Guideline Supplementary Paper

New Zealand Autism Spectrum Disorder Guideline’s supplementary paper on the effectiveness of strategies for supporting school transitions for young people on the autism spectrum.



With the support of the New Zealand Autism Spectrum Disorder Guideline’s Living Guideline Group

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The work was researched and written by INSIGHT Research Ltd employees or contractors. Appraisal of the evidence, formulation of recommendations and reporting are independent of the Ministries of Health and Education.

**Statement of intent**

INSIGHT Research produces evidence-based best practice guidelines, health technology assessments and literature reviews to help health care practitioners, educators, policy-makers and consumers make decisions about practices in specific circumstances. The evidence is developed from systematic reviews of international literature and placed within the New Zealand context.

Guidelines, including supplementary papers, are not intended to replace a health practitioner’s judgement in each individual case.

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About the evidence review

Purpose

The first edition of the New Zealand Autism Spectrum Disorder Guideline (referred to henceforth as the “guideline”) was published in April 2008 [[1](#_ENREF_1)]. As part of their commitment to the implementation of the guideline, New Zealand’s Ministry of Health and Ministry of Education agreed to establish a “Living Guideline process” in 2009. This process ensures that the guideline is regularly updated and refined to reflect new evidence and changing user needs.

A multidisciplinary advisory panel called the Living Guideline Group (LGG) are responsible for prioritising what topics should be updated. Updates to the guideline are required when the guideline’s recommendations are no longer valid in view of research that has emerged since the guideline’s literature searches were conducted. For each topic, a systematic literature review is undertaken by INSIGHT Research which includes a critical synthesis of research published since the original guideline’s searches were completed in 2004. The LGG consider the completed systematic review, and report on any implications for guideline recommendations and good practice points. These topic updates which supplement the guideline, known as Supplementary Papers, have been produced annually since 2009 [[2-10](#_ENREF_2)]. A second edition of the guideline was published in 2016 [[11](#_ENREF_11)], incorporating revised and new recommendations and good practice points from the first seven supplementary papers.

The current Supplementary Paper updates the guideline with respect to the effectiveness of transitions to and between primary and secondary schools and between year levels within those schools for children and adolescents on the autism spectrum.

This Supplementary Paper and the entire living guideline process is co-funded by New Zealand’s Ministry of Health and Ministry of Education.

Scope of the evidence review

The current review aims to update evidence published from 2004 onwards relating to interventions for children and adolescents on the autism spectrum transitioning to and within primary and secondary schools. The LGG identified this topic as an area worthy of updating and one which could lead to revised or additional recommendations for the guideline [[11](#_ENREF_11)].

The review covers interventions aimed to improve transitions from preschool to primary school, and from primary school to intermediate (middle) and/or secondary school, as well as between year levels within schools.

“Preschool” refers to teacher-led,[[1]](#footnote-1) early childhood education centres, including kindergartens,[[2]](#footnote-2) preschools, and early intervention developmental programmes. “School” includes teacher-led State/public schools, kura kaupapa Māori schools, State integrated schools, and private/independent schools offering education at the primary, intermediate or secondary level. Included are special schools or mainstream schools with attached special education units or outreach services.

The review excludes transitions to, and from, parent-led childcare and schooling arrangements such as home schooling, correspondence school/Te Kura, playcentres/Kōhanga Reo, and playgroups/Puna kōhungahunga. It also excludes transitions to post-secondary school environments including employment, training, further education, and/or independent living.

This document should be read in the context of the guideline’s 2nd edition [[11](#_ENREF_11)].

Definitions

The current report relates to school transitions.

Education terminology varies within and between countries. There are 13 years in the school system, commencing with year 1 in primary (elementary) school. Most children commence school when they turn five years of age, transitioning from early childhood education settings including kindergarten, preschool or home-based child care. In New Zealand, students can delay commencing school until they turn 6 years of age, and can leave school from 16 years, but are offered formal schooling until 19 years[[3]](#footnote-3). Full primary schools cover years 1 to 8 and lead directly to secondary school (high school) which covers years 9-13. Alternatively, contributing primary schools offer Years 1-6 after which the child attends an intermediate (middle) school for years 7 and 8, before commencing secondary school. Contributing high schools offer years 7-13. Most children will commence year 7 (or intermediate) at the age of 10-11 years of age which is close to the commencement age for high schools in most developed countries which is 11-12 years. In this report, references to the transition to secondary school usually refers to the transition to a separate, often larger, more senior school beyond primary school. This transition applies to movement to intermediate/middle schools (Years 7 and 8), contributing secondary/high schools (Years 7-13), and secondary/high schools (years 9-13).

The term kindergarten is used in countries such as the US to refer to the first year of primary school. To avoid confusion, in the current report the word kindergarten will be avoided and preschool will refer to all teacher-led, group-delivered early childhood education programmes (see **Scope of the evidence review**, above).

Autism Spectrum Disorder (ASD) is a condition that affects communication, social interaction and adaptive behaviour functioning. In the current edition of the diagnostic manual of mental disorders, the DSM-5 [[12](#_ENREF_12)], four of the pervasive developmental disorder subcategories specified in the manual’s predecessor, the DSM-IV [[13](#_ENREF_13)], are subsumed into one broad category of autism spectrum disorder. These subtypes are autistic disorder, Asperger's disorder (Asperger syndrome), childhood disintegrative disorder (CDD), and pervasive developmental disorder not otherwise specified (PDD-NOS). The name pervasive developmental disorder (PDD) was changed to Autism Spectrum Disorder (ASD)[[4]](#footnote-4). The diverse range of disability and intellectual function expressed by people across the autism spectrum requires that a wide range of services and approaches be employed to reflect the heterogeneity of the condition.

The term ASD is still used widely internationally and the guideline’s first edition [1] was prescient in recognising the movement toward considering autism as a spectrum condition. However, increasingly many people (particularly adults) in the autism community, whether formally or self-diagnosed, prefer to use identity-first language to refer to themselves as being autistic, autists or Aspies. This recognises autism as a central part of their identity, rather than being a person “with autism”. Some prefer to describe themselves as being on the autism spectrum, or as having autism or Asperger’s. Where used, the acronym ASD is sometimes defined as autism spectrum *difference* rather than *disorder.* In the UK, the term Autism Spectrum Condition (ASC) is sometimes used instead of ASD. In this supplementary report, the term “person on the autism spectrum” or “autistic person” is preferred, and refers to someone understood to have met criteria for the diagnosis of ASD. The acronym ASD is only used when referring to a person’s formal diagnosis, such as when used as a selection criteria in cited research studies.

It is understood that the term “high functioning” to describe more cognitively and verbally able groups of people on the autism spectrum is considered unhelpful and divisive by many on the autism spectrum. In this report, the term “high functioning” is only used when quoting specific inclusion criteria for appraised studies. In such studies, the term refers to people with higher cognitive ability either as established either by cognitive assessment (generally indicated by full-scale IQ scores of 70 or above), or through the diagnosis of “high-functioning autism,” or Asperger syndrome (under DSM-IV criteria) [[13](#_ENREF_13)]. It is acknowledged that these distinctions may no longer be used clinically in light of the removal of Asperger syndrome as a separate diagnostic classification in DSM-5 [[12](#_ENREF_12)]. It is noted that DSM-5 utilises “specifiers” including whether or not the ASD is accompanied by intellectual impairment [[12](#_ENREF_12)].

Target audience

The systematic review that forms the bulk of this report aims primarily to provide an updated synthesis of research evidence on a specific topic for consideration by the Living Guideline Group. As such it is written in an academic style and is not intended for the general reader.

The systematic review informs the Living Guideline Group in revising and developing new recommendations and good practice points to update the New Zealand Autism Spectrum Disorder Guideline [[11](#_ENREF_11)]. These outputs (detailed in **Section 3** of this paper) are intended for a broader audience, including the providers of professional health, education and support services for New Zealanders on the autism spectrum, as well for people on the autism spectrum themselves, their families, and whānau.

Treaty of Waitangi

INSIGHT Research acknowledges the importance of the Treaty of Waitangi to Aoteoroa/New Zealand, and considers the Treaty principles of partnership, participation and protection as central to improving Māori health and education.

INSIGHT Research’s commitment to improving Māori health outcomes means we attempt to identify points in the guideline or evidence review process where Māori health must be considered and addressed. In addition, it is expected that Māori health is considered at all points in the guideline or evidence review in a less explicit manner.

Recommendation development process

The research topic was identified and prioritised by the LGG. A literature review updating the published evidence was conducted by INSIGHT Research and disseminated to the LGG as pre-reading for a one day, face-to-face meeting on 23 November 2018. At the meeting, the currency of the guideline was discussed in view of the updated evidence. Existing recommendations/good practice points were revised and new ones developed based on the considered evidence. These are described, accompanied by the LGG’s rationale and additional notes, in **Section 3** of this paper.

INSIGHT Research follows specific structured processes for evidence synthesis. Full methodological details and a list of Living Guideline Group members is provided in **Appendix 1**. **Appendix 2** presents a [Glossary](#Glossary) of key epidemiological and topic-specific terms, abbreviations and acronyms. **Appendix 3** presents evidence tables of included studies for the current review update.

Summary: Revised recommendation and new good practice point

Summary Table I: Revised recommendation relevant to school transitions and autism

|  |  |  |
| --- | --- | --- |
| Reference | **Revised recommendation** | **Grade** |
| 3.4.5 | All transitions for students on the autism spectrum should be carefully planned and include the following:   * Identifying a key education professional early in the transition process to guide children and young people and their family/whānau, and provide an ongoing point of contact * Use person-centred planning through involving children and young people in decisions about the transition, respecting their views, and individualising their plans * Having team transition planning meeting/s, preferably beginning 6-12 months prior to transition, involving family/whānau, key staff from both sending and receiving schools, and other supporting team members * Developing a student profile in collaboration with the child/young person and their family/whānau, to inform current and future school teams. The profile should include the child/young person’s strengths, interests, needs, behaviours, preferences, and successful strategies * Having transition visits for the child/young person to their new school environment to provide familiarisation, establish relationships, and alleviate anxiety * Using visual supports appropriate to individual needs, for example:   + a map of the new school   + photographs, pictures and social stories incorporated into an induction booklet   + visual schedules, including calendars, timetables, diaries and planners that present the routines of each day * Providing social supports and environmental adaptations such as a safe person, peer buddy, adult mentors, and a safe space * Having regular, constructive, culturally appropriate and respectful communication between teachers and family/whānau * Sharing support strategies across school and home environments. | **B** |

**Note**: Grades indicate the strength of the supporting evidence rather than the importance of the evidence. Grade A indicates good evidence, B is fair evidence, C is international expert consensus, and I is insufficient, poor quality, or conflicting evidence. See **Table A1.2** in **Appendix 1** for details.

Summary Table II: New good practice point relevant to school transitions and autism

|  |  |  |
| --- | --- | --- |
| **Reference** | **New Good Practice Points** | **Grade** |
| 3.4.5a | Many strategies recommended in Recommendation 3.4.5 are applicable to within-school transitions (e.g., between year levels and other transitions). | ✓ |
| **Note**: Where a consensus-based recommendation is based on the experience of members of the Living Guideline Group, it is referred to as a good practice point. | | |

1 Introduction

1.1 Background

School transitions

School transitions can occur between a number of environments. These include those between activities and schedules, home and preschool, and primary and secondary school. There are also transitions beyond secondary school and into adulthood, including further training, tertiary education, employment, and independent living.

School transitions have been categorised as being either *horizontal* or *vertical* [[14](#_ENREF_14)]. Horizontal transitions involve short-term movements between situations or events which are repeated on a regular basis. Such transitions are specific to an individual and their needs; for example, moving from the playground to the classroom or from one activity to another. By contrast, vertical transitions are longer-term, sustained changes in an educational environment, programme or year level. They tend to be predictable, developmental and routinely experienced by all students, and benefit from careful transition planning [[14](#_ENREF_14)]. The current review focussed on vertical transitions including those from preschool to primary school, from primary school to secondary school, and from one year level (grade) to another.

The transition to school is a major milestone for children. It represents moving from a less structured, play-based learning environment to a more academic and formalised one. In the mainstream primary school environment, certain skills such as independent toileting, following instructions, and social and communication abilities, are generally assumed to be present. In a review of research comparing activities [[15](#_ENREF_15)], curriculum and instruction between preschool and primary school, researchers observed that students at primary school are expected to work more independently, with less teacher-support, and rely more on large-group instruction, than when in early childhood settings. The transition to primary school can also be difficult for parents in their support role, with a significant decrease in parent-teacher communication at “school-focussed” primary school compared with “family focussed” preschool [[16](#_ENREF_16)]. This reduced contact may limit the opportunity for parents to pass on valuable information about how their individual child’s transition can be best facilitated.

Following primary school comes the transition to secondary school which can bring new challenges and anxieties for all students. There are new physical and organisational features such as an increased school area, having lockers, and a more complex organisational structure to orient to. There is also a change in the curricular environment in terms of new subjects, subject teachers, and teaching methods. This brings changes in routine, classroom and subject changes, and the need to follow a timetable and navigate a campus. Moreover, there can be higher expectations for independence, self-directed learning, academic achievement, homework tasks, and discipline.

In most industrialised countries the pivotal transition from primary to secondary school[[5]](#footnote-5) occurs around the ages of 11 to 12 years, coinciding with the beginning of adolescence [[17](#_ENREF_17)], and the biological and developmental changes that accompany puberty [[18](#_ENREF_18)]. It is also a time of social transition as peer relationships and status are re-established in the new school settings [[18](#_ENREF_18)]. These social challenges are heightened by students having to interact with different teachers and peers as they attend different classes throughout the school day. Such demands contribute to a period of stress for students, as suggested by a review of research finding an association between commencing high school and declines in performance, attendance and self-esteem [[19](#_ENREF_19)].

Whilst moving to secondary school is a time of change, not all changes are negative. In considering both prospective and retrospective accounts across studies of students in the general population [[20](#_ENREF_20)], a review identified the following expected or experienced positives: a greater breadth and variety of subjects; learning new things; finding work easier; having a range of teachers; increased opportunities for movement; and making new friends. In contrast, the review also summarised negative expectations and experiences, some of which have already been highlighted. These include: the larger and more complex layout of the school; the potential for getting lost; the greater number and range of teachers; higher expectations of teachers; different approaches to classroom management; a greater level and amount of class- and home-work; organisational challenges; a loss of personal space; the insecurity of forming new social groups; not knowing anyone; and being picked on, teased or bullied [[20](#_ENREF_20)]. Importantly, whilst some of these anticipated changes may not be realised, they may contribute to stress prior to transition and affect preparation for and transition to the new school.

School transitions for people on the autism spectrum

Over the last couple of decades, there has been a growing movement towards more inclusive educational practices in western countries, with larger numbers of students on the autism spectrum being enrolled in mainstream classrooms and schools [[21](#_ENREF_21)]. In New Zealand also, wherever possible and when it is the parents’ choice, children with disabilities are enrolled with other children in regular, mainstream classes, including most students with special education needs. Special education services are available for children with disabilities, learning or behaviour difficulties who need additional resources [[22](#_ENREF_22)].

The greater levels of inclusion of children on the autism spectrum in mainstream schooling, combined with increased awareness and diagnosis of ASD, have accompanied a burgeoning research base of studies about school transitions for children and young people on the autism spectrum. These studies suggest that the core social and communication difficulties and commonly associated sensory sensitivities make students and prospective students on the spectrum particularly vulnerable to stress in school transitions [[23](#_ENREF_23)].

Attendance at a new school presents significant challenges for autistic children in terms of making new friends, communicating with teachers, and understanding new rules and norms [[24](#_ENREF_24)]. Social aspects of the changed environment can be especially difficult. A case-control study [[25](#_ENREF_25)] found that compared to children in the control condition, students on the autism spectrum engaged in fewer social interactions during the school day; were more likely to spend break times inside; reported having fewer friends; and were more likely to be bullied than neurotypical children. These differences in the social arena are of particular concern given that teachers reportedly rate social skills as more important than academic skills for successful adjustment in primary school [[26](#_ENREF_26)].

An autistic person’s preferences for sameness and predictability of routine can also disrupted by a transition to a new environment such as a new school. Reviewed research suggests that young people on the autism spectrum show more symptoms of anxiety and stress when coping with change than other children [[27](#_ENREF_27)].

Sensory vulnerabilities can also be tested in the often larger and more complex new school environment. Secondary schools, being physically big, noisy and chaotic, can be overwhelming for people on the autism spectrum who may have heightened sensitivity to sensory stimuli [[28](#_ENREF_28)].

“It’s very busy because it’s a bigger school . . . all the people in the corridor might not know that I’m sensitive to noise, so they might look at me strangely for doing this [putting hands over ears] or wearing my ear-defenders” (Parfitt, 2013, p. 193).

Planning for transition success

Transition planning aims to maximise the likelihood that a transition that is potentially stressful can occur successfully. The plan typically focusses on continuing supports and services, and defining the roles and responsibilities of people and personnel involved [[23](#_ENREF_23)]. Pre-transition school visits are usually advocated to allow the person to be more familiar with their new surroundings, to anticipate changes that are likely to occur, and to be prepared to respond to them once commencing at the new school. Other transition strategies consider the unique needs of the child in relation to their new physical environment, curriculum, and behaviour supports. This involves sharing information about the student’s needs between the “sending” (pre-transitional) and the “receiving” (post-transitional) preschool/school. To ensure a successful transition, good communication between professionals, and involving parents in communications, is considered to be critical [[14](#_ENREF_14)].

Less research has attempted to define what a good transition looks like. In studies of students in the general population transitioning to secondary school, transitions have been defined as successful where the young person makes new friends; becomes academically engaged, improves self-esteem and confidence; adapts to new routines and the organisation; and where parents are not concerned [[29](#_ENREF_29)]. These themes have some empirical support with respect to transitions for autistic children. In a recent study, researchers [[28](#_ENREF_28)] developed an index of transition success from their small study of autistic children transitioning from primary to secondary school. The index included four correlated factors: developing friendships and confidence; showing a growing interest in school and work; settling into school life; and getting used to new routines. This preliminary work suggests that transition success may be identified by satisfactory adjustment in social, academic, physical, and psychological domains for children on the autism spectrum.

1.2 Transitions covered in the guideline

Overview

The concept of “transitions” for people on the autism spectrum is used in various ways throughout the guideline [[11](#_ENREF_11)]. There is an extended section on the transition toward adulthood and post-secondary school options in Part 5 (*Living in the Community*), which is outside the scope of the current review.

With respect to education, transitions are discussed several times across Part 3 (*Education for learners with ASD*), including: Sections 3.1.d, Section 3.3, and Sections 3.4.a, 3.4.b.and 3.4.c, leading to two recommendations relevant to the current review. These sections are summarised below with respect to transitions. This information forms part of the evidence base considered by the LGG alongside that identified within the current systematic review update (see [**Section 3**](#RecDevelopment)**)**.

Transition in education

Section 3.1: Transitions and young children

In Section 3.1.d (*Transitions and young* *children*) of the guideline [[11](#_ENREF_11)] the following strategies are suggested in transitions from home to an early childhood setting and from there, to school:

* “preparing children to function as independently as possible from the beginning. This may begin by teaching imitation and attention to adults and then particular skills taught in small steps
* actively teaching ‘survival skills’, for example, turn-taking, sitting quietly during activities, listening to directions from both near and afar, communicating basic needs
* members of the team around the child visiting the new setting and considering the demands of the environment and teaching the child the skills needed, for example, putting belongings into a tray or locker, indicating they need to go to the toilet, putting toys away
* members of the team from the current setting providing information, support and education to the staff in the new setting
* planning the transition to the new setting with visits which take place on a gradual basis
* using social stories and other visual strategies to introduce the new setting and the people in it”. (p. 91)

Section 3.3: Particular issues for secondary students

Transitions to and within secondary schools are described in Section 3.3 (under *Transitions*, p. 123) of the guideline [[11](#_ENREF_11)], including horizontal transitions (excluded from the current update) between different teaching areas, teachers, groups of peers and subjects as well as changes of activities within classes. Schedules and timetables are recommended to prepare students for these changes, as captured in Recommendation 3.3.1: “The student should be supported through multiple secondary school transitions using schedules and other support” (see **Table 1.1**).

Table 1.1: Recommendations relevant to school transitions in the guideline [[11](#_ENREF_11)]

|  |  |  |
| --- | --- | --- |
| **Reference** | **Recommendation** | **Grade** |
| 3.3.1 | The student should be supported through the multiple transitions of secondary school using schedules and other support. | C |
| 3.4.5 | All transitions for students with ASD should be carefully planned and the child or young person and the new environment carefully prepared. | B |

**Note**: Grades indicate the strength of the supporting evidence rather than the importance of the evidence. Grade A indicates good evidence, B is fair evidence, C is international expert consensus, and I is insufficient, poor quality, or conflicting evidence. See **Table A1.2** in **Appendix 1** for details.

Section 3.4.b Implications for the New Zealand school sector

In Section 3.4.b (under *Collaborative teams in education*) of the guideline [[11](#_ENREF_11)], a key feature of special education support is identified as being the collaborative team. This generally includes the student’s classroom teacher, special education needs coordinator (SENCO), and the student’s family and whānau. However psychologists, speech-language, occupational therapists, other teachers, paraprofessionals and school staff may also be involved. Functions of the collaborative team are outlined, and include one which relates particularly to transition:

* “planning for successful transitions within, between and beyond early childhood education settings and schools”. (p. 128)s

Section 3.4.c Supporting and planning for transitions

Finally, in Section 3.4.c (*Supporting and planning for transitions*) of the guideline [[11](#_ENREF_11)], transitions between activities, from home to school, and between teachers, places, classrooms and schools are discussed. Strategies suggested to help students understand the purpose and expectations of transitions include:

* “visual supports
* maps
* priming
* schedules of events
* planning for changes and sharing plans with the child
* social stories
* careful analysis of difficulties (not always what is assumed)” (p.129).

Another recommended resource given in the guideline is to develop a personal profile for students which includes their skills, behaviours, preferences, interests, effective strategies and prior learning.

From this discussion, a recommendation is made that all transitions for students be carefully planned and the student and new environment carefully prepared (Recommendation 3.4.5) (see **Table 1.1**). This recommendation is also included as one of the 11 “key recommendations for learners” in Part 3.

Guideline gaps

As presented above, aspects of supporting effective transitions in education are discussed at various points within Part 3 of the guideline [[11](#_ENREF_11)]. However a dedicated review on school transitions (for example, early childhood education to primary school, primary school to secondary school) was excluded from the original guideline’s scope. This was due to a refinement of scope made because of “resourcing and time issues” (p. 283). The current review addresses this exclusion.

1.3 The current review update

Review objectives

Given the transition areas already covered in the guideline [[11](#_ENREF_11)], the objectives of the current review update were to:

* Systematically identify, select, and narratively synthesise research studies published since January 2004 which describe and/or evaluate effective strategies for transitioning children/adolescents on the autism spectrum into and between primary and secondary school and between school year levels.
* Consider this evidence as it supplements the guideline [[11](#_ENREF_11), [30](#_ENREF_30)] in order to inform the LGG’s revision of existing recommendations/good practice points and/or the development of new ones.

2 Systematic review of school transitions for young people on the autism spectrum

This chapter describes the findings of a systematic review relating to interventions for supporting school transitions for children and adolescents on the autism spectrum.

2.1 Scope and methods

Full details of review methods including search strategies, appraisal of study quality and data extraction are presented in **Appendix 1**.

Research question

The review update’s primary research question is:

* What strategies are effective in supporting transitions of children and young people on the autism spectrum with transitions as they move into and between primary and secondary school and between school year levels?

Identification and selection of studies for inclusion

Search strategies were limited to English language publications from 1 January 1 to ensure capture of articles published since the search was conducted for the original guideline [[1](#_ENREF_1)]. Studies already appraised for a relevant research question in the guideline’s first or second edition [[1](#_ENREF_1), [11](#_ENREF_11)] were excluded from the current review regardless of date of publication.

Nine bibliographic, health technology assessment, and guideline databases were included in the systematic search (see **Appendix 1** for details). The search was conducted on 1 August 2018. Following removal of duplicates, 271 potentially relevant articles were identified. Selection criteria were applied to titles and abstracts to identify articles for retrieval, and then to retrieved full text articles, to identify included studies. Criteria relating to study designs was refined after the initial search was conducted in order to determine the level of “best evidence” to be applied.

Selection criteria for included and excluded studies are summarised in **Table 2.1**.

Table 2.1: Inclusion and exclusion criteria for selection of studies

|  |  |
| --- | --- |
| **Characteristic** | **Inclusion criteria** |
| Publication type | Studies published 1 January 2004 or later in the English language |
| Participant/informant characteristics | Children and adolescents:  - aged 3-18 years (or mean age within this range)  - diagnosed with Autism Spectrum Disorder (ASD) (or for samples with mixed disabilities, if at least 51% of participants diagnosed with ASD)  - who will be, are or have transitioned, to primary or secondary school or between school year levels.  If some, but not all, of a study’s participants were eligible for inclusion, there was a sub-sample eligible for which outcomes were reported separately.  Parents/care-givers/whānau, teachers/educators, paraprofessionals supporting such transitions. |
| Scope | Where the study’s key focus (i.e., as a stated aim or in a significant representation within the results) was identifying effective transition interventions or investigating the effectiveness of eligible transition interventions for children/adolescents diagnosed with ASD. |
| Study Design | No restriction on study designs or sample size for primary studies, with the exception of single case reports which were excluded.  Best evidence from the NHMRC hierarchy of evidence (Appendix A, Table A1.1) was included first, and where significant best evidence was lacking, lower order evidence was considered.  Secondary studies (systematic reviews and/or meta-analyses) published in or since 2013 that had a clear and relevant review question, used at least one electronic bibliographic database, and included at least one study eligible for the current review. |
| Intervention | Strategies, processes, plans, programmes or accommodations which aim to assist students or prospective students to successfully transition into or between schools at the primary, intermediate and/or secondary level, and/or between school year levels. |
| Comparator | For experimental studies, the comparison/control group could be no intervention, wait-list control, or usual care/transition process. |
| Setting | Teacher-led[[6]](#footnote-6) early childhood education centres, including kindergartens,[[7]](#footnote-7) preschools, and early intervention developmental programmes.  Teacher-led schools offering education at the primary, intermediate or secondary level.  Included were special schools or mainstream schools with attached special education units or outreach services. |
| Outcomes | Scales/indices rating the success of transitions, school assimilation  Changes in repeated measures post-transition including increased adaptive functioning, well-being, confidence and reduced school anxiety for the child/adolescent undergoing the transition  Proxy indicators of transition quality; e.g., post-transition behavioural difficulties, academic progress, social connections |

Table 2.1: Inclusion and exclusion criteria for selection of studies *(continued)*

|  |  |
| --- | --- |
| **Characteristic** | **Inclusion criteria (*continued)*** |
| Outcomes (*continued)* | Secondary outcomes included:  - Ratings, identification, or descriptions of effective transition interventions  - Commonly used or recommended strategies identified by professionals  - Strategies identified by eligible children/adolescents or their parents/carers as expected to be helpful/desired in prospective transition  - Process outcomes for the intervention (including feasibility, practicality, satisfaction, confidence and readiness for delivering programme)  Quantitative (e.g., from survey instruments or lists) and/or qualitative outcomes included (e.g., key themes from interviews with informants). |
| **Characteristic** | **Exclusion criteria** |
| Publication type | Non-systematic reviews, correspondence, editorials, commentaries, abstracts, poster presentations, dissertations, books, animal studies, single case reports, and non-empirical research were excluded, except where retrieved as providing background material.  Unpublished data  Studies included in the guideline relevant to school transitions [[1](#_ENREF_1)] |
| Language | Non-English language articles |
| Scope | Studies which were not deemed relevant to the research question or nature of review, including:  - studies describing service provision (without explicit evaluation of the intervention)  - studies describing development of an intervention, outcome measure or index (without explicit evaluation of the intervention) |
| Setting | Considered transitions from/to parent-led childcare and schooling arrangements such as home schooling, correspondence school, playcentres, and playgroups.  Considered transitions to post-secondary options including employment, training, further education, and/or independent living. |

Bibliographies of retrieved publications and recent narrative reviews were examined to identify any additional eligible studies. Narrative reviews retrieved for this purpose or to provide background material were not critically appraised for inclusion in the review. Hand searching of journals and contacting of authors for unpublished research was not undertaken.

Publication type

Included were studies published in the language English between 1 January 2004 – 1 August 2018 inclusive, including primary (original) research published as full original reports and secondary research (systematic reviews and meta-analyses) published in on since 2013.

Participants

The study population were people aged 3-18 years (or for samples with a mean age within this range), diagnosed with Autism Spectrum Disorder (ASD), who will be, are or have transitioned to or between primary and secondary school or between school levels/grades. Whilst the ASD Guideline [[11](#_ENREF_11)] defines autism spectrum disorder as classified by or consistent with DSM-IV [[13](#_ENREF_13)] or DSM-5 [[12](#_ENREF_12)] diagnostic criteria, studies were not limited by how ASD status was identified. Studies of broader populations were included where results were reported separately for the eligible sub-group; or for samples of mixed disabilities, if at least 51% of its participants were diagnosed with ASD.

Studies were also included where informants on eligible outcomes were adults with experience in supporting the transition of children or adolescents on the autism spectrum. These include: parents/carers/whānau, educators, and paraprofessionals including special educational needs coordinators (SENCO), learning support staff, occupational therapists, speech and language therapists (SLT), psychologists, Resource Teachers of Learning and Behaviour (RTLB), early intervention providers, principals, and other relevant school staff.

Scope

Included were studies where a key focus (i.e., as a stated aim or in a significant representation within the results) was identifying effective transition interventions, or investigating the effectiveness of eligible transition interventions, for children/adolescents diagnosed with ASD.

Study designs

There was no restriction on study designs or sample size for primary studies, with the exception of single case reports which were excluded.

Criteria relating to study designs was refined after the initial search was conducted in order to determine the level of evidence to be applied using the NHMRC hierarchy [[31](#_ENREF_31)], see **Appendix A, Table A1.1** for further details. The goal was to identify evidence at higher levels of the evidence hierarchy (for example, controlled comparative studies) and only in their absence, include lower order evidence, such as case series studies.

In addition, secondary studies (systematic reviews and/or meta-analyses, including those informing clinical practice guidelines) were eligible for appraisal where they had a clear and relevant review question, used at least one electronic bibliographic database, reported on the eligible study population (solely or separately as a synthesised sub-group), and included at least one study eligible for the current review.

Intervention

Included studies evaluated interventions (i.e., strategies, processes, plans, programmes, and/or accommodations) aimed at supporting the effective transition of children/adolescents on the autism spectrum from preschool to primary school, and from primary school to intermediate (middle) and/or secondary school, and/or between year levels within schools.

Comparator

Where applicable for experimental study designs, the comparison/control group could be no intervention, wait-list control, or usual care/transition process.

Settings

Pre-school settings including teacher-led early childhood education centres, including kindergartens,[[8]](#footnote-8) preschools, and early intervention developmental programmes.

School settings including teacher-led State/public schools, kura kaupapa Māori schools, State integrated schools, and private/independent schools offering education at the primary, intermediate or secondary level. Included are special schools or mainstream schools with attached special education units or outreach services.

Teacher-led was defined as where at least 50% of supervising adults are qualified and registered teachers.

Outcomes

Outcomes measured quantitatively (e.g., from survey instruments or lists) and/or qualitatively (e.g., key themes coded from interviews with informants) were included.

Primary outcomes of interest as dependent variables:

* scales/indices rating the success of transitions, and school assimilation for the child/adolescent undergoing the transition
* changes in repeated measures post transition including increased adaptive functioning, well-being, confidence and reduced school anxiety for the child/adolescent undergoing the transition
* proxy indicators of a transition quality; for example, post-transition measures of behavioural difficulties, academic progress, and social connections.

Secondary outcomes included:

* ratings, identification, or descriptions of effective transition interventions. Examples include interventions described as being "best practice", "recommended", "successful", "effective", “superior”, “ideal”, "important", "helpful", "supportive", "working best", “favoured” or “preferred”
* commonly used or recommended strategies identified by professionals experienced in supporting school transitions of students on the autism spectrum
* strategies identified by eligible children/adolescents or their parents/carers as being expected to be helpful or desired in a prospective transition
* process outcomes for the intervention (including feasibility, practicality, satisfaction, confidence and readiness for delivering programme
* moderators of effectiveness of interventions identified through multivariate statistical analyses were also of interest.

Exclusions

Research papers were **excluded** if they:

* were published prior to 2004 (however earlier primary studies may be reported in included systematic reviews)
* were not published in the English language
* were included in the guideline relevant to school transitions [[1](#_ENREF_1)]
* were non-systematic reviews, correspondence, editorials, expert opinion articles, commentaries, news reports, trade magazines, case reports, book chapters, articles published only in abstract form, conference proceedings, poster presentations, dissertations, unpublished work, animal studies, single case reports, and non-empirical research (except where retrieved as providing background material)
* described service provision (without explicit evaluation of the intervention)
* described development of an intervention, outcome measure or index (without explicit evaluation of the intervention)
* considered transitions from/to parent-led childcare and schooling arrangements such as home schooling, correspondence school/Te Kura, playcentres/Kōhanga Reo, and playgroups/Puna kōhungahunga
* related to supporting the transition towards adulthood, independent living, employment, training, further or tertiary education.

Critical appraisal of included studies

Included primary studies were broadly assigned “levels of evidence” which correspond to an evidence hierarchy [[32](#_ENREF_32)]. This hierarchy (see **Appendix 1**, **Table A1.1**) ranks the quality of research designs which are broadly associated with particular methodological strengths and limitations so as to rank them in terms of quality, from the most robust level of I (for systematic reviews of level II studies) to IV (before-and-after studies with repeated measures assessed at baseline and post-intervention for the treatment group). Systematic reviews of lower order evidence rank at the same level as that order of evidence.

Each study may be designed and/or conducted with particular strengths and weaknesses which can be assessed using critical appraisal tools. In this review, included studies were formally appraised using the SIGN quality checklists from the Scottish Intercollegiate Guidelines Network [[33](#_ENREF_33)] as appropriate to study design, including those for systematic reviews and randomised controlled trials. No checklist is available for cross-sectional or case series studies (level IV). The quality and resistance to risk of bias of an individual study was scored as either ++ (high quality), + (acceptable), or – (low quality), and included in the Evidence Tables for included studies (**Appendix 3**).

Full details of review methods including search strategies, appraisal of study quality and data extraction are presented in **Appendix 1**.

2.2 Body of evidence

Overview

Following a comprehensive database search and citation searching of primary and secondary studies published since 2004, 257 unique abstracts were identified. After applying inclusion and exclusion criteria, 26 studies were eligible for inclusion in the review: three secondary studies (i.e., systematic reviews, clinical guidelines), and 23 primary studies.

Detailed study attributes are presented in Evidence Tables (see [**Appendix 3**](#Appendix4)). These include: the country the study was conducted in, study design, evidence level (as defined in **Appendix 1**, **Table A1.1**), SIGN study quality rating (except for evidence level IV studies), study aim, study setting, participant characteristics, selection criteria, procedure, outcome measures, results, authors’ conclusions, reviewer’s comments, and source of funding.

Summary characteristics for the included secondary studies are presented in **Table 2.2,** andincluded primary studies in **Table 2.3**, organised by year of publication (oldest first), and alphabetically by first author.

Systematic reviews

Three secondary studies on the review topic were identified. One was a clinical practice guidelines [[34](#_ENREF_34)], and two were systematic reviews [[35](#_ENREF_35), [36](#_ENREF_36)].

Table 2.2: Characteristics of secondary studies

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, Quality | Scope | Research question/s | Search strategy and analysis | Results/Recommendations |
| National Institute for Health and Clinical Excellence (2013) [[34](#_ENREF_34)] | UK | IV  Quality: ++ (high quality) | Narrative systematic reviews used to inform a clinical practice guideline on the management and support of children and young people on the autism spectrum | Within the broader review:  - What information and day-to-day support for people with autism and their families and carers (i) is effective at key transitions, and (ii) is wanted at key transitions? | Very broad search strategy including 13 databases, citation searching, hand searching.  Thematic analysis of qualitative and quantitative data identified themes relevant to the experience of care, coded by two researchers working independently.  Conclusions validated by expert advisory group. Guideline Development Group developed Recommendations by informal consensus. | Recommended that health and social care professionals should receive training in autism awareness and skills in managing autism, which should include: (*among others listed*) the importance of key transition points, such as changing schools.  Make arrangements to support children and young people with autism and their family and carers during times of increased need, including (*among others listed*) starting or changing schools. |
| Marsh et al (2017) [[36](#_ENREF_36)] | Australia | IV  Quality: + (acceptable quality) | Narrative systematic review to identify factors that promote a positive start to school for children on the autism spectrum | Aimed to examine:  - school readiness,  - parent and teacher perspectives on transition practices (*most relevant to current review*),  - characteristics of children with ASD that are associated with successful transition to school, and  - the impact of school based intervention programs. | Moderately broad search including 4 databases, citation searching, hand searching, citations of included studies, PhD dissertations.  Two researchers independently applied eligibility criteria, extracted data. Appraisal checklists not used.  Narrative analysis identified “fairly consistent practices for school transition as identified by parents and teachers”. | 1575 studies reviewed as full text, 2 met inclusion criteria, 4 relevant to current review.  Recommended that structured and individualised transition plans be developed and implemented in preschool and continue through the first year of primary school.  Advised that better adjustment of families to the new school environment requires more structured processes, and more communication between schools, teachers and parents. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, Quality | Scope | Research question/s | Search strategy and analysis | Results/Recommendations |
| Nuske et al (2018) [[35](#_ENREF_35)] | US | III.3  Quality: + (acceptable quality) | Narrative systematic review related to school transitions (to primary and secondary) for children on the autism spectrum | Aimed to describe:  - transition difficulties team members of children with ASD face  - strategies currently available to support better transitions (*most relevant to the current review*) | Limited search strategy: 2 databases, no supplementation.  Strategies for successful transition operationalised as those that were (broadly) used, useful, recommended, wanted.  Two researchers independently applied eligibility criteria, extracted data, rated level of evidence, coded data coded through consensus.  Used the constant comparison method to identify themes relating to difficulties, and transition strategies (*most relevant to the current review*). Overall level of evidence assigned to each sub-theme. | 154 studies reviewed as full text, 27 met inclusion criteria, 20 relevant to strategies of which 19 were observational studies and one a controlled study [[17](#_ENREF_17)].  Themes relating to particularly useful transition strategies:  - adjusting student to new setting, starting before and continuing throughout the transition  - individualizing transition supports  - clarifying transition process for parents  - fostering communication among the sending and receiving schools, and school and home.  Recommended community-based, rigorously tested interventions to examine effectiveness of different school transition strategies. |

Key: ++ rated as high quality; + rated as acceptable quality; ASD=Autism Spectrum Disorder; UK=United Kingdom; US=United States of America

The 2013 guideline, from the UK’s National Institute for Health and Clinical Excellence (NICE), was informed by a systematic review of high quality, representing evidence level IV evidence [[34](#_ENREF_34)]. Within a broader review of management and support of children and young people on the autism spectrum, the review considered children and families’ information and support needs at key transitions.

Two recently published systematic reviews were also included. Australian researchers Marsh and colleagues (2017) considered (among other research questions) parent and teacher perspectives on transition practices on commencing school [[36](#_ENREF_36)]. Their systematic review of level IV evidence was of acceptable quality and included four primary studies also included in the current review [[15](#_ENREF_15), [26](#_ENREF_26), [27](#_ENREF_27), [37](#_ENREF_37)].

Most recently, Nuske et al (2018) [[35](#_ENREF_35)] in the US reviewed research describing strategies to support better transitions to primary and secondary school (in addition to identifying difficulties with transitions). Including a comparative study with a historical control [[17](#_ENREF_17)] assigned evidence level III.3, the review was of acceptable quality, with a limited search strategy but structured data extraction and appraisal methods and good inter-rater reliability. The review identified 20 studies relevant to strategies, 19 of which overlapped with those included in the current review.

Primary studies

Study characteristics for the primary studies are presented in **Table 2.3.**

Country

Twenty-three primary studies were appraised. Of these, 9 were conducted in the UK [[17](#_ENREF_17), [18](#_ENREF_18), [24](#_ENREF_24), [27](#_ENREF_27), [38-42](#_ENREF_38)]; five in the US [[14](#_ENREF_14), [15](#_ENREF_15), [23](#_ENREF_23), [37](#_ENREF_37), [43](#_ENREF_43)], including one which included a comparative sample in Ghana [[37](#_ENREF_37)]; five in Australia [[20](#_ENREF_20), [21](#_ENREF_21), [28](#_ENREF_28), [44](#_ENREF_44), [45](#_ENREF_45)], two in Ireland [[46](#_ENREF_46), [47](#_ENREF_47)]; and two in Canada [[16](#_ENREF_16), [26](#_ENREF_26)].

Study design

All but one of the 23 included primary studies were case series studies. These included three cross-sectional surveys, which accessed transition practices and preferences from early childhood teachers [[27](#_ENREF_27)], graduate special needs teachers [[47](#_ENREF_47)] and pre-school teachers [[37](#_ENREF_37)]. There were three cross-sectional qualitative studies conducted at pre-transition [[43](#_ENREF_43), [44](#_ENREF_44), [46](#_ENREF_46)] and seven conducted post-transition [[16](#_ENREF_16), [23](#_ENREF_23), [39-42](#_ENREF_39), [45](#_ENREF_45)]. There were nine longitudinal studies with qualitative assessment at pre- and post-transition [[14](#_ENREF_14), [15](#_ENREF_15), [18](#_ENREF_18), [20](#_ENREF_20), [21](#_ENREF_21), [24](#_ENREF_24), [26](#_ENREF_26), [28](#_ENREF_28), [38](#_ENREF_38)], three of which included an additional follow-up assessment [[18](#_ENREF_18), [20](#_ENREF_20), [26](#_ENREF_26)]. Two of the longitudinal studies were mixed methods case series studies, including a sub-sample with a cross-sectional assessment as well as another longitudinal study group receiving pre- and post-transition assessments [[15](#_ENREF_15), [18](#_ENREF_18)].

Table 2.3: Characteristics of primary observational studies

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, quality | Research design | Transition type | Participants: sample size, children’s characteristics | Informants (n) | Assessment, key outcome |
| Forest et al (2004) [[23](#_ENREF_23)] | US | IV  Quality: NA | Case series  Cross-sectional descriptive (post-transition) | to Primary school | N=10  relating to 3 children with “high functioning autism” (100% male; aged 5-6 years) | Care-givers (4)  Pre-school teachers (3)  Primary teachers (3) | face-to-face interviews  informants endorsed 25 presented strategies as important |
| Jindal-Snape et al (2006) [[40](#_ENREF_40)] | UK | IV  Quality: NA | Case series  Cross-sectional descriptive (post-transition) | to Secondary school | N=25  including 5 children with ASD (100% male; aged 12 years) | Children (5)  Care-givers (4)  Primary teachers (5)  Secondary teachers (4)  Psychologist (5)  Speech and language therapist (2) | face-to-face interviews  informants identified effective strategies |
| Stoner et al (2007) [[14](#_ENREF_14)] | US | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) | to Primary school | N=8  relating to 4 children with ASD (100% male; aged 6-8 years; 1 functional speech, 1 non-speaking, 2 single-word speech) | Care-givers (8) | face-to face interviews  informants identified necessary strategies |
| Denkyirah & Agbeke (2010) [[37](#_ENREF_37)] | US and Ghana | IV  Quality: NA | Case series  Cross-sectional descriptive survey | to Primary school | N=275 preschool teachers (65 from Ghana, 210 US) | Pre-school teachers (275) | survey  informants endorsed 10 presented strategies as important |
| Dann (2011) [[38](#_ENREF_38)] | UK | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) | to Primary school | N=30  including 6 children (83% male; age 11-12 years) | Children (6)  Care-givers (6)  School staff (18) | face-to face interviews  informants identified effective strategies |

Table 2.3: Characteristics of primary observational studies *(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, quality | Research design | Transition type | Participants: sample size, children’s characteristics | Informants (n) | Assessment, key outcome |
| Quintero & McIntyre (2011) [[15](#_ENREF_15)] | US | IV  Quality: NA | Case series  Cross-sectional descriptive (pre-transition) (teachers)  Longitudinal (pre- and post-transition) (parents) | to Primary school | N=138  relating to 95 children, 19 with ASD and 76 with DD (70% male; M age=4.8 years; 84% white, 16% mixed) | Care-givers (95)  Pre-school teachers (43) | questionnaire  informants endorsed the most commonly used of 15 presented strategies |
| Dillon & Underwood (2012) [[18](#_ENREF_18)] | UK | IV  Quality: NA | Case series  Cross-sectional descriptive, (post-transition)  Longitudinal (pre- and post-transition) with follow up | to Secondary school, and higher year levels | N=15  relating to 15 children with ASD (87% male; age range=11-14 years; all white British) | Care-givers (15) | face-to-face interviews  informants identified effective strategies |
| Hannah & Topping (2012) [[20](#_ENREF_20)] | Australia | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) with follow up | transition programme to Secondary school (6 x 2 hour group sessions) | N=18  including 9 children with AS (100% male; M age=11.8; 90% white) | Children (9)  Care-givers (9) | questionnaire group activity, and face-to-face interviews  informants identified which strategies will help/had helped |
| Tobin et al (2012) [[24](#_ENREF_24)] | UK | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) | to Secondary school | N=7  relating to 6 children with ASD (87% male; aged 10-11 years) | Care-givers (7) | focus group and phone interviews  informants identified strategies used, planned, helpful, and recommended |

Table 2.3: Characteristics of primary observational studies *(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, quality | Research design | Transition type | Participants: sample size, children’s characteristics | Informants (n) | Assessment, key outcome |
| Dixon & Tanner (2013) [[39](#_ENREF_39)] | UK | IV  Quality: NA | Case series  Cross-sectional descriptive, (post-transition) | to Secondary school, and higher year levels | N=8  including 2 adolescents with AS (gender NR; aged 14-15 years) | Children (2)  Care-givers (2)  Secondary teachers (4) | face-to face interviews  informants identified strategies experienced, planned, or suggested |
| Perfitt (2013) [[43](#_ENREF_43)] | US | IV  Quality: NA | Case series  Cross-sectional descriptive, (pre-transition) | from special school (which was closing) to a new high school | N=15  including 15 children, 7 with ASD, 8 with specific language impairment (93% male; aged 14-15 years; 80% white British, 13% black, 7% Asian). | Children (15)  Care-givers (NR)  School staff (NR) | face-to-face interviews using pictorial images as prompts and rating methods  informants suggested desired strategies |
| Beamish et al (2014) [[27](#_ENREF_27)] | UK | IV  Quality: NA | Case series  Cross-sectional, descriptive survey | from early intervention developmental programme to primary school | N=91 | Early childhood teaching staff (91) | online survey  informants rated importance of 36 recommended strategies |
| Foulder & Hughes (2014) [[44](#_ENREF_44)] | Australia | IV  Quality: NA | Case series  Cross-sectional descriptive, (pre-transition) | to Secondary school | N=6  including 6 children with ASD and/or DSD/dyspraxia (83% male; aged=10-11 years) | Children (6) | face-to-face interviews  informants identified desired strategies |
| Deacy et al (2015) [[47](#_ENREF_47)] | Ireland | IV  Quality: NA | Case series  Cross-sectional, descriptive survey | to Secondary school | N=30 | Graduate Special Educational Needs (SEN)/ASD teachers (30) | online survey  informants suggested desired strategies |

Table 2.3: Characteristics of primary observational studies *(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, quality | Research design | Transition type | Participants: sample size, children’s characteristics | Informants (n) | Assessment, key outcome |
| Fontil & Patrakos (2015) [[26](#_ENREF_26)] | Canada | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) with follow-up, | to Primary school | N=11  relating to 10 children, 9 with autism and 1 with suspected PDD-NOS (90% male; aged=4.5-7 years; 50% Canadian, 50% immigrants) | Care-givers (11) | face-to face and telephone interviews  informants identified positive strategies used |
| Connolly & Gersch (2016) [[46](#_ENREF_46)] | Ireland | IV  Quality: NA | Case series  Cross-sectional descriptive, (pre-transition) | to Primary school | N=6  relating to 6 children with ASD (gender NR; aged=5 years) | Care-givers (6) | face-to-face interviews  informants suggested desired strategies |
| Mandy et al (2016) [[17](#_ENREF_17)] | UK | III.3  Quality: - (low quality) | Analytical study with historical nonconcurrent control  Assessments pre-transition and post-transition | Primary to Secondary school  Intervention: STEP-ASD programme | N=87 informants; 15 caregivers (assessed pre- and post- transition), and 72 school staff (differing at baseline and follow-up)  relating to N=37 adolescents with ASD (81% males; M age=11.5 years; mean IQ: 85.2; 68% white British)  Intervention group: n=17  Control: n=20 | At baseline (52):  Care-givers (36)  Primary teacher (19)  Learning support (8)  SENCOs (9)  Head teacher (1).  Parents (35)  At follow up (35):  Care-givers (36)  SENCOs (21)  Learning support (9)  Secondary teachers (5) | Efficacy: Strengths and Difficulties Questionnaire (SDQ) pre- and post-transition (staff and parents)  Feasibility & acceptability: face-to-face interviews: use of programme elements, helpfulness, user friendliness, whether improved knowledge, whether would recommend. |
| Neal & Frederickson (2016) [[41](#_ENREF_41)] | UK | IV  Quality: NA | Case series  Cross-sectional descriptive, qualitative study (post-transition) | to Secondary school | N=6  relating to 6 children with ASD (87% male; Year 7 (age around 12); 100% white British, IQ within normal range) | Children (6) | face-to-face interviews  informants identified useful, experienced and recommended strategies |

Table 2.3: Characteristics of primary observational studies *(continued)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/s (year) | Country | Evidence level, quality | Research design | Transition type | Participants: sample size, children’s characteristics | Informants (n) | Assessment, key outcome |
| Peters & Brooks (2016) [[42](#_ENREF_42)] | UK | IV  Quality: NA | Case series  Cross-sectional descriptive (post-transition) | to Secondary school | N=17  relating to 17 children with ASD (82% male; Year 7/8, age around 12-13; 100% white British) | Care-givers (17) | questionnaire  informants identified useful, experienced & suggested strategies |
| Starr et al (2016) [[16](#_ENREF_16)] | Canada | IV  Quality: NA | Case series  Cross-sectional descriptive (post-transition) | to Primary school | N=35  relating to 11 children with ASD (82% male; Year 1 aged 5 years, with the exception of two of 12 years; 58% spoke English, 18% Mandarin, 18% Arabic) | Care-givers (11)  Primary teachers (6)  Early childhood resource teachers (16)  Early intervention providers (2) | focus groups  informants identified used or suggested strategies |
| Strnadová et al (2016) [[45](#_ENREF_45)] | Australia | IV  Quality: NA | Case series  Cross-sectional descriptive (post-transition) | to Secondary classes (within combined primary-secondary school) | N=27  relating to 14 adolescents with intellectual disability, 7 with ASD (64% male; M age 14 years; all with ID) | Care-givers (14)  Primary teachers (13) | face-to-face interviews  informants identified recommended strategies |
| Makin et al (2017) [[28](#_ENREF_28)] | Australia | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) | to Secondary school | N=49  including 15 children with ASD (87% male; aged 10-11 years; IQ≥70) | Children (15)  Care-givers (16)  Primary teachers (13)  Secondary teachers (5) | face-to-face interviews  index of transition success  informants identified experienced and effective strategies |
| Tso et al (2017) [[21](#_ENREF_21)] | Australia | IV  Quality: NA | Case series  Longitudinal (pre- and post-transition) | to Secondary school | N=15  relating to 12 adolescents with AS (92% male; M age=16 years) | Care-givers (15) | face-to-face interviews  informants identified experienced, suggested strategies |

Key: ++ rated as high quality; + rated as acceptable quality; - rated as low quality; AS=Asperger’s syndrome; ASD=Autism Spectrum Disorder; DSD=Developmental Coordination Disorder; M=mean; NA=Not Applicable; SDQ=Strength and Difficulties Questionnaire; SENCO=Special educational needs coordinator; STEP=Systemic Transition in Education Programme for Autism Spectrum Disorder (STEP-ASD); UK=United Kingdom; US=United States of America.

These 22 case series studies provided descriptive information about the experiences of transition and perspectives of stakeholders but did not consider outcomes as a function of strategies or interventions experienced. As such these studies were assigned level of evidence IV [[31](#_ENREF_31)] for which no quality checklists are available.

By contrast, there was one comparative, analytic study [[17](#_ENREF_17)]: an observational study where a historical non-concurrent control group (who were given the usual transition programme in the previous two academic years) was compared to a group receiving a manualised transition programme, STEP-ASD. To assess efficacy of the intervention, staff and parents’ scores at pre- and post-intervention on the Strengths and Difficulties Questionnaire (SDQ), measuring emotional and behavioural problems, were compared for the control and intervention groups. In addition the study included cross-sectional data post-transition of school and affiliated staff to determine the feasibility and acceptability of the intervention programme. According to the SIGN checklist for controlled trials, the study was of low quality (-).

Transition phase

Nine of the appraised primary studies considered the transition of children to primary school [[14-16](#_ENREF_14), [23](#_ENREF_23), [26](#_ENREF_26), [27](#_ENREF_27), [37](#_ENREF_37), [38](#_ENREF_38), [46](#_ENREF_46)]. The majority of studies (n=14) considered the transition to or within secondary school [[17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [21](#_ENREF_21), [24](#_ENREF_24), [28](#_ENREF_28), [39-45](#_ENREF_39), [47](#_ENREF_47)]. Of these, two included transitions to higher year levels [[18](#_ENREF_18), [39](#_ENREF_39)], one related to transitions within the same primary and secondary combined school [[45](#_ENREF_45)], and another related to transitions to a new high school because the old school was closing [[43](#_ENREF_43)].

Sample characteristics

Nineteen of the 23 appraised primary studies related to specific children/adolescents transitioning to a new class/school and receiving some sort of transition intervention process, although informants for this transition only included students in eight studies.

There were 284 participants receiving a school transition intervention in 19 studies. Sample sizes for the studies ranged from 3 to 95 children/adolescents, with a mean of 14.9 people per study.

Details on diagnosis were often lacking, but where reported it appeared that the high majority of participants had functional speech and were of average or greater intelligence. Specifically, 117 participants were described as having ASD (including seven people with Intellectual Disability, one non-speaking child, and two with limited speech). Thirty participants were reported as having Asperger’s syndrome, three with High Functioning Autism, nine with autism, and one with suspected PDD-NOS. Samples also included 92 participants without ASD, including 76 with Developmental Disabilities, eight with specific language impairment; seven with Intellectual disability, and one with dyspraxia.

For the 284 participants undergoing school transition, 79% were male, and 21% were female (gender was not reported for two primary studies), approximating the 4:1 male to female ratio that is commonly seen in studies of ASD prevalence [[48](#_ENREF_48)]. Age was reported in different ways across studies including age range, mean age, and school grade/year level, making synthesis difficult. However, the vast majority of children transitioning to primary school ranged in age from 4.5 to 8 years (n=126), with one study including two 12 year-old children. For transitions to secondary school, ages ranged from 10 to 13 years for most children, with 43 students aged 14 to 16 years. These variations reflect that some studies collected data retrospectively on transitions, and some students on the autism spectrum may delay commencement of primary and secondary school compared to the usual age of commencement.

Ethnicity was another characteristic that was reported either inconsistently or was not reported on at all. Considering the nine studies where ethnicity was reported for transitioning students [[15-18](#_ENREF_15), [20](#_ENREF_20), [26](#_ENREF_26), [41-43](#_ENREF_41)], 80% or more were white for six studies, and 68% were specifically white British in the evaluation study of STEP-ASD [[17](#_ENREF_17)]. Two studies conducted in Canada explicitly aimed to recruit ethnically diverse families, including a study including 58% of participants who spoke English, 18% Mandarin, and 18% Arabic [[16](#_ENREF_16)], and another involving 50% who were immigrants to Canada including participants from Jamaica, China, Peru, Haiti, and the Philippines [[26](#_ENREF_26)]. Whilst one cross-cultural study of pre-school teachers did not report on participants’ ethnicity [[37](#_ENREF_37)], 65 were from Ghana, and 210 from the US.

Assessment procedure and outcomes

Of the 23 appraised primary studies, 20 included at least some qualitative components, and 15 were entirely qualitative, accessing data from face-to-face or telephone interviews [[14](#_ENREF_14), [17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [23](#_ENREF_23), [24](#_ENREF_24), [26](#_ENREF_26), [28](#_ENREF_28), [38-41](#_ENREF_38), [43](#_ENREF_43), [44](#_ENREF_44), [46](#_ENREF_46)]. Three of these used focus groups or group activities to gather data [[16](#_ENREF_16), [20](#_ENREF_20), [24](#_ENREF_24)]. And in one qualitative study, researchers employed methods to assist children and young people understand the concepts and questions better during the interview process, for example using pictorial images as prompts and visual rating aids [[43](#_ENREF_43)].

Five studies included surveys or questionnaires [[15](#_ENREF_15), [27](#_ENREF_27), [37](#_ENREF_37), [42](#_ENREF_42), [47](#_ENREF_47)], often developed by the researchers. These generally included open ended and closed questions and allowed for comments permitting quantitative and qualitative data to be collected. In four of these studies, a list of suggested or common strategies were provided as prompts for endorsement, rating or ranking [[15](#_ENREF_15), [23](#_ENREF_23), [27](#_ENREF_27), [37](#_ENREF_37)].

Three studies included the use of formal instruments as outcome measures [[15](#_ENREF_15), [17](#_ENREF_17), [28](#_ENREF_28)]. An index of transition success was developed from other research in an Australian study [[28](#_ENREF_28)], which also administered several scales (measuring intelligence, trait anxiety, autistic symptomatology, and sensory responsiveness) at baseline pre-transition to see if such sample characteristics mediated transition success. A second study [[15](#_ENREF_15)] included a Family Expectations and Involvement in Transition (FEIT) questionnaire for parents. However there was no reports on whether these scales have been psychometrically validated. The exception was The Strengths and Difficulties Questionnaire [[49](#_ENREF_49)] used in the evaluation of the STEP-ASD intervention [[17](#_ENREF_17)] which has been validated [[50](#_ENREF_50)].

Given the lack of outcomes assessing transition quality directly or indirectly in the current review, descriptions were used as proximal indicators of effective transition strategies. In 19 studies, potentially effective strategies were identified where informants described them as any of the following: effective, necessary, helpful, experienced/used, planned, suggested, recommended, positive, or useful [[14](#_ENREF_14), [15](#_ENREF_15), [16,](#_ENREF_17) 17, [18](#_ENREF_18), [20](#_ENREF_20), [21](#_ENREF_21), [24](#_ENREF_24), [26](#_ENREF_26), [28](#_ENREF_28), [38-47](#_ENREF_38)].

Informants

The 19 primary studies reporting on a specific transition intervention process reported on data from 950 informants. Eighteen of these reported on parents/care-givers [[14-18](#_ENREF_14), [20](#_ENREF_20), [21](#_ENREF_21), [23](#_ENREF_23), [24](#_ENREF_24), [26](#_ENREF_26), [28](#_ENREF_28), [38-40](#_ENREF_38), [42](#_ENREF_42), [43](#_ENREF_43), [45](#_ENREF_45), [46](#_ENREF_46)], totalling 276 with a mean of 16.2 parents/caregivers per study (ranging from 2-95). By contrast, only eight studies reported on child/adolescent informants [[20](#_ENREF_20), [28](#_ENREF_28), [38-41](#_ENREF_38), [43](#_ENREF_43), [44](#_ENREF_44)], totalling 64 young people, ranging from 6-15, and averaging 8 per study.

School and para-professional staff were included as informants in 13 studies [[15-17](#_ENREF_15), [23](#_ENREF_23), [27](#_ENREF_27), [28](#_ENREF_28), [37-40](#_ENREF_37), [43](#_ENREF_43), [45](#_ENREF_45), [47](#_ENREF_47)], numbering 610 in total (Range=2-275; Mean=46.9). School staff accessed were predominantly teachers, with 478 pre-transition teachers providing data in nine studies [[15-17](#_ENREF_15), [23](#_ENREF_23), [27](#_ENREF_27), [28](#_ENREF_28), [37](#_ENREF_37), [40](#_ENREF_40), [45](#_ENREF_45)], 275 of whom were in one study [[37](#_ENREF_37)]. In six studies, there were 27 post-transition teacher informants [[16](#_ENREF_16), [17](#_ENREF_17), [23](#_ENREF_23), [28](#_ENREF_28), [39](#_ENREF_39), [40](#_ENREF_40)]. One study did not report the number of caregivers or school staff included as informants [[43](#_ENREF_43)]). Other para-professionals included as informants were 30 SENCOs, 17 learning support people, and one head teacher [[17](#_ENREF_17)]; five psychologists and two speech and language therapists [[40](#_ENREF_40)]; two early intervention providers [[16](#_ENREF_16)]; and 48 miscellaneous staff [[38](#_ENREF_38), [43](#_ENREF_43), [47](#_ENREF_47)].

As expected, sample sizes were smaller for the 15 purely qualitative studies. These considered 224 informants, averaging 14.9 (range: 6-35) per study.

2.3 Synthesis of results

Systematic reviews

Results of the three systematic reviews appraised for the current review are summarised in **Table 2.2.** Of these, the clinical practice guidelines from the UK’s National Institute for Health and Clinical Excellence (NICE) [[34](#_ENREF_34)] are least applicable to the current review. However in considering children and families’ information and support needs at key transitions, there were two recommendations of peripheral relevance. One advised that autism training for professionals should include (among other features) awareness of the importance of “key transition points”, including changing schools. Another suggested support be arranged for times of increased need, which could include starting or changing schools.

The more recently published Australian systematic review [[36](#_ENREF_36)] of level IV evidence investigated parent and teacher perspectives on transition practices in transitioning to primary school. From thematic synthesis, the reviewers recommended that structured and individualised transition plans be developed and implemented in preschool and continue through the first year of primary school. Further, to increase adjustment of families to a new school, the authors called for more structured processes, and more communication between schools, teachers and parents.

Finally and of most relevance here, the “Broken Bridges” article by Nuske et al (2018) [[35](#_ENREF_35)] in the US identified 20 studies describing strategies to support better transitions to primary and secondary school, 19 of which overlapped with those included in the current review, including the single analytical study evaluating the STEP-ASD transition programme [[17](#_ENREF_17)].

Selection criteria for studies were somewhat vague, describing the scope as including “strategies for successful student school transition” as well as “quality of school transition”. Successful strategies were operationalised in a very inclusive way to refer to any strategies that were used, useful, recommended, or wanted. They could be identified in prospective or retrospective accounts of actual transitions by any informant (student, carer-giver, professional), or through surveys of teachers/professionals indicating best or usual practice in supporting transitions. Results were synthesised in tables listing themes/subthemes of strategies identified in the reviewed studies, and organised into three groups depending on whether they related most to the transitioning child/adolescent, the parent/caregiver, or teacher/professional. For each strategy listed, the studies which contributed that strategy were referenced and a summary grade of evidence applied qualitatively [[51](#_ENREF_51)]. These grades were consistently low (C and D) due to “small samples, no control groups, and lack of quantitative measures” of the contributing studies. Strategies highlighted as being particularly useful were summarised as follows:

* adjusting the student to the new setting (starting before and continuing throughout the transition),
* individualising transition supports,
* clarifying transition processes for parents, and
* fostering communication between schools, and between school and home.

Rather than providing a comprehensive and conclusive summary of all transition strategies, the authors [[35](#_ENREF_35)] suggest that their systematic review be used as a starting framework from which school transition strategies can be derived, and tested.

Primary studies

Approach to describing key strategies

Given the recency and large overlap in included studies between the systematic review of US researchers Nuske et al (2018) [[35](#_ENREF_35)] and the current one, the themes and sub-themes identified in that paper (relating to children, parents, and teachers, respectively) were used as a starting point for recording the strategies identified in the current review. Using these strategies as an initial coding guide, strategies were identified from the 23 primary papers included in the current review, including three studies which were not included in the US review [[18](#_ENREF_18), [38](#_ENREF_38), [40](#_ENREF_40)]. Referencing of studies which identify these strategies was done independently of the Nuske et al (2018) reviewers, with some variations noted after coding was completed. The strategies of three additional primary studies were included, and one study included in Nuske et al [[35](#_ENREF_35)] was excluded [[52](#_ENREF_52)][[9]](#footnote-9) due to scope. Additional strategies were also identified.

Considering the resulting revised and expanded list of strategies/themes, several strategies appeared to overlap, and the division of strategies according to child, parent and teacher seemed somewhat unhelpful, with some themes applying to more than one group. Therefore for the current review, the themes were collapsed across these three groups, redundancies removed, new strategies incorporated, and references citing each strategy summated.

The synthesis of themes and strategies is presented in **Table 2.4**, with strategies ordered to approximate their use in the school transition pathway from pre- to post-transition (with some occurring throughout). Shaded cells indicate strategies identified in at least 6 appraised primary studies and therefore considered well supported by the evidence.

Several transition approaches identified in this process were already mentioned in the guideline [[11](#_ENREF_11)]. However, the transition approaches described in the guideline tend to be more general and goal oriented, such as recommending careful *planning* of transitions, and *preparing* the new environment, rather than outlining specific strategies. Where strategies identified in the appraised studies overlap with those mentioned (even if only broadly) in the guideline, the relevant guideline section is referenced in **Table 2.4**. Sometimes this is evident only for a theme (e.g., planning, visual supports, school sharing information, and visiting school) rather than for explicit strategies. For example, school visits are recommended in the guideline; however it was not specified whether these should include the student and parents and/or teachers from the “sending” or “receiving” pre-school/school.

Overview

Twelve themes were identified across the 23 included primary studies; and within these were 37 specific strategies (see **Table 2.4**).

Key transition strategies

Eight themes and 15 specific transition strategies were identified by six or more included studies and as such are considered to be well supported by evidence of preference, use, and usefulness. These are summarised below, annotated by the number of studies citing them, and asterixed to indicate those themes and strategies also referred to in the guideline [[11](#_ENREF_11)]. These well-supported strategies are also highlighted (by shading of cells) in **Table 2.4**. The other 22 strategies mentioned by relatively few studies (fewer than 5) are considered to be less supported by evidence.

Table 2.4: Strategies for transition synthesised from appraised primary studies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Theme - strategy | When | **Description of strategy** | References | Citations | Guideline |
| Planning |  |  |  |  | 3.4.b/c |
| - Student-centered planning | Throughout | Individualized transition plan designed to meet student’s needs, involving student in development.  Open, supportive discussions with student which checks for understanding of transition process, and values input of the student  To help address problems in a supportive environment where the student’s voice is heard | [[14](#_ENREF_14), [17](#_ENREF_17), [20](#_ENREF_20), [21](#_ENREF_21), [24](#_ENREF_24), [28](#_ENREF_28), [38](#_ENREF_38), [41](#_ENREF_41), [42](#_ENREF_42), [47](#_ENREF_47)] | N=10 | 3.4.c |
| - Identify transition facilitator | Throughout | A point of contact at the pre-transition school and again at the post-transition school to guide the student and parents through the transition process  To ensure parents and student always have someone to help them, and to simplify communication channels | [[16](#_ENREF_16), [17](#_ENREF_17), [23](#_ENREF_23), [27](#_ENREF_27), [28](#_ENREF_28), [39](#_ENREF_39), [40](#_ENREF_40), [46](#_ENREF_46)] | N=8 |  |
| - Increasing demands at pre-transition school | Pre | Increasing homework demands and fading off teacher support at pre-transition school  To prepare the student for higher academic demands and less 1:1 adult support, and increase independence | [[28](#_ENREF_28), [41](#_ENREF_41)] | N=2 | 3.1.d |
| Transition meetings with family |  |  |  |  |  |
| - Team transition planning meeting | Pre | Meeting between school transition team and family  To discuss transition, set goals, identify challenges, and build relationships | [[15-17](#_ENREF_15), [23](#_ENREF_23), [24](#_ENREF_24), [26-28](#_ENREF_26), [37](#_ENREF_37), [39](#_ENREF_39), [40](#_ENREF_40), [42](#_ENREF_42), [45](#_ENREF_45), [47](#_ENREF_47)] | N=14 | 3.1.d |
| - Parents meet with receiving school staff | Pre | Meeting with new/receiving school’s principal, special education coordinator, and other key staff  To ask questions regarding the school transition process and access any required supports | [[16](#_ENREF_16), [17](#_ENREF_17), [21](#_ENREF_21), [26](#_ENREF_26), [39](#_ENREF_39), [46](#_ENREF_46)] | N=6 |  |
| - Home visit from receiving school teacher | Pre | New teacher/s visits prospective student’s home prior to transition  Can observe student in comfortable surroundings and provide resources and support for the family | [[15](#_ENREF_15), [16](#_ENREF_16), [26](#_ENREF_26), [37](#_ENREF_37)] | N=4 |  |
| - Informal contact of parent with receiving teacher | Pre | Parent contacting the receiving school teacher prior to the start of the next school year  To build a good working relationship with the new school and to relieve stress parents often feel about the transition | [[16](#_ENREF_16), [21](#_ENREF_21), [39](#_ENREF_39)] | N=3 |  |

Table 2.4: Strategies for transition identified in current review *(continued)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Theme - strategy | When | **Description of strategy** | References | Citations | Guideline |
| Schools sharing information |  |  |  |  | 3.1.d |
| - Student personal profile | Pre | Key information page completed by parents and pre-transition teacher for post-transition teacher  Gathers key information about student (interests, needs, successful strategies, behaviors, and preferences)  To be disseminated to new school team, preferably using digital versions to ease accessibility | [[14](#_ENREF_14), [15](#_ENREF_15), [17](#_ENREF_17), [24](#_ENREF_24), [26](#_ENREF_26), [27](#_ENREF_27), [37](#_ENREF_37), [39](#_ENREF_39)] | N=8 | 3.4.c |
| - Informal information sharing | Throughout | Informal information sharing between pre-transition teacher/s and post-transition teacher/s  To help receiving school teacher/s best support and teach the incoming student | [[15](#_ENREF_15), [27](#_ENREF_27), [28](#_ENREF_28), [37](#_ENREF_37), [39](#_ENREF_39), [47](#_ENREF_47)] | N=6 |  |
| - Receiving school teacher visits sending school | Throughout | Teachers visit sending school/pre-school prior to transition  Can observe student in comfortable surroundings | [[16](#_ENREF_16), [23](#_ENREF_23)] | N=2 |  |
| Information for parents |  |  |  |  |  |
| - Transition workshops | Pre | Attending information sessions held by schools or outside organizations  To find out more about the school transition process and to ask any unanswered questions | [[16](#_ENREF_16), [20](#_ENREF_20), [21](#_ENREF_21)] | N=3 |  |
| - Transition binder | Throughout | Producing an information binder for parents about the transition, including practical steps pre- and post- transition  To identify organizational supports, empower parents and limit confusion regarding the school transition process | [[15-17](#_ENREF_15)] | N=3 |  |
| School visits |  |  |  |  | 3.1.d |
| - Student visits new school with sending school teacher | Pre | Sending school teacher visiting new school with student and meeting school staff, more than once if possible  To establish a partnership and reduce anxiety and stress | [[14-17](#_ENREF_14), [20](#_ENREF_20), [21](#_ENREF_21), [23](#_ENREF_23), [24](#_ENREF_24), [26](#_ENREF_26), [27](#_ENREF_27), [38-42](#_ENREF_38), [45-47](#_ENREF_45)] | N=18 | 3.1.d |
| - Prospective student visits receiving school with parent/s | Pre | Identify–Observe–Explore strategy: identifying the new classroom situation, observing the student’s reaction, and allowing student to explore the new classroom  Teacher and parent establish a connection and work on a strategy using experiences and expertise of both | [[14](#_ENREF_14), [16](#_ENREF_16), [28](#_ENREF_28)] | N=3 | 3.1.d |

Table 2.4: Strategies for transition identified in current review *(continued)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Theme - strategy | When | **Description of strategy** | References | Citations | Guideline |
| Visual supports |  |  |  |  | 3.1.d, 3.4.c |
| - School map | Pre | Map of the new post-transition school  To provide familiarity with the new environment | [[14](#_ENREF_14), [17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [24](#_ENREF_24), [38](#_ENREF_38), [39](#_ENREF_39), [44](#_ENREF_44), [47](#_ENREF_47)] | N=9 | 3.4.c |
| - Photos/pictures/social stories | Pre | Photos of the new school’s teachers, buildings, or other areas  Social story or pictures representing the school transition process  To help orientate student to the new environment | [[14](#_ENREF_14), [17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [24](#_ENREF_24), [38](#_ENREF_38), [39](#_ENREF_39), [44](#_ENREF_44), [47](#_ENREF_47)] | N=9 | 3.1.d, 3.4.c |
| - Checklists | Throughout | Checklists (e.g., for packing school bag, homework)  To prepare the student for new demands | [[14](#_ENREF_14), [17](#_ENREF_17), [45](#_ENREF_45)] | N=3 |  |
| - Schedules/calendars | Throughout | Picture schedule of day in the new school, calendar/diaries, or colour-coding of timetables  To provide predictability of routines for student | [[14](#_ENREF_14), [16](#_ENREF_16), [17](#_ENREF_17), [20](#_ENREF_20), [23](#_ENREF_23), [24](#_ENREF_24), [28](#_ENREF_28), [39](#_ENREF_39), [45](#_ENREF_45), [47](#_ENREF_47)] | N=10 | 3.3, 3.4.c |
| Social supports |  |  |  |  |  |
| - Peer buddies/social skills groups | Pre and Post | Social skills/communication training groups  Student buddy in the new school  To provide the student with support in navigating the new school and making new friends | [[17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [28](#_ENREF_28), [38](#_ENREF_38), [44](#_ENREF_44), [47](#_ENREF_47)] | N=7 | 3.1.d |
| - Safe person or space | Post | A peer/adult mentor that gets along with/can guide students (safe person)  or a physical area the student can go to (safe space), when needed | [[17](#_ENREF_17), [18](#_ENREF_18), [20](#_ENREF_20), [28](#_ENREF_28), [38](#_ENREF_38), [39](#_ENREF_39), [42-44](#_ENREF_42)] | N=9 |  |
| - Recess/lunch time structure | Post | Structured playtime/recess support such as timetabled activities  To support students around making and keeping friends and to support cooperative group work | [[28](#_ENREF_28), [47](#_ENREF_47)] | N=2 |  |
| - Staff relationships | Throughout | Trusting relationships between student and adults/staff  To ensure student feels supported in their new environment | [[28](#_ENREF_28), [38](#_ENREF_38)] | N=2 |  |
| - Patron teacher | Post | Teacher with common interests of student is given role of “patron” teacher based on student’s strengths | [[39](#_ENREF_39), [47](#_ENREF_47)] | N=2 |  |
| Accommodations |  |  |  |  |  |
| - Continuity of class grouping | Post | Student allocation to a specific class grouping for the entire year  To limit confusion of changing classes throughout the day | [[39](#_ENREF_39)] | N=1 |  |

Table 2.4: Strategies for transition identified in current review *(continued)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Theme - strategy | When | **Description of strategy** | References | Citations | Guideline |
| Family support |  |  |  |  |  |
| - Support from community | Throughout | Seeking informal supports, particularly in the form of community organizations  To inform parents about how the special education system works and parental rights and responsibilities | [[16](#_ENREF_16), [21](#_ENREF_21), [37](#_ENREF_37), [39](#_ENREF_39)] | N=4 |  |
| - Support from parent networks | Throughout | Parent to parent support networks, organized through schools or community organizations  To facilitate relationships between parents and increase assess to supports | [[16](#_ENREF_16), [20](#_ENREF_20), [26](#_ENREF_26)] | N=3 |  |
| - Support from family and friends | Throughout | Family and friends provide support to the student | [[21](#_ENREF_21), [41](#_ENREF_41)] | N=2 |  |
| Teacher support |  |  |  |  |  |
| - Teacher support | Throughout | Additional support from teaching assistants, external agencies, psychologists | [[15](#_ENREF_15), [47](#_ENREF_47)] | N=2 |  |
| - Training about autism | Throughout | Attending training/information sessions on autism, reading student’s documents pre-transition.  To gain knowledge and understanding of student’s diagnosis, and their reactions to transitions | [[16](#_ENREF_16), [17](#_ENREF_17), [24](#_ENREF_24), [28](#_ENREF_28), [38-40](#_ENREF_38), [42](#_ENREF_42)] | N=8 |  |

**Notes**: Shaded cells indicate strategies included in at least 6 primary studies and considered well supported by the evidence. *Student* refers to the transitioning child/adolescent. *Parent* refers to any care-giver or family member responsible for the child’s welfare. *Teacher* refers to any staff member in contact with the student and their family/whānau. In the final column, the references refer to sections within the New Zealand Autism Spectrum Disorder Guideline’s 2nd edition (2016) where these themes and/or strategies are referred to.

Planning\*

Planning for the transition was a strong theme threaded through many of the primary studies and also emphasised in the guideline, with Recommendation 3.4.5 devoted to this goal: *All transitions for students with ASD should be carefully planned and the child or young person and the new environment carefully prepared* (Grade B).

* Student-centred planning (n=10)\*

A core value expressed explicitly in 10 primary studies was the importance of transitions being person-centred, considering the child’s voice in all discussions and decisions. This approach respects that children are individuals first and have choices over aspects of their day [[38](#_ENREF_38)].

The involvement of the student is argued as integral to considering the child’s holistic needs, including their happiness and independence [[28](#_ENREF_28)]. It also directs the choice of strategies by understanding what works and doesn't work for the child personally. One parent commented:

“what I do is very focussed on him. He is guiding me” [[14](#_ENREF_14)]

Teachers in one particular study are called to learn about the transitioning child, to listen to them, and become aware of how challenging it is for them to experience changes [[21](#_ENREF_21)]. A greater understanding is said to inform the development of individualised transition plans, tailoring them to the strengths, needs and preferences of the child or young person. Person-centred approaches reflect a philosophy of school staff and parents understanding and responding to the needs of the child and making adaptations that make a transition easier. This contrasts with more generic transition programmes [[20](#_ENREF_20)] which focus on training the child/adolescent to learn skills to prepare them for the new school environment.

A value of involving the student in transition planning is the development of their self-determination skills and self-efficacy, as illustrated by this parent’s comment:

“I think if given the opportunity to voice some of the things that they feel would work for them … I think that helps them make that adjustment because they feel they’ve also been involved in those decisions. So instead of thinking that their whole life has been because someone has told them, ‘you have to do this’, they can then take the step back and think this isn’t so bad because I kind of helped choose to do this for me“ (p. 395) [[21](#_ENREF_21)].

* Transition facilitator identification (n=8)

Another strongly supported strategy related to planning transitions was to identify a transition facilitator to guide students and their caregivers through the transition and provide support and information as needed. This strategy aims to simplify communication channels. Ideally, the transition facilitator should be identified early in the transition process at the pre-transition school and, later, at the post-transition school.

Transition meeting with family

Another core and prominent theme relates to holding transition meetings between school staff and the child/adolescent and their family/whānau. The guideline [[11](#_ENREF_11)] also highlighted the importance of members of the team from the pre-transition setting providing information, support and education to the staff in the new setting (see guideline’s section 3.1.d).

Team transition planning meeting (n=14)\*

A collaborative transition team of stakeholders from the sending and receiving schools meeting with the family/whānau was a highly endorsed strategy, explicitly supported by 14 primary studies. The goal of the transition planning meeting is to discuss the transition plan, set goals and a timeline, identify challenges prior to transition, allocate team responsibilities, and make a transition plan [[27](#_ENREF_27)]. Teachers in one study emphasised the need to ensure that their attendance can be facilitated by providing adequate notice and release time to attend [[16](#_ENREF_16)]. Some studies also advised that the meeting should occur early to avoid disrupting transition [[40](#_ENREF_40)], preferably 6-12 months prior to transition [[24](#_ENREF_24), [37](#_ENREF_37)].

Parents meet with key school staff (6)

A related strategy under the same theme explicitly mentioned the need of the prospective student and their parents/caregivers meeting with the principal, special education needs coordinator (SENCO), and other key staff at the receiving school. This meeting is said to allow information sharing and the identification of support needs. One study particularly highlighted the receiving school’s principal as having a central role in ensuring good collaboration with staff at the sending school [[16](#_ENREF_16)].

Schools sharing information

Another recurring theme related to the sharing of information between the sending and receiving schools.

Student personal profile (8)\*

A specific strategy highlighted in eight primary studies was the provision of a “key information page” or “child profile”. This document is to be completed by parents and the sending school’s transition team and disseminated (ideally digitally) to the receiving school’s transition team. It should include key information about the student’s interests, needs, successful strategies, behaviors, and preferences and may also include the student’s Individual Education Plan or IEP [[47](#_ENREF_47)]. The child profile is to stay with the child during their time at school. One parent explained its purpose succinctly, “it keeps us from reinventing the wheel” [[14](#_ENREF_14)]. A related strategy is to highlight the student’s autism in other easily accessible ways such as on a support register, student file, and on the class roll to provide a visual prompt to the teacher, and particularly for relieving teachers [[39](#_ENREF_39)].

Informal information sharing (6)

Less formal modes of sharing information were also advocated throughout the transition process between pre-transition staff and post-transition staff. For example, the receiving school teacher could contact the sending school’s teacher and work with them on curriculum [[15](#_ENREF_15)], so that the new school is best equipped to support the child and understand their specific needs.

School visits\*

The most highly endorsed theme related to school visits. Whilst a usual practice for any transitioning student is to attend school open days or participate in a class orientation visit, this theme related to private, extended visits by the prospective student, their sending school teacher/SENCO and/or parents/caregivers [[21](#_ENREF_21)]. Meeting with children pre-transition allows a receiving school’s teacher/s to meet the student, observe them, answer questions, discuss what to expect at the new school and what is different, and remain positive, building optimism and reducing fears about the changes ahead [[41](#_ENREF_41)]. As illustrated by one teacher, observing a prospective student closely means, “we can keep a good eye on them as they are going around (on school visits) and get to know more about them” [[28](#_ENREF_28)].

This theme was identified in the guideline [[11](#_ENREF_11)] where visits were recommended on a “gradual basis”. It is further advised in the guideline that the team supporting the child visit the new setting with them (in this section it related to primary school), consider the demands of the environment, and teach the child the skills needed. For example, putting belongings into a tray or locker, indicating where they need to go to the toilet, and putting toys away (guideline section 3.1.d) [[11](#_ENREF_11)].

Student visits new school with sending school teacher (18)\*

Eighteen of the primary studies explicitly endorsed the sending school teacher or transition coordinator visiting the new school with the prospective student, more than once if possible. Visiting schools allows the student to familiarize themselves with the new environment, tour the facilities and meet teachers, ideally sparking excitement about the move. An exceptional example was of a child who met all their new teachers, sat in on classes, and had the same seat assigned in every room to provide continuity [[21](#_ENREF_21)]. The goal of such visits is to establish a partnership between the sending and receiving schools, and to reduce anxiety and stress for the child/adolescent as they approach this critical life stage.

One cross-sectional survey of 17 parents of children who had transitioned reported that parents of five students whose transition they rated as extremely easy/easy also reported retrospectively that they received supplementary pre-transitional visits and support [[42](#_ENREF_42)]. This contrasted with parents of 4 students whose transition was rated as being extremely difficult who reportedly received minimal transitional support and experienced additional stressors (bullying, severe anxiety). Whilst not a controlled or prospective study, this provides some evidence of support to the benefit of pre-transition visits.

Visual supports\*

Visual aids, prompts, photographs and social stories are well established as being useful for young people on the autism spectrum, and they are clearly important in transitions, as reflected in several parts of the guideline [[11](#_ENREF_11)], most particularly in section 3.4.c where several visual strategies are identified. Recommendation 3.3.1 also advocates the use of scheduling: “The student should be supported through the multiple transitions of secondary school using schedules and other support” (Grade C).

School map (9)\*

A map of the new school was often identified as useful for the child/young person prior to and during transition, to increase their comfort and make it easier to get around what is often a larger and more complex learning environment. One small case series study of young people interviewed prior to transitioning to secondary school reported that all children explicitly mentioned maps and/or pictures being useful in terms of orientation and familiarising them with their school; comments included “lots of pictures would be helpful”, and “pictures and maybe a map” [[44](#_ENREF_44)].

Photos/pictures/social stories (9)\*

Photographs of the new school’s teachers, buildings, or other areas were also commonly suggested as useful visual strategies for transitioning students. Social stories representing the school transition process and an induction booklet of pictures were also advocated [[47](#_ENREF_47)].

Schedules/calendars (10)\*

Visual schedules presenting the routines of each day in the new school were highly endorsed to provide predictability. Examples included colour-coded timetables [[47](#_ENREF_47)], calendars, diaries and planners [[28](#_ENREF_28)]. One parent describes their usefulness for her primary school child who had transitioned to secondary school:

“So, what I try to do is get kids into that change of routine: meeting lots more people, putting checklists in place (so) they can then self-regulate to the best of their ability, so — I haven’t got any on me at the moment, but I use it now, where we have our visual timetable. They know that they have to, you know, catch up on work if they haven’t completed it, in a high school setting, there’s an expectation” [[45](#_ENREF_45)].

Social supports

Social supports are a key area for facilitating a student’s adjustment to a new school and to their making friends.

Peer buddies/social skills groups (7)\*

Strategies aiming to ease social connectedness included the use of one or two student buddies or mentors, either older students or teachers, who can introduce and orient the new student to the playground [[39](#_ENREF_39)]. They can also assist the student in navigating around the physical buildings and routine of the school. This young person suggests what would be useful for them, thus: *“Maybe someone to help but only if they were older”* [[44](#_ENREF_44)].

More formal social skills groups [[28](#_ENREF_28)] and communication training are also suggested, perhaps as part of a pre-transition programme [[20](#_ENREF_20)]. Such programmes teach social communication skills but also can help kids on the autism spectrum meet other similar-minded new peer network of friends, described as pivotal for transition [[18](#_ENREF_18)].

The guideline also refers to providing training in “survival skills” before commencing school; for example, turn-taking, sitting quietly during activities, listening to directions from both near and far, and communicating basic needs (see guideline section 3.1.d) [[11](#_ENREF_11)].

Safe person or space (9)

Another well-supported social strategy was the provision of a safe peer/adult mentor that gets along with and can guide the student when they are struggling (safe person), as well as a physical area the student can go to (safe space). The areas were variously described as “safe spaces” [[18](#_ENREF_18), [28](#_ENREF_28)], a special needs/designated break room [[42](#_ENREF_42)], and a “hub” specifically assigned space for kids on the spectrum [[38](#_ENREF_38)]. These environments provide familiarity and continuity, are small, and allow the student somewhere to go to if under pressure or stressed [[43](#_ENREF_43)], where they can calm themselves by “switching off” through music/playing a game [[42](#_ENREF_42)].

Teacher-parents communication

Enhancing school and home partnerships through good communication was a theme threaded throughout the transition processes suggested in many primary studies.

Frequent communication with parents (9)

A need for regular, frequent (daily) and informal contact between key teacher and parent/care-giver was strongly endorsed, including face to face, a journal or daily notebook, phone calls, texts, and/or e-mail contact [[14](#_ENREF_14)]. Such communications alert parents, as well as the school, of any issues that arise, and fosters positive relationships which facilitates home-school collaboration. The goal is smooth and effective flow of information, not too much or too little. Frequent communication was welcomed by parents when “it avoided others viewing their children as a problem” (p.116) [[18](#_ENREF_18)]. However, some parents expressed that they were contacted too often, being called on and expected to come in to school to solve every problem that arises with their child [[18](#_ENREF_18)]. This made is difficult for them to work or look after other children and home duties without worrying about having to drop everything and come in at any time. Getting the balance right will vary from parent to parent and is something to be negotiated.

Open, caring communication with parents (7)

Also evident in several studies was the importance of the nature and quality of the communications themselves. There were preferences for good quality, open, positive, warm, and caring communications between school and family members which is said to facilitate trust and collaboration in problem solving. Examples included teachers and schools keeping parents informed and initiating discussions to problem solve, and listening to concerns of parents and their requests for additional support. Further, parents appreciated having civilised discussions without needing to “get tough” [[21](#_ENREF_21)].

However, parents typically want genuine collaboration beyond just talking about homework and difficulties. [[21](#_ENREF_21)]. Integral to home-school partnerships is having school staff show respect for parents’ expertise about their child and incorporating their suggestions into school-based practices [[14](#_ENREF_14)]. For example, parents being encouraged to participate in decision-making, and working together on strategies (e.g., routines and rewards systems) that can be carried across from the school to the home environment, and vice versa [[21](#_ENREF_21)].

These comments are illustrative:

“Parents…showed a keen awareness of what does and does not work with regard to their children” (p. 119) [[18](#_ENREF_18)].

“The willingness of schools to develop expertise and links to the home during the transition period was seen by the parents as being crucial, because it not only provided parents with information and insights into what to expect from the school but also provided them with the opportunity to impart information about their children” (p. 119) [[18](#_ENREF_18)].

Teacher support

Finally, supporting teachers, specifically in their understanding about autism, was another well endorsed theme in the current review.

Training about autism (8)

Several studies identified the need for school staff to receive professional development sessions on autism, to facilitate their understanding of a student’s diagnosis and their reactions to transitions in general, and to learn how to apply that knowledge to transition situations. Examples included formal training such as attending an information session on autism, as well as being well acquainted with a student’s documents (e.g., student profile) prior to their commencing at the new school. One study described the usefulness of an information session on autism that was run by the school that involved the transitioning student’s mum and speech pathologist [[39](#_ENREF_39)]. The value of understanding autism is said to allow the support team to find solutions to problems before they turned critical [[18](#_ENREF_18)]. Staff with a good understanding of autism and previous experience of working with autistic children is regarded as essential to a good transition and inclusion process [[28](#_ENREF_28)].

Efficacy of school transition interventions

Of the observational case series studies appraised for the current review, one attempted to explore predictors of transition success. The Australian longitudinal observational study [[28](#_ENREF_28)] compared pre-transition child characteristics (assessed using standardised scales) with parent- and student-rated post-transition success. None of the baseline characteristics (including intelligence, trait anxiety, autistic symptomatology, and sensory responsiveness) were related to school transition success. Nor were there differences between transition success in those who went to mainstream versus specialist provision schools.

Of the 23 primary studies appraised in the current review, only one employed an analytic comparative and controlled design, albeit using a non-concurrent, and non-randomly allocated historical control [[17](#_ENREF_17)]. Transitioning students in an intervention group (n=17) received a specially developed transition programme. These were compared with those in a control group (n=20) who received usual transition support in the previous two academic years. The study represented evidence level III.3, and was awarded a SIGN quality score of “–“ (indicating low quality).

This study, conducted in the UK, investigated the efficacy of a manualised, low-intensity transition programme aimed at supporting children transitioning to secondary school: the Systemic Transition in Education Programme for Autism Spectrum Disorder (STEP-ASD). The goal of the programme is to modify the school environment before, during and after transition in order to improve the fit between the student and their environment. A “bridge meeting” is held pre-transition, attended by the transitioning child, parents, professionals from both schools, and a STEP-ASD worker (in this study, a psychologist) to identify a child’s strengths, difficulties and associated strategies. After this meeting, the STEP-ASD worker develops an individualised transition management plan identifying strategies and assigning responsibility for an allocated member of staff at both schools. A one-page pupil profile is distributed to all secondary school staff pre-transition. A transitions pack is provided with chapters relevant to strategies generated for that individual, including practical support steps and associated resources (including visits, school maps, pictures). The STEP-ASD worker has scripted calls with secondary school staff for two semesters to promote adherence to the process.

Cross-sectional survey data suggest that the STEP-ASD intervention is feasible and acceptable, finding it implemented in 80% of the 12 schools, reported as used (87%), helpful (93%), user-friendly (80%), informative (80%), and recommended (94%) by the high majority of 15 staff respondents.

Staff and parents’ scores on a repeated-measures scale measuring emotional and behavioural problems (the psychometrically tested Strengths and Difficulties Questionnaire or SDQ) were compared before and after transition. There was some evidence of efficacy of the intervention for reducing school-reported problem behaviours and distress on the SDQ for children receiving the intervention compared with historical controls. This did not appear to be generalised to the home context as indicated by no change in parent’s scores over time, although there was a borderline significant reduction (p=0.05) in the hyperactivity subscale for the intervention group compared with controls.

The study had several methodological limitations. Participants were not randomly allocated to condition, and the lack of a concurrent control group meant that there was the potential for additional temporal confounders. This opens up the potential for many differences in the comparison groups apart from whether or not they received the STEP-ASD transition programme. In the previous two years when usual transition processes were employed, teachers may have been less motivated to deliver good transitions, there may have been events during the time or at the schools that made transitions more or less difficult, the students’ characteristics may have varied from those involved during the intervention programme, etc. The response rate of staff or parents was not reported and respondents may have been biased toward those with a good experience of the intervention (response biases). The SDQ was completed retrospectively months after transition during the second semester, when recall may have been affected by continued adjustment to the new school (recall biases). Finally, staff and parents were not blind to whether students received the intervention or not and intervention group informants may have under-reported problem behaviours and distress (performance biases).

Taking these limitations into account, this small pilot study provides promising findings for the feasibility, acceptability and potential efficacy of a manualised, low-intensity transition programme.

2.4 Review limitations

The current study used a structured approach to review the literature. However, there are some inherent limitations with this approach. The review is limited by the review’s methodology and the quality of the studies included in the review.

Limitations of review methodology

The current review was limited by the restriction to English language studies. Restriction by language may result in study bias, but the direction of this bias cannot be determined. However, English-speaking countries most comparable to New Zealand’s education system are likely to publish in English-language Journals.

The review was limited to the published academic literature, and has not appraised unpublished work. Such restriction is likely to lead to publication biases since studies that show an absence of effect are less likely to be published.

Studies were initially selected for appraisal by examining the articles’ abstracts. Therefore, it is possible that some studies were inappropriately excluded prior to examination of the full text article. To minimise this possibility, where detail was lacking or ambiguous, papers were retrieved as full text.

The review had a broad scope. A pragmatic decision was made to focus the review on studies explicitly investigating transition as a key objective. Thus, articles were initially identified where they included any of the following as key terms in their title, subject or abstract “transition”, “transitioned”, “transitions” and “transitioning” (alongside search terms relating to autism and school). This may have excluded studies where transition strategies were identified as part of a study with a broader or different scope. By contrast, the search strategy was unrestrictive with respect to study design and sample size with the exception of single case reports.

All studies included in this review were conducted outside New Zealand, and therefore, their generalisability to the New Zealand population, culture and autism service context may be limited and needs to be considered. Most were conducted in Western developed countries (UK, US, Australia, Ireland and Canada) with majority white participants. However three studies included significant African, non-English speaking and/or migrant sub-groups [[16](#_ENREF_16), [26](#_ENREF_26), [37](#_ENREF_37)] permitting comparative analyses.

The search, data extraction, synthesis and report preparation was performed by a single reviewer over a limited timeframe (July to October 2018). For a detailed description of interventions, methods and results of the studies appraised, the reader is referred to the original papers cited.

Limitations of appraised studies

The current review’s conclusions are limited by the methodological quality of included studies.

There was only one analytical study: a comparative study with an historical control [[17](#_ENREF_17)]. The sample was relatively small, with 17 children receiving the intervention compared with 20 receiving usual transition processes in the previous two years. Non-concurrent controls are the weakest form of control group, as temporal factors can vary and confound results. As discussed in **Section 2.3** under synthesis of results, any factors could have varied between the control and intervention group apart from whether they received the STEP-ASD programme or not which may account for any differences in outcomes. As the participants were also not randomised into control or intervention conditions, differential recruitment processes, participation and drop-out rates could also introduce biases into the comparison groups, as will be discussed shortly.

The remaining 22 studies were all descriptive case series, including three cross-sectional surveys, 10 cross-sectional qualitative studies (three pre- and seven post-transition), eight longitudinal studies with qualitative assessment at pre- and post-transition, and two mixed methods studies including multiple assessments. These designs have varying ability to identify successful transition processes reliably and validly, with pre-transition assessments identifying wanted or preparatory processes, and post-transition measures reflecting on processes either concurrently or retrospectively, sometimes months after school has commenced, allowing recall biases to interfere with reliable reporting.

Whilst overall there were 950 informants included across the 23 primary studies, only eight studies reported on 64 children/adolescents as informants discussing the transition process themselves. When also including parent/caregiver and professional informants, there were an average of 15 informants interviewed (ranging from 6-35) per study for the 15 purely qualitative included studies. The three survey studies were larger (ranging from 30 to 275 teachers) with moderate to good response rates for two (69% to 87%) [[27](#_ENREF_27), [37](#_ENREF_37)], but a low rate (56%) for the third [[47](#_ENREF_47)].

Samples that are small, having inadequate sampling frames, poor response rates and high drop-out rates, are open to sampling biases in unpredictable directions. These can make samples unrepresentative of the perspectives and experiences of informants relating to the broader population the intervention is intended for. In the current review, four studies employed convenience sampling where the sample was drawn from part of the population that is close to hand [[16](#_ENREF_16), [39](#_ENREF_39), [40](#_ENREF_40), [44](#_ENREF_44)]. A further three studies’ recruited volunteers that were self-selected [[18](#_ENREF_18), [24](#_ENREF_24), [43](#_ENREF_43)] in response to invitations to participate sent via parent groups, autism support agencies, and autism websites, and one recruited through selection by practitioners [[23](#_ENREF_23)]. Where a topic is about concerns about transitions, such approaches may bias participants towards those experiencing or expecting to experience transition problems [[24](#_ENREF_24)], or employing agency and professional services for autism related difficulties. Alternatively, those already engaging with services who volunteer to participate may be highly motivated and resourced to ensure a good transition. As there is no randomisation or control condition for case series studies, such participation biases cannot be controlled for.

Another sampling approach employed for nine studies in the current review [[14](#_ENREF_14), [20](#_ENREF_20), [21](#_ENREF_21), [26](#_ENREF_26), [28](#_ENREF_28), [42](#_ENREF_42), [45-47](#_ENREF_45)] was purposivesampling (aka judgmental, selective, or subjective sampling), where people are approached for inclusion based on their characteristics and the objective of the study. This approach tended to be used when selected schools/preschools students were attending or transitioning to were identified for inclusion, and/or where potential participants live or are eligible for services within a selected geographical region. This approach is less effective when the area is relatively narrowly defined and the recruitment methods inadequate to ensure a high proportion of eligible potential participants are approached.

Finally, criterion sampling, where potentially eligible participants are selected who meet some predetermined criterion of importance, was employed by one study [[41](#_ENREF_41)]. Here, participants were enrolled until saturation of coding within the dataset was met (that is, novel themes were no longer being identified). Where conducted well, this can be an effective approach for qualitative studies where a broad description of experience is the main goal.

Developing accounts of experiences, beliefs, and desires is the ideal objective for qualitative studies that, when well conducted (that is, with data collected longitudinally, double-coded, transcribed, systematically analysed, triangulated from multiple informants, and validated by participants) provide a rich account of the experience of transition. However with the exception of the analytical study of Mandy et al (2016) [[17](#_ENREF_17)], the 22 qualitative and survey studies appraised did not assess the transition strategies used, favoured or recommended using reliable indicators of transition success. As such, they were not designed to evaluate the effectiveness of transition intervention strategies, the subject of the current review. For this reason they were coded as being low grade evidence (level IV) on the hierarchy of evidence [[31](#_ENREF_31)] relevant to intervention studies and quality checklists were not employed.

The appraised studies also suffered from a lack of standardised, validated assessment scales. Most questionnaires, interview schedules, or lists of strategies for endorsement were developed “in-house” by the researchers. These questionnaires have not been psychometrically evaluated and the use of different instruments makes it difficult to compare findings between studies. Two studies referred to scales by name that appeared to be unpublished and unvalidated [[15](#_ENREF_15), [28](#_ENREF_28)]. Apart from formal scales used to assess baseline characteristics, the one assessment used that was validated [[49](#_ENREF_49)] was The Strengths and Difficulties Questionnaire [[49](#_ENREF_49)], used in the controlled analytic study [[17](#_ENREF_17)] to evaluate intervention effectiveness. However, the veracity of this measure is threatened by the lack of blind assessment (i.e., informants knowing whether the participant received the intervention or usual care). Unblinded studies cannot control for participants and observers biased towards seeing an improvement (reporting biases), perhaps influenced by the desire to reward the researchers for the time and effort invested in the intervention or the belief that a promoted intervention is likely to benefit.

There was a lack of independent, objective outcome measures of transition success. Instead, most of the observation studies identified strategies that were wanted, used or useful to suggest effective transition strategies. However no studies collected direct observational or statistical data to determine whether behavioural improvements (e.g., in increased social behaviour, academic performance, or attendance) were evident.

2.5 Future research

Future research into the transitions to and between schools and classrooms for students on the autism spectrum is needed which address the limitations of the current evidence base. Some of the key factors are outlined below.

There have been suggestions about how research can contribute to developing transition interventions. Areas that have been advocated for investigation include developing peer mediated strategies to facilitate inclusion and acceptance [[35](#_ENREF_35)]. Refreshingly, Mandy et al (2016) suggest that researchers should move from a focus on child-focussed interventions which address maladaptation of the autistic student to their environment, to interventions which aim to change the environment for the transitioning student [[17](#_ENREF_17)]. Consistent with this approach are calls to adapt academic curriculum to incorporate visual learning, accommodate fine and gross motor incoordination, and makes provisions for sensory sensitivities and special interests [[39](#_ENREF_39)]. As each student’s needs and preferences vary, the need for individualised transition interventions has been suggested [[15](#_ENREF_15)]. Given that parents have a deep knowledge of their children, families are likely to have a role in developing such supports: “their voices should be given higher priority in the creation of more individualised transition support for their children with ASD” [[21](#_ENREF_21)]. Such research will contribute to the development and delivery of high quality transition programmes for young people on the autism spectrum.

Beamish et al (2014) suggest that recommended and highly endorsed practices also need to be investigated in terms of their “do-ability” [[27](#_ENREF_27)]. Given that any intervention that is experienced as burdensome by teachers is liable to fail [[17](#_ENREF_17)], feasibility and acceptability should be a pre-requisite for any transition programme. Nevertheless, schools and teachers are under time pressure to deliver the curriculum whilst ensuring the social, physical and emotional well-being of students. Not every strategy can or should be applied for every individual, and research is needed to tease out the contribution of different elements of transition programmes that best prepare students for a successful transition [[15](#_ENREF_15), [23](#_ENREF_23)]. Some strategies may be more essential than others. Moderators and mediators of success also need to be explored, such as intervention content, adherence to a transition programme [[17](#_ENREF_17)], previous educational structure (formal vs more play-orientated), cognitive and verbal ability, child age at entry, school system factors, culture, educational provision, school/class/community size, and locality differences [[35](#_ENREF_35)].

There has been a significant growth in research employing qualitative case series and survey designs which have given invaluable information into transition strategies that are being used, sought, and valued. Whilst a large number of school transition practices have been endorsed, the adequacy of the strategies themselves has not been established [[36](#_ENREF_36)]. The research synthesised in this review provides a foundation for fine-tuning transition programmes that can then be systematically and experimentally investigated. To do this in a rigorous way, randomised, controlled trials with repeated measures are needed which evaluate intervention programmes which have been pilot tested for feasibility and efficacy. It is encouraging in this regard to know that the non-concurrently controlled trial in the current review [[17](#_ENREF_17)] is planning to undertake a randomised controlled trial (RCT) to evaluate their STEP-ASD programme (*personal communication* with Dr William Mandy, 12 September 2018).

With respect to sample size and composition, larger, more representative and carefully recruited samples are needed to address sampling biases and increase the generalisability of findings. For example, participants receiving transition interventions need to represent a broader range of support needs so that research can investigate whether varying needs of students impact on the effectiveness of transition processes [[23](#_ENREF_23), [38](#_ENREF_38)]. More research is also needed which includes families of diverse cultural and ethnic backgrounds [[16](#_ENREF_16)], and investigates the similarities and differences that exist in educational practices in developed and developing countries [[37](#_ENREF_37)].

Finally, studies should employ validated, standardised instruments to permit inter-study comparisons, including direct objective measures of successful transitions from independent, blinded-to-condition assessors in a range of settings. Outcomes are needed to assess children’s socio-emotional, adaptive, and cognitive/academic progress [[36](#_ENREF_36)]. For example, through indicators of school absences, school exclusion, quality of life, and academic performance [[17](#_ENREF_17)].

2.6 Systematic review summary and conclusions

Overview

This systematic review updates evidence for the New Zealand Autism Spectrum Disorder Guideline [[11](#_ENREF_11), [30](#_ENREF_30)] with respect to the effectiveness of interventions that aim to improve transitions for children and adolescents on the autism spectrum when commencing school or changing schools or year levels. Following a comprehensive database search and citation searching of primary and secondary studies published since 2004, 257 unique abstracts were identified. After applying inclusion and exclusion criteria, 26 studies were included for critical appraisal: one clinical practice guideline, two systematic reviews, and 23 primary studies collecting original data.

This represents a significant upsurge in research in this field. The primary studies were mainly conducted in Western, developed countries including US, UK, Australia, Canada, and Ireland). A large variety of study designs have been employed, including cross-sectional surveys, cross-sectional case series and longitudinal case series studies. Most studies included qualitative components and 15 studies were purely qualitative. However all but one included study represented observational case series designs, essentially offering descriptive data into the school transition experiences of young autistic people. The exception was a historically (non-concurrent) controlled trial.

Key findings of the review

Secondary research

Considering the secondary research considered in this review, the NICE guideline [[34](#_ENREF_34)] emphasised the transitioning to school as a key point requiring support for young people on the autism spectrum. A recent Australian systematic review [[36](#_ENREF_36)] highlighted the need for individualised plans, more structured processes, and better communication between home and school. The recently published systematic review from a US team [[35](#_ENREF_35)] provided a starting point for coding the themes and strategies identified in the current review.

Effectiveness

There was evidence from one single, small, low quality, historically controlled trial [[17](#_ENREF_17)] for the feasibility, acceptability and potential efficacy of a manualised, low-intensity transition programme. Randomised controlled trials of such programmes are needed to confirm these preliminary findings.

Transition strategies

The 23 primary studies appraised – twenty of which included qualitative data – provided rich information and personal accounts of the transition process from the perspectives of the young people themselves, their parents/care-givers, and school and affiliated support staff. Transition strategies were extracted from these papers to identify 12 themes and 37 strategies that were reported as being sought, used, useful or recommended. Of these, four themes and 19 strategies were mentioned by fewer than 5 studies. These tended to relate to information for parents, accommodations, coping strategies, and family support. It is hypothesised that these themes may have been less represented because they related more towards best practice with respect to teaching students on the autism spectrum than to the transition itself, and that they were related more to parents’ needs than those of the transitioning child/adolescent.

Of most importance, eight themes and 15 specific transition strategies were identified by at least six primary studies. These are regarded as well-supported by the evidence considered in the current review as representing key features of best practice transition programmes. These are summarised below.

Planning

This theme was also supported by guideline Recommendation 3.4.5 that “All transitions for students with ASD should be carefully planned and the child or young person and the new environment carefully prepared” (Grade B) [[11](#_ENREF_11)]. Specifically:

* Employing person-centred planning which involves the child or young person in all decisions about their transition, listens to and respects them, and ensures transition plans are individualised to their expressed needs and preferences.
* Identifying a transition facilitator early in the transition process to guide students and their family/whānau through the transition process and provide a point of contact. A (possibly different) facilitator should be identified post-transition.

Transition meeting with family

Also reflected in the guideline [[11](#_ENREF_11)] (see guideline’s section 3.1.d) is the importance of pre-transition meetings involving the child/adolescent, their family/whānau and key school staff. Specifically:

* Holding team transition planning meeting/s, preferably 6-12 months prior to transition, including stakeholders from both sending and receiving schools.
* Parents and transitioning student meeting with key staff from the receiving school including the principal and special education needs coordinator (SENCO).

Schools sharing information

This theme encourages the partnership of sending and receiving schools in sharing information. Specifically:

* Producing and disseminating a “student profile” or “key information page” to members of the new school team. Completed by parents and pre-transition school staff it includes the student’s interests, needs, successful strategies, behaviors, and preferences. It stays with the student during their time at school.
* Sharing information informally between schools, to share strategies and work on a curriculum.

School visits

This was the most highly endorsed theme, also mentioned in the guideline [[11](#_ENREF_11)] (see guideline’s section 3.1.d), and relates to private, extended visits by the student, their sending school teacher/SENCO and/or parents/caregivers. Specifically:

* Student visits their new school with the sending school teacher/transition coordinator, ideally more than once, to provide familiarization and alleviate anxiety. The visit also establishes a partnership between schools.

Visual supports

Another prominent theme, that is also reflected in the guideline [[11](#_ENREF_11)] (guideline section 3.4.c), encourages the use of visual supports to aid the transition process. Specific strategies include:

* Providing a map of the new school.
* Providing photographs, pictures and social stories of the new school’s teachers and buildings, and incorporating these into an induction booklet or social stories.
* Providing visual schedules, including calendars, colour-coded timetables, diaries and planners that present the routines of each day. This strategy is also advocated in guideline Recommendation 3.3.1: “The student should be supported through the multiple transitions of secondary school using schedules and other support” (Grade C) [[11](#_ENREF_11)].

Social supports

The social communication challenges experienced by people on the autism spectrum can make the stresses of fitting in socially at a new school particularly stressful, and social supports have an important role in facilitating a new student’s adjustment and to making friends. Specifically:

* Providing peer buddies (including older students or teachers who can act as mentors and guides) and social skills groups[[10]](#footnote-10) to facilitate social connections and expand the student’s peer network. Learning of “survival skills” before commencing school is also advised in the guideline (see guideline section 3.1.d) [[11](#_ENREF_11)].
* Providing a familiar and trusted peer/adult mentor (safe person), and a physical area (safe space) that the student can go to when under stress.

Teacher-parents communication

Good communication is crucial to facilitate home-school collaboration. Specifically:

* Regular, frequent, and informal communication between a key teacher and parent/care-giver through face to face, notebook, phone calls, texts, and/or e-mail (as negotiated with the care-giver).
* Open, positive, respectful and caring communication of teachers with parents, and working together on strategies to be shared across school and home environments.

Teacher support

Finally, supporting teachers in their understanding about autism. Specifically:

* Providing training about the autism spectrum, including professional development sessions as well as being well acquainted with the student’s files.

Conclusions

The current review of this emerging and important field of research identified a significant evidence base of descriptive research concerning school transition processes. The findings consisted predominantly of uncontrolled, small and selectively sampled observational studies with a lack of independent, blinded, objective indicators for transition success. These descriptive and often qualitative studies are not designed to determine the effectiveness of specific transition intervention strategies or programmes. Their findings are limited in the ability to generalise to broader populations and to reliably and validly represent the transition experience of all potential intervention participants.

Whilst accepting that the largely observational research base included in the current review has its limitations, the use of multiple informants permits triangulation of data which guarantees multiple perspectives about a transition experience [[39](#_ENREF_39)]. This is particularly helpful for complex systems processes such as transition and for a population involving the heterogeneity of presentation of autism. Indeed, Fontil and Petrakos (2015) argue that “despite its limitations, qualitative research is emerging as a plausible solution to complicated service delivery problems” (p. 786) [[26](#_ENREF_26)]. To illustrate this point, a common theme identified in the review was the centrality of communication between school and home. However more communication (of any kind) was not always better, with some parents noting that they didn’t like the burden and intrusion of being routinely called up and expected to come in to school to solve every problem that arises for their child, leading them to be “always waiting for the phone to ring” [[18](#_ENREF_18)].

The rich, personal accounts of transition provided by the observational studies that dominated this review demonstrate the diverse and idiosyncratic school transition needs of young people across the spectrum. They suggest that there is no single approach for supporting students and families in transitions between schools. The centrality of the individual undergoing the transition to planning their supports was an important theme in the review. Individualised accommodations and supports tailored to a particular student is critical to ensure a smooth transition to the student’s new learning environment [[21](#_ENREF_21), [35](#_ENREF_35)]. Such individualisation can be built into intervention programmes through involving the child/adolescent and their family in the process at the beginning, identifying their needs and preferences. The involvement of parents in decision-making was also emphasised as vitally important, as a means to acknowledge their expertise and to incorporate their insights and strategies into school’s transition practices [[24](#_ENREF_24)]. Such a commitment to home-school collaboration principles is needed to help students on the autism spectrum as well as others with disabilities and additional needs [[21](#_ENREF_21)]. Finally, successful transitions depend on the recognition that transitions be seen as a long-term process as opposed to a single event, and require continuity of support and communication throughout the process [[19](#_ENREF_19), [21](#_ENREF_21)].

With the limitations of the evidence base in mind, this review suggests that there is consensus agreement that having structured transition programmes in place is best practice for children on the autism spectrum. There was also broad agreement about the key features that are commonly used, sought, valued, and recommended. However, it is not currently possible to offer robust conclusions about the *necessary* content, components and processes of transition programmes to ensure successful transitions for children and adolescents on the autism spectrum. This is really important in the education sector. Schools and teachers have many competing demands on their time and resources, and cannot employ all potentially useful strategies suggested to them. They need a pragmatic programme of strategies that can be selected where applicable, that are practical to implement, and which are likely to be taken up and lead to successful transitions.

Preliminary research from one promising trial with a non-concurrent control group suggests that a transition programme can be devised which is well received, acceptable, practical, and which has the potential to lead to transition success. Further rigorous research is awaited to provide more definitive evidence of effective strategies and programmes for children and young people at these frequently stressful and pivotal times in their lives.

3 Recommendation development

The Living Guideline Group (LGG) was tasked with considering the systematically reviewed evidence reported in **Section 2** above in addition to the evidence already appraised and included in the guideline [[1](#_ENREF_1), [11](#_ENREF_11)]. Specifically, the LGG considered whether the updated body of evidence required revisions of existing recommendations and good practice points (GPP) as well as the development of any new ones.

The text and graded “strength of evidence” of recommendations and GPP (see **Appendix 1**, **Table A1.2**) were revised/developed at an all-day face-to-face meeting. The LGG’s decisions are presented below, and summarised in **Summary Tables I** and **II** (p. x). Where considered helpful, these decisions are accompanied by additional explanatory text, and/or with a brief rationale which highlights any particular issues that the LGG took into account in their deliberations.

Decisions of the Living Guideline Group

Preamble

This update was informed by a systematic review updating the evidence for effective strategies for improving school transitions for children and young people. This review benefitted from the work of Nuske et al (2018) [35] which provided an initial coding framework of strategies for the current review’s thematic analysis. The Living Guideline Group observes that as New Zealand is a signatory to the United Nations Convention on the Rights of the Child (UNCROC)[[11]](#footnote-11), this convention should be included in the list of legislations and policies that are relevant to the New Zealand ASD Guideline (p. 27, 2nd edition) [11].

Existing Recommendations and Good Practice Points

Existing recommendations and Good Practice Points in the ASD Guideline [11] were considered for revision by the Living Guideline Group.

* **Original Recommendation 3.3.1:** “The student should be supported through the multiple transitions of secondary school using schedules and other support.” (Grade C)

**Unchanged**

* **Original Good Practice Point 3.3.3:** “A quiet place should be provided for the young person to take a break from the busy environment of secondary school”. ✓

**Unchanged**

**Rationale**: Recommendation and GPP were left unchanged as they remain accurate and relevant to secondary students in the context of Section 3.3 “Particular issues relevant to secondary students”, pp 122-123 [11]

**Additional text:** In the conclusion of the subsection titled “Transitions” (p. 123) [11] add text to complete the current final sentence to become: “for further discussion about transitions see section 3.4: Education sector organisation and management, and specifically Recommendation 3.4.5.”

**Rationale**: Recommendation 3.4.5 (revised, see below) provides more specific, extended guidance on transitions in all school settings which are also relevant here.

* **Original Recommendation 3.4.5:** “All transitions for students with ASD should be carefully planned and the child or young person and the new environment carefully prepared.” (Grade B)

changed to

* **Revised Recommendation 3.4.5**: “All transitions for students on the autism spectrum should be carefully planned and include the following:
* Identifying a key education professional early in the transition process to guide children and young people and their family/whānau, and provide an ongoing point of contact
* Person-centred planning involving children and young people in decisions about the transition, respecting their views, and individualising their plans
* Having team transition planning meeting/s, preferably beginning 6-12 months prior to transition, involving family/whānau, key staff from both sending and receiving schools, and other supporting team members
* Developing a student profile in collaboration with the child/young person and their family/whānau to inform current and future school teams. The profile should include the child/young person’s strengths, interests, needs, behaviours, preferences, and successful strategies
* Having transition visits for the child/young person to their new school environment to provide familiarisation, establish relationships, and alleviate anxiety
* Using visual supports appropriate to individual needs, for example:
  + a map of the new school
  + photographs, pictures and social stories, possibly incorporated into an induction booklet
  + visual schedules, including calendars, timetables, diaries and planners that present the routines of each day
* Providing social supports and environmental adaptations such as a safe person, peer buddy, adult mentors, and a safe space
* Having regular, constructive, culturally appropriate and respectful communication between teachers and family/whānau
* Sharing support strategies across school and home environments.”

**LGG additional text:** research that forms the basis of this updated Recommendation relates to transitions to and between primary, intermediate and secondary schools and school levels. See Section 5.1 [11] relating to post-secondary school transitions.

Transitions into or from non teacher-led education settings (such as home-schooling) were not within the scope of this topic update. However, strategies suggested in Rec 3.4.5 are likely to be useful and should be considered by school staff and whānau in such situations.

Research on social skills groups for young people and adults was comprehensively updated as part of the living guideline process. It is summarised in Appendix 10.6, and is available as full text from the Ministry of Health website. (Also see new recommendation 4.2.1a, and new good practice points 4.2.1b and 4.2.1c in Chapter 4.)

With respect to cultural appropriateness, research on the effects of ethnicity on recognition, diagnosis, education, treatment and support for people on the autism spectrum was also updated as part of the living guideline process. It is available from the Ministry of Health website.

Note also that safe spaces are recommended in Recommendation 3.3.1.

New Good Practice Point

* **New Good Practice Point 3.4.5b**: “Many strategies recommended in Recommendation 3.4.5 are applicable to within-school transitions (e.g., between year levels and other transitions)”. ✓

**Summary Tables I** and **II** (p. xi) presents the revised recommendation and new Good Practice Point.

Appendix 1: Methods

A1.1 Contributors

This systematic review was conducted, and the report prepared, by **Marita Broadstock** (INSIGHT Research). The recommendations and good practice points were developed and graded by the LGG based on discussion of the systematic review’s body of evidence as it updates that included in the guideline [[11](#_ENREF_11)].

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Declarations of competing interest

None

A1.2 Search strategy

Search strategies were limited to publications from January 1 2004 onwards. Database searches were conducted on 1 August 2018. Full search strategies are available upon request. Bibliographic, health technology assessment and guideline databases were included in the search strategy, listed below.

* Medline
* Cinahl
* PsycINFO
* PsycARTICLES
* ERIC
* Cochrane Database of Systematic Reviews (CDSR)
* Central Register of Controlled Trials (CRCT)
* Database of Abstracts of Reviews of Effects (DARE)
* Health Technology Assessment Database (HTA Database)

A combination of search terms were used in article titles (TI), abstracts (AB) and subject headings (SU) and adapted for different databases. The following illustrative search is offered:

AB ((autis\*) OR (ASD) OR (asperger$) OR (PDD) OR (pervasive development\* disorder$)) OR TI ((autis\*) OR (ASD) OR (asperger$) OR (PDD) OR (pervasive development\* disorder$))

AND

AB (transition$) OR TI (transition$) OR SU (transition$) OR AB (transitioning) OR TI (transitioning) OR SU (transitioning)

AND

AB ((school$) OR (kindergarten) OR (pre$school) OR (early childhood) OR (post$primary) OR (elementary education) OR (elementary secondary education) OR (primary education) OR (secondary education) OR (junior high) OR (intermediate education)) OR TI ((school$) OR (kindergarten) OR (pre$school) OR (early childhood) OR (post$primary) OR (elementary education) OR (elementary secondary education) OR (primary education) OR (secondary education) OR (junior high) OR (intermediate education)

Table A1.1: Hierarchy of evidence

|  |  |
| --- | --- |
| Level | Intervention |
| I | A systematic review of level II studies |
| II | A randomised controlled trial |
| III-1 | A pseudorandomised controlled trial  (i.e. alternate allocation or some other method) |
| III-2 | A comparative study with concurrent controls:  - Non-randomised experimental trial  - Cohort study  - Case-control study  - Interrupted time series with a control group |
| III-3 | A comparative study without concurrent controls:  - Historical control study  - Two or more single arm study  - Interrupted time series without a parallel control group |
| IV | Case series with either post-test or pre-test/post-test outcomes. |

**Source**: NHMRC [[31](#_ENREF_31)]

Limited to English language, 2004-current, peer reviewed journal articles. Hand searching of journals was not undertaken.

A1.3 Appraisal of studies

A single researcher performed study selection, data extraction, critical appraisal, and synthesis.

Criteria relating to study designs was refined after the initial search was conducted in order to determine the study design or “level of evidence” cut-off to be applied to inclusion criteria. The level of evidence indicates how well the study eliminates bias based on its design. INSIGHT Research uses a published evidence hierarchy, designed by the National Health and Medical Research Council of Australia (NHMRC) [[32](#_ENREF_32)]. These describe research designs which are broadly associated with particular methodological strengths and limitations so as to rank them in terms of quality, from I (systematic reviews of level II studies) to IV (case series). In the hierarchy of evidence employed (described in **Table A1.1**), systematic reviews which include level II studies are ranked as level I evidence whereas systematic reviews of lower order evidence rank at the same level as that order of evidence.

Each study may be designed and/or conducted with particular strengths and weaknesses which can be assessed using critical appraisal tools. In this review, included studies were formally appraised using the quality checklists from the Scottish Intercollegiate Guidelines Network [[53](#_ENREF_53)] as appropriate to study design, including those for systematic reviews and randomised controlled trials. Note that no checklist is available for cross-sectional or case series studies (level IV).

The quality and resistance to risk of bias of an individual study was rated as follows:

* **High quality** (++): Majority of criteria met. Little or no risk of bias
* **Acceptable** (+): Most criteria met. Some flaws in the study with an associated risk of bias
* **Low quality** (-): Either most criteria not met, or significant flaws relating to key aspects of study design
* **Reject** (0): Poor quality study with significant flaws. Wrong study type. Not relevant to guideline
* Evidence tables (see **Appendix 3**) were completed for each appraised study. Evidence tables present the key characteristics of each of the appraised studies including study design, level of evidence, sample characteristics, setting, methodology, results, conclusions, reviewer comments, funding source, and SIGN quality rating (where applicable).

A1.4 Preparing recommendations

Developing recommendations

A one-day face-to-face meeting was held on 23 November 2018 where the LGG considered the findings of the current systematic review and revised affected recommendations (and good practice points) from the guideline [[11](#_ENREF_11)] and/or developed new ones. Using their collective professional judgement and experience, the LGG discussed the body of evidence with respect to the research questions and the applicability of the evidence within New Zealand.

Developing recommendations involves consideration of the whole evidence base for the research question. The quality and consistency of the evidence and the clinical implications of the evidence within a New Zealand context is weighed up by all the LGG members.

Each recommendation is assigned a grade to indicate the overall “strength of the evidence” upon which it is based. Strength of the body of evidence is determined across three domains [[32](#_ENREF_32)]:

* quality (the extent to which bias was minimised as determined by study design and the conduct of the study)
* quantity (magnitude of effect, numbers of studies, sample size or power)
* consistency (the extent to which similar findings are reported).

Table A1.2: Guide to grading recommendations [[11](#_ENREF_11)]

|  |  |
| --- | --- |
| **Recommendations** | **Grade** |

|  |  |
| --- | --- |
| The recommendation is supported by good evidence (based on a number of studies that are valid, consistent, applicable and clinically relevant) | **A** |
| The recommendation is supported by fair evidence (based on studies that are valid, but there are some concerns about the volume, consistency, applicability and clinical relevance of the evidence that may cause some uncertainty but are not likely to be overturned by other evidence) | **B** |
| The recommendation is supported by international expert opinion | **C** |
| The evidence is insufficient, evidence is lacking, of poor quality or opinions conflicting, the balance of benefits and harms cannot be determined | **I** |

|  |  |
| --- | --- |
| **Good practice point** | **Grade** |

|  |
| --- |
| **Note**: Grades indicate the strength of the supporting evidence rather than the importance of the evidence. |

|  |  |
| --- | --- |
| Where a recommendation is based on the clinical and educational experiences of members of the Living Guideline Group, or feedback from consultation within New Zealand, it is a Good Practice Point. | **✓** |

The grades of recommendations used by the LGG, and also used in the guideline [[1](#_ENREF_1)], are presented in **Table A1.2**.

The wording of recommendations and GPP, and the evidence grade, is determined by the LGG through discussion and group consensus during the meeting.

It should be noted that systematic reviews and meta analyses (secondary studies) considered which draw on publications over an overlapping timeframe could report on (some of) the same primary studies appraised. For this reason it is important to be aware that the results from secondary studies should not be summated as independent sources of evidence as this would misrepresent the quantity of studies and give shared primary studies undue weight. Rather, recently published secondary evidence should be considered as background information and to validate the findings of the current review.

A1.5 Consultation

Seeking comments from stakeholders is vital for peer-review and quality assurance processes in developing the report. In a focused consultation 29 key stakeholder organisations/individuals were approached for feedback on a late draft of the report through an online survey. Organisations approached included 10 Primary, Intermediate and Secondary school sector groups; 5 pre-school sector organisations, 3 disabled peoples organisations, and 11 organisations supporting young people on the autism spectrum and/or with learning support needs and their whānau. Particular attention was sought regarding the relevance of the report to New Zealand’s services and needs, clarity and ease of use of the report, and implementability of the revised or new recommendations and GPP.

Responses were received from 18 organisations/individuals representing a 62% response rate. The lead researcher (INSIGHT Research) collated feedback and drafted revisions for the LGG to consider. Amendments were finalised by group consensus. Suggestions identified in the consultation led to several improvements to the final report. INSIGHT Research and the LGG are grateful to those individuals and organisations who participated in the consultation process.

Appendix 2: Abbreviations and glossary

A2.1 Abbreviations and acronyms

Miscellaneous Terms

AS Asperger’s syndrome

ASD Autism Spectrum Disorder

GPP Good Practice Points

GRADE Grading of Recommendations: Assessment, Development, Evaluation

HFA High Functioning Autism

IQ intelligence quotient

IEP Individual Education Programme

I(D)P Individual (Development) Plan

INSIGHT Research INdependent Specialist in Guidelines & Health Technology Research

LGG Living Guideline Group

M mean

N (or n) number (usually, sample size)

NHMRC National Health and Medical Research Council (Australia)

p. page number

PDD Pervasive Developmental Disorder

PDD-NOS Pervasive Developmental Disorder – Not Otherwise Specified

RCT randomised controlled trial

RTLB Resource Teacher of Learning and Behaviour

SENCO Special Education Needs Coordinator

SIGN Scottish Intercollegiate Guidelines Network

SLT Speech and Language Therapist

UK United Kingdom

US United States of America

vs versus

Tests, scales and measures

DSM-IV-TR Diagnostic and Statistical Manual of Mental Disorders - IV (text revision)

DSM5 Diagnostic and Statistical Manual of Mental Disorders – 5th edition

SDQ Strengths and Difficulties Questionnaire

Databases

CDSR Cochrane Database of Systematic Reviews

CINAHL Cumulative Index to Nursing and Allied Health Literature

DARE Database of Abstracts of Reviews of Effects

EMBASE Excepta Medica Database

ERIC Education Resources Information Centre

HTA database Health Technology Assessment Database

Medline Medical Literature Analysis and Retrieval System Online

PsycINFO Psychology Information Database

A2.2 Glossary

**Accommodations**

Making exceptions, adaptations or accommodations to the curriculum or environment

**Adaptations**

Changes to accommodate the student’s needs or preferences

**Bias**

Bias is a systematic deviation of a measurement from the “true” value leading to either an over- or under-estimation of the treatment effect. Bias can originate from many different sources, such as allocation of patients, measurement, interpretation, publication and review of data

**Case-control study**

Patients with a certain outcome or disease and an appropriate group of controls without the outcome or disease are selected (usually with careful consideration of appropriate choice of controls, matching, etc.) and then information is obtained on whether the subjects have been exposed to the factor under investigation.

**Case series**

Case series are collections of individual case reports, which may occur within a fairly short period of time. Cases consist of either only the exposed people with the outcomes, or people with the outcome regardless of the exposure. In neither of these examples can the risk for the outcome be determined

**Child-centred**

The goals, materials and teaching strategies are determined with considerations of the child’s interests and preferences

**Cohort study**

Subsets of a defined population can be identified who are, have been, or in the future may be exposed or not exposed in different degrees, to a risk factor or factors hypothesised to influence the probability of occurrence of a given disease or other outcome. Subjects are followed from a well-described starting point to determine whether the outcome/disease occurs (either retrospectively, or prospectively). The control group of people not exposed to the risk factor can be identified within the population-based cohort, and be matched by confounders known to be associated with the outcome (e.g., age, sex), or can be obtained from an historical cohort. Studies usually involve the observation of a large population, for a prolonged period (years).

A prospective cohort study is where groups of people (cohorts) are observed at a point in time to be exposed or not exposed to an intervention (or the factor under study) and then are followed prospectively with further outcomes recorded as they happen.

A retrospective cohort study is where the cohorts (groups of people exposed and not exposed) are defined at a point of time in the past and information collected on subsequent outcomes, e.g., the use of medical records to identify a group of women using oral contraceptives five years ago, and a group of women not using oral contraceptives, and then contacting these women or identifying in subsequent medical records the development of deep vein thrombosis.

**Convenience sampling**

Also known as grab sampling, accidental sampling, or opportunity sampling, Convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand.

**Criterion sampling**

Involved selecting cases that meet some predetermined **criterion** of importance. For example: Every person that meets selection criteria within a service environment is invited until a certain sample size criterion has been met.

**Cross-sectional study**

A study that examines the relationship between exposures (e.g., risk factor) and outcomes (e.g., disease), as they exist in a defined population, at a particular time. A group of people are assessed at a particular point (or cross-section) in time and the data collected on outcomes relate to that point in time; i.e., proportion of people with asthma in October 2014. This type of study is useful for hypothesis-generation, to identify whether a risk factor is associated with a certain type of outcome, but more often than not (except when the exposure and outcome are stable; e.g., genetic mutation and certain clinical symptoms) the causal link cannot be proven unless a time dimension is included.

**Detection bias**

Detection bias refers to systematic differences between groups in how outcomes are determined. Awareness by outcome assessors/respondents of whether an intervention was received or not (i.e., they are not blind to allocated condition) may increase the risk of their measurements/ratings/reports being affected by detection bias.

**Effect size**

A quantitative measure of the strength of a phenomenon, a standardized measure of the size of the difference between two groups.

**Effectiveness**

A measure of the extent to which a specific intervention, procedure, regimen, or service, when deployed in the field in routine circumstances, does what it is intended to do for a specified population.

**Further education**

Tertiary education (university or polytechnic), adult education, and vocational training schemes

**Generalisability**

Applicability of the results to other populations.

**Grounded theory**

A systematic methodology involving the construction of theory through methodical gathering and analysis of data.Grounded theory is a research methodology which operates inductively.

**High functioning**

Whilst it is acknowledged that the term “high functioning” is not universally favoured, in this report, the term “high functioning” is used to refer to people with higher cognitive functioning either as established by intelligence tests (generally indicated by full IQ scores of 70 or above), or through the diagnosis of “high-functioning autism” or Asperger syndrome (under DSM-IV criteria). In light of the removal of Asperger syndrome as a separate diagnostic classification in [DSM-5](http://en.wikipedia.org/wiki/DSM-5), these distinctions may no longer be used clinically.

**Individual Education Programme (IEP)**

the individual planning process which is the basis of collaborative planning between home, school and specialist services. Goals are based on the New Zealand curriculum.

**Individual (Developmental) Plan (IP or IDP)**

A plan which is sometimes used in early childhood education services. Goals are based on Te Whāriki, the early childhood education curriculum.

**Kōhanga reo**

early childhood education centre catering for young children in a Māori cultural environment

**Kura kaupapa Māori**

school based on Māori practices and philosophies

**Level of evidence**

Levels within a hierarchy of study evidence that indicates the degree to which bias has been eliminated in the study design. For example, see **Appendix 1, Table A1.1.**

**Mean**

Calculated by adding all the individual values in the group and dividing by the number of values in the group.

Neurodiversity

An approach to learning and disability which suggests that diverse neurological conditions appear as a result of normal variation in the human genome. This term was coined in the late 1990s as a challenge to prevailing views of neurological diversity as inherently pathological, and it asserts that neurological differences should be recognized and respected as a social category on a par with gender, ethnicity, sexual orientation, or disability status.

**Neurotypical**

An abbreviation of neurologically typical, a term coined in the autism community as a label for people who are not on the autism spectrum, otherwise referred to as typically developing people.

**Non-randomised, experimental trial**

The unit of experimentation (e.g., people, a cluster of people) is allocated to either an intervention group or a control group, using a non-random method (such as patient or clinician preference/availability) and the outcomes from each group are compared.

This can include:

- a controlled before-and-after study, where outcome measurements are taken before and after the intervention is introduced, and compared at the same time point to outcome measures in the control group.

- an adjusted indirect comparison, where two randomised controlled trials compare different interventions to the same comparator i.e. the placebo or control condition. The outcomes from the two interventions are then compared indirectly.

**Observational studies**

Also known as epidemiological studies. These are usually undertaken by investigators who are not involved in the clinical care of the patients being studied, and who are not using the technology under investigation. Distinct from experimental studies.

**Performance bias**

Performance bias refers to systematic differences between groups in the care that is provided, or in exposure to factors other than the interventions of interest. After enrolment into the study, blinding (or masking) of study participants and personnel may reduce the risk that knowledge of which intervention was received, rather than the intervention itself, affects outcomes. Effective blinding can also ensure that the compared groups receive a similar amount of attention, ancillary treatment and diagnostic investigations. Blinding is not always possible, however.

**Person-centred planning**

Covers a number of approaches that assess and review the needs of disabled people within a community setting, which actively involves the person with disabilities as the “focus” person, and includes their chosen main carers and friends

**Post-test**

Case series where only outcomes after the intervention (factor under study) are recorded in the series of people, so no comparisons can be made.

**Pre-test/post-test**

Case series where measures on an outcome are taken before and after the intervention is introduced to a series of people and are then compared (also known as a ‘before- and-after study’).

**Priming**

Most students on the autism spectrum struggle with transitions and new situations, becoming anxious and confused. Priming, a strategy by which an adult previews activities, is designed to decrease anxiety that accompanies change and new situations. A teacher or parent can prime a student for an entire day or an activity.

**Power**

The probability that a statistical test or study will detect a defined pattern in data and declare the extent of the pattern as showing statistical significance.

**Prevalence**

A measure of the proportion of people in a population who have some attribute or disease at a given point in time or during some time period.

**Puna kōhungahunga**

Māori-focused playgroups

**Purposive sampling**

A non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposivesampling is also known as judgmental, selective, or subjective sampling.

**Quality of evidence**

Degree to which bias has been prevented through the design and conduct of research from which evidence is derived.

**Randomised controlled trial (RCT)**

An experiment in which subjects in a population are randomly allocated into groups to receive or not receive an experimental preventive or therapeutic procedure, manoeuvre, or intervention. The groups are compared prospectively.

**Resource Teacher of Learning and Behaviour (RTLB)**

Itinerant consultant in the New Zealand school system whose role is to assist teachers in better catering for students with mild to moderate behaviour or learning needs within regular schools

**Secondary study**

An analysis or synthesis of research data reported elsewhere, including systematic reviews, meta analyses and guidelines.

**Selection bias**

Error due to systematic differences in characteristics between those who are selected for inclusion in a study and those who are not (or between those compared within a study and those who are not).

**Speech and Language Therapist (SLT)**

Therapists who assess and treat people who have problems with communication or swallowing

**Social stories**

Narratives written about social situations to assist understanding, to help the person manage their anxiety and sometimes to encourage appropriate behaviour

**Special Education Needs Coordinator (SENCO)**

A person in school who coordinates programmes for children with special educations needs

**Strength of evidence**

The strength of evidence for an intervention effect includes the level (type of studies), quality (how well the studies were designed and performed to eliminate bias) and statistical precision (P-value and confidence interval).

**Systematic review (SR)**

A literature review reporting a systematic method to search for, identify and appraise a number of independent studies.

**Te Kura**

Māori-focused correspondence school playgroups

**Te Whāriki**

the New Zealand early childhood education curriculum

**Transition**

Movement between activities or environments, These can be major transitions or daily transition. Examples of major transitions include movement from early childhood education/day care to school, between schools, and from school into work, vocational services or further education. Examples of daily transitions include movement from house to car, lino to carpet, entering another space, changes to new living environment, going to bed.

**Treatment effect**

An effect attributed to a treatment (intervention), which in a clinical trial is based on a comparison between active treatment and a placebo control, or two or more treatment regimens.

**Whānau**

Extended family

Appendix 3: Evidence Tables of included studies

Tables are ordered by study type (primary then secondary studies), and then within each table, according to the following hierarchy: year of publication (oldest first), and alphabetically (by first author‘s surname).

Table A3.1: Evidence Tables for included primary studies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Forest et al (2004)**  **[**[**23**](#_ENREF_23)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: US  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to identify and integrate critical elements in the transition process, develop a practical tool and pilot test with three families to determine content validity | **Setting/recruitment**: identified by country early childhood service providers. Transitioning to mainstream and hybrid (mainstream and special education only) placements.  **Participant**s: 10 stakeholders (4 parents, 3 preschool teachers and 3 primary school teachers) of 3 male children with “high functioning autism” transitioning from preschool to school, aged 5 or 6 years. | **Inclusion criteria**: diagnosed with autism, transitioning to primary school within past 12 months, consent received  **Exclusion criteria**: not reported  **Assessments:** post-transition face-to-face interviews measuring endorsement of 25 listed strategies as important | **Intervention**: transition from preschool to primary school  **Measures:** interview schedule was developed based on a review of research published 1990-2001 (of ERIC and PsycINFO databases) identifying 25 recommended features for preschool to school transition for children with autism. A 1-6 Likert scale rated the extent to which an element was implemented, and (relevant to the current review) perceived as important for transitions. Open-ended request for other suggested features included.  **Analysis:**  Qualitative  Mean ratings for each item presented graphically across the scale | **Key findings**: The 25 items received rating of high levels of perceived importance for successful transition, with high consistency across responders. One outlier was whether a specific primary school needs to be chosen 6 months pre-transition.  Remaining 24 features related to following areas:  - having planning meeting (pre and post transition) of parents, teachers and other professionals where a transition plan is formalised, timeline created, roles and responsibilities of team members identified, services coordinated, transition evaluated  - transition contact person identified  - child, parents, and preschool teachers visit new school and meet new primary school teacher, as well as primary school teacher visiting preschool to observe child  - daily schedule for new school developed  - materials specific to child’s needs created  - physical environment ready  *continued*… | **Author conclusions**: Provides an index of transition elements that may be useful to guide future research, and as a checklist to facilitate effective transitions. The pilot study showed validation that these items are important. Further research is needed to describe the reliability, validity and sensitivity of the interview schedule as a measurement tool.  **Reviewer’s comments**: Small survey of perceived importance of features of successful transition identified from review of literature. Students not interviewed. Many items overlapped (e.g., would be covered in planning meeting) or were vague (e.g., developing materials and physical environment) without offering more specific guidance. |

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| **Forest et al (2004)**  **[**[**23**](#_ENREF_23)**]  *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | Overall success of transition rated moderately highly (out of 6) for 3 students (parents M=4.3, preschool teachers M=5.3, primary teachers M=4,7), despite only half of the features identified as important evident in the recent transition. | **Source of funding**: Grants from the Office of Special Education Programs, US Department of Education. Authors are affiliated with academic institution. |

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| **Jindal-Snape et al (2006)**  **[**[**40**](#_ENREF_40)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Scotland, UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to examine perceptions of stakeholders about current and desired practices for effective primary-secondary school transition | **Setting/recruitment**: the psychological service of a large local authority has four quadrants, and one was selected by convenience as including 5 eligible children.  **Participant**s: 25 stakeholders relating to 5 children (all boys aged 12 years with ASD) including the following): the student (n=5), parent/carer (n=4), primary teacher (n=5), secondary teacher (n=4), psychologist (n=5), speech and language therapist (n=2). There was overlap in staff across students. | **Inclusion criteria**: children meeting statutory requirements for Special Education Needs with ASD about to make the transition from primary to secondary school, their parent/carer, and key staff from the primary and proposed secondary schools.  **Exclusion criteria**: not reported  **Assessments:** post-transitional face-to-face interviews. | **Intervention**: transition from primary school to secondary school  **Measures:** Interview schedules developed from previous research  - open and closed-ended questions about the transition including ratings on 10-point scales about the adequacy of transition arrangements, ranging from 1 (inadequate) to 10 (adequate). Follow-up questions were asked about how that point was arrived at, and what would be needed to move the rating up the scale (i.e., to make the transition arrangement more adequate).  **Analysis:**  Qualitative  Systematic content analysis to identify themes, and descriptive statistics reported where appropriate. | **Key findings**: 4/5 cases, transition arrangements were delayed or incomplete.  - the adequacy of transition arrangement rated by parents (M=2.75) & psychologists (M=3.40) were lower than primary (M=5,40) and secondary teachers (M=6.25).  Themes were identified of strategies suggested by stakeholders that would improve the adequacy of transition arrangements:  - Make placement decision early for long-term strategic planning  - professionals should work together to communicate with parents  - parents need to challenge the system more  - fill the current gap in provision arrangements  - parental permission to discuss child’s difficulties with child  - more communication between professionals (multi-agency involvement in placement decision making)  - more time for assessment during transition period  - clearer definition of professionals’ roles (e.g., outreach teacher, Speech & Language Therapist)  Other themes included:  - students found school visits very helpful  - staff development to enhance acceptance and inclusion of children with ASD | **Author conclusions**: Parental evaluations of transition arrangements were considerably lower than those of teachers. Often delays or disruption to transition programme leading to stress and anxiety of stakeholders. “It was suggested by stakeholders that this difficult situation could be avoided in future by more rational, timely, strategic and *joined up* placement decisions” (p. 29).  **Reviewer’s comments**: very small retrospective and cross-sectional case series study of all students within a small geographical region, and variety of stakeholders. Researcher-prepared survey questions. Retrospective accounts of pre-transition activities may have recall biases from school experience post transition. Not clear how long after transition the interviews took place or how many schools were involved. As data for different stakeholders were summed and compared at group level rather than individual. Relevant results relate to suggested improvements to transition arrangements which are subjective.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

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| **Stoner et al (2007)**  **[**[**14**](#_ENREF_14)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |

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| **Country**: US  **Study design**:  Case series  Longitudinal (pre- and post-transition**)** qualitative analysis  **Evidence level**: IV  **Aim:** to investigate the perspectives and concerns of parents of young children with ASD related to transitions | **Setting/recruitment**: Purposive sampling was used to identify parents via a parent support group meeting whose children with ASD attended different schools within the same school district.  **Participant**s: 8 people (4 married couples) who were parents to 4 male children with autism: 2 in preschool (aged 6) and 2 in elementary school (aged 8). One child was verbal with functional speech, one non-speaking, and two had limited single-word speech. | **Inclusion criteria**: parent is biological parent of a child with ASD, married, have a child with ASD enrolled in the public-school system at preschool or primary school level.  **Exclusion criteria**: not reported  **Assessments:** longitudinal with pre- or post-transitional face-to-face interviews; the 2nd interview being 6 months after the first, and the 3rd meeting 3 months later. | **Intervention**: transition from preschool to primary school  **Measures:** data collected through three 90-minute home-based, semi-structured, face-to-face interviews for each parent. Findings confirmed using triangulation from different members of a couple, asking respondents for feedback on concept map, and following up discrepancies in later interviews. observations (e.g., of visual chart in the home), and documentation (e.g., Individual Education Plans).  **Analysis:**  Qualitative  Two researchers used cross-case analysis of line-by-line coding to identify themes. These were represented visually using a concept map. | **Key findings**: Relevant to the current review, themes emerged of strategies necessary for successful transitions.  - child-centred transitions, ones which come from understanding the child, what works and doesn't work for that child. “What I do is very focussed on him. He is guiding me”.  - open and honest communication between home and school. Can be facilitated via a daily notebook that goes between home and school, phone calls, emails, and informal conversations whenever possible. Communication also based on a comprehensive “Child Profile” that follows the child year-to-year and includes the child’s strengths and weaknesses, likes and dislikes, and idiosyncratic features. It also is a planning tool for transitions. One parent said, “it keeps us from reinventing the wheel”.  - preparing for transitions starting with understanding the child and their reactions to transitions. Examples include using picture schedules, and introductions. Planning transitions requires acknowledging parents’ expertise, respecting their opinions, and incorporating their suggestions into school-based practices.  - identify-observe-explore strategy (identify potential difficult transition, observe the transition at a time of low stress, and explore the setting before the transition occurs)  - visual strategies (e.g., picture schedules, social story)  *continued* | **Author conclusions**: Recommended the following:  - listen to and communicate with parents with care and attention  - be consistent in transition strategies across all transitions to build trust and alleviate child’s anxiety,  - allow time to know children’s characteristics, anticipate transition issues and plan for them using the identify-observe-explore strategy  - develop, read and use a form (child’s profile) that follows the child through the school, which documents transition issues and facilitates grade changes  - recognise parents are dealing with transition issues all the time and assist them in developing plans to encourage consistency between home and school.  **Reviewer’s comments**: Children not interviewed. Not clear whether all of the 3 interviews for parents of pre-schoolers occurred before transition to primary school. As parents from a parent support group and volunteered for the study, they may be more action-oriented than parents generally.  *continued* |

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| **Stoner et al (2007)**  **[**[**14**](#_ENREF_14)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - self-queuing strategy (reminding oneself that something is going to happen when waiting)  Also explored transitions to higher classes where the identify-observe-explore strategy was used. Parents involved in selection of teachers and paraprofessionals. | **Source of funding**: Authors are affiliated with academic institution. |

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| **Denkyirah & Agbeke (2010)**  **[**[**37**](#_ENREF_37)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: US, Ghana  **Study design**:  Case series  Cross-sectional descriptive survey  Quantitative analysis  **Evidence level**: IV  **Aim:** to identify strategies that teachers of pre-schoolers with ASD in Ghana and US consider to be effective in transitioning pre-schoolers to school settings | **Setting/recruitment**: preschool teachers recruited from 8 counties in mid-Western US and south and western regions of Ghana.  **Participant**s: N=275: 65/82 (79%) preschool teachers from Ghana, 210/306 (69%) from US, all female. | **Inclusion criteria**: teachers who had taught or were teaching pre-schoolers with ASD and intellectual and developmental disabilities  **Exclusion criteria**: none reported  **Assessments:** survey, quantitative analysis | **Intervention**: transition from preschool to primary school  **Measures:** open-ended 10-item survey based on work of Forest et al (2004) of items considered important in preparing pre-schoolers with ASD for primary school. Surveys conducted at same time in both countries.  **Analysis:**  Quantitative  Descriptive statistics across 10 items compared between countries. | **Key findings**: The issues both country’s teachers considered important for transition included:  - timing and planning and preparation, including getting a transition planning team at least 6 months prior to transition  - sharing information with family, including in the family’s preferred language. Collaboration between schools and parents, outlining the process and the roles of people involved.  - discussing placement options with family. Encourage parents to visit different programmes (schools) by providing information about open days, application procedures, registration dates, parent’s orientation.  - helping family to find resources, such as family and community support (e.g., after-school programme)  - preparing the child for changes in services  - preparing receiving school and teachers. gathering information about the child, their interests and preferences,  - developing reciprocal relationships between the sending and receiving schools.  - home visits. Preschool teachers in Ghana did not find assistive technology and parent training as important strategies, which the authors argue is related to the socio-economic and cultural differences of the developing country of Ghana compared with the developed country of US. | **Author conclusions**: teachers in Ghana and US agreed on the effectiveness of most strategies. More studies should investigate the similarities and differences that exist in educational practices in developed and developing countries.  **Reviewer’s comments**: Teacher survey with reasonable response rate to identify reported important transition strategies. Survey questions informed from literature (not published tool). Basic descriptive analysis and non-specific, broad theme descriptions. No verification of whether strategies are used or associated with successful transitions. No qualitative analysis to understand why variations occurred between Ghana and US teachers.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

| **Dann (2011)**  **[**[**38**](#_ENREF_38)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Longitudinal (pre- and post-transition**)** qualitative analysis  **Evidence level**: IV  **Aim:** to explore the expectations and experiences of key stakeholders regarding transition into secondary schooling for students with Autism Spectrum Conditions (ASC) | **Setting/recruitment**: students transitioning from primary school to secondary school, either a mainstream school with (n=3) or without (n=3) a specialist provision for students with ASD. Recruitment not reported.  **Participant**s: N=30; 6 Year 6 students (5 boys, 1 girl), 6 parents, and 18 key members of staff at both primary and secondary schools (4 specialist educational needs coordinators, one inclusion coordinator, one specialist provision lead teachers, 6 class teachers and 6 support staff). | **Inclusion criteria**: met criteria for admission to mainstream secondary school with attached specialist provision for autism; that is, had a statement of need for ASC  **Exclusion criteria**: none reported  **Assessments:** pre- (final term of primary school) and post-transition interviews (following first term of secondary school). | **Intervention**: transition from primary school to secondary school  **Measures:** semi-structured interviews (based on that developed by another study) with students and parents and focus groups with key staff. “Talking mats’ used with students to provide visual structure to responses, with vignettes and questions used to ensure understanding of key concepts.  Themes identified by students (S), parents (P), or key staff (K).  **Analysis:**  Qualitative  Thematic analysis of transcribed interviews using phenomenological and inductive techniques. 10% of data re-analysed into themes with 83% inter-rater reliability. | **Key findings**: of themes relating to effective strategies for transition, 4 were identified pre-transition:  - Environment: familiarity and comfort with social (P) and physical environment and how to get around (e.g., use of maps) (S)  - Motivation & pedagogy: teachers ensuring kids are motivated, using strategies for flexible learning (P, K)  - Be prepared, proactive: planning, sharing information with staff (P, K)  - Home-school liaison: ensuring communication between school and parents (P)  and 4 themes at post-transition  - Factors supporting transition: helpful, kind staff (S), predictability of structures and routines and use of buddies (P, K), additional visits (P, K), communication with parents (P, K), individualised strategies (K)  - benefits of specialist provision: availability of a specifically assigned space for kids on the spectrum (“SCD hub”) provided familiarity and continuity (and were small) (S, P, K)  - Individuals first: students having choices over aspects of their day (S, P, K)  - Support for mainstream subject teachers: where there were no specialist provisions, important to share information between teachers and have good training (K) | **Author conclusions**: Emerging themes provided several indicators for good practice regarding the transition of this group of pupils.  **Reviewer’s comments**: Small but well conducted qualitative study triangulating perspectives from students, parents and teachers at pre- and post- transition. ASD verified. Analysis appropriate, very thorough and coding reliable.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

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| **Quintero & McIntyre (2011)**  **[**[**15**](#_ENREF_15)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: US  **Study design**:  Case series  Cross-sectional descriptive survey (teachers)  Longitudinal (pre- and post-transition (parents) quantitative and qualitative study  **Evidence level**: IV  **Aim:** to explore transition practices in preschool children with ASD and DD through transition preparation practices of teachers and families pre and post transition to primary school | **Setting/recruitment**: ASD children enrolled in special education preschool. Teachers recruited from 32 early education programme sites in mid-size city in northeast US. 75% of sites approached participated.  **Participant**s: n=138; 95 parents and 43 preschool teachers of 95 children (19 with ASD (mostly autistic disorder) and 76 with DD, 70% male, M age 4.8 years, 84% white/Caucasian) attending their final year of preschool (across 48 classrooms).  Across both groups, response rate of parents was 22% at Time 1, and of these, 45 (47%) responded at Time 2.  Teachers were mostly female, Caucasian and well educated. | **Inclusion criteria**: teachers and parents of children with an active Individualised Education Program (IEP), parent-reported diagnosis of ASD or DD, in final year of preschool, and had lived with primary caregiver for at least 1 year prior to study.  **Exclusion criteria**: parent/caregiver did not hold legal guardianship, did not hold educational rights, unable to complete measures in English.  **Assessments:** pre-transition (last term of preschool) at Time 1 for preschool teachers, and for parents, pre- and post-transition (Time 2, first term of primary school) | **Intervention**: transition from preschool to primary school  **Measures:** Teachers questionnaire asked which of 15 commonly used transition preparation practices they used with a student. Open-ended questions for teachers asked about additional or desired transitional practices.  Parents given Family Expectations and Involvement in Transition (FEIT) questionnaire that included questions about parent’s involvement in 16 suggested transition practices.  **Analysis:**  Quantitative and qualitative  Descriptive statistics compared for ASD and DD groups using Chi-squared, t-tests, and Pearson correlations.  Open-ended questions coded into themes with mean inter-rater agreement of 96.4%. | **Key findings**: ASD and DD groups same at baseline in demographic variables except children with ASD received more therapeutic services than DD group (3.2 vs 2.4, p=0.01).  - Endorsement of transition practices were broadly the same for ASD and DD groups except that preschool teachers endorsed visiting primary school classroom more for ASD children than DD children (p=0.001).  - The following transition preparation practices were endorsed as used by over a third of preschool teachers: monthly contact with parent (84%); meetings with school team (84%); attending transition planning meeting with preschool staff (100%), and primary school staff (81%); visiting primary school with student (37%), visiting assigned classroom (42%); member of transition planning team (95%); phone call with primary school teacher (42%); visiting child’s home (63%); providing written information to parents (95%); work with primary school teacher on curriculum (37%); have primary teacher visit preschool (74%); provide students (58%) and parents (79%) with primary school orientation.  - In addition, use of transition folders, and formal transition programmes.  - Desired practices included meeting with the primary school teacher, formal transition programmes, more classroom visits, and more collaboration with primary school team.  *continued*… | **Author conclusions**: findings suggest schools and families engaged in a set of standard transition practices and were primarily less intensive and individualised.  **Reviewer’s comments**: Poor response rate to study participation. Survey questions informed from literature (not published tool). Detailed description of socio-demographic characteristics suggests relatively homogenous sample. Low response rate at follow-up for parent. Results of preschool teacher’s questionnaire relate to uptake of standard, commonly used practices pre-transition. No verification of whether strategies were used or associated with successful transitions. Multi-informants used but the study did not report practices endorsed by parents pre and post transition except where they differed between ASD and DD groups. Primary school teachers not included in the study.  **Source of funding**: Grant from National Institute of Child Health and Human Development. Authors are affiliated with academic institution. |
| **Quintero & McIntyre (2011)**  **[**[**15**](#_ENREF_15)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - No details given on what transition practices parents reported had occurred pre- and post-transition, except that parents of ASD group less likely to report attending transition planning meetings (p=0.02), and less likely to report having received written communication regarding transition (p=0.003), than DD group. |  |

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| **Dillon & Underwood (2012) [**[**18**](#_ENREF_18)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (pre-transition), and  Longitudinal (pre- and post-transition) (for parents), qualitative study  **Evidence level**: IV  **Aim:** to explore the issues and concerns of parents with children with ASD when transferred from mainstream primary to mainstream secondary school sectors and identify what key factors led to a successful transfer experience. | **Setting/recruitment**: parents recruited through the National Autistic Society and a local parental support group.  **Participant**s: 15 parents of 15 children with ASD: Group 1: (pre-transition group) = 9 parents (of 1 girl, 8 boys) and Group 2 (post-transition group) = 6 parents (of one girl, five boys). All parents were white, British. | **Inclusion criteria**: parents of children with a diagnosis of ASD in full-time (at study entry) mainstream education  **Exclusion criteria**: none reported  **Assessments:** Two groups of students.  Group 1 assessed pre-transition (final term of primary school), and twice post-transition (following half way through first term of secondary school, and then following a full year of secondary schooling).  Group 2 assessed 1-year post-transition only. 5 parents dropped out in Group 1 for the 3rd assessment. | **Intervention**: transition from primary school to secondary school, and secondary school year 1 to year 2.  **Measures:** focus groups for the two groups initially, and follow-up in-depth interviews for Group 1, recorded or transcribed. Interview schedules developed from previous research.  **Analysis:**  Qualitative  Each statement assigned as positive or negative and themes identified using a grounded theory approach. Second coder coded interviews with “high” (unreported) agreement. | **Key findings**: Significant decline in the number of negative referents made by parents at follow-up compared to baseline in Group 1.  Of themes and sub-themes, the following related to effective strategies for transition:  - School approaches to transition: designation of a safe place, provision of a map of the school  - Communication between school & home: smooth and effective flow of information, not too much or too little. Frequent communication was welcomed by parents when it avoided others viewing their children as a problem” (p.116). “Parents…showed a keen awareness of what does and does not work with regard to their children” (p. 119). “The willingness of schools to develop expertise and links to the home during the transition period was seen by the parents as being crucial, because it not only provided parents with information and insights into what to expect from the school but also provided them with the opportunity to impart information about their children” (p. 119).  - Understanding of autism in the school: understanding allowed support team to find solutions to problems before they turned critical  - sensory and physical issues: creation of a sensory board, use of smooth paper for a child who had an aversion to scratchy paper.  *continued*… | **Author conclusions**: Fear of the unknown appears to be a major factor in the development of parental expectations about transition. The establishment of friendship groups and peer acceptance appeared to be the key criteria for successful transition. No one-size fits all approach.  **Reviewer’s comments**: Small but well conducted qualitative study with some repeated measures at pre- and post- transition. ASD verified. Analysis appropriate, very thorough and coding reliability reported as high.  **Source of funding**: Supported by a grant from the Bailey Thomas Charitable Foundation. Authors affiliated with academic institution. |
| **Dillon & Underwood (2012) [**[**18**](#_ENREF_18)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - Children’s coping strategies: assistance of school staff in supporting student’s coping strategies showed understanding  - Peer support: finding a peer network of friends was pivotal for transition. Sometimes this was extended from primary school, or children found similar-minded new friends. |  |

| **Hannah & Topping (2012) [**[**20**](#_ENREF_20)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Australia  **Study design**:  Case series  Longitudinal (pre- and post-transition, with follow up  Quantitative and qualitative analysis  **Evidence level**: IV  **Aim:** to examine student and parent views about the experience of transition to secondary school including feelings, expectations, and supports. | **Setting/recruitment**: purposive sampling of students with a diagnosis of ASD and attending their last year of mainstream primary school in two quadrants of the city (served by one local authority) within a large inner city in Scotland.  **Participant**s: 18 stakeholders including 9 male students with Asperger’s syndrome (AS) (M age=11 years 9 months; range=11 years 3mths to 12 years 2 months), and 9 parents. Students transitioned to either secondary communication support units (n=3) or mainstream secondary schools (n=6). Drop-out of one child and parents after pre-transition assessment. | **Inclusion criteria**: students diagnosed with ASD attending their last year of mainstream primary school  **Exclusion criteria**: not reported  **Assessments:** longitudinal with assessment at three time-points, pre-transfer questionnaire (last term of primary school about 4 months prior to transition to secondary school); post-transfer focus group in first term, 2 months after transfer to secondary school; and post-transfer individual interviews about 6-8 months after transition. | **Intervention**: transition from primary to secondary school. Transition programme to complement usual transition. 6 x 2-hour group sessions in school including activities to enhance students’ knowledge of expected behaviour at high school, understanding ASD, developing social communication, organisational and emotional regulation skills. Teachers provided resources (school maps, timetables). Parents attended information sessions. Homework activities encouraged parent-child discussions.  **Measures:** pre-transfer questionnaire: administered to children (and parents) at first session; asked about feelings and what 3 supports would most help with transition)  post-transfer group activity: groups asked what has/could have helped transition, then prioritised factors  post-transfer individual interviews: asked about expectations, experience and feelings  **Analysis:**  Quantitative and qualitative. Content analysis with mutually exclusive categories generated inductively. Inter-rater independent coding (Cohen’s Kappa: 0.73-1.0). | **Key findings**: students/parents asked what will help/has helped transition:  Pre-transition: Desired supports named by majority  - *preparation of students* (7 comments by students, 11 comments by parents) including learning about school, getting to know new teachers/system, visit school  - *support* (8 comments by parents) including safe area to go, someone he can go to if he has any problems.  Post-transition: Experienced supports named by majority  - *programme activities* (36 comments by students) including components of the transition programme, information, school maps, and timetables  - *transition information* (35 comments by parents) including knowing where he was going to school  - *transition group support* (30 comments by parents) including meeting other kids/parents in same situation  - *general school support* (18 comments by parents) including additional help  - *meeting other people with ASD* (9 comments by students)  Asked about suggested improvements of the transition programme in post-transition groups, comments by 13 students related to more *programme activities*. Students and parents also would have liked more information and school visits. | **Author conclusions**: Experience of the move was better than expected. The importance of preparatory information, transition activities and support were highlighted by all participants.  **Reviewer’s comments**: small study of eligible students (and parents) within a small geographical region. Not clear how many schools were involved but two educational contexts. Interviews were not taped as “could be unsettling”. Responses summated with only basic qualitative analysis of responses from notes, not transcriptions. Retrospective recall of supports post transition could have been hampered by the “poor recall and difficulties of imagination associated with ASD” p. 9. May have been respondent bias to identify aspects of the transition programme as being helpful post-transition. No control group to evaluate whether the transition programme increased the success of transition.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

| **Tobin et al (2012)** **[**[**24**](#_ENREF_24)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Longitudinal (pre- and post-transition**)** qualitative analysis  **Evidence level**: IV  **Aim:** to identify parents’ hopes, concerns, problems, and coping with transition of their child from primary to secondary school | **Setting/recruitment**: self-selected respondents to an advertisement on autism support agencies (including National Autistic Society). Were from wide geographical spread from North-east to south-east England.  **Participant**s: 7 parents (5 mothers, 2 fathers) of 6 children with ASD (5 boys and 1 girl, aged 10-11 years, Full Scale IQ > 70). 4/7 parents also interviewed post-transition | **Inclusion criteria**: parents of child with formal diagnosis of ASD, child transitioning from non-fee paying mainstream primary to secondary school  **Exclusion criteria**: children transitioning to specialist schools  **Assessments:** pre-transition (focus group) in holidays prior to transition, and post transition (individual telephone interview) 18 months later | **Intervention**: transition from primary school to secondary school  **Measures:** focus group (pre-transition) and semi-structured interview (post transition). Questions related to concerns; what a successful transition would look like; strategies used, planned and helpful; recommended supports, how would they know if transition was successful.  **Analysis:**  Qualitative  Thematic analysis of transcribed interviews. Validity checked through independent analysis until consensus reached. | **Key findings**: Themes relating to strategies included preparation, communication, and parental perceptions.  Preparation:  - should begin earlier, ideally in Year 5 (penultimate year of primary school).  - Transition needs to be individually tailored for each child and their needs.  - SENCO should initiate transition by meeting child before school’s general transition preparations start.  - Individual visits to school. Visual strategies including map, timetable, photos of school and teachers.  - Teachers should attend a training session on ASD.  - Child profile sheet of strengths, difficulties and strategies.  Communication:  - Regular, easy, simple communication appreciated. Good communication underpinned by understanding, preparation and acceptance of resource limitations.  Parental perceptions:  - Parents identified their role as being forceful as the only way to be heard, being a “fighter” or a “pushy parent”.  A successful transition was judged as being one related to a child’s happiness in everyday things, like “a smile on her face”, “making a friend”. | **Author conclusions**: Preparation, communication and coping skills are core to these parents’ experience of their children’s transition to mainstream secondary school. Suggested that professionals should work with schools to support parents to alleviate anxiety during this stressful time.  **Reviewer’s comments**: Small but well conducted qualitative study. Self-selected parents likely to have biased towards those encountering problems. ASD verified. Interview schedule researcher-developed. Analysis appropriate.  **Source of funding**: Not reported. |

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| **Dixon & Tanner (2013) [**[**39**](#_ENREF_39)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to identify perceptions of stakeholders regarding transition procedures | **Setting/recruitment**: Convenience sampling was used to identify two students transitioning into two academically focussed “selective” high schools, recruited by contacting the principals  **Participant**s: 8 stakeholders including 2 students with Asperger’s syndrome (AS) (aged 14-15 years), their parents (n=2), executive teachers and classroom teachers (n=4). | **Inclusion criteria**: diagnosed with AS, their caregiver, classroom teacher and executive teacher  **Exclusion criteria**: not reported  **Assessments:** post-transitional face-to-face interviews | **Intervention**: transition from primary school to secondary school, and to higher year levels  **Measures:** semi-structured interviews based on literature review related to effective transitioning  **Analysis:**  Qualitative  Line-by-line coding to identify themes qualitatively of transcribed interviews. Collaboration and consensus of two interviewers to finalise sub-categories. | **Key findings**: Relevant to the current review, strategies used, planned or suggested:  Awareness and understanding of students:  - student history passed primary to secondary  - parent provided teachers information sheet on child’s needs, also on learning support register, student file on database, condition on class roll  - information session on AS run by school involving student’s mum, speech pathologist  - patron teacher, single point of contact  - awareness of visual learning modality  - professional development sessions on ASD  - familiarity with physical environment (visits)  - secondary teacher visiting teachers and student at primary school  Transition procedures  - safe haven & model club (though not used)  - in Year 7 (first year of secondary), student stays with same class for all subjects  - learning support provide visual resources (maps, clear labelling of rooms)  Transitioning between year levels  - strategies that have worked and helped passed on in meeting to head of year  *continued*… | **Author conclusions**: Both schools experienced difficulties implementing successful ongoing strategies, linked to lack of collaboration. Close, collaborative consultation and proactive planning with all stakeholders (including the student) needs to be focus of ongoing transition physically, academically, socially, and from a home-school perspective.  **Reviewer’s comments**: Small sample, several informants ensured triangulation of data. Interviewed after transition to primary school and some reports were retrospective. Some suggestions were not successful (e.g., safe haven and model club not used). Note that schools were academically focussed.  **Source of funding**: Authors are affiliated with academic institution. |
| **Dixon & Tanner (2013) [**[**39**](#_ENREF_39)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - adjust academic content and presentation, written homework instructions over verbal  - prepare student for timetable changes  Involvement of others in transitioning  - proactive parent liaised with school informally and met with head of school, offering strategies  - learning support team  - allocated two buddies (older peers) to introduce student to playground |  |

| **Perfitt (2013) [**[**43**](#_ENREF_43)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (pre-transition)  **Evidence level**: IV  **Aim:** to investigate the impact of transitions for pupils with speech, language and communication needs to identify common stress factors and (of relevance to current review) support mechanisms | **Setting/recruitment**: A special school closure led to students needing to transition to another provision/school. Self-selected sampling.  **Participant**s: 15/33 pupils; 7 with ASD, and 8 with SLI (aged 14-15 years, 93% male, 80% white). Parents and professionals were also interviewed but no demographic details provided. | **Inclusion criteria**: attending special school, aged 11-14 years, and reported to have ASD or SLI (no details given) and with parental/carer permission  **Exclusion criteria**: not reported  **Assessments:** pre-transitional face-to-face interviews, using pictorial images as stimuli and rating methods (for children) | **Intervention**: transition from a special school to a new school  **Measures:** to overcome communication difficulties around abstract concepts, adapted version of Pictorial Measure of School Stress and Wellbeing used to elicit responses. Participants shown 10 emotionally neutral drawings of scenarios (e.g., homework, seeing bullying, being in hallway, doing independent work) at their prospective new school and given short descriptions of situation. Participants then prompted to indicate level of stress, and (as relevant to current review) what would help them feel less stressed.  **Analysis:**  Qualitative  Descriptive baseline statistics of demographics and stress levels.  No description of analysis of qualitative data. Stress levels and quotes provided for individual participants, organised by research questions. | **Key findings**: Relevant to the current review, a parent of a student with ASD suggested as a strategy to overcome stress of transition the following: “set up a safe place that my son can go to if under pressure or stressed”. | **Author conclusions**: suggested stakeholders work together to develop a transition plan that is tailored to meet the needs of the individual.  **Reviewer’s comments**: Somewhat irregular situation of a school closure precipitated the study. Small sample. Interviewed prior to transition about suggestions for reducing stress in hypothetical scenarios. Not clear how much time prior to transition the interviews were conducted. Not clear how parents or professionals were interviewed. Case series description with no qualitative synthesis into themes. Not clear for all cases described whether they had ASD or SLI.  **Source of funding**: Not reported |

| **Beamish et al (2014)** **[**[**27**](#_ENREF_27)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Australia  **Study design**:  Case series  Cross-sectional descriptive survey  Quantitative and qualitative analysis  **Evidence level**: IV  **Aim:** to identify and socially validate transition-to-school practices for Australian children with autism and their families | **Setting/recruitment**: Queensland Department of Education invited eligible people to respond (anonymously) by email.  **Participant**s: 91/123 (74% response rate) early intervention and advisory teachers | **Inclusion criteria**: teachers and administrators at early childhood developmental programmes and advisory visiting teachers for rural/remote communities employed by Queensland Department of Education  **Exclusion criteria**: not reported  **Assessments:** online survey, quantitative and qualitative analysis | **Intervention**: transition from early intervention developmental programme to primary school  **Measures:** Online researcher developed survey including 36 recommended transition practices (identified from literature review, overlap and duplication removed, wording improved for local understanding) to be rated for importance by teachers on a 1-6 scale ranging from not important to highly important. Open-ended request for other comments included.  **Analysis:**  Quantitative and qualitative  Data analysed using SPSS software.  Qualitative data from comments analysed using PASW Text Analytics for Surveys with identified themes expanded by researchers. | **Key findings**: Teachers reported having high or very high knowledge (69%) and confidence (72%) in the transition process.  - Teachers judged the effectiveness of actual transitions they had been involved in as being moderate to high (75%).  - of the 36 transition practices, all were judged as being highly important (mean score over 5.35 out of 6 for all). Practices related to the sending teacher pre-transition included:  - transition team meeting with parents, stakeholders, set timeline, team responsibilities, make transition plan  - transition coordinator identified  - primary classroom visits organised (at time of low stress)  - teacher shares information about child to primary school  - informal contact between teachers  - child’s readiness skills identified, taught  - 45% of respondents providing additional comments/concerns, illustrated in 3 prominent themes:  - transition as a distinct process,  - critical role of links with parents, and  - need to circumvent constraints. | **Author conclusions**: A strong consensus of the high importance of recommended transition practices, validated in the Australian context. With additional field testing and modification, the tool should assist individuals and teams to guide, assess and monitor actual transitions against these practices. Validated practices can be used in teaching practice and infused into tertiary training programmes and professional development activities.  **Reviewer’s comments**: cross-sectional internet survey of teacher with good response rate. Researcher-prepared survey questions based on literature and pilot testing. Actual use or success of practices not investigated.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

| **Foulder & Hughes (2014)**  **[**[**44**](#_ENREF_44)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (pre-transition)  **Evidence level**: IV  **Aim:** to investigate how children with ASD and Developmental Coordination Disorder (DSD) feel about the transition from primary to secondary school | **Setting/recruitment**: Convenience sampling of eligible children in Year 6 recruited from a mainstream school in the South West of England.  **Participant**s: 6 children with ASD and/or DSD/dyspraxia (aged 10-11 years, 5/6 male); 5 of whom had ASD. | **Inclusion criteria**: diagnosed with, or with a statement of special educational needs for, ASD or DCD, and meeting criteria for :School Action Plus” on the special needs register; i.e., pupils receiving support from external agencies for their condition.  **Exclusion criteria**: not reported  **Assessments:** pre-transitional face-to-face interviews | **Intervention**: transition from primary school to secondary school  **Measures:** face-to-face (or rather, side by side) semi-structured interviews  **Analysis:**  Qualitative  Two researchers generated initial codes and after review, generated themes and sub-themes | **Key findings**: Relevant to the current review, two themes relating to suggested strategies:  - Older mentor: 2 children with ASD suggested an older student or adult could orient them around the physical buildings and routine of the school; e.g., “Maybe someone to help but only if they were older”.  - Maps and pictures: all children explicitly mentioned maps and/or pictures being useful in terms of orientation and familiarising them with their school; e.g., “Lots of pictures would be helpful”. “Pictures and maybe a map”. | **Author conclusions**: Better teaching awareness is needed around the specific needs and anxieties that face this group of children.  **Reviewer’s comments**: Small sample. Interviewed prior to transition to primary school . Suggestions may not necessarily be offered or successful.  **Source of funding**: Authors are affiliated with academic institution. |

| **Deacy et al (2015) [**[**47**](#_ENREF_47)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Ireland  **Study design**:  Case series  Cross-sectional descriptive survey  Quantitative and qualitative analysis  **Evidence level**: IV  **Aim:** to investigate best practice in relation to the planning, process and strategies that support the transition of students with ASD from primary to post-primary school. | **Setting/recruitment**: purposive sample of graduate Special Educational Needs (SEN)/ASD teachers from a College in Sligo sent an email linking to website-based questionnaire. Responses were anonymous and from across Ireland.  **Participant**s: 30/52 (57% response rate); 63% taught at primary schools and 37% at post-primary. 90% were currently teaching students with ASD, 73% had supported children with ASD in transition from primary to post-primary. | **Inclusion criteria**: graduates of a postgraduate Certificate/Diploma in SEN (ASD) working in primary and post-primary schools in Ireland  **Exclusion criteria**: not reported  **Assessments:** cross-sectional, questionnaire survey | **Intervention**: transition from primary to secondary school  **Measures:** Online researcher developed survey about the planning, process and strategies that support the transitions of students with ASD from primary to post-primary. No further details provided of schedule.  **Analysis:**  Quantitative and qualitative  Quantitative data analysed using SPSS software.  Qualitative data from comments analysed thematically to identify patterns across the data. | **Key findings**: Strategies that support transition were reported across three themes:  Preparation:  - opinion of student should be sought  - close liaison between teachers  - pass information between teacher’s meetings, orally, through parents, and Individual Education Plans (passed between schools)  Programme of transition activities:  - transition programmes  - social stories  - visual supports (e.g., map, colour coded timetables, induction booklets)  - visiting post-primary schools  - lunch-time activities  - Buddy systems  Relationships:  - formation of transition teams  - key staff member as key contact point for student at primary and post-primary schools  - communication with parents  - accessing external agencies such as psychologists, and special needs organisers | **Author conclusions**: Identified many examples of good practice but these need to be structured in a more formal and consistent manner. The authors recommend: a framework where a 3-year transition programme commences two years before the transition; the IEP is updated for skills necessary over the transition period and transfers with the student and reviewed, updated and implemented at the new school; create a transition team including a key contact person at both schools; have a transition programme with an individualised approach based on strengths and challenges for the student.  **Reviewer’s comments**: cross-sectional internet survey of teachers with fair response rate. No details on questions used in the researcher-prepared survey or how it was developed. Actual use or success of practices not investigated.  **Source of funding**: Not reported. Authors are affiliated with tertiary educational centre for Special Education Needs |

| **Fontil & Patrakos (2015) [**[**26**](#_ENREF_26)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Canada  **Study design:**  Case series  Longitudinal (pre- and post-transition, with follow up, and qualitative analysis  **Evidence level**: IV  **Aim:** to explore the experiences and support systems of Canadian and immigrant families of children with ASDs during the transition to school. | **Setting/recruitment**: purposive sample of students transitioning from one of two preschools, or at-home day-care, to 9 elementary schools in Québec (segregated, inclusive, and integrated). Recruitment not reported.  **Participant**s: Eleven parents (8 mothers, 3 fathers) of 10 children (9 boys, 1 girl, aged 4 ½ – 7 years, 9 with autism, 1 suspected of PDD-NOS) from 5 Canadian and 5 immigrant families (from Jamaica, China, Peru, Haiti, and the Philippines). | **Inclusion criteria**: diagnosed with or suspected of having an ASD.  **Exclusion criteria**: none reported  **Assessments:** Time 1 (Summer prior to transition to school), Time 2 (post transition following 2nd term of first year at primary school); and Time 3 (following 3rd term of first year at primary school). | **Intervention**: transition from preschool to primary school  **Measures:** semi-structured interviews: face-to-face at Time 1 and 3, by telephone at Time 2. Interviews were adapted from Kindergarten Transition Interview – Preschool. 20-item Measures of Processes of Care (MPOC-20) assessed parent-reported behaviours and proficiencies of health care professionals on a 7-pt scale.  **Analysis:**  Qualitative  Thematic analysis of transcribed (and translated, where necessary) interviews (based on grounded theory approach) using the constant comparative method, a verified by 2nd researcher with consensus reached after discussion. Validation strategies included triangulating interviews with MPOC, asking families to read interviews for validity, and having variable sample (ethnicity, SES, type of setting). Immigrant and Canadian families comparted. | **Key findings**: the following positive transition strategies were used, under the following themes:  Genuine care and practical services:  - teachers genuinely cared for and supported the needs of their children, parent-teacher communication was open and positive  - primary school (receiving) teachers met with parents before transition to school  - student’s preschool coordinator visited primary school  Support systems:  - psycho-educator visited parent at home  - parent-to parent networks  Canadian and immigrant family experiences:  - suggestion to digitise the reports so its easily accessible | **Author conclusions**: A variety of resources, such as familial, educational, and community support, seemed to help some Canadian and immigrant families in different ways. Overall, the successful transition to school for all children will require collaboration from preschools, elementary schools, families, and communities.  **Reviewer’s comments**: Small but well conducted qualitative study of parents’ perspectives pre- and post- transition. Analysis appropriate, and very thorough.  **Source of funding**: Grants from Centre for Human Research and Development, the Fonds de recherche du Québec – Sánte, and the Transcultural Research and Intervention Team. Authors are affiliated with academic institution. |

| **Connolly& Gersch (2016)**  **[**[**46**](#_ENREF_46)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Ireland  **Study design:**  Case series  Cross-sectional descriptive, qualitative study (pre-transition)  **Evidence level**: IV  **Aim:** to explore the experiences of parents of children with ASD who were starting primary school | **Setting/recruitment**: Purposive sampling of parents of children with ASD who were accessing multidisciplinary therapeutic support services from publicly-funded voluntary agencies in two counties in Ireland.  **Participant**s: 6 parents (5 mums, 1 dad) of children with ASD (aged 5 years) | **Inclusion criteria**: parents of children with ASD whose children were due to start school in the following September.  **Exclusion criteria**: not reported  **Assessments:** pre-transitional face-to-face interviews | **Intervention**: transition from preschool to primary school  **Measures:** Interpretive Phenomenological Analysis (how people make meaning of major life experiences) used to elicit perceptions of parents through semi-structured interviews with individual parents or two parents in one double interview.  **Analysis:**  Qualitative  Cross-case analysis of emerging themes in transcribed interviews to identify themes. | **Key findings**: Relevant to the current review, 2 themes relating to suggested strategies were:  “I think they need to believe, believe what we're telling them”:  - role of parents as advocates, having to fight for their children’s rights and resources, or to get understanding of their children; e.g., “it’s like fighting for your rights kind of things. You have to push… and get a bit of a thick skin as much as you mightn’t be that person…it’s like a different persona you have to almost be... to fight your corner” (p. 252).  “Preparing for school and feelings about the future”:  - desire to communicate frequently with teaching staff  - looking for qualities in teaching staff of being “nice”, “kind”, and “gentle” (p. 253).  - visiting schools | **Author conclusions**: Implications: the transitions be parent-centred, and that as key informants and advocates, their intimate knowledge and views should be valued; professionals should be aware that parents can feel intimidated by them; school staff should consider meeting with parents before and after the transition to discuss concerns and strategies; a key liaison person for parents can ensure that they feel consulted and included in the transition planning process; and professionals should understand the complexity of the lives of parents of parents with children with ASD (e.g., having siblings with ASD).  **Reviewer’s comments**: Small sample of parents all receiving support services, likely to be a homogenous group. Interviewed prior to transition to primary school, but not clear how far in advance. Suggestions may not necessarily be offered or successful. Methodical process of analysis but no validation methods used. Literature review and theoretical references used to inform interviews and interpretation.  **Source of funding**: Authors are affiliated with academic institutions. |

| **Mandy et al (2016) [**[**17**](#_ENREF_17)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  A comparative study without concurrent controls: historical control study, pre- and post-transition quantitative study.  **Evidence level**: III.3  **Study Quality** (SIGN checklist): - (low quality)  **Aim:** to investigate the feasibility, acceptability and efficacy of a manualised school transition intervention, the Systemic Transition in Education Programme for Autism Spectrum Disorder (STEP-ASD), for reducing behavioural and emotional behaviours at school of children with ASD. | **Setting/recruitment**: students with a diagnosis of ASD transitioning from primary to secondary school in the mainstream, state-run educational system (in mainstream classrooms and not a specialist unit within a mainstream school) in Greater London or South-East London. Recruitment through advertisements in mental health services, publications, websites, and charities targeting parents of children with ASD.  **Participant**s: Parents and school informants of N=37 students with ASD (81% males; M age=11.5 years; mean IQ: 85.2); intervention (n=17), historical controls (n=20) who transitioned in previous 2 years (same assessments, same researchers). No two participants attended the same school. No follow-up data for 2 students.  At baseline: class teachers (n=19), learning support workers n=8), SENCOs (n=9), head teacher (n=1), parents (n=36). At follow up: SENCOs (n=21), learning support workers (n=9), class teachers (n=5), parents (n=36). | **Inclusion criteria**: students with clinical diagnosis of ASD, transitioning from state-run mainstream classrooms in primary to secondary school in 2009, 2010, or 2011  **Exclusion criteria**: diagnosed intellectual disability  **Assessments:** unblinded, comparative controlled study with outcomes measured before (in last year of primary school) and after (in second semester of secondary school) transition for an intervention group (receiving STEP-ASD in 2011) compared with an historical control group (receiving “management as usual” in 2009, or 2010). Average time between assessments was 9.9 months. | **Intervention**: transition from primary to secondary school using a low-intensity, manualised intervention: STEP-ASD. It attempts to modify school environment before, during and after transition in order to improve the fit between the student and their environment. A “bridge meeting” is held pre-transition, attended by the child, parents, professionals from both schools, and a STEP-ASD worker (graduate-level psychologists) to identify a child’s strengths, difficulties and associated strategies. The workers develop anindividualised *transition management plan* identifying strategies and assigning responsibility, for parents and allocated member of staff at both schools. A one-page *pupil profile* is distributed to all secondary school staff pre-transition. A *transitions pack* is provided with chapters relevant to strategies generated for that individual, including practical support strategies and associated resources (including visits, school maps, pictures). STEP-ASD worker has scripted calls with secondary school staff for 2 semesters to promote compliance. | **Key findings**: Feasibility and acceptability: In 12 (80%) of schools, staff implemented bridge meeting somewhat or fully; and in 12 (80%) of schools, pupil profile and transition pack were distributed to all staff in contact with transitioning child. Of 15 staff responding, 87% (n=13) used the transition pack, 93% found it helpful, and user friendly (n=14), 80% (n=12) said it improved their knowledge, and 94% (n=14) would recommend to colleagues.  Efficacy: At baseline, intervention and control groups were comparable on all clinical, educational and socio-demographic variables measured, including age, IQ, diagnosis, autistic traits, co-occurring conditions, ethnicity, special education needs, & neighbourhood deprivation. Significant group x time effect: children receiving intervention showed a large (Cohen’s d=0.88) reduction in school-reported *total problems* score on SDQ, children in the control group showed no change (d=-0.1) (p=0.01). Also, group x time effect on school-reported SDQ *hyperactivity* *subscale* (again with reduction for treatment group and not controls across transition) (p=0.029).  For parent-reported SDQ, no significant difference for *total problems*, or for any subscale except *hyperactivity* which bordered significance (p=0.05), with a moderate reduction for the treatment group (d=0.37) and a slight increase for the control group (d=-0.17). | **Author conclusions**: We provides evidence that STEP-ASD is feasible and acceptable to teachers using it. Found initial evidence that STEP-ASD as a low-intensity intervention may be effective for reducing problem behaviours and distress in children with ASD as they transition to mainstream secondary school.  **Reviewer’s comments**: Comparative study with non-randomised historical control. ASD diagnosis not independently confirmed but was an official NHS diagnosis. Not clear whether all eligible students participated, or a sample were approached. Response rate not reported for staff or parents. Retrospective recall of supports post transition, particularly given it was delayed until the second semester. Teachers were not blind to condition (whether student had received STEP-ASD programme or not) and may have under-reported symptoms. Control group is historical and there may have been unmeasured confounders (e.g., varying teachers and schools, temporal factors). |
| **Mandy et al (2016) [**[**17**](#_ENREF_17)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  | **Measures:** School-reported Strengths and Difficulties Questionnaire (SDQ) (measuring emotional and behavioural problems) [[49](#_ENREF_49)]. Parent-reported SDQ to see whether any effects at school generalised to the home environment. Post-Transition Monitoring Interview assessed acceptability and feasibility of intervention to secondary school staff.  **Analysis:**  Quantitative  Independent samples t-tests compared cross-sectional group differences. 2 x 2 mixed analyses of variance (ANOVAs) compared intervention and control groups on changes pre- and post- transition on the SDQ. Effect size measured by Cohen’s d. Reliable change index (RCI) measured reliable improvement within individuals. Intention to treat analysis. | According to the RCI of changes in scores within subjects over time on the school-reported SDQ total problems scale, 47% (n=8) of children receiving the intervention showed reliable improvement across the transition compared to 10% (n=2; p=0.033) in the control condition. | Both groups did not vary at baseline. Low power to detect small effects. SDQ has been psychometrically validated [[50](#_ENREF_50)]. STEP-ASD may have improved other unmeasured outcomes such as quality of life or academic performance. Important that feasibility and acceptability are demonstrated for an intervention that might be considered for wide spread use.  **Source of funding**: Great Ormond Street Hospital Special Trustees. Authors are affiliated with academic institution. |

| **Neal & Frederickson (2016) [**[**41**](#_ENREF_41)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to explore how children who have transitioned successfully experience transition and what strategies they identify as helping to manage their anxiety across this period. | **Setting/recruitment**: Criterion sampling of participants of 5/9 school approached, recruited through each participating school, until saturation of coding within the dataset was met.  **Participant**s: 6 children (5 boys, 1 girl) with ASD, all white British children who spoke English as a first language and with cognitive ability in the normal range. | **Inclusion criteria**: children with a diagnosis of ASD, in Year 7, considered by their teachers to have made a successful transition.  **Exclusion criteria**: not reported  **Assessments:** post-transitional face-to-face interviews between March and June of Year 7 (with year commencing in September). | **Intervention**: transition from primary school to secondary school  **Measures:** semi-structured interviews with visual aids used for emotions. Screen for Child Anxiety Related Emotional Disorders, and Strengths and Difficulties Questionnaire, are given as validity check that students had transitioned successfully.  **Analysis:**  Qualitative  Cross-case analysis of emerging themes using an inductive approach from transcribed interviews, validated by peer scrutiny from post-graduate student as well as 10% of transcripts re-checked for accuracy. | **Key findings**: Relevant to the current review, themes relating to suggested strategies were:  “Facilitators”:  - visiting the secondary school. Meeting the teachers, sparking excitement and recognising positive aspects of the move  - primary school teachers adapted the school environment to reflect changes to secondary school, such as setting harder work.  - providing primary students with practical information through class discussions, such as what lessons are taught, how much homework is set, focusing on the positive aspects.  - secondary school teachers visiting the primary school and providing practical advice and information, including written advice  - family and friends providing support; e.g., “every day my dad text me saying ‘*have a really nice day, love you*’ and it really like gets me ready for the day”.  “Individualised support”:  - need for personalised support, tailored to meet individual’s needs | **Author conclusions**: suggest disseminating transition strategies and reframe staff expectations for transition to encourage a more positive narrative. Also recommend strategies that involve children’s contributions to individualised transition plans.  **Reviewer’s comments**: Small sample, identified as having had a successful transition and therefore a subset of the population, with lack of ethnic diversity. Interviewed some months after transition to secondary school, but not clear how far, and possibility of lack of recall. Methodical process of analysis with triangulation with quantitative scale data. Literature review and theoretical references used to inform interviews and interpretation.  **Source of funding**: Nuffield Foundation. Authors are affiliated with academic institutions. |

| **Peters & Brooks (2016) [**[**42**](#_ENREF_42)**]** | | | | | |
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| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: UK  **Study design**:  Case series  Cross-sectional descriptive, quantitative and qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to explore experiences of the transition to secondary school for students with Asperger’s Syndrome (AS) or High Functioning Autism (HFA) | **Setting/recruitment**: Purposeful sampling through gate-keeper organisations. Parents recruited through publicity by 8 of 37 support groups/organisations within National Autistic Society’s service directory.  **Participant**s: 17 parents of 14 boys and 3 girls (all Caucasian). | **Inclusion criteria**: parents or guardians of students with a diagnosis of AS or HFA currently in Year 7 or 8 at a mainstream school in the UK  **Exclusion criteria**: incomplete response to questionnaire  **Assessments:** post-transitional online pilot survey | **Intervention**: transition from primary school to secondary school  **Measures:** Online researcher developed questionnaire, completed by parents. Included open and closed-ended questions about the transition, and other aspects of school experience  **Analysis:**  Quantitative and qualitative  Correlations of quantitative measures.  Simple pattern-based analysis of brief open-ended responses (thematic analysis not undertaken) | **Key findings**: - structural planning (meetings, organised visits) occurred for 76% of students.  - Transition rated on Likert scale 1 (extremely easy) to 5 (extremely difficult); average=2.75.  - parents of 5 students whose transition was rated extremely easy/easy also reported that they received supplementary pre-transitional visits in Year 6 and support once commencing  - parents of 4 students whose transition was rated as being extremely difficult reported they received minimal transitional support and had additional stressors (bullying, severe anxiety).  Prevalent responses indicated the following useful (suggested or experienced) strategies:  - “switching off” through music/playing a game  - using special needs/designated break room  - additional visits during Year 6  - teacher training in ASD  - emphasis on uniqueness of students  - transition planning meetings | **Author conclusions**: Positive transitional ratings were associated with receiving pre-transitional support. Stressors at school combined with poor transition preparation were associated with very difficult transitions.  **Reviewer’s comments**: Small retrospective and cross-sectional internet survey with low response rate. ASD not verified. Researcher-prepared survey questions (not published tool). Retrospective and unvalidated accounts of transition may be biased by school experience and may not reflect student’s own experience. Analysis very basic.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |

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| **Starr et al (2016) [**[**16**](#_ENREF_16)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Canada  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to explore the transition to primary school experience for ethnically diverse families of children with ASD | **Setting/recruitment**: Convenience sampling was used to recruit parents, and teachers/providers in three medium-sized cities in Ontario. Parents recruited through an early intervention programme, promotion via autism treatment and services agencies, a mosque, and “snowballing” technique. Primary school teachers were recruited via an email sent to all first-year public school primary school teachers in one city. Other stakeholders recruited through personal contacts with the researcher.  **Participant**s: 36 stakeholders in 6 focus groups; including 3 groups of parents (n=12) (one English speaking, one Arabic speaking, and one Mandarin speaking), and one group each of primary school teachers (n=6), early childhood resource teachers (n=16), and early intervention providers (n=2). Children of 2 families in the Arabic speaking group were older (M age=12 years) and had transitioned some years earlier. | **Inclusion criteria**: Parents of child reported to have ASD who had transitioned into primary school within last 2 years (with exception of 3 Arabic parents); primary school teachers who have taught ethnically diverse children with ASD in their classes;  **Exclusion criteria**: not reported  **Assessments:** post-transitional (for parents) focus groups | **Intervention**: transition from preschool to primary school  **Measures:** focus groups using 12 questions. Mandarin and Arabic speaking groups led in those languages by researchers fluent in them.  **Analysis:**  Qualitative  Line-by-line “open coding”, codes subsumed in broader themes (“axial coding”) and then overarching themes identified (selective coding) qualitatively from transcribed interviews. Coding reviewed independently and finalised by consensus of 2-3 researchers. | **Key findings**: Relevant to the current review, strategies used or suggested under 4 themes:  Relationship building  - Building of trust/rapport of teachers & parents  - parents and teachers meet informally prior to multi-disciplinary conference of transition team  - receiving teachers meeting child pre transition  - relationship between sending and receiving preschools/schools, with primary teacher observing child functioning in preschool before transitioning, visiting home  - principal important for effective collaboration  Communication:  - persistent advocacy from parents to ensure child’s needs are met and resources provided.; can be adversarial and “a bit of a battle”.  - extensive daily communication between parent and teacher, using more colloquial language, openness of teachers to suggestions  Knowledge  - Teacher specific knowledge needs  - Parent specific knowledge needs; e.g., external workshops offered by external organisations or early intervention providers; meeting with parents, principal and special education teacher; binder of information  *continued*… | **Author conclusions**: Based on findings the authors made recommendations that: needs for consistent and comprehensive transition plan; primary school teachers need early notice of transitioning child, and time and money to attend relevant meetings, observe child in preschool, meet preschool staff, and meet child and parents at their home; pre-service and in-service training about ASD; and more awareness of and sensitivity toward world cultures, different interaction and parenting styles, and ASD beliefs.  **Reviewer’s comments**: Small convenience or volunteer sample; range of informants ensured triangulation of data; difficulty recruiting non-English speaking parents; reliable qualitative analysis processes.  **Source of funding**: Funded University of Windsor Humanities and Social Science Research Grant, and by the University of Windsor Faculty of Education Faculty Development Grant. Authors are affiliated with academic institution. |
| **Starr et al (2016) [**[**16**](#_ENREF_16)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | Support:  - Formal supports (e.g., early intervention providers, preschool teachers as point of contact throughout transition)  - Informal supports (e.g., community organisations for parents, especially non-English speakers; social support network among parents)  - Teacher supports (e.g., educational assistants)  - Communication from administration to teachers about incoming students with ASD  - Educational supports (e.g., visual schedules, pictures, choice boards) |  |

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| **Strnadová et al (2016) [**[**45**](#_ENREF_45)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Australia  **Study design**:  Case series  Cross-sectional descriptive, qualitative study (post-transition)  **Evidence level**: IV  **Aim:** to explore the experiences of parents and teachers of the transitions of students with ASD/ID attending special schools | **Setting/recruitment**: Purposive sampling of parents and teachers of children with ASD who were attending four special government schools in New South Wales (including primary through secondary years within each school). Four schools were randomly sampled in Sydney and invited to participate.  **Participant**s: 13 teachers, and 14 carers (11 mothers, one father, 2 grandmothers) of 14 students with ID, 7 of whom also had ASD (5 females, 9 males; M age 14 years, ranging 9-18, 2 also had cerebral palsy) | **Inclusion criteria**: parents and teachers of children with ID/ASD who have transitioned or will transition to or within the school or out of the school.  **Exclusion criteria**: not reported  **Assessments:** post-transitional face-to-face interviews | **Intervention**: transition from primary to secondary school (transitions to post-secondary school also explored but not reported on here)  **Measures:** semi-structured interviews based on a critical review of the literature.  **Analysis:**  Qualitative  Content analysis of emerging themes in transcribed interviews based on memos, codes, frequency of occurrences, and quotes. Coding of 2 interviews done by 2 authors and discussed, the rest coded by one interviewer who developed the themes. These were reviewed by another author for reliability and then all were re-examined and confirmed by other 2 authors to ensure triangulation and peer checking. | **Key findings**: This paper was part of a larger study and only one theme relating to transitions is reported here, excluding those related to post-secondary options. Most transitions within the school were said to be smooth and “seamless” because the child stayed at one school for primary and secondary years.  For a student on the autism spectrum who transitioned to the school from another mainstream school, the parent suggested that collaboration between primary and secondary school teachers was important.  *“So, what I try to do is get kids into that change of routine: meeting lots more people, putting checklists in place (so) they can then self-regulate to the best of their ability, so — I haven’t got any on me at the moment, but I use it now, where we have our visual timetable. They know that they have to, you know, catch up on work if they haven’t completed it in a high school setting, there’s an expectation. How can they manage that in their diaries? How do you actually use a diary?”*  Teachers identified a number of ways in which they could make transitions from primary to secondary school easier for students and their parents:  - supporting students transitioning to a special school in getting used to a new environment  - organizing orientation days for parents  - informing parents about their child’s transition progress  *continued*… | **Author conclusions**: The processes that are implemented to support students with ASD/ID require closer scrutiny, as there were inconsistencies between schools, and parents and teachers suggested ways to strength processes.  **Reviewer’s comments**: Select, small sample of students attending “K-12” special schools, such that there is no transition from one school to another, but rather from junior to senior classes. Not clear what response rate of parents and teachers was. Note that sample included children with ID, only half of whom also had ASD diagnoses. Not reported what year levels the teachers taught. Some validation of analysis provided by peer review. Only one theme described in the review and so synthesis is essentially narrative with one sentence describing the common transition strategies that teachers use in fairly broad and nonspecific terms.  **Source of funding**: UNSW School of Education research funding. Authors are affiliated with academic institutions. |
| **Strnadová et al (2016) [**[**45**](#_ENREF_45)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - preparing students for a change in routine  - teaching them skills to manage such a change. |  |

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| **Makin et al (2017) [**[**28**](#_ENREF_28)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Australia  **Study design**:  Case series  Longitudinal (pre- and post-transition), quantitative and qualitative analysis  **Evidence level**: IV  **Aim:** to examine the factors that influence a successful school transition from primary to secondary school for autistic children | **Setting/recruitment**: students transitioning from mainstream primary schools to (mainstream and specialist provision) secondary schools in one local education authority in England. Recruitment through purposive sampling to invite all eligible students in the local authority and invite them and their parents to take part.  **Participant**s: 15 Year 6 students (13 boys, 2 girls; aged 10-11 years, cognitively able with full scale IQ**≥**70 or over); 16 parents (including both parents of one student); 13 primary school teachers; and 5 secondary school teachers. | **Inclusion criteria**: attending their final year at a state-funded mainstream primary school, be of year 6 schooling age, have received a clinical diagnosis or ASD, and have received a Statement of Special Educational Need.  **Exclusion criteria**: none reported  **Assessments:** pre- (final term of primary school) and post-transition (during first term of secondary school, 4 months post initial interview) interviews with children, parents, and teachers. | **Intervention**: transition from primary school to secondary school  **Measures:** face-to-face semi-structured interviews pre and post transition. Pre-transition, assessed children’s general cognitive ability (WASI), autistic symptomatology (SRS), sensory responsiveness (SP) and trait anxiety (SCAS-P). Post-transition success was assessed by a standardised index with a continuous variable completed by parents and students post-transition. Visual support used for interviews with children (emotion cards and mind maps).  **Analysis:**  Quantitative and qualitative  Quantitative analyses determined whether pre-transition child characteristics predicted scores on an index of post-transition success.  Qualitative thematic analysis of transcribed interviews using inductive approach, with three authors independently coding and resolving discrepancies through discussion. | **Key findings**: No significant associations between successful transition and children’s pre-transition scores on intelligence (WASI-verbal scale), trait anxiety (SCAS-P), autistic symptomatology (SRS), and sensory responsiveness (SP). Also, no differences between transition success in those who went to mainstream versus specialist provision schools.  Supportive systems and structures:  - several visits to new school prior to transition with student, and primary teacher  - importance of child involvement in decision making  - diaries, timetables and planners  - including a safe space in school, where they can cope when stressed and calm themselves  - student buddies and teachers to help them navigate their new school  - timetabled activities at lunchtime  - trusting relationships with key adults and peers  - greater liaison between the two school phases, open communication between all parties as early as possible  - sharing of information with primary schools  - regular contact in Term 1 with a familiar and dependable monitor  - social skills groups  *continued*… | **Author conclusions**: Identified mainly negative experiences of primary-to-secondary transition. None of the child-level factors predicted transition success four months later. Applying interventions that are designed to ease the transition to secondary school by modifying the school environment before, during and after transition to improve the fit between the autistic child and their educational environment should go some way in tackling school-related barriers to a successful transition for these children.  **Reviewer’s comments**: Small study triangulating perspectives from students, parents and teachers at pre- and post- transition. Participation rate not reported. ASD verified. Very few secondary school teachers participated. Pre-transition child factors not repeated post transition.  **Source of funding**: Not reported. Authors are affiliated with academic institution. |
| **Makin et al (2017) [**[**28**](#_ENREF_28)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - making adjustments to account for children’s sensory differences (e.g., wearing a uniform, allowing headphones in class, extra time to get to the next lesson)  - the need to consider the child’s holistic needs, including their happiness and independence.  - training lunchtime staff; staff with a good understanding of autism and previous experience of working with autistic children was essential  - get to know children before they transitioned, careful observations during visits; “*We can keep a good eye on them as they are going around (on school visits) and get to know more about them*” (teacher). |  |

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| **Tso et al (2017) [**[**21**](#_ENREF_21)**]** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
| **Country**: Australia  **Study design**:  Case series  Longitudinal (pre- and post-transition**)** qualitative analysis  **Evidence level**: IV  **Aim:** to explore the experiences of parents of the transitions of students from primary to secondary mainstream schools | **Setting/recruitment**: Purposive sampling of parents of children with ASD who were attending four mainstream government schools in New South Wales. Classrooms included mainstream (4), support (3) and mainstream with support (5). All metropolitan schools in Sydney were invited, four schools participated and parents of children meeting criteria were invited to participate.  **Participant**s: 15 parents/carers of 12 students with ASD (12 males, 1 female; M age 16 years, ranging 14-17) | **Inclusion criteria**: parents/carers of children with ASD who are currently enrolled in Year 9 or above at a NSW government high school  **Exclusion criteria**: not reported  **Assessments:** cross-sectional, post-transitional face-to-face interviews | **Intervention**: transition from primary to secondary school  **Measures:** semi-structured interviews based on a critical review of the literature.  **Analysis:**  Qualitative  Inductive content analysis of emerging themes in transcribed interviews. Coded by one interviewer with codes compared and contrasted and themes developed through consensus of 2 authors to develop themes and subthemes. | **Key findings**: This paper was part of a larger study and only one theme is reported here, on educational provision for students with ASD, and its sub-themes of transitions, and home-school collaboration, which are relevant to the current review. Strategies are reported where experienced and recommended or suggested.  Transitions:  - private and extended visits to school (more than the class orientation visit) including tour of facilities and meeting with teachers. An exceptional example was for a child who met all their teachers, sat in on classes, and had the same seat assigned in every room to provide continuity.  - transition planning meetings including primary and secondary school stakeholders  - support from primary school staff, teacher’s aides, advocacy and non-profit external agencies involving the child in discussions, arranging paperwork, and organising transport.  - early commencement of transition planning, including checking on supports available, and response of school to children with ASD  - parents communicating openly to school  - encouraging child to ask questions, parent explaining what school is like, arranging a meeting with the school counsellor  *continued*… | **Author conclusions**: It is recommended that parents’ knowledge of their children with ASD should be prioritised and utilised in transition planning. Findings also suggest that a greater implementation of practices including mandated transition planning and home–school collaboration in schools would contribute to more authentic inclusion of students with ASD.  **Reviewer’s comments**: Small sample of 15 parents. Not clear what response rate was. Not clear why students of Year 9 and above included which meant that there were some years since transition from primary school. Relied on retrospective recall which could introduce biases. Some validation of analysis provided by peer review.  **Source of funding**: UNSW School of Education research funding. Authors are affiliated with academic institutions. |
| **Tso et al (2017) [**[**21**](#_ENREF_21)**] *continued*** | | | | | |
| Country, study type, evidence | Participants | Inclusion and exclusion criteria | Intervention, comparison and outcome measures | Results | Conclusions |
|  |  |  |  | - involving the child in transition planning and developing their self-determination skills.  - teachers meet with parents in planning for transition  - student-centred practices including that teachers learn about transitioning child, listen to them, and become aware of how challenging it was for them to experience changes.  Home-school collaboration:  - teachers and schools keeping parents informed and initiating discussions to problem solve, listen to concerns of parents and their requests for additional support  - civilised discussion without (parents) needing to “get tough”  - parents allowed to participate decision-making, work on strategies that could be carried across to the home environment (e.g., routines and rewards systems).  - collaboration wanted beyond talking about homework and difficulties |  |

**Key:** AS=Asperger’s syndrome; ASC=Autism Spectrum Conditions; ASD=Autism Spectrum Disorder; DD=developmental disabilities; DSM-IV=Diagnostic and Statistical Manual of Mental Disorders, 4th edition; DSD=Developmental Coordination Disorder; DSM-5=Diagnostic and Statistical Manual of Mental Disorders, 5th edition; HFA=High Functioning Autism; IEP=Individualised Education Program; IQ=intelligence quotient; PDD-NOS=pervasive developmental disorder – not otherwise specified; SCAS-P=Spence Child Anxiety Scale for Parents); SCDC=Social Communication Disorders Checklist; SDQ=Strengths and Difficulties Questionnaire; SEN=Special Educational Needs; SENCO=Special educational needs coordinator; SIGN=Scottish Intercollegiate Guidelines Network; SLI=Specific Language Impairment; SP=Sensory Profile; SRS=Social Responsiveness Scale; UK=United Kingdom; US=United States of America, WASI=Weschler Abbreviated Scale of Intelligence

Table A3.2: Evidence Tables of included secondary studies

| **National Institute for Health and Clinical Excellence (2013) [**[**34**](#_ENREF_34)**]** | | | | |
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| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
| **Country**: UK  **Study type**: systematic review/guideline  **Evidence level**: IV (with respect to studies included relevant to current review)  **Study Quality** (SIGN checklist): ++ (high quality)  **Review scope**: as part of a larger review on management and support of children and young people on the autism spectrum.  **Aim**: within a broader review, research questions relevant to the current review were:  RQ2.1 What information and day-to-day *support is effective* in supporting children and young people with autism and their families and carers in (lists a number of time periods, including) at key transitions (for example, school transitions and transition to adult services).  RQ2.2 What information and day-to-day *support do children and young people with autism and their families and carers want* (lists a number of time periods, including) at key transitions (for example, school transitions and transition to adult services). | **Databases**: 13 databases were searched including Medline, Embase, Cinahl, PsycINFO, ERIC, Sociological Abstracts, and Cochrane Library.  **Search terms**: Search terms provided, searched from beginning of the database until January 2013. Supplemented by citation searching, hand-reference searching of key Journals and websites.  **Selection criteria**: children and young people from birth to 18 years; systematic reviews, qualitative studies and surveys. Excluded studies: not published in English, books, dissertation abstracts, trade magazines, policy and guidance, and non-empirical research, case studies, experiences of autism with no explicit implications for management, planning and/or delivery of care, autobiographical accounts; and qualitative measures of perceived intervention effectiveness where a quantitative approach would have been more appropriate. | **Method:** Thorough details provided for data extraction, appraisal, and checklists. Where possible two independent reviewers extracted data.  A thematic analysis of qualitative and quantitative data reported in the primary studies and identified themes relevant to the experience of care.  Qualitative studies were appraised using a matrix of service user experience, with emergent themed coded by two researchers working independently. Conclusions of qualitative analysis validated with an expert advisory group of children and young people on the autism spectrum.  GRADE was used to summarise quality of evidence. In the absence of high-quality research, a narrative review relevant to the question was considered in a process of informal consensus by the Guideline Development Group (GDG).  Within the matrix, “continuity of care and smooth transitions” was the dimension relevant to the current review reported here where it applied to educational settings and excluded transition to adulthood/beyond secondary school. | **Included**: No study explicitly assessing the effectiveness of transition programmes was included in the review. However, descriptive observational studies identified important strategies. These included:  - pre-visits and orientation opportunities  - sharing information between old and new teachers, including a parent-teacher record of child’s strengths and weaknesses to be shared with receiving teacher  - direct skill development  - decreasing amount of support students received in primary school pre-transition, focus on activities that required peer interaction  - formal transition planning and written plan  One conclusion (based on more than just the evidence related to educational transitions) was that children and young people with autism should have access to a keyworker approach in order to manage and coordinate treatment, care and support, including the management of transitions, for the child or young person with autism and their family and carers. Summary of findings from the expert advisory group:  *continued*…. | **Author conclusions**: Developed two new clinical practice recommendations of relevance:  11.1.1.8 Health and social care professionals working with children and young people with autism in any setting should receive training in autism awareness and skills in managing autism, which should include: (among others listed) the importance of key transition points, such as changing schools or health or social care services.  11.1.1.12 Make arrangements to support children and young people with autism and their family and carers during times of increased need, including major life changes such as puberty, starting or changing schools, or the birth of a sibling.  **Reviewer’s comments**: gold standard search and appraisal methodology  **Source of funding**: Commissioned by NICE, published by the British Psychological Society and the Royal College of Psychiatrists. Independent of government.  **Included studies also in current review:**  [[14](#_ENREF_14), [18](#_ENREF_18), [38](#_ENREF_38), [40](#_ENREF_40)] |

| **National Institute for Health and Clinical Excellence (2013) [**[**34**](#_ENREF_34)**] *continued*** | | | | |
| --- | --- | --- | --- | --- |
| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
|  |  |  | - Children and young people with autism should have access to a keyworker approach in order to manage and coordinate treatment, care and support, including the management of transitions, for the child or young person with autism and their family and carer.- Some of the young people had professionals they called key workers who worked within their schools and were often the named individual with whom they would discuss their problems. |  |

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| **Marsh et al (2017) [**[**36**](#_ENREF_36)**]** | | | | |
| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
| **Country**: Australia  **Study type**: systematic review  **Evidence level**: IV (with respect to studies included relevant to current review)  **Study Quality** (SIGN checklist): + (acceptable quality)  **Aim**: To identify factors that promote a positive start to school for children with autism spectrum disorder (ASD). Specifically, aims to examine: (1) school readiness, (2) parent and teacher perspectives on transition practices (most relevant to current review), (3) characteristics of children with ASD that are associated with successful transition to school, and (4) the impact of school based intervention programs. | **Databases**: Web of Science, MEDLINE, Scopus, and PsychINFO.  **Search terms**: Searched from 1994 to 2013. Transparent selection criteria used. Broad range of keywords used. Database searches supplemented by searching of websites, ancestral searching of reference lists, and reverse citations of included studies. Included PhD dissertations.  **Selection criteria**: studies included were those that: considered children with autism aged 3-8 years; survey and interviews of parent and teacher views of school transition or school readiness; monitored functioning and adjustment in the first year of school; and school-based intervention studies in first year of school targeting school readiness or transition.  Excluded were: single-subject studies, sample sizes <5, non-English language publications. | **Method:**  Two researchers independently assessed full text for eligibility, resolving disagreements through discussion and consensus. Used data extraction form to report study characteristics. | **Included**: 1575 publications identified, 137 reviewed as full text, 20 studies met criteria for inclusion., 4 of these were directly relevant and also included in the current review.  From these, the authors listed the following fairly consistent practices for school transition as identified by parents and teachers:  - transition team established;  - parent involvement in planning;  - child and parent visit to  school;  - visit support;  - placement identification;  - parent communication and information;  - teacher sharing between preschool and kindergarten teacher;  - child preparation (e.g., social stories);  - decision support;  - support identification;  - transition administrator to supervise and evaluate the transition;  - peer, classroom and school preparation.  *continued*… | **Author conclusions**: Recommended that structured and individualised transition plans be developed and implemented in preschool and continue through the first year of primary school. Better adjustment of families to the new school environment requires more structured processes, and more communication between schools, teachers and parents.  **Reviewer’s comments**: Search strategy included a small number of databases using explicit criteria, with eligibility determined independently by two researchers. No mention of methodological checklists sued for appraisal. Aspects of the topic were somewhat peripheral to the current review.  **Source of funding**: Cooperative Research Centre for Living with Autism (Autism CRC), and the Commonwealth Department of Social Services.  **Included studies also in current review:**  [[15](#_ENREF_15), [26](#_ENREF_26), [27](#_ENREF_27), [37](#_ENREF_37)] |
| **Marsh et al (2017) [**[**36**](#_ENREF_36)**] *continued*** | | | | |
| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
|  |  |  | Transition practices were generic and rarely individualised to each child’s needs [[15](#_ENREF_15)].  Not eligible for the current review but of background interest, the review suggested:  - that children with ASD are less school ready emotionally than their peers.  - that children with ASD appear to have poorer relationships with their teachers, more externalising behaviours and self-regulation difficulties, and difficulty being actively engaged in the classroom.  - that individual child characteristics may present as risk factors for poorer transition to school. Repetitive and restricted behaviours, social anxiety, less effortful control, poor social skills, and dislike of school appear to be associated with greater difficulty settling and engaging in school.  - that school-based behavioural interventions appear to improve cognitive, language and daily living skills, but have less impact on socialisation and peer inclusion. |  |

| **Nuske et al (2018) [**[**35**](#_ENREF_35)**]** | | | | |
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| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
| **Country**: US  **Study type**: systematic review  **Evidence level**: III.3 (with respect to studies included relevant to current review)  **Study Quality** (SIGN checklist): + (acceptable quality)  **Aim**: To describe transition difficulties team members of children with ASD face and (relevant to the current review) strategies currently available to support better transitions. | **Databases**: PsychINFO, ERIC  **Search terms**: Search dates not given. Transparent selection criteria used. Broad range of keywords used. Authors were contacted for information where not provided.  **Selection criteria**: studies included: studies of strategies for successful student school transition (transition to primary or middle/high school) or quality of school transition; students diagnosed with or at high risk of ASD; article in a peer reviewed journal (i.e., no theses, book chapters, or general reports); article written in English.  Strategies for successful transition operationalised as those that were (broadly) used, useful, recommended, or wanted.  Excluded were: studies on transition from school to work or college; student age group>18 years | **Method:**  Two researchers independently assessed full text for eligibility (with high inter-rater reliability; Cronbach’s α=0.92), resolving disagreements through discussion and consensus.  Information about difficulties and strategies were extracted by two coders independently coding two articles to establish inter-rated agreement (>80%), and then coding the remaining articles by consensus. The constant comparison method was used to identify themes and sub-themes. Results were reported separately for difficulties and strategies relevant to children/students, parents, and school staff, and Tables included the point given with respect to transition, and evidence rating.  Level of evidence [[51](#_ENREF_51)] was independently rated by two authors for articles on transition strategies; Inter-rater reliability was acceptable; α=0.82. These were synthesised for each specific strategy identified in tables. | **Included**: 154 reviewed as full text, 27 studies met inclusion criteria, 20 relevant to strategies. One controlled study, 26 observational studies. Studies ranged from 2+ (well conducted case-control study) to 3 (non-analytic study, case series). Themes relating to transition strategies, were graded C or D [[51](#_ENREF_51)].  For students  *- Planning* (visit school, child-centred planning)  *- Visual supports* (school map, photos, checklists, schedules)  *- Social supports* (peer buddies, safe person/place, recess structure, trusting staff relationships)  *- Self regulation* (coping strategies, emotion thermometer)  For parents  *- Information* (transition workshops, meeting with key school staff, transition binder)  *- Communication with school staff* (informal first contact with receiving teacher)  *- Support* (community organisations, parent networks)  *- Advocacy* (ensuring student’s needs met)  For school staff  *- Communication* (team transition planning meeting, student key information page, sharing student information between schools, transition facilitator identified, frequent, open and caring communication with parent, everyday language with parents)  *- Planning* (identify-observe-explore strategy, home visits, student-centred planning, increasing demands pre-transition, digital reports)  *- Training/knowledge* (training on ASD)  *- Placement* (pairing of faculty, continuity of class grouping)  *- Preparing accommodations* (sensory adaptions)  *continued*… | **Author conclusions**: Strategies that adjust the student to the new setting, starting before and continuing throughout the transition, that individualize transition supports, that clarify the transition process for parents, and that foster communication among the sending and receiving schools and school and home, may be particularly useful. There is a pressing need for community-based, rigorously tested interventions to examine the effectiveness of different school transition strategies to ensure the success of students with ASD.  **Reviewer’s comments**: Search strategy included only two databases using explicit criteria with no additional search methods used. Eligibility determined independently by two researchers with high inter-rater reliability. Most coding done by 2 researchers through consensus. The level of evidence was low for all studies and therefore particular strategies were graded C or D.  **Source of funding**: UA3 MC11055 HRSA |

| **Nuske et al (2018) [**[**35**](#_ENREF_35)**] *continued*** | | | | |
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| Country, study type | Search strategy | Appraisal methods | Results | Conclusions |
|  |  |  | Themes relating to transition difficulties were not specifically eligible for the current review but are summarised here as providing background. Themes for transition difficulties (most relating to secondary school students) related to:  - *student characteristics* (anxiety; sensory, behavioural and adaptive functioning; academics, social fear)  - *student interactivity and disorientation* (social pressure; bullying; disorientation; peer relations and social skills; communication; and changes in building locations, physical configurations and everyday routines, including locating buildings and materials, lockers, new and multiple teachers, physical education classes, and transportation challenges).  - *parent characteristics* (stress, cultural and language factors)  *- family resources* (feeling powerless, family impact, familiarity with clinical language)  - *parent interactivity* (picking their battles, advocacy, placement choice)  - *school characteristics* (school location)  *- school/staff resources* (knowledge of ASD)  *- school/staff interactivity* (school-home collaboration and staff engagement during transition) | **Included studies also in current review:**  [[14-16](#_ENREF_14), [21](#_ENREF_21), [23](#_ENREF_23), [24](#_ENREF_24), [26-28](#_ENREF_26), [37](#_ENREF_37), [39](#_ENREF_39), [41-47](#_ENREF_41), [54](#_ENREF_54)] |

**Key:** AS=Asperger’s syndrome; ASD=autism spectrum disorder; CINAHL=Cumulative Index to Nursing and Allied Health Literature; Embase=Excepta Medica Database; GRADE=Grading of Recommendations: Assessment, Development and Evaluation; HFA=High Functioning Autism; Medline=Medical Literature Analysis and Retrieval System Online; MA=meta-analysis; PsycINFO=Psychology Information Database; RCT=Randomised Controlled Trial; SIGN=Scottish Intercollegiate Guidelines Network; UK=United Kingdom; US=United States of America

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\*Asterixed references indicate articles appraised in the systematic review

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1. Where 50% of the supervising adults must be qualified and registered as Early Childhood Education teachers [↑](#footnote-ref-1)
2. In New Zealand, unlike the United States, the term kindergarten is used to refer to state-funded, pre-school early childhood education services that are teacher-led. [↑](#footnote-ref-2)
3. This may be extended to 21 years for some students with special needs. [↑](#footnote-ref-3)
4. Note that whilst Rett Syndrome was considered a PDD subtype under the DSM-IV, in DSM-5 Rett Syndrome is considered a separate diagnosis to ASD. [↑](#footnote-ref-4)
5. In this report, references to the transition to secondary school usually refers to the transition to a separate, often larger, more senior school beyond primary school. In New Zealand, this transition applies to movement to intermediate/middle schools (Years 7 and 8), contributing secondary/high schools (Years 7-13), and secondary/high schools (Years 9-13). [↑](#footnote-ref-5)
6. Teacher-led is defined as where at least 50% of supervising adults are qualified and registered teachers. [↑](#footnote-ref-6)
7. In New Zealand, unlike the United States, the term kindergarten is used to refer to state-funded, pre-school early childhood education services that are teacher-led. [↑](#footnote-ref-7)
8. In New Zealand, unlike the United States, the term kindergarten is used to refer to state-funded, pre-school early childhood education services that are teacher-led. [↑](#footnote-ref-8)
9. The focus of the study by Levy and Perry (2008) [52] was to compare the (surveyed) practices about transition processes of intensive behavioural intervention staff with school system staff. [↑](#footnote-ref-9)
10. Note that the guideline was updated on the effectiveness of social skills groups in a Supplementary Paper published in 2015 [7]. [↑](#footnote-ref-10)
11. For more information on UNCROC and New Zealand’s commitment to it, see: https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/uncroc/ [↑](#footnote-ref-11)