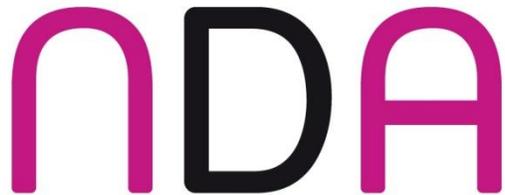


Reasonable Accommodations for people with Autism Spectrum Disorder

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1. Introduction

The purpose of this paper is to look at the problems people with Autism Spectrum Disorder (ASD) can face and suggest supports that may assist them. It focuses primarily on educational and work environments. The aim of this paper is to inform National Disability Authority guidance.

The structure of this paper is as follows: an introduction to ASD including definitions and prevalence rates; a brief description of the difficulties attributed to ASD; and, finally, accommodations (where available) are identified for each difficulty. Suggested accommodations are two-fold:

- Personal coping strategies and
- Suggestions for educators, employers, carers etc

2. Understanding Autism Spectrum Disorder

There is considerable disagreement about the exact cause of ASD. It is a neurological condition with three association impairments: social communication, social interaction and social imagination/play.

"Autism is a lifelong developmental disability, sometimes referred to as Autistic Spectrum Disorder (ASD) or Autistic Spectrum Condition (ASC). Its causes are not fully understood, although there is some evidence that genetic factors are involved. The term 'spectrum' is used because, while all people with autism share three main areas of difficulty, their condition affects them in different ways. Some can live relatively independently – in some cases without any additional support – while others require a lifetime of specialist care."¹

People from all socioeconomic groups and nationalities can have ASD.² There are gender differences as it is more common in boys with a male to female ratio of 4:1. However, it can affect females more severely.³ Many people with ASD have other behavioural and psychiatric problem, referred to as co-morbidities. These include anxiety, intellectual disability, attention deficit hyperactivity disorder (ADHD)⁴ and learning difficulties, such as dyslexia (a learning difficulty that makes it difficult for some people to read and write)⁵ and dyspraxia (a difficulty with coordination as well as planning and carrying out sensory and motor tasks).^{6 7 8} Deficits in social-information processing can affect perception, understanding, and can limit capacity for understanding others' thoughts, intentions and emotions.⁹

Some medical conditions are also associated with autism. These include gastrointestinal disorders, seizure disorders and immune disorders such as immune deficiency and dysfunction.¹⁰

ASD is a lifelong condition and there is a wide diversity within the spectrum.¹¹ Deficits will be present throughout the lifespan but how they are presented will vary with age and any other co-morbidities e.g. anxiety, sensory difficulties. However, it is important to realise that it is possible to develop strategies to help a person with ASD cope with situations they find difficult and to provide appropriate accommodations. That is the subject of this paper.

The Triad of Impairments

People with ASD share three core areas of difficulty. Commonly referred to as the triad of impairments, these include:

- Social communication (including verbal and non verbal communication)
- Social interaction (recognising other people's emotions/feelings and expressing their own)¹²
- Social imagination/play (including engaging in imaginative play and activities)

Other related features can include love of routines and rules, aversion to change, and sensory sensitivity for example a dislike of loud noises/bright lights. Around half of people with autism also have a learning disability while the rest do not.¹³ Other conditions classified along the Autism Spectrum Disorder have some of the following features:

- a restricted range of interest
- abnormal social behaviour including head banging and rocking of body against a solid object
- poor motor co-ordination
- speech difficulties
- and repeating words said by others (echolalia)¹⁴

ASD includes closely related disabilities such as:

- Pervasive developmental disorder - Not Otherwise Specified (PDD-NOS), which refers to a collection of features that resemble autism but may not be as severe or extensive;
- Asperger's syndrome, which refers to individuals with some autistic characteristics but relatively intact early language abilities;

- Childhood disintegrative disorder, which refers to children whose development appears normal for the first few years, but then regresses with the loss of speech and other skills, until the characteristics of autism are conspicuous, and
- Rett's syndrome, which affects girls and is characterised by severe progressive physical and mental regression, seizures and some autism-like features, that become more apparent with age.^{15 16}

DSM V is operational since May 2013. In terms of ASD, the main changes are ASD now includes the previous DSM-IV autistic disorder, Asperger's disorder, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified. Also, rather than being characterised by a triad of impairments DSM V now defines ASD by

1. Deficits in social communication and social interaction and
2. Restricted repetitive behaviours, interests and activities^{17 18}.

There are changes to the age of onset, in that they can be present currently or in reported on in the past. Symptoms for ASD not previously included in DSM-IV are included, such as sensory issues and fixated interests. DSM-V acknowledges the presence of other medical conditions, such as anxiety, seizures and gastrointestinal problems. Finally, DSM-V includes a new category SCD (Social Communication Disorder). This allows for a diagnosis of a deficit in social communication without repetitive behaviour being present.¹⁹

The ICD 10 (International Classification System) of the World Health Organisation (WHO) classification system defines ASD using the triad of impairment. ICD 11 is due in 2017.

If children have a diagnosis of ASD in their early years, they can receive intervention in childhood.^{20 21} Barnard et al (2000) believe that early diagnosis and intervention can increase a person's chance of living independently, as well as achieving adequate education and training.²²

3. Prevalence of Autism Spectrum Disorder

The earliest identification of autism as a specific form of disorder dates from the mid 1940s, and it took a couple of decades before there was more widespread recognition of it as a separate diagnosis. Older adults who may have autistic traits are less likely to have a diagnosis.

In recent decades, there has been an increase in the number of children with an ASD diagnosis. Literature suggests changes in diagnostic criteria have affected

prevalence rates.^{23 24} There are also dedicated special education resources linked to a diagnosis of ASD in Ireland, which can encourage parents to secure a positive ASD diagnosis for their children. The 2012 HSE review of autism services also highlights that socio-economic status correlates to prevalence of autism with increased diagnosis in higher socio-economic groups. This may be “ascertainment bias” as higher socio-economic groups are in a more favourable position to access better medical help.²⁵

A report by the Eastern Regional Health Authority (ERHA) reviewing services for people with ASD (2002)²⁶ highlights the difficulty in estimating prevalence rates for people with ASD. This is because of the different methods of “case ascertainment” used. The study points out, that using a tiered approach method generally results in higher prevalence rates for ASD. A tiered approach is where

“all children in a defined population are screened using standard methods, with positive cases being referred for further evaluation” (p.12).

An investigation of the prevalence of ASD amongst primary school children in Ireland is currently underway by the School of Nursing in Dublin City University. A preliminary report estimates Autism prevalence at 1%.²⁷ The final report is due in mid-2014.

Table 1 displays the prevalence figures per 10,000 people. The 2012 HSE Autism Review estimates a rate of 1.1% / 110 per 10,000 based on the 2006 National Disability Survey (NDS).²⁸

Table Title – Summary of ASD Prevalence Rates

Source	Year	Country	Rate per 10,000	Percentage
School of Nursing, Dublin City University	2013	Ireland	100	1%
HSE Autism Review	2012	Ireland	110	1.1%
National Autistic Society	2010	UK	100	1%
Office of National Statistics	2008	UK	90	0.9%
Report on commissioning Services for people on the Autism Spectrum	2008	Scotland	100	1%
Centre for Disease Controls	2010	USA	91	0.9%

Source: Various

A UK Study by the Office of National Statistics surveying the mental health of children and young people in Britain, found a prevalence rate of 0.9% (90 in 10,000) for Autism Spectrum Disorders.²⁹ The National Autistic Society believes the best estimate for prevalence figures in the UK for children is 1% (1 in 100).³⁰ Estimates by Knapp et al (2007), suggest that there are about half a million people with autism in England, of whom around 400,000 are adults³¹ and that autism is three to four times more common in men than in women.³²

The Scottish Government’s Report on Commissioning Services for people on the autism spectrum notes prevalence studies. This report points out that more recent studies suggest a rate of around 1% (1in 100 equating to 100 per 10,000)

as the best estimate of the prevalence of ASD in children, suggesting over 50,000 people in Scotland with ASD. It also notes that prevalence studies have not been carried out on adults. Services in Scotland suggest that there has been an increase in the number of adults seeking and receiving a primary diagnosis. Many of these adults seek a diagnosis following an increased awareness of ASD due to a diagnosis given to a school-age relative.³³

The Centre for Disease Control in the US, estimate that 0.9% (1 in 110 equating to 91 per 10,000) toddlers and children have a diagnosis of an Autism Spectrum Disorder. While approximately 85% of the 1.5 million Americans now known to be living with autism are under the age of 21, that proportion of known cases will change as these children and youths reach adult age.³⁴

4. Supports for those with Autism Spectrum Disorder across the lifespan

The following section briefly describes the areas of difficulty a person with ASD may experience and the accommodations and supports that may assist.

As noted earlier ASD is a lifelong condition. Therefore, suggested supports can be used when the need arises, or as the HSE National Review of Autism Services (2012) describe “needs change with age” (p.10). Due to the nature of ASD, some people with ASD will require lifelong support from service providers and others will require professional support periodically. Ideally, assessment of the individual should be at different stages of their life and responding to their needs at that time. Accordingly as needs change supports change too.³⁵ When considering supports for people with ASD it is also important to be mindful of the diversity between people with ASD e.g. a support that may be effective for one child with ASD may not work so well for another.

The importance of a thorough/continuous assessment is also highlighted in the National Council of Special Education(NCSE) 2009 report “International Review of the Literature of Evidence of Best Practice Provision in the Education of Persons with Autistic Spectrum Disorders”, which reviews literature from 2002-2008 on educational provision and interventions. This report notes “the importance of conducting a thorough assessment across all areas, taking information from parents and school staff into account, to determine the nature and level of a child’s needs”.³⁶

Some of the accommodations suggested may be useful for more than one functional difficulty e.g. accommodations for difficulties with social skills may also be useful for difficulties with intellectual function.

4.1 Social Skills: social communication, social interaction and social imagination (play)

People with ASD have difficulty with social skills. This can include difficulties understanding and predicting other people's behaviour, making sense of abstract ideas and imagining situations outside their immediate daily routine.³⁷ This is also referred to as the "hidden curriculum", learning the social skills that people know but are not taught, which can be particularly problematic for those with ASD.³⁸ As the NCSE (2009), report highlights:

'Unlike most children who learn to apply and use skills across situations and contexts and can pick up skills incidentally, children with ASD often need to be taught skills explicitly and then taught to use these across situations'³⁹

They may have difficulty reading other peoples facial expression, body language and tone of voice.⁴⁰ Dr Temple Grandin (1999) a doctor of animal science and author with ASD sums this point up nicely:

'I did not know that eye-movements had meaning until I read Mind Blindness by Simon Baron-Cohen. I had no idea that people communicate feelings with their eyes'⁴¹

Disability awareness training

Raising awareness about ASD is essential in order to change attitudes towards it. It is important that professionals involved in health, social services, education and employment are able to recognise when dealing with a person with ASD and are equipped with the skills to meet their individual needs.⁴²

The strategy for adults with autism in England emphasises that raising awareness within the public services and employers is a good starting point to raising awareness in society.⁴³

Suggestions for those involved with people with ASD

People with ASD may interpret language literally.⁴⁴ Michael Barton, a student with high functioning autism has written a book aimed at people with ASD, explaining the true meaning of idioms and expressions. The book titled "It's Raining Cats and Dogs: An Autism Spectrum Guide to the Confusing World of Idioms, Metaphors and Everyday Expressions" could also be useful resource for those dealing with people with ASD as it illustrates one of the communication difficulties people with autism can experience, in that they may take the literal meaning from expressions⁴⁵.

Other accommodations include:

- Using clear language ⁴⁶
- Buddy or mentoring schemes with a circle of friends, or peer-tutoring
- Building on strengths and self esteem
- Pictorial or visual timetables
- Structuring of teaching and leisure time, including social-time-support at lunch/break times
- Friendship support networks
- Prevention of teasing and bullying
- Planned transitions
- Phased, positive, implementation of new experiences⁴⁷
- Providing help in finding opportunities to make friends required for some adults.⁴⁸

Suggestions for education providers

Schools tend to focus on academic achievement, but for individuals with ASD, preparation for adult life is particularly important. Basic life and social skills (e.g. shopping, living independently, job seeking) should be incorporated into their schooling.⁴⁹

The Special Education Support Service provide information and support for teachers of children with special needs, including supports for children with ASD (see <http://www.sess.ie/categories/autism-autistic-spectrum-disorders>).

The NCSE (2009) report is also relevant here. The results in this paper give implications for research and practice that may be useful to education providers and carers. Areas include:

- Developing play for preschoolers
- Home-based interventions and impact on parents
- Social interaction, understanding and skills for preschool, primary and post primary
- Social interaction, understanding and skills: visual supports and video modelling
- Social interaction, understanding and skills: peer facilitation: typically developing peers for pre-school and primary levels

- Structured or systematic instruction at pre-school, primary, post primary and post-compulsory education
- Strategies to develop specific cognitive skills, social stories, picture based learning approaches
- Computer based approaches
- Giving a voice of children, young people and adults with ASD
- School staff training, and parent/training involvement. ⁵⁰

Differentiating instruction can be effective in addressing diverse needs and sensory issues of children with ASD. Good teaching strategies can include:

- Pacing (extending/ adjusting time; allowing frequent breaks; varying activity often; omitting assignments that require timed situations)
- Environment (preferential seating; altering physical room arrangement; defining limits (physical/ behavioural); reducing/minimising distractions (visual, auditory, both)
- Presentation of material (individualising instruction; taping lectures for replay; demonstrating; using hands-on activities; providing visual cues; emphasising a particular teaching approach - visual, auditory, tactile, multi teaching approach)
- Reinforcement (a rewards based system) and follow-through (using positive reinforcement; using concrete reinforcement (a tangible reward given after a display of positive behaviour); checking for understanding/review; providing peer tutoring etc). ⁵¹

The NCSE are currently compiling a publication about Educational Provision for Students with Autism Spectrum Disorder, this forthcoming policy advice is due in 2015.

Help with transitions

If a child with ASD is transferring between schools, seek guidance to manage the transfer. The “Essential Guide to Special Education in Ireland” by David Carey⁵² contains useful suggestions. These include:

- Common sense transition (start planning the year before the move is to be made; relevant parties in both schools should be involved; parents and child should be involved meaningfully and the child should be placed at the centre of transition planning); consider transitional Individualised Education Plan (IEP)
- Make a photo album of the new school and review with the child - have digital photos (with permission) of the new school entrance-from the road, doorway of new school, entrance hallway of new school, hallway to classroom, the

school hall, yard(s), classroom, and when possible pictures of Principal, teacher, other teachers

- Write social stories of new school and include these in the story photos you have taken of your child near the school entrance
- Compile a one-page document to share with receiving teacher:
 - hints about discipline
 - identify any “triggers” to disorganised behaviour
 - how to respond to disorganised behaviour
 - clearly indicate what the behaviour is trying to communicate
 - have previous year’s teacher indicate reading and maths skills level
 - identify any rewards that can be used as positive reinforcements

Other information on school transition includes Amy Eleftheriades guide to handling the transfer of students with ASD.⁵³ The National Council for Curriculum and Assessment (NCCA) have launched an education passport for children moving from primary to secondary schools. This is aimed at all children and has provision in it to note any special education supports.⁵⁴

Transitions within the school may also be a concern for someone with ASD, e.g. transition between the corridor and the classroom. A person with ASD may need more time and space to help get ready for such a change.⁵⁵

Provide a gradual school-to-work transition if available.⁵⁶ The NCSE (2009) highlight how transitions (between and within settings) may be a source of ‘extreme stress and vulnerability’ for a person with ASD and their family. Planning for transitions is essential and information sharing from existing to new staff is very important.⁵⁷ Stephen Shore has also written on this topic as well as developing programmes to help people with autism to become self advocates.⁵⁸ The Middletown Centre for Autism has a publication reviewing articles on transitions for people with ASD. The range of articles includes the move from preschool to primary up to third level and the work place.⁵⁹

Transition to adulthood can be a challenge and this should also be incorporated into a person’s Individual Education Plan. Research Autism have guidance on transition planning for people with autism, including vocation and employment, post secondary education and life skills.⁶⁰

Social skills in the workplace

Research illustrates that people with ASD in the workforce, benefit from accessing ongoing vocational services that help with day-to-day challenges in the

workplace.⁶¹ As people with ASD have such specific issues with social skills, employers should ensure that there is a buddy/mentor system in operation to help people with ASD negotiate any workplace difficulties.⁶² Johnston-Tyler cites Muller (2006) et al who reiterate this point “[ASD individuals] felt strongly that they would not have been fired from their jobs if someone had been available to advocate for them, and help clear up misunderstandings”.⁶³

The National Disability Authority are currently compiling a publication on guidance for line managers, this forthcoming publication is due in 2015.

Personal coping strategies for social skills in the workplace

Using strategies derived from the principles of applied behaviour analysis is advocated by some to help people with ASD in the workplace.⁶⁴ Key issues in the workplace for a person with ASD may include:

- Getting to/from work⁶⁵
- Understanding required tasks
- Comprehending workplace rules
- Awareness of the workday schedule including start/end times, break times etc
- Awareness of any emergency procedures
- Knowledge on pivotal areas of the workplace

The use of a self-assessment/self rating scale, to identify strengths and weaknesses and as a useful reflection of performance may be beneficial. Ensure a person with ASD can request where possible, from an employer, a consistent schedule for completion of work tasks, as this will help to increase job predictability.⁶⁶

Workplace accommodations

Interviewing people with ASD

- Ask closed rather than open questions. People with ASD may find open questions more difficult to answer, as there may be many different answers to an open question. People with ASD may have difficulties thinking about the reasoning behind the question thus they are not able to establish the information the interviewer is seeking
- Avoid hypothetical/abstract questions and preferably ask about what the person has done in the past. People with ASD may have a difficulty with imagining so questions about direct experiences will suit them better
- Questions cannot be metaphorical as they may be interpreted literally
- Interviewers should be aware that a person may find it difficult to judge if they have provided enough information to answer a question. Interviewers may

need to use prompts such as 'you have provided sufficient information about A, please tell us about B now'

- Interviewers need to allow that social cues may not be read appropriately and allow for lack of eye contact and minimise the use of facial expressions and body language⁶⁷
- Further tips are available from the National Autistic Society website <http://www.autism.org.uk/working-with/employment-services/employers.aspx> accessed July 2014

Workplace/Setting

- Coloured lines on the floor or physical icon objects can be used to identify specific areas and types of activities⁶⁸
- Provide assistance with motor skills when needed. Ensure ample space exists to move between furniture, machinery etc, that could be knocked over
- Provide employees with a rest area/safe space to go in times of stress⁶⁹
- Ensure location/tasks do not have excessive stimulation such as distracting sounds, smells, or sights including the avoidance of fluorescent lights (humming or flickering can be distracting). Provide sunglasses or tinted glasses to reduce light, headphones or earplugs to reduce sound levels and a white noise machine to mask distracting sounds⁷⁰

Supported work environment

- Use support workers (job coaches) where available. In the UK, the National Autistic Society provides support workers through the supported employment service see <http://www.autism.org.uk/living-with-autism/employment/employment-introduction.aspx>. Also see Hendricks (2010) (p131) for more information on articles around supported employment⁷¹
- Match a person with ASD to a colleague who can act as a mentor to help explain/translate workplace culture, instructions and comments. A co-worker could also help with egress in case of emergency evacuation⁷²
- Offer internship programmes⁷³. A work trial may be a useful way to establish if someone can successfully do a job⁷⁴
- It is believed that due to the way people with ASD learn, on-the-job training is most beneficial⁷⁵
- Carry out an assessment to establish the communication strengths and needs of staff with ASD⁷⁶

Raise awareness with colleagues

- Employers and colleagues will require knowledge about ASD and what supports are needed in the workplace⁷⁷

- Raise awareness amongst staff about a person's particular needs^{78 79}
- Research illustrates that people with ASD felt their colleagues/employers need training to help understand the condition and why they act in a certain way⁸⁰

Help with work tasks and daily routine

- Ensure work tasks are defined clearly (complex tasks should be broken into smaller assignments and illustrated with diagrams) and located in areas with minimal distractions
- Ensure feedback on work tasks is well-defined
- Provide jobs/tasks that do not require social skills⁸¹
- Ensure work tasks are predictable and suitable for someone with ASD. Standifler (2009) recommends, “A daily schedule prominently posted, with icons or pictures (even if reading skills are strong). The schedule should answer the questions “What am I doing?”, “Why am I doing this?” and “What comes next?”. Even individuals who are normally well anchored in their daily routine maybe have occasional “off” days when they lose track of these details and become confused”⁸²
- Give an employee advance warning of any changes in routines, as well as an opportunity to practice new routines. Give an employee flexibility to develop their own way of organising their workspace and doing a task.⁸³
- Use visual prompts to signal changes between activities during the day. Standifler (2009) recommends using social stories for the workplace. These are “a set of short stories or cue cards with information about what to do in different situations or explaining how people expect others to act in different situations (i.e. – “if I can’t find a tool I need, I can ask the supervisor” [with a photo of the supervisor attached]; “if I run out of paper, I go to the copy room and ask for more”; a short paragraph on what happens when co-workers go out for lunch together, etc)”.⁸⁴
- Provide a personal calendar, or appointment book and use technology like smart phones with scheduling software⁸⁵
- Have well defined and structured break times⁸⁶
- Ensure adequate time for training/learning. Standifler (2009) recommends “Training done on site and first day activities which match the typical routine. People with ASD often look for immediate creation of new routines. A day or two of orientation and paperwork will be very confusing. Any prompts provided during training should be the same ones used during typical work routines”⁸⁷

- Provide extra support to employees when any changes in work tasks arise and in times of high staff turnover⁸⁸

Support with communication issues

- Provide social coaching and training in social skills. Coaching on activities to do during breaks may also be useful⁸⁹
- Use writing, picture exchanges or gestures, if speaking skills are weak. A picture exchange system and communication board may also be useful
- The National Autistic Society (NAS) have developed a framework to help understand and respond to needs of people with ASD called SPELL (Structure, Positive approaches and expectations, Empathy, Low arousal and Links). Further details can be found on <http://www.autism.org.uk/living-with-autism/strategies-and-approaches/spell.aspx>
- The National Learning Network run some courses to help people improve their social skills see <http://www.nln.ie/Find-A-Course.aspx> for details

4.2 Intellectual Function

There is a wide diversity in intellectual ability in people with ASD, ranging from intellectually impaired, to average or high intelligence.⁹⁰

Personal coping strategies for intellectual function

- Self-assessment/self-rating scales can be used by people with ASD to improve self awareness and reflection of performance, depending on functional abilities⁹¹
- Portable organisers, personal digital assistants, smart phones or tablets can be useful as cognitive aids. The use of assistive technology for people with ASD is still in its infancy. Future research in this area has been recommended⁹²
- Job matching skills - job searching, identifying appropriate jobs, preparing a curriculum vitae and interview skills may be useful for those seeking to join the workforce⁹³
- Identify or solidify interests and seek to nurture special talents
- Develop awareness of strengths: "People on the ASD continuum... each one of us has a certain savant skill or collection of skills, and if we were allowed to, encouraged to indulge that vocationally to our heart's content... we could come up with some amazing solutions for various workplace problems"⁹⁴
- Seek functionality and job-for-fit assessments⁹⁵
- Engage in freelance work, with only brief social contact, where appropriate.

Accommodations for intellectual function

Adequate training and expertise is essential for those in contact with people with ASD, in order to help those with the condition fulfil their potential. This includes being able to recognise when dealing with a person with ASD and being able to meet their individual needs.⁹⁶ The **Suggestions for Education Providers** in this document in relation to social skills may also be useful for intellectual function.

Adults with ASD who have intellectual impairments

For adults with ASD who have received the necessary support during their education, it is important that support continues into their adult life. They can require ongoing help with:

- Support with employment and/or further education⁹⁷
- Social skills
- Strategies to enable self-care and independent living
- Medical management of their condition.

Public transport can be daunting for people with ASD and can cause reluctance to use it. This can make many community facilities inaccessible to them. To help counteract this, travel training for people with ASD can help to build people's confidence in using public transport. The delivery of this training can be person centred, i.e. structured to meet the needs of those on different levels of the autism spectrum.⁹⁸

Suggestions for employers of people with intellectual impairments

Possible accommodations include:

- Provide written job instructions when possible
- Prioritise job assignments
- Allow periodic rest breaks to reorient
- Allow a self-paced workload⁹⁹
- Earlier suggestions for employers in relation to social skills may also be useful for intellectual function

Housing and Autism Spectrum Disorder:

Goals for housing for people with ASD include:

- Safety and security

- Maximising familiarity, stability and clarity
- Minimising sensory overload
- Allowing opportunities for controlling social interaction and privacy
- Adequate choice and independence
- Enhancing dignity and promoting wellness and health
- Ensuring durability and accessibility
- Achieving affordability
- Ensuring support in the surrounding neighbourhood

A description and meaning of each of the above goals, as relevant to individuals with autism, are available in a report by Ahrentzen & Steele.¹⁰⁰

It is also important to consider the location of the home in terms of access to family, carers and other local supports. When supplying housing, be mindful of house size/ number of bedrooms, as some people with ASD may need a carer for overnight stays.¹⁰¹

4.3 Communication and Language

People with ASD may encounter a wide range of communication difficulties. Children with autism often display speech problems such as late speech or no speech.¹⁰² Individuals with ASD may have problems with comprehension of language.¹⁰³ Around 20% of people with ASD have no speech and do not use speech to communicate. Some people with ASD may have a large vocabulary of spoken words but may have issues interacting with others.¹⁰⁴

Personal coping strategies for communication and language difficulties

- Advanced voice output devices are beneficial for some adults with autism.
- Parents of children with ASD should seek advice from local multidisciplinary teams and support groups i.e. speech therapy, occupational therapy¹⁰⁵

Suggestions to help people with communication and language problems

Hendricks (2010) cites several studies advocating the use of high-tech equipment and other strategies to help people with ASD with communication skills (p.130).¹⁰⁶ These include:

- A voice output system to help greet co-workers, give directions, make requests and/or comments

- Social stories, which can be used to increase appropriate conversational interactions

Some adults with autism need prompts to help promote self-expression. In the workplace, a mentor can help "translate" instructions or comments and can help the person understand social situations and cues and workplace culture.¹⁰⁷

The Dyspraxia Association of Ireland (Dyspraxia is sometimes a co-morbidity of ASD) has publications and guides for teachers <http://www.dyspraxia.ie/>.

4.4 Attention Span

People with ASD may have difficulties with maintaining concentration or may have Attention Deficit Hyperactivity Disorder (ADHD).¹⁰⁸ ADHD is a neurological condition more prevalent amongst males than females. It affects a person's ability to sustain attention and their organisational skills. A person with ADHD may be easily distracted and forgetful.¹⁰⁹

Personal coping strategies to help with attention span

- A daily schedule prominently posted, with icons or pictures can be helpful even if reading skills are strong. This schedule should answer questions: What am I doing? How am I doing this? What comes next?
- Personal calendars/appointment books/ memory books/computer calendars can be useful for reminders as can smart phones with scheduling software and prompting software, texting alerts and E-mailing personal reminders | 10
- Advice can be accessed from local multidisciplinary teams and support groups. If needs change advice can be obtained on specific treatment and management options from relevant specialists. | 11

Suggestions for carers/teachers to help with attention difficulties

- The Special Education Support Service has produced teaching, behaviour and class management tips on supporting students with attention issues <http://www.sess.ie/sites/default/files/CabhairADHDinsertissue2.pdf>
- Seek professional advice (educational psychologist, occupational therapist) on how to deal with these issues

Workplace accommodations for employees with attention span difficulties

To help employees with attention deficits, employers can:

- Minimise distractions
- Provide sound-baffle panels to reduce distractions in the work area

- Provide memory aids, such as schedulers or organisers
- Allow flexible work hours
- Provide more structure to the work day
- Identify workplace stressors and where possible reduce these.¹¹²

4.5 Emotional Functions

People with ASD may have difficulty understanding and sharing their own and other people's emotions. Self-expression and self-regulation of their own emotions can be particularly difficult.¹¹³ The Middletown Centre for Autism has produced a Research Bulletin (no.8) titled Autism and Emotional Regulation. It contains ten summaries of peer-reviewed articles and literature reviews on this topic.¹¹⁴ The Organization for Autism Research (OAR) has also produced literature to help with emotional regulations.¹¹⁵

Suggestions for education providers dealing with emotional difficulties

- Be alert to possible bullying
- Implement training programmes to help those with ASD in mainstream education. See "Fitting in" by Annie Atherington as a guide to establishing training programmes.¹¹⁶

Suggestions for parents/carers dealing with emotional difficulties

- Seek a parenting course. UPR (understanding, preventing, and responding) is one such course to help with challenging behaviour including emotional regulation.

Suggestions for employers dealing with emotional difficulties

- Intensive services in instructions and communications skills are recommended for those with ASD. The transition to adulthood and employment for people with ASD may be particularly challenging¹¹⁷
- Training done on site and first day activities should match the typical routine. Any prompts provided during training should be the same ones as used during typical work routines¹¹⁸
- Manage inappropriate behaviour. Hendricks cites articles (p.130) that deals with management strategies to reduce inappropriate behaviour, such as aggression, self-injury, property destruction and pica in the workplace.^{119 120} Strategies include:

- Functional behaviour assessments - these can be carried out in various settings to plan and provide behavioural support based on why a person behaves in a particular way. Strategies in the workplace can include encouraging a worker to take a break when upset, building rapport and learning how to make choices
- In supported employment settings implementation of a picture schedule can be helpful.¹²¹

4.6 General Sensation – sensitivity to noise, light, heat

Many people with ASD are hyper/hypo-sensitive to tactile, auditory and visual stimulations, and may have unusual responses to hot and cold temperatures and/or pain.¹²²

Personal coping strategies for issues with general sensation

If heat sensitivity is a problem, where possible, install air conditioning and avoid hot tubs and saunas.¹²³

Suggestions for education providers

There are many sensory issues a person with ASD may experience, e.g. visual distraction, sun and glare, lighting, acoustics and smell. For teachers of children with ASD it is important to establish which sensory issues may be a problem and make all aware of them. Once sensory issues are established strategies can be put in place to help pupils and staff address these problems. For example if a bell ringing will upset a pupil, position this pupil away from the bell and/or give them warning when it is due to ring.¹²⁴

Suggestions for helping with general sensation issues

Many people with ASD may struggle accessing mainstream services such as banks, healthcare facilities, employment advice etc. This is because of communication difficulties or inability to be in crowded/noisy places due to sensory problems. This may mean people with ASD cannot access essential services they require. Services must insure they make reasonable adjustments for adults with autism in order to ensure they access the services and support they need.

Suggestions include:

- Ensuring premises are designed in such a way that quiet and lower-light areas can be provided
- Scheduling appointments at quieter times, and allocating more time for people with ASD

- Being aware about sensitivity to touch
- Ensuring any necessary forms/paperwork is available in accessible formats
- Offering opportunities for people with ASD to visit settings in advance of necessary appointments, in order to familiarise themselves with the setting
- Providing a separate waiting area for people with ASD away from crowds, where possible¹²⁵

Suggestions for employers:

- Evaluate noise level and reduce where necessary
- Keep interruptions and crowding to a minimum
- Ensure suitable lighting and space navigation are suitable¹²⁶
- Reduce work-site temperature
- Use fan/air-conditioner at the workstation
- Allow flexible scheduling and flexible use of leave or consider allowing work from home during hot weather¹²⁷

Suggestions for family members/carers

- Install thermometers in sinks/baths/showers to allow accurate monitoring of temperature of water¹²⁸
- Be mindful of issues with hypersensitivity towards lighting as well as issues with layout, furniture and fittings¹²⁹

4.7 Sleep Functions

People with ASD may have sleep problems.¹³⁰

Personal coping strategies for sleeping issues

- Establish a good sleeping routine¹³¹

Suggestions for employers of those with sleep difficulties

- Allow the individual to have periodic rest breaks¹³²

4.8 Control of Voluntary Movement

Many children with ASD may experience poor co-ordination and have difficulties with fine motor control.¹³³

Personal coping strategies for problems controlling voluntary movement

Parents of children with these issues should seek advice from local multidisciplinary teams and support groups such as occupational therapy and physiotherapy¹³⁴. There are many exercises that to help improve problems such as fine/gross motor skills, core strength, posture, pencil grasp see Occupational Therapy Learning for Kids <http://www.ot-mom-learning-activities.com/>.

Suggestions for employers/carers/teachers assisting those with problems controlling voluntary movement

- Seek professional advice (occupational therapy, physiotherapy, speech therapy) on how to deal with these issues.

5. Current innovations for people with Autism Spectrum Disorder

Focusing on strengths

Recent attention has begun to focus on the positive attributes associated with ASD. Although a person with ASD may have difficulty empathising they often perform extremely well at systemising,¹³⁵ precision and display great attention to detail.^{136 137} An innovative Danish organisation “Specialisterne”, established in 2004, offers services like software testing and proofreading technical documents. A very high percentage of its employees are people with ASD, of whom it states

“the traits that usually exclude people with autism from the labour market are the very traits that make them valuable employees at Specialisterne, such as attention to detail, zero tolerance for errors and a persistence to get the job done. We don’t see them as people with an autism diagnosis; rather, we see them as true specialists, which is why we refer to them as ‘specialist people’ ”.¹³⁸

One key feature of Specialisterne is their approach to the interview process and recognising the difficulties for people with ASD. Using Lego and robotics as tools to break down barriers helps reduce the social pressure for interviewees. The company also support employees with self-management skills e.g. exercise, healthy sleep habits and time management.¹³⁹

Assistance from animals

Using animals to assist people with disabilities (hearing/sight dogs) is commonplace and now includes people with ASD. Dolphins, guinea pigs, rabbits and ferrets are therapy animals for people with ASD. Children with ASD may

relate to an animal in ways they cannot with people and may help a child with ASD with their communication skills.¹⁴⁰ Some children with ASD display “bolting” behaviour when they become agitated and this may affect outdoor activity. Assistance dogs – who are attached to a child with ASD and trained to sit when a child bolts – alleviate some of the safety concerns associated with children bolting.¹⁴¹

Suggestions on housing

A recent design guide by Andrew Brand “Living in the community Housing Design for Adults with Autism” (2009) stresses the importance of good housing design to enhance the quality of life for people with ASD. This project looks at how design may improve residential accommodation for people with ASD. The research included workshops with people with ASD, visits to supported accommodation, interviews with support workers and clinical professionals and a review of the literature. An expert group was established to guide the project and included scientists, parents, architects and designers. The guide offers advice on many aspects of housing design including robustness, layout, mechanical and electrical, fixture, fittings and finishes. The guide can be found at http://www.hhc.rca.ac.uk/CMS/files/1.Living_in_the_Community.pdf

Newgrove Housing Association has commenced a housing project in Limerick for people some of whom are people with ASD. At the time of writing is being constructed and due for completion in 2013. Information about this project is on <http://www.rehab.ie/press/article.aspx?id=779> (accessed May 2013).

6. Summary

There is ample research and information available about ASD. One of the difficulties with ASD is that it is a hidden disability and not as obvious as more visible disabilities, such as, a physical disability. As a result, ensuring that people with ASD are included in society may prove more challenging.

It is important to raise awareness about ASD, in particular, with those sections of society that may have direct contact with people with ASD (e.g. front line medical staff, educators, employers). It is important that people are able to recognise when someone has ASD and are equipped with the skills to deal with them. The HM Government (2010) report (p.27) recommends that awareness training about ASD should be included in general equality and diversity training programmes, in operation across all public services. This training should

“focus less on the theory of autism and more on giving staff an insight into how autism can affect people, drawing directly on the

experiences and input of adults with autism and their families. This will better enable staff to understand the potential behaviours of adults with autism in different settings, so they can respond appropriately and make reasonable adjustments to better accommodate adults with autism"¹⁴²

The literature agrees that early diagnosis is key.¹⁴³ The earlier a diagnosis is made the earlier interventions can take place. Parents/carers should be aware of the developmental milestones children should reach.¹⁴⁴ For those who receive a diagnosis of ASD for their child, it is important that they can access the necessary supports. Similarly, where adults receive a diagnosis the required supports need to be available.¹⁴⁵

For individuals, it is important to establish what method of learning works for them, for example pictures, stories or charts. A 'one size fits all' approach is not appropriate for people with ASD. Assessments need to be rigorous and include information from people in the persons with ASD life i.e. teacher or carer or parent. As a person with ASD grows, their needs will change so updating and keeping on top of a person's needs is essential for true inclusivity.

In terms of effective accommodations, one can see that there many. There are also commonalities across settings in effective accommodations such as:

- the use of pacing in workplace or classroom (extending and adjusting time; allowing more frequent breaks; varying activity often; omitting tasks that require working against the clock)
- environmental adjustments (altering physical room arrangement; defining limits (physical/ behavioural))
- reducing or minimizing visual or auditory distractions (visual, auditory, both)
- the way material is presented (individualising instruction; taping lectures for replay; demonstrating; using hands-on activities; providing visual cues; emphasising a particular teaching approach - visual, auditory, tactile, multi)
- reinforcement and follow-through (using positive reinforcement; checking often for understanding; providing peer tutoring etc)

Finally, nurture the traits associated with ASD as they may be considered prerequisites in particular occupations. Great attention to detail and precision are characteristics that many employers value.

Activities and Support Groups

A variety of parent-led groups have been set-up that run activities with a special focus on children that for whatever reason are not suited to mainstream activities. These activities can also be used as a stepping stone for children before they join a mainstream activity.

<http://www.hxarts.org/gymjam.php>

<http://therippleeffect.ie/>

<http://www.hxarts.org/index.php>

<https://www.asiam.ie/>

Further reading

The Northern Ireland Assembly has completed a lot of work on ASD and has been awarded an Autism Access Award. This includes a lot of useful information on approach, training of staff etc. While it relates to the justice system, the training and accessibility initiatives done are applicable to other settings. Please see the link below.

<http://www.niassembly.gov.uk/visit-and-learning/autism-and-the-assembly/>

Autism: a guide for criminal justice professionals produced by The Department of Justice and the National Autistic Society Northern Ireland

<http://www.dojni.gov.uk/index/publications/publication-categories/pubs-criminal-justice/autism-guide-updated-20.03.15.pdf>

National Council for Special Education. (2014). Post School Education and Training Information and Options for Adults and School Leavers with Disabilities. Meath: NCSE

This publication gives a summary of the main national supports in education and training available to people with disabilities.

McNally Morris Architects and Queen's University Belfast. (2013). Aldo goes to Primary School Experiencing Primary School through the Lens of the Autistic Spectrum. Belfast: McNally Morris Architects.

This publication illustrates some of the everyday issues a pupil with ASD may experience in the school environment. The issues are told through the use of social stories, thus from the perspective of a child with ASD. Architectural and design considerations are identified that may help improve conditions for the child with ASD.

Gerland, Gunilla (2013). *Secrets to Success for Professionals in the Autism Field*.

This book gives an insiders guide to understanding Autism (the author was diagnosed with Asperger's syndrome as an adult). It provides guidance for professionals working with people with autism, including teachers, psychologists, medical staff, rehabilitation assistants, social workers, care workers.

Chaplin, E., Hardy, S., Underwood, L. (2013). *Autism Spectrum Conditions A Guide*. Hove: Pavilion Publishing and Media Ltd.

This is an introduction to working with people with ASD. Using case studies it offers insights into the everyday lives of people with ASD and suggestions on how they can be helped.

Middletown Centre for Autism

The centre publishes research bulletins that are summaries of peer review articles. In total, there are 12 research papers and topics include autism and siblings, autism and play and sensory processing
<https://www.middletownautism.com/research/>

National Council for Special Education. (2009). *International Review of the Literature of Evidence of Best Practice Provision in the Education of Persons with Autistic Spectrum Disorders*. Meath: NCSE

This report is an overview of international literature on educational provision for people with ASD between the years 2002 to 2008 (literature from 2008 to 2013 is forthcoming). The report systematically compiles key learning from a broad range of international literature and is an excellent resource for those working/caring for people with ASD. Each section reviews literature in a specific area and summarises implications for practice.

Special Educational Needs Cross-Border Professional Exchange Programme under PEACT II. (2006). *Opening the Spectrum insights into working with pupils on the autistic spectrum*

This publication is a cross border initiative detailing how to include people with ASD in particular settings, such as, educational establishments and the wider school community.

Michelle Garcia Winner (2000) Inside Out: What Makes a Person with Social Cognitive Deficits Tick?

This publication gives an understanding of the social deficits that impact on individuals with ASD.

National Council for Special Education. Educational Provision for Students with Autism Spectrum Disorder – forthcoming policy advice due 2015

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http://www.ncse.ie/uploads/1/2_NCSE_Autism.pdf access 1st May 2014

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¹⁴ <http://apps.who.int/classifications/icd10/browse/2010/en#/F84.0> accessed 28th may 2013

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¹⁶ <http://apps.who.int/classifications/icd10/browse/2010/en#/F84.0> accessed 28th May 2013

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Accessed 30th April 2014

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