

APPENDIX 2

DISABILITIES AND LEARNING



DISABILITY	CHARACTERISTICS	IMPLICATIONS FOR LEARNING
Amputation (Limb Loss and Limb difference)	Residual limb and phantom pain Skin irritation and abrasions with prosthetic limbs	Adjustments to be made to equipment, particularly the bike SEE APPENDIX ONE – BIKE TYPES
Arthritis	Inflammation within joints which causes pain Can be chronic	Session duration, frequency and difficulty directed by individual Possible difficulty with mobility and grip necessitating adjustments to equipment Possible joint sensitivity to weather – appropriate clothing and reschedule as required
Attention Deficit Hyperactivity Disorder (ADHD) Attention Deficit Disorder (ADD)	Inattentiveness Hyperactivity Impulsiveness Difficulties interacting with others Poor impulse control	Impact on duration of session – short attention span Impact on ability to listen – keep refocussing attention and keep explanations clear and concise and repeat for focus. Give calm, slow, simple instructions Impact on activity within session – important to keep high level of activity/cycling Build complex skills by breaking into parts Impact on risk perception Impact on group work as an individual with ADHD can often struggle with taking turns or in waiting to speak out/answer questions Praise skills well performed and focus on accomplishment



DISABILITY	CHARACTERISTICS	IMPLICATIONS FOR LEARNING
<p>Autistic Spectrum Disorder (ASD) SEE NOTE ONE*</p> <ul style="list-style-type: none"> • Autistic Disorder or classic autism • Asperger Syndrome – usually above average intelligence • Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) or atypical autism • Pathological Demand Avoidance (PDA) 	<p>Difficulties with social interaction and mixing</p> <p>Lack of awareness of social cues</p> <p>Difficulties with forming relationships/ friendships</p> <p>Sometimes low or lack of verbal skills</p> <p>Difficulty understanding gestures, body language, facial expressions and tone of voice</p> <p>Literal interpretation of language, often misunderstanding jokes etc.</p> <p>Often overly-formal or adult-like language in children</p> <p>May speak with an accent, often American</p> <p>May have unusual repetitive movements which precede actions</p> <p>May move whole body to look at things</p> <p>Often tied to specific objects or routines, reacting very strongly to change or disruption</p> <p>Often strong reaction to sensory conditions and sensitive to particular textures, smells, colours or sounds</p> <p>High level of anxiety when demands are placed on them</p> <p>Reluctance to engage if pressure is felt</p> <p>May show aggressive behaviour or have outbursts if pressure felt</p>	<p>Impact on group or one-to-one training environment</p> <p>Impact on equipment – may be issues with helmet wearing, contact of helmet straps under chin, particular with saddles, handlebar grips etc.</p> <p>Impact on environment – more sensitive to particular weathers or sensory conditions. Create a SENSORY PROFILE by being aware of difficulties, by being creative in how sensory experiences can be positive and by being prepared – warning an individual in advance</p> <p>Keep learning environment practice focussed rather than achievement focussed to reduce anxiety from perceived demands or pressure</p> <p>Communicate face-to-face with the individual, and at their level so they can see your facial expressions, use the persons name</p> <p>Ensure the individual always cycles towards you so you remain in their field of vision when giving instructions</p> <p>Communication should be based on “SAY LESS AND STRESS, GO SLOW AND SHOW” (Sussman, 1999)</p> <p>Accompany words with gesture or picture support</p> <p>Keep the training environment structured but open, so that you can follow their lead</p> <p>Build complex skills by breaking into parts, use visual cues such as cones or finish lines</p> <p>Keep environment and structure the same throughout training to ensure predictability and comfort</p> <p>If individual moves whole body to look at things, will have an effect on cornering</p> <p>Operate a SPELL framework for the learning environment – Structured, Positive, Empathetic, Low Arousal and Links (to others in the individual's network who will support the learning process) SEE NOTE 2*</p> <p>Impact on understanding verbal directions – there are often benefits to</p> <ul style="list-style-type: none"> • visual demonstrations • gestures and • physical manipulation training techniques (eg moving the leg and foot, in contact with the pedal, through the pedalling motion) <p>If aversion to physical contact is an issue, the trainer can try having a helper the individual knows give the demonstration.</p> <p>Generally, before touching an individual, always approach from the front and ask permission before touching</p> <p>If an individual shows signs of stress in the learning environment have a time out</p> <p>A meltdown is an intense reaction to a feeling of being overwhelmed and requires time, space and calm – a meltdown may be avoided by asking the helper if there are triggers to be avoided and if there are strategies that can be used to divert/distract from a meltdown</p> <p>Praise skills well performed and focus on accomplishment, tell what to do rather than what not to do</p> <p>Teach safety rules and be clear and specific about them</p>



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Cerebral Palsy	<ul style="list-style-type: none"> Disorder of movement Impairment of co-ordination Issues with muscle strength and tone Impacts on posture and movement Impairment to hearing and/or vision Loss of skin sensation Possible epilepsy (recurring seizures) Speech and language difficulties to varying degrees Possible delay in reaction time Short-term memory loss 	<ul style="list-style-type: none"> Assess INDIVIDUAL physique and mobility Speak to individual to find out their personal preferences in learning Temperature and weather may have exponential effects May require stretching and flexibility warm up May tire more quickly Particular balance and control considerations May be difficulty changing position May be difficulty holding and letting go handlebars Repetition of instructions if memory loss is an issue Build complex skills by breaking into parts and building Physical manipulation techniques may aid (eg go through physical action of pedalling, foot to pedal) One-to-one or small-group instruction Assist with equipment, buckles etc. may prove difficult
Deaf or Hard of Hearing	<ul style="list-style-type: none"> Communication difficulty and loss of sound perception Mild – difficulty with conversation, especially in noisy surroundings Moderate – need hearing aid to converse Severe – powerful hearing aids and lip reading Profound – lip reading and sign language 	<ul style="list-style-type: none"> Often poor acoustics in sports halls or outdoors Avoid exaggerated lip movement and long detailed explanations Avoid actions that will make perception of lip reading difficult such as standing sideways to the individual, looking at feet, chewing gum Have a red flag warning system (for emergencies only) For someone who has to remove their hearing aid have a system of agreed signals – use these for all trainees taking part in the session (eg arm raised, flat of hand facing trainees to signify “STOP”) Some situations may require an interpreter to facilitate What other technology is possible eg battery microphone systems May impact balance, as hearing and balance are linked Which communication methods are appropriate (eg hands on signing)?



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<p>Dyslexia</p> <p>Dyspraxia</p> <p>(Developmental coordination disorder (DCD))</p>	<p>Literacy and language related</p> <p>Inability to accurately sequence and memorise spoken or demonstrated instructions</p> <p>Affects movement, gross and/or fine motor skills, and co-ordination</p> <p>Physical movements often difficult to learn and retain and to carrying out movements in the right order</p> <p>Can cause un-co-ordinated, awkward movement</p> <p>Variable by time – one day may seem better performance than another</p> <p>Impact on learning ability</p> <p>May impact speech</p> <p>Possible behavioural or sensory issues</p>	<p>Possible impact on duration of session – short attention span</p> <p>Build complex skills by breaking into parts where there is an issue with following a series of instructions in order</p> <p>Greater repetition will assist learning</p> <p>Positive encouragement will assist learning</p> <p>Keep training area free of obstacles to minimise collision</p> <p>Keep training area free of people movement to minimise collision (eg don't use an area with expected footfall)</p> <p>Strive for a calm, controlled training area</p> <p>Be aware that weather conditions may cause anxiety</p> <p>May be more suited to one-to-one learning</p>
Global Developmental Delay	<p>Limited reasoning and conceptual skills</p> <p>Poor social skills and judgement</p> <p>Communication difficulties</p> <p>Aggressive behaviour as coping mechanism</p>	<p>Fine and gross motor delays may impact and delay balance and co-ordination</p> <p>Language and cognition considerations – clear, direct instructions focussing on one learning point at a time</p> <p>Use of photo and symbol cards to assist understanding</p> <p>Physical manipulation techniques may aid understanding (eg go through physical action of pedalling, foot to pedal)</p> <p>One-to-one or small-group instruction</p> <p>Assist with equipment, buckles etc. may prove difficult</p> <p>Buddy system to aid learning by seeing</p> <p>Role playing to introduce group cycling and road skill concepts (eg right of way)</p>



DISABILITY	CHARACTERISTICS	IMPLICATIONS FOR LEARNING
Intellectual Disabilities (ID) <ul style="list-style-type: none"> • Down Syndrome • Profound and Multiple Learning Difficulty (PMLD) • Severe Learning Difficulties (SLD) • Moderate Learning Difficulties (MLD) 	<p>Reduced ability to understand new or complex information</p> <p>Reduced ability to learn and apply new skills</p> <p>Reduced ability to remember new skills</p> <p>Reduced ability to cope independently</p> <p>Degree of ability will be linked to degree of Intellectual Disability</p> <p>Inability to express themselves</p> <p>Possible physical considerations to do with low muscle tone and loose joints for individuals with Down Syndrome</p> <p>Possible hearing impairment for individuals with Down Syndrome</p>	<p>Speak directly to the person, find out what they can do, their goals and establish a relationship</p> <p>Build routine and familiarity</p> <p>Language and cognition considerations – clear, direct instructions focussing on one learning point at a time, with repetition</p> <p>Will trigger words be appropriate?</p> <p>How does the individual communicate – gesture, pointing, single word?</p> <p>Build complex skills by breaking into parts</p> <p>Use of photo and symbol cards to assist understanding</p> <p>Physical manipulation techniques may aid understanding (eg go through physical action of pedalling, foot to pedal)</p> <p>One-to-one or small-group instruction</p> <p>Assist with equipment, buckles etc. may prove difficult</p> <p>Buddy system to aid learning by seeing</p> <p>Learning with the aid of a helper (parent/guardian/carer/teacher) who will ensure practice is done between training sessions</p> <p>Role playing to introduce group cycling and road skill concepts (eg right of way)</p> <p>Accessible and easy-to-read information – ROAD SIGNS</p>
Muscular Dystrophy	<p>Progressive deterioration of muscle strength and function</p>	As Cerebral Palsy
Oppositional Defiant Disorder (ODD)	<p>Usually a childhood condition</p> <p>Characterised by defiance and disobedience</p> <p>Often deliberately provocative</p>	Are there either school or parental structures and approaches in place for an individual which should be incorporated as part of cycle training?
Spina Bifida	<p>Paralysis, loss of sensation in lower body (waist down)</p> <p>Pressure sores</p> <p>Incontinence</p> <p>Hydrocephalus (water on the brain)</p>	<p>Adjustments to be made to equipment, particularly the bike</p> <p>SEE APPENDIX ONE – BIKE TYPES</p>



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Spinal Cord Injury/ Spinal Paralysis	Quadriplegia – loss of function below the neck Paraplegia – loss of function below the chest Monoplegia – loss of function in one limb Hemiplegia – loss of function on one side	How does the individual wish to participate? Try out Interact directly with the individual, making eye contact A wheelchair is part of the personal space of the user and shouldn't be encroached upon without first asking permission SEE APPENDIX ONE – BIKE TYPES If moving from a wheelchair to a specially adapted bike, check if the individual can manage themselves, or with the assistance of someone with them – some people may need a hoist to move and an unqualified, untrained person such as a trainer should not be involved in lifting
Stroke	Weakness, up to complete loss of movement, usually on one side of the body Can affect <ul style="list-style-type: none">• speech• vision• memory and• emotions	Assess INDIVIDUAL physique and mobility Speak to individual to find out their personal preferences in learning Temperature and weather may have a big impact May require stretching and flexibility warm up May tire more quickly Particular balance and control considerations May be difficulty changing physical position May be difficulty holding and letting go handlebars May need adjustments to brake levers to compensate for weakened grip Repetition of instructions if memory loss is an issue Build complex skills by breaking into parts and building Physical manipulation techniques may aid (eg go through physical action of pedalling, foot to pedal) One-to-one or small-group instruction Assist with equipment, buckles etc. may prove difficult



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Vision Impairment (VI)	<p>Total blindness or limited vision</p> <p>Stable or gradually degenerating</p>	<p>Will particular lighting and contrast be of help?</p> <p>How will this affect training options in terms of time of day and place of training (inside or out)?</p> <p>Remember to always introduce yourself</p> <p>If assistance is needed, offer your right elbow to an adult (wrist to a child) and walk slightly ahead and to the left</p> <p>Does the individual have difficulty with bright lights?</p> <p>Does the individual have difficulty with moving from dark to bright areas?</p> <p>Does the individual have central vision loss (difficulty reading)?</p> <p>Does the individual have peripheral vision loss (lack of 20/20 vision)?</p> <p>Does the individual have general vision loss (blurred, light and shade only)?</p> <p>Use the clock method by talking through the layout of the training area with reference to positions of a clock ("the wall is at 3 O'Clock")</p> <p>Keep training space free of obstacles/equipment</p> <p>Advise trainees of any changes to the training area</p> <p>Which communication methods are appropriate (eg Braille on the hand)?</p> <p>When cycling on a tandem as pilot with a person with a vision impairment, the trainer's role is to create as complete a picture of the environment as possible for the trainee, including cars, street furniture, signs, traffic lights etc. The pilot is responsible for manoeuvring and position while the rear rider signals on the prompting of the pilot</p>

GENERAL COMMUNICATION:

1. Positive, supportive, with frequent praise and encouragement
2. Clear and calm delivery
3. Pitched at conversational level rather than shouting



NOTES

Note 1*

Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development. These disorders are characterised, in varying degrees, by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviours. With the May 2013 publication of the DSM-5 diagnostic manual, all autism disorders were merged into one umbrella diagnosis of ASD. Previously, they were recognized as distinct subtypes, including autistic disorder, childhood disintegrative disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS) and Asperger syndrome.

Note 2* National Autistic Society UK

What is the SPELL framework?

SPELL stands for Structure, Positive approaches and expectations, Empathy, Low arousal, Links.

Structure

Structure makes the world a more predictable, accessible and safer place. We can support people on the autism spectrum in creating structured environments using visual information. Structure can aid personal autonomy and independence by reducing dependence (eg prompting) on others. Environments and processes can be modified to ensure each person knows what is going to happen and what is expected of them, reducing anxiety.

Positive (approaches and expectations)

We must seek to establish and reinforce self-confidence and self-esteem by building on natural strengths, interest and abilities.

Expectations should be high but realistic and based on careful assessment. Assessments should be made from as wide a perspective as possible and should include a view of the barriers in accessing opportunity. For example, many people on the autism spectrum may have difficulty with verbal communication, leading to an underestimation of their ability and potential. Conversely some may have a good grasp of speech but this may mask other needs.

Many autistic people may avoid new or potentially aversive experiences, but through the medium of structure and positive, sensitive, supportive rehearsal can reduce their level of anxiety, learn to tolerate and accept such experiences and develop new horizons and skills.

Empathy

We must try to see the world from the standpoint of the autistic child or adult, knowing what it is that motivates or interests them but importantly what may also frighten, preoccupy or otherwise distress them. This is a key ingredient in the 'craft' of working with people on the autism spectrum.

Making efforts to understand, respect and relate to the experience of the autistic person must underpin our attempts to develop communication and reduce anxiety. The quality of the relationship between the person and supporter is of vital importance. Effective supporters are calm, predictable, good humoured, empathetic and analytical.

Low arousal

Approaches and the environment need to be calm and ordered in such a way so as to reduce anxiety and aid concentration. There should be as few distractions as possible, paying attention to noise levels, colour schemes, odours, lighting and clutter, for example. Some people may need more time to process information, especially speech. Clear information should be given in the medium best suited to the individual with care taken not to overload or bombard.

Some people may seek out sensory experiences. This is best achieved with an approach where the input can be regulated.

Low arousal should not be confused with 'no arousal'. It is of course desirable that people are exposed to a wide range of experiences but that this is done in a planned and sensitive way. It is recognised that for the most part the individual may benefit most in a setting where sensory and other stimulation can be reduced or controlled. Supplementary relaxation and arousal reduction therapies, multi-sensory rooms, music and massage, sensory diet etc may be helpful in promoting calm and general well-being and in reducing anxiety.

Links

Autistic people, their parents or advocates should be seen as partners. Recognise the benefits of sharing information and working alongside the individual, their families and other professionals. Open links and communication will reduce the risk of misunderstanding, confusion or the adoption of fragmented, piecemeal approaches. Create and maintain links between the individual, their wider support networks and the community.