# RCSLT acquired brain injury member pages

## DRAFT FOR CONSULTATION

### June 2025

Information contained within this document is for consultation only and should not be shared outside of this.

The information in this document is currently in development and has been shared as part of a consultation. If you are seeking guidance or information on this topic, please ensure you refer to final published content which can be found on rcslt.org.

We appreciate any comments provided to us during the consultation, all of which will be reviewed by the working group within the context and scope of the project. We ask that, where possible and relevant, you accompany any counter arguments to statements made in the document with supporting evidence eg a research reference.

Members of the working group should not be contacted directly and all feedback should be made through the assigned route eg via survey or project manager. Feedback made through unassigned routes or after the closing date will not be accepted or responded to.

Thank you for your support with this project.

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# **RCSLT member pages**

## Introduction

This guidance is to support speech and language therapists (SLTs) working with people with acquired brain injury (ABI).

The information in these pages should act as clinical guidance and provides a summary of current literature; it is not exhaustive. SLTs should continue to use evidence-based clinical judgement alongside the guidance.

See the member resources page [link to be added when published] for useful resources relating to working with individuals with a brain injury.

For professionals looking for information about speech and language therapy in ABI and the role of SLTs, refer to [link to be added when published] pages.

For general information about how SLTs can support individuals who have had a brain injury and their friends, families and/or carers, refer to the public webpages [link to be added when published].

If you have any suggestions or feedback on these pages, please [contact us](https://www.rcslt.org/help-and-support/contact-us).

## Definition

ABI is commonly defined as any injury or trauma to the head and/or brain which disrupts the function of the brain (NICE, 2023; CDC, n.d.).

An ABI may involve the scalp, the skull, the brain or its protective membranes. The injury can result in speech, voice, language, communication and/or eating, drinking and swallowing (EDS) difficulties.

A number of terms and labels are often used when talking about ABI including ‘brain injury’, ‘acquired brain injury’, ‘traumatic brain injury’ and ‘head injury’. In countries such as Australia, Canada and the USA, where the majority of the literature comes from, specific distinctions between traumatic brain injury (TBI) and other ABIs are necessary in order to access certain health insurances and adequate support.

Generally, and for the purposes of this guidance, the NICE (2023) definition for ABI will be used, which includes any brain injury that has occurred after birth and excludes congenital conditions and neurodegenerative conditions such as motor neurone disease or multiple sclerosis. For the purposes of this guidance, cerebral palsy will not be counted as an acquired brain injury. See RCSLT’s [cerebral palsy guidance](https://www.rcslt.org/members/clinical-guidance/motor-disorders/motor-disorders-guidance/#section-1) for further information.

It is also recommended to refer to the definition and criteria for the particular service you work in. For example, some services may count specific types of strokes, such as a subarachnoid haemorrhage, but not mild brain injuries in their scope of practice.

This guidance will be in reference to TBI primarily, though the principles are applicable to all ABIs. See RCSLT clinical guidance pages for specific non-traumatic injuries (eg stroke).

## 3. Terminology and aetiology

ABI is the umbrella term for a range of brain injuries.

ABIs can be either traumatic or non-traumatic.

### 3.1 Traumatic brain injury (TBI)

TBI refers to an event which results from an impact or blow to the head (eg from a fall or a road traffic accident). TBI can be a result of either closed or open injury to the head.

Closed head injury describes trauma that does not result in opening of the skull. It typically gives rise to diffuse damage in the brain following a blunt force trauma (eg falls, motor vehicle accidents or sports injuries) and/or acceleration-deceleration injuries (eg whiplash or violent shaking, assaults or abusive head trauma).

Open (or penetrating) head injury is where the skull is fractured, and foreign objects penetrate the brain tissue. These tend to give rise to more focal damage. Examples of an open head injury include a gunshot wound, stabbing or injury caused by an explosion.

### 3.2 Non-traumatic brain injury

Non-traumatic brain injury is caused by events that occur inside the body, such as:

* neuro-infections and neuro-inflammation such as encephalitis, meningitis, brain abscess or COVID-19 (Agoston, 2024; Michael et al, 2023) (see RCSLT’s [Long COVID](https://www.rcslt.org/members/clinical-guidance/long-covid/long-covid-guidance/) guidance for further information)
* cardiovascular issues such as stroke and other vascular events, or cardiac arrest resulting in hypoxia (see [RCSLT's stroke guidance](https://www.rcslt.org/members/clinical-guidance/stroke/stroke-guidance/) for further information)
* hypoxia due to respiratory arrests, non-fatal drowning, failed hanging attempts, suffocation or carbon monoxide poisoning causing neuronal cell death
* neuro-oncology issues such as glioblastoma, meningioma, medulloblastoma, metastatic tumours or radiotherapy damage resulting in brain necrosis
* neurotoxicity such as carcinogens or substance abuse (alcohol, drugs, heavy metals, toxins), which can lead to toxic encephalopathy
* metabolic disorders such as severe hypoglycaemia or hypokalaemia, which can cause hypoxia and neuronal damage.

### 3.3 Mild traumatic brain injury (mTBI) and concussion

mTBI is a type of brain injury that can be considered temporary, although it can take several months to heal (CDC, n.d.).

mTBI and concussion are interchangeable terms, with concussion being used more in the paediatric population and sports concussion being a sub-type (Levin and Diaz-Arrastia, 2015). NICE (2023) does not provide a differential definition for either term and counts them both as a head injury.

The World Health Organization (WHO) recognises mTBI as a significant public health concern, emphasising the importance of proper diagnosis and management to prevent long-term consequences (Holm et al, 2005).

Symptoms may not appear immediately and can develop over hours, days or even weeks following the injury. Attention should be paid to any new signs and symptoms.

Only around 10% of reported mTBIs or concussions involve a loss of consciousness, so it’s important not to rely solely on this as an indicator.

Key characteristics of mTBI include:

* a Glasgow Coma Scale (GCS) score of 13–15
* loss of consciousness (LOC) of up to 30 minutes
* post-traumatic amnesia (PTA) for less than 24 hours
* typically normal neuroimaging.

Common symptoms include:

* headaches
* dizziness
* nausea
* fatigue
* blurred vision
* sensitivity to light or noise
* difficulty concentrating or remembering
* mood changes (eg mood swings, irritability, sadness).

### 3.4 Persistent post-concussive symptoms (PPCS) or post-concussion *s*yndrome (PCS)

PCCS or PCS can be used to refer to ongoing cognitive, physical and emotional symptoms that last for more than three months after an mTBI or concussion. They can persist for months or even years (Reddy, 2011).

Younger individuals or those with prior concussions may take longer to recover.

### 3.5 Chronic traumatic encephalopathy (CTE)

CTE is a type of brain injury caused by repeated brain injuries including concussions over time (Stern et al, 2011; CDC, n.d.). It may be experienced by boxers who take repeated blows to the head or by those who play contact sports.

CTE usually develops over years. It can take years or even decades to show symptoms and is sometimes only identified at a postmortem.

Key features of CTE are progressive degeneration of brain tissue and abnormal build-up of tau protein (also seen in Alzheimer’s disease but with a different distribution pattern).

Common symptoms include:

* memory loss
* confusion
* impaired judgment
* aggression or mood swings
* depression or suicidal thoughts
* increased risk of neuro-progressive conditions including Parkinsonism and Dementia.

### 3.6 Severity

ABIs are typically categorised as ‘minor’, ‘moderate’ or ‘severe’ according to medical symptoms. 85-90% of ABIs are classed as mild (Cassidy et al, 2004).

For TBIs, this categorisation is based on medical assessment tools such as the Glasgow Coma Scale (Teasdale and Jennett, 1974), which measure the individual’s level of consciousness after a TBI. The GSC does not assess the subsequent effects (physical, physiological, cognitive, communicative or psychological) and outcomes following the brain injury, which can have a devastating and long-term impact even if someone has a mild brain injury.

## 4. Statistics

Challenges with the way in which ABI is recorded affect the accuracy of the statistics for this clinical population. Most epidemiological studies typically rely on the ICD-10 classification of head injury and hospital admission rates (Headway, 2018). However, many ABIs, particularly mTBIs and concussions, would not be captured under this classification and are unlikely to be admitted to hospital. Some studies have shown up to 50% of these individuals have persisting effects a year after injury (Bloom et al, 2022). Consequently, this can lead to an underestimation of the true incidence, prevalence and long-term needs of individuals with ABI.

A recent Freedom of Information (FOI) request made by UKABIF (n.d.) found there is currently no definitive data collected to provide accurate data on the prevalence of ABI in the UK.

The evidence base for ABI and the role of speech and language therapy remains limited. There is no established data or statistics on the proportion of individuals with ABI who experience cognitive communication disorders (CCD), which presents a significant challenge when advocating for services or seeking support and funding from commissioners.

Statistics from Headway UK (Headway, n.d.), APPG - Time for Change (Menon, 2018), All-Party Parliamentary Group for Acquired Brain Injury and UKABIF (2025) and NICE (2023) suggest:

* ABI is the leading cause of death and disability in people aged under 40 in the UK.
* An estimated 1.3 million people in the UK live with an ABI-related disability.
* Wellbeing costs associated with ABI are an estimated £91.5 billion.
* The annual cost of ABI to the UK is an estimated £43 billion a year. The NHS annual budget is a quarter of that.
* Every year there are approximately 356,699 hospital admissions with an ABI in the UK. That is approximately 977 a day, or one every 90 seconds (Headway, n.d.). By comparison, in the UK, someone is admitted with a stroke every four minutes.
* ABI accounts for 3.4% of all A and E attendances in the UK (Gerritsen et al, 2018).
* Approximately 40, 000 people are admitted to hospital with a TBI.
* Approximately 90% of ABIs in a hospital setting are mild.

## 5. Risk factors

ABI can affect anyone. However, certain populations, characteristics and behaviours significantly increase the risk or can influence recovery outcomes.

### 5.1 Age

Infants and toddlers are at highest risk due to falls, abusive head trauma and accidents (Alison et al, 2017).

Up to 50% of people with ABI are aged under 15. This is likely due to risk-taking behaviours, sports injuries and motor vehicle accidents.

Younger people (aged 20 to 40) tend to have more behavioural and mood changes with chronic traumatic encephalopathy (CTE), while those who are older (aged 50+) tend to have more cognitive difficulties.

Older adults are at risk of increased falls due to balance issues, vision impairment, medications or frailty. When they experience an ABI, they are more likely to have lasting symptoms and co-morbidities that may make treatment and recovery more complex. There is a higher mortality rate among older adults with ABI than among younger individuals (Chan et al, 2013; Thompson et al, 2006; Harvey and Close, 2012).

### 5.2 Gender

Men are at higher risk of ABI than women (nearly twice as likely). This may be due to increased participation in contact sports, high-risk jobs and combat, as well as increased likelihood of reckless behaviour and violence (Mollayeva et al, 2018).

Women may experience more frequent concussion-related symptoms (eg in contact sports).

Women are more likely to have a poorer and longer recovery due to hormonal influences (Wunderle et al, 2014).

### 5.3 Health-related conditions

Certain medical conditions increase the likelihood of brain injury or complicate recovery (eg surgical intervention for cardiovascular conditions).

Conditions such as epilepsy or cerebral palsy heighten the risk of falls and seizures.

Certain conditions can be associated with potential for repeated or multiple insults to the brain, eg sickle cell disease or epilepsy, with resultant complex and varied patterns of deficit.

People with a history of ABI are at a much higher risk of having further brain injuries and second-impact syndrome, where a second concussion occurs before the first one resolves. Related deaths can be attributed to unintentional falls and suicides (Centre for Mental Health, 2016).

Having a TBI roughly doubles the risk of experiencing another injury and having had two TBIs increases the risk of a third injury eight-fold (Parsonage, n.d.).

### 5.4 Neurodivergence

Some neurodivergent people may be at a higher risk of ABI due to their associated behaviours (impulsive behaviours, coordination difficulties, reduced attention, repetitive physical behaviours such as head banging or self-stimulating behaviour). Adverse childhood experiences may also add to their increased vulnerability (Hughes et al, 2024).

Autistic children have a 40% higher rate of hospital treatment for head, face and neck injuries (McDermott et al, 2008).

Increased risk of violence faced by autistic adults highlighted; autistic women and those who are transgender or gender non-conforming are at greatest risk (Gibbs et al, 2022).

There is a higher risk of ABI in siblings of children with ADHD (Wu et al, 2024).

### 5.5 Substance abuse and mental health conditions

Alcohol and drug usage impairs judgment, coordination and reaction time, increasing the risk of falls, accidents and assaults, which may lead to ABI (Parsonage, n.d.).

Depression and suicidal behaviour are associated with a higher likelihood of self-inflicted head injuries (Parsonage, n.d.).

### 5.6 Socioeconomic risk

Broader social and environmental influences play a role in ABI prevalence. Low socioeconomic status (SES) and poor living conditions give rise to poor access to healthcare, which leads to delays in diagnosis and treatment.

Unsafe living conditions can lead to increased risk of falls and assaults. Additionally, people living in unsafe conditions are unlikely to have access to protective equipment such as bicycle helmets.

Violence and domestic abuse increases the risk of head trauma from assaults, intimate partner violence or child abuse.

A lower socioeconomic background may lead to a higher risk of head injury. This is seen as independent of race and ethnicity (Johnson and Diaz, 2023).

### 5.7 Race and ethnicity

Individuals from the global majority are found to be at higher risk of sustaining an ABI and have a higher risk of subsequent death and managing with functional outcomes (Brainkind, n.d.).

Individuals from the global majority are less likely to be discharged to inpatient rehabilitation, and when they are discharged into this setting, they are likely to be discharged more slowly (Brainkind, n.d.).

Individuals from the global majority have also been shown to use rehabilitation services less than the global minority (Asemota et al, 2013).

### 5.8 Occupation and environment

A number of occupational factors can affect an individual’s risk of ABI. These include:

* military and combat exposure such as blast injuries, head trauma or repetitive concussions
* High-risk jobs such as construction, military, firefighting and law enforcement
* Exposure to toxic chemicals or carbon monoxide
* Working at heights without proper safety protection

Environmental factors can also affect the risk. Urban areas have higher rates of motor vehicle accidents, violence and falls, while rural areas can have limited access to specialist trauma care, which could increase the severity of untreated injuries.

### 5.9 Behaviour and lifestyle

Certain behaviours significantly raise the risk of ABI. For example, reckless driving or driving under the influence of drugs or alcohol increases the risk of road traffic accidents, which can lead to ABI.

### 5.10 Sports and recreational activities

Taking part in high-contact sports such as football, rugby, boxing and hockey, or in extreme sports such as skateboarding, skiing or mountain biking can increase the risk of a TBI.

Improper or reduced use of protective gear and returning to play too soon after a concussion or head injury can also lead to increased risk.

## 6. Role of speech and language therapy in ABI

SLTs play a vital and complex role in supporting individuals with ABI as well as their network including social, education and health care professionals, carers, friends and families.

An SLT’s role can vary depending on the stage of recovery (acute or chronic), the individual’s specific needs and the setting they are in.

SLTs are integral members of multidisciplinary teams, providing expert support in communication, eating, drinking and swallowing (EDS), advocacy and education. Their role extends beyond clinical intervention to include training, awareness-raising and medico-legal contributions, ultimately improving the quality of life for individuals with ABI and their loved ones.

### 6.1 Assessment and identification of *c*ommunication *c*hanges

SLTs play an important role in the exploration, assessment, identification and differential diagnosis of changes in an individual’s communication abilities following an ABI. This could be speech, voice, language and/or communication difficulties. It is important to understand the individual’s pre-injury communication skills versus their post-injury skills and how the injury is impacting on their ability to function, in order to support them optimally.

### 6.2 Assessment and identification of eating, drinking and swallowing (EDS) difficulties

SLTs may need to assess the effects of ABI on an individual’s ability to eat, drink and swallow safely. Cognitive impairments may exacerbate these difficulties. SLTs can also facilitate discussions, decision-making and strategy implementation while providing training to caregivers and professionals.

### 6.3 Differential diagnosis

SLTs help to distinguish between different types of communication impairments and EDS difficulties. Help may be required to differentiate between purely cognitive impairments and cognitive communication disorders (CCD). Common conditions that may co-occur with a brain injury include aphasia, CCD or EDS difficulties.

### 6.4 Intervention

SLTs implement therapeutic interventions aimed at recovery and/or compensatory and/or maintenance strategies to enhance communication and EDS functions that may have been affected after ABI via neurorehabilitation. This may include psychoeducation and/or AAC assessment and implementation. A consultative approach to a support team may be used*.*

### 6.5 Contribution to holistic formulation

SLTs contribute to the broader understanding of the individual by providing insights into communication, cognition and functional abilities as part of a comprehensive rehabilitation plan.

### 6.6 Collaboration and multiagency work

SLTs are an integral part of a multidisciplinary team (MDT) supporting a person with a brain injury to achieve their goals.

SLTs collaborate with a broad range of professionals in addition to the immediate neurorehabilitation MDT team. These may include maxillofacial teams, ENT specialists, independent healthcare providers (eg Cygnet), charitable organisations (eg Headway), independent SLTs, medicolegal teams, social care services and social workers, nursing and care homes.

Building strong therapeutic relationships and working collaboratively with the wider MDT are essential.

### 6.7 Training and education

SLTs provide education and training to the individual, to their family/caregivers and wider social network, and to the MDT on communication and EDS changes, therapeutic interventions (such as communication partner training) and the role of the SLT when working with individuals with ABI.

Social workers and other social care professionals often receive limited training in communication disorders. Programs such as ‘Heads Together’ aim to improve awareness and interdisciplinary collaboration (Howell et al, 2023).

### 6.8 Awareness-raising

SLTs raise awareness about the hidden and overt communication and EDS difficulties associated with ABI, as well as the role of speech and language therapy in this area.

### 6.9 Psychoeducation

Psychoeducation is an integral part of neurorehabilitation. SLTs play a key role in psychoeducation, helping individuals and their families understand the effect of brain injury on communication and swallowing.

### 6.10 Raising insight into communication and EDS changes

SLTs help individuals recognise and understand their communication and/or EDS changes and their potential impact on daily function. This insight is essential for active participation in neurorehabilitation.

### 6.11 Advocacy and *s*upport

SLTs play an important role in advocacy for individuals who experience communication and EDS difficulties.

### 6.12 Promoting self-advocacy

Empowering individuals (or in the case of children and young people, their parents/caregivers) to advocate for their own communication and EDS needs is a key part of neurorehabilitation and self-management. SLTs can support individuals to develop self-advocacy.

### 6.13 Mental *c*apacity and shared decision-making

SLTs support individuals in decision-making processes by assessing communication, in particular cognitive communication abilities, and ensuring informed choices are made.

### 6.14 Addressing communication breakdowns

SLTs can equip individuals with strategies to repair communication breakdowns and reduce barriers to social interaction as well as engage in neurorehabilitation.

### 6.15 Counselling and emotional support

SLTs often provide emotional support alongside clinical interventions.

### 6.16 Working with complex conditions

SLTs are skilled in managing communication and EDS difficulties that arise in individuals with complex, co-occurring conditions such as dual communication diagnoses (eg aphasia and CCD) and dual clinical diagnoses (eg ABI and a mental health disorder).

### 6.17 Supporting return to work or education

SLTs can assist individuals in re-integrating into vocational or educational settings by addressing communication challenges specific to that context (Meulenbroek et al, 2022).

### 6.18 Support at transitional points

SLTs are an important part of the process of transitions, supporting individuals and their MDTs with moving from primary to secondary school, transitioning to college and higher education, moving from mainstream to specialist school, moving from paediatric to adult services, or gaining or returning to employment.

### 6.19 Medico-legal involvement

TBIs (eg from medical negligence, road traffic accidents or workplace injuries) can lead to criminal or civil legal proceedings, which may involve input from medico-legal services. SLTs may be involved as the treating therapist or instructed as an expert witness.

Educating legal professionals including case managers, solicitors, judges, court personnel, police and probation officers on the hidden and misunderstood impacts of ABI on communication and EDS, is an essential part of SLTs’ role, alongside helping them understand the extent of the individual’s impairments.

### 6.20 Awake craniotomy

SLTs play a role in intraoperative brain mapping and ensuring communication function is preserved. See RCSLT’s guidance on awake craniotomy for further information. [link to be added when awake craniotomy guidance is published].

### 6.21 Research and development

SLTs contribute to evidence-based practice and advance the field through research. Research and evidence is severely lacking in the UK. Much more research is needed, particularly around CCD and ABI, as well as paediatric ABI in general. At the moment, many SLTs seek information from the adult literature.

## 7. Impact of ABI

Impairment to the brain following an ABI can be categorised as focal damage or diffuse damage (or both):

* Focal damage is where damage is confined to a specific area of the brain (eg brain tumour, ischaemic stroke, stab wound).
* Diffuse damage is where the damage is more widespread. Diffuse damage may occur over multiple regions of the brain (eg diffuse axonal injury, hypoxia, concussions).

In TBI, the brain can be injured not only at the point of impact (coup) but also on the opposite side (contrecoup) as it moves within the skull. For example, hitting your forehead on the windshield in a car accident may injure both frontal and occipital lobes. Assessment and intervention should consider both localised and widespread damage when understanding the effects.

Diffuse axonal injury (DAI) is the most common type of injury to the brain in TBI. Widespread damage to the brain’s white matter disrupts communication among nerve cells in the brain. This also leads to the release of neurochemicals that can cause further damage. This damage may be temporary or permanent; recovery can take a long time.

Primary effects following the initial physical trauma to the brain may include:

* skull fractures
* lacerations and contusions
* hypoxaemia
* hypertension
* intracranial haemorrhage
* raised intracranial pressure

These can lead to:

* inflammation
* swelling
* reduced blood flow
* metabolic changes
* herniation.

Brain injuries often result in widespread and long-term impairments, including:

* physiological issues such as fatigue, persistent headaches, chronic pain, epilepsy and sensory changes
* cognitive difficulties including problems with memory, attention and concentration, processing speed, executive dysfunction and cognitive fatigue
* emotional and psychological impact such as emotional lability, personality changes, loss of confidence or identity, and behavioural changes
* communication difficulties including dysarthria, aphasia, CCD, apraxia of speech and dysphonia, with many co-occurring.

These impairments often co-occur, are often lifelong and can significantly impact daily functioning.

### 7.1 Lifelong impact

ABI is a lifelong condition. Thanks to medical advances, more people are surviving the initial trauma, but this leads to a growing population who are living with long-term consequences, including difficulties with communication, cognition, emotional wellbeing, social relationships and EDS (Holloway and Tasker, 2019). ABI can also disrupt typical developmental trajectories, particularly when sustained during childhood or adolescence (Kurowski et al, 2023).

While some people make a good recovery, many require long-term rehabilitation, workplace support and social services. In severe cases, ABI can lead to profound disability or even death. Even mild ABI can lead to serious challenges if left unaddressed.

The terms ‘hidden disability’ and ‘walking wounded’ are often used to describe individuals whose impairments may not be immediately apparent or visible. Individuals may appear to manage simple and daily tasks yet struggle with complex tasks such as making significant life decisions or managing finances. They may also perform adequately on formal assessments, which are typically conducted in quiet, structured environments and do not reflect the demands of real-world communication. As a result, their true difficulties may go unrecognised and their needs may be overlooked.

SLTs play a vital role in identifying and helping with these challenges. SLTs can support individuals in improving communication and quality of life, thereby reducing social isolation, promoting reintegration and alleviating the broader societal and economic burdens of ABI.

Early intervention, ongoing support and increased awareness are essential to improving outcomes and fostering independence for people living with ABI.

### 7.2 Reduced social interactions, social networks and increased isolation

The high presence of cognitive and communication difficulties leads to vulnerability and increased problems in social participation (INCOG 2.0 guidelines; Togher et al, 2023), with social withdrawal being one of the most significant long-term effects.

Social isolation can be the largest impact, particularly chronically, and has been shown to carry the same mortality risk as long-term smoking (Byrne et al, 2022).

Loss of employment and reduced social networks further contribute to isolation (Cuthbert et al, 2015).

As experts in communication and interaction, SLTs are perfectly placed to support individuals to reduce or avoid this risk and mitigate social disengagement.

### 7.3 Impact of ABI on families and caregivers

ABI not only affects the individual, but also their family and caregivers, who often experience a wide range of emotional and practical challenges. These can include:

* stress, frustration and anger
* sudden role reversals and shifts in family roles and responsibilities
* feelings of isolation and resentment
* strained relationships – sometimes leading to them breaking down
* reduced participation in leisure activities
* ongoing emotional strain

These multifaceted impacts can significantly affect the wellbeing of those supporting a person with ABI and may influence family dynamics, daily routines, and overall quality of life.

The support of family and caregivers is crucial for the survivor’s recovery, but they will likely need comprehensive assistance and resources to sustain their caregiving role and their own wellbeing.

### 7.4 Loss of employment and/or education

Return to employment/education after ABI is complex. Research shows a decline in employment rates post-injury (Kreutzer et al, 2003).

Only 41% of individuals employed before a brain injury return to work within two years and those who don't by then are unlikely to return at all. Even among those who do, sustaining employment remains difficult (Radford et al, 2018). Even when they have returned, employment is usually significantly fewer hours and not at pre-injury level of responsibility (Libeson et al, 2022).Cognitive and behavioural changes play a significant role in employment retention (Bricout and Bentley, 2000).

Individuals with ABI often face stigma in hiring, comparable to those with mental health conditions such as schizophrenia (Craven et al, 2024).

Children and young people (CYP) face challenges when returning to school after ABI (all severities) including fatigue, memory problems, slower processing and challenges with keeping up with homework (Anderson et al, 2021).

CYP need tailored return-to-education programs and accommodations to support academic success and social reintegration.

Many CYP have special educational needs post-injury, but not all receive appropriate educational plans or funding, underscoring gaps in support.

### 7.5 Change to identity

ABI may cause an individual's sense of identity within their family, social and work environment to alter, usually negatively (Beadle et al, 2016).

Individuals may no longer be able to engage in traditional roles, responsibilities and dynamics within their families and peers groups (eg breadwinner or caregiver).

Subsequently, they may require additional support to return to work or be unable to return to positions previously held.

### 7.6 Societal and economic cost and burden

ABI poses significant societal and economic challenges worldwide, impacting healthcare systems, productivity and the quality of life of individuals and their families.

The economic burden extends beyond direct medical costs, encompassing indirect costs such as lost work time and early retirement, which account for the majority of expenses associated with mild brain injury.

Addressing the societal and economic burden of ABI requires a comprehensive approach, emphasising prevention, efficient healthcare delivery and robust support networks for patients and their families.

### 7.7 Reduced health-related quality of life (HR-QoL)

General quality of life post injury is reported as lower after ABI than for other groups with long-term and life-changing health conditions (Horneman et al, 2005).

Changes to communication and EDS can lead to a reduced QoL as they often lead to withdrawal from interaction, which can subsequently impact on building and maintaining relationships (romantically, platonically, or collegiately) and therefore lead to a reduction in social networks and social isolation.

### 7.8 Health inequality

The hidden disability of ABI leads to health inequality for this vulnerable group, with many services unequipped to care for or rejecting those who have had an ABI (Horneman et al, 2005).

### 7.9 Mental health

All types of mental health disorders have been found to be more common following ABI, with increased rates of depression (90%), post-traumatic stress disorder (PTSD) (70%), panic attacks (40%) and aggressive behaviour (30%) (Schwarzbold et al, 2008).

This increased incidence is also evidenced in children and young people (Massagli et al, 1993; McKinlay et al, 2010).

ABI doubles the risk of developing mental health problems.

#### 7.9.1 Depression

Depression occurs more frequently in individuals with ABI than in the general population. However, it is often underdiagnosed due to atypical presentation and symptom masking after ABI.

Research has found that 60% of individuals with ABI had not been asked about their mental health in the first three years following the ABI. Missed diagnosis and therefore lack of support and intervention can impact on the individual’s ability to progress through neurorehabilitation.

If an individual’s cognitive function is not as good as it could be after the brain injury, this can indicate that they may have depression.

#### 7.9.2 Schizophrenia

There is a significant association between ABI and schizophrenia (Malaspina et al, 2001). Individuals are more likely to develop schizophrenia if they have had an ABI (Fazel et al, 2013; Cheng et al, 2024; Molloy et al, 2011; Malaspona et al, 2001).

#### 7.9.3 Suicide risk

Suicide risk is significantly higher in individuals with ABI compared to the general population (Fann et al, 2002; Fazel et al, 2014), with the risk remaining lifelong, unlike with cancer diagnosis for example (Misono et al, 2008).

Psychological support for emotional regulation and mental health management is required.

Research by Timonen et al (2002) found that after controlling for other possible influences such as socio-economic background, having ABI as a child or young person more than doubled the risk of psychiatric disorder in adulthood.

### 7.10 Substance misuse

ABI is strongly associated with misuse of substances such as drugs and alcohol due to consequences of misuse including increased impulsivity, reduced coping skills etc. (Centre for mental health, 2016; McKinlay et al, 2010).

### 7.11 Criminal justice system

Brain injury is significantly overrepresented in the criminal justice system (Pitman et al, 2012). Recent research has found that:

* having a TBI increases the risk of offending by at least 50%
* 60% of prisoners have experience of TBI (Williams et al, 2010)
* 70% of those with a history of TBI experienced their first injury before they committed their first offence (Pitman et al, 2012)
* up to 87% of individuals in the criminal justice system have ABI (Linden et al, 2024)
* up to 72% of young offenders have ABI (Hughes et al, 2015)
* up to 60% of the prisoner population have communication difficulties (Bryan et al, 2007).

As vulnerable adults, individuals with ABI require appropriate support throughout the criminal justice process, from arrest to court proceedings and potential incarceration. However, many professionals within the system remain unaware of the often-hidden disabilities that can follow an ABI.

A 2022 Freedom of Information (FOI) request by UKABIF revealed that 10 out of 44 police forces in England and Wales had no screening, assessment, or referral pathways in place for identifying and supporting those with ABI.

Speech and language therapy can play a valuable role in supporting this population (Togher, 2004).

Routine screening for ABI should be implemented at key stages in the criminal justice system, enabling timely referral to appropriate services. This is essential not only for ensuring fair access to justice but also for reducing the risk of re-offending, especially for those who may never have received intervention previously.

Access to registered intermediaries should also be made available for individuals with ABI when needed, to facilitate effective communication throughout legal proceedings. Moreover, tailored support should continue upon release, to support reintegration into the community and reduce the rate of re-offending.

See [RCSLT justice settings](https://www.rcslt.org/speech-and-language-therapy/where-slts-work/justice/) for further information.

### 7.12 Homelessness

ABI is overrepresented in the homeless population compared with the general population, with up to 53% of people who are homeless having a brain injury (Topolovec-Vranic et al, 2012).

90% of the homeless population report having an ABI before becoming homeless (Oddy et al, 2012).

Communication needs are more common among rough sleepers than the general population (Andrews and Botting, 2020).

SLTs working in ABI have a role to prevent or minimise the risk of homelessness happening and to help and support those who are now homeless.

According to a survey by the Homelessness CEN, 75% of SLTs do not ask about an individual’s housing situation. SLTs and healthcare professionals must assess housing stability when working with brain injury and identify future risks.

See [RCSLT speech and language therapists working in homelessness settings](https://www.rcslt.org/wp-content/uploads/2024/10/RCSLT-and-Homelessness-CEN_policy-statement_October2024.pdf) and [RCSLT homelessness and speech, language and communication](https://www.rcslt.org/members/delivering-quality-services/homelessness-and-speech-language-and-communication/#section-1) webpages for further information.

### 7.13 Increased risk of mental capacity changes

ABI sequelae including executive dysfunction, reduced insight, memory and attention difficulties and CCD may all impact an individual’s capacity to make decisions.

ABI is a causative nexus. Accordingly, Deprivation of Liberty Safeguards (DoLS) frequently occur.

Individuals with CCD or executive dysfunction may be able to answer hypothetically but behave differently in the moment (George and Gilbert, 2018). They may appear competent in structured settings but struggle with decision-making in real-world situations.

Due to the hidden disability of ABI, it may not be evident that supported decision-making is required. Individuals’ ability to make decisions may fluctuate according to time, day and context.

Capacity may improve as ABI impairment improves following recovery, rehabilitation and compensation. Individuals’ capacity should be reviewed and re-assessed regularly.

See [RCSLT's support decision making](https://www.rcslt.org/speech-and-language-therapy/guidance-for-delivering-slt-services/supported-decision-making-and-mental-capacity/#:~:text=SLTs%20can%20play%20different%20roles,a%20communication%20and%20swallowing%20difficulty.) statement for further information.

### 7.14 Neurodiversity/neuro-disability

There are notable overlaps between neurodivergent conditions and ABI.

ADHD secondary to ABI is a common neuro-behavioural consequence, occurring in up to 50% of individuals post-injury (Stojanovski, 2021).

ABI can result in psycho-neurological changes that increase the chances of ADHD developing.

Children who have had a serious ABI are 25% more likely to develop ADHD but may not present for up to a decade later (Narad et al, 2018).

There is a suggested increase in the incidence of ABI among people with neurodivergent conditions. As such, SLTs should be particularly alert to any new or worsening cognitive difficulties in this population, as these may be indicative of ABI and require a different approach to neurorehabilitation. See [RCSLT’s autism guidance](https://www.rcslt.org/members/clinical-guidance/autism/) for more general information.

### 7.15 Increased risk of dementia

There is an increased risk of dementia, Alzheimer’s disease following ABI, specifically CTE (Shively et al, 2012; Zhang et al, 2023). Genetics may also play a role (Guo et al, 2000).

## 8. Clinical recommendations

This section will provide an overview of the speech and language therapy approaches and principles for working clinically with individuals with ABI and their health and social care professionals and family, friends and carers.

This is a consensus clinical recommendations document. The information detailed in these pages should act as clinical guidance and is not exhaustive. Clinicians should continue to use their own evidence-based clinical judgement and refer to local policies and pathways.

For general information about how SLTs can support individuals who have had an ABI and their friends, families and/or carers, refer to the public webpages [RCLST link to be added when published].

### Introduction

Communication is a highly complex process which incorporates multiple structures and processes in the brain, therefore an ABI will likely impact communication in some way, whether receptively or expressively.

People with ABI is an important clinical population for SLTs and may present in all clinical settings. SLTs are well placed to support these individuals as well as their family and carers and the MDT working with them.

### 8.1 Adult population

Due to the complex nature and possible widespread impact of brain injury, a person with ABI may also have co-existing communication disorders and/or eating, drinking and swallowing difficulties. These may include:

* Aphasia: most commonly seen after stroke or focal brain injury in the areas of the brain predominantly involved in language processing eg frontotemporal cortex or cerebellum. See [RCSLT’s aphasia guidance](https://www.rcslt.org/members/clinical-guidance/aphasia/aphasia-guidance/) for further information.
* Motor speech disorders: most commonly seen after stroke or focal brain injury in the areas of the brain predominantly involved in speech production eg motor cortex or cerebellum. See [RCSLT's motor speech disorders guidance](https://www.rcslt.org/members/clinical-guidance/acquired-motor-speech-disorders/acquired-motor-speech-disorders-guidance/) for further information.
* Voice disorders: voice issues largely relate to disruption to the cranial nerves for laryngeal function or secondary to prolonged intubation or the need for tracheostomy placement. Voice can also appear altered due to dysprosody or disruption to the intonation pattern. See [RCSLT's voice disorders guidance](https://www.rcslt.org/members/clinical-guidance/voice/voice-guidance/) for further information.
* Cognitive communication disorders: see RCSLT’s CCD guidance for further information. [link to be added when this guidance is published]

For further information about eating, drinking and swallowing difficulties, see [RCSLT’s EDS guidance](https://www.rcslt.org/members/clinical-guidance/eating-drinking-and-swallowing/).

The most common changes after ABI are cognitive changes (executive dysfunction or impaired social cognition) as the frontal lobes are the most frequently damaged as they are more susceptible to damage. This is the same in both adult and paediatric populations. Subsequently, the most prevalent communication difficulty is CCD (MacDonald, 2024). It is estimated that more than 70% of people with ABI will have CCD (MacDonald, 2017) with some even estimating up to 100% (MacDonald and Wiseman-Hakes, 2010).

### 8.2 Neurorehabilitation

#### 8.2.1 Definitions

“Rehabilitation is a process of assessment, treatment and management by which the individual (and their family/carers) is supported to achieve their maximum potential for physical, cognitive, social and psychological function, participation in society and quality of living” (BSRM, 2014).

Rehabilitation is “a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment” (WHO, 2021).

#### 8.2.2 Principles of neurorehabilitation

Neurorehabilitation is a key component of the brain injury care pathway. It is an interdisciplinary (IDT), problem-solving approach based on a biopsychosocial model of healthcare. It is not just therapy, but education to optimise functional recovery and maintenance, disability, self-management and adaptation to loss and change. It is a process by which individuals and their family/carers are supported to achieve their maximum potential to function and participate in society and enjoy a good quality of life (Time for Change, 2018).

Rehabilitation includes not only restoration, but also compensation, condition management and even neuro-palliative care to ensure a good quality end of life. It is person-centred and holistic, working towards the individual’s goals. These goals will vary and depend on the stage of recovery, condition, trajectory and, of course, the person.

Neurorehabilitation is grounded in principles based on Hebbian learning (Hebb,1949) that “neurons that fire together wire together”. These include:

* intensive repetitive tasks
* errorless learning
* functional task-specific activities
* timing of input

These approaches are designed to harness neuroplasticity – a term used to describe changes in neural pathways and synapses which result in changes in behaviour and neural processes. It is the brain’s ability to adapt and reorganise itself in response to learning and injury, which then enables individuals to regain function.

Neuroplasticity commonly takes place following brain injury and can be optimised through therapy, which SLTs can take advantage of (Zotey et al, 2023).

Neurorehabilitation is significant for SLTs as it typically aims to optimise social participation. By identifying how the individual presents and their and their family’s wishes and goals and by gathering information through assessment, the MDT can support the individual to understand the prognosis and can make a plan of action to help achieve their goals and improve their outcome (Wade, 2025).

Specialist rehabilitation services play a vital role in management and recovery and have been shown to be cost-effective (Turner-Stokes et al, 2019). After immediate medical and surgical needs are met, neurorehabilitation allows the needs of the complexity of the condition and sequalae to be addressed to maximise recovery and support transition back into the community. Neurorehabilitation can take place in a number of contexts and settings, with each offering distinct advantages. Settings include acute hospital care, inpatient neurorehabilitation units, outpatient clinics and community-based care.

Neuroplasticity is a term used to describe changes in neural pathways and synapses which result in changes in behaviour and neural processes.

Neuroplasticity is the brain’s ability to adapt and reorganises itself in response to learning, experience of injury which then enables individuals to regain in function.

#### 8.2.3 Major trauma pathway

For major traumatic injuries there is the major trauma care pathway, which includes rehab prescription (RP). See [NICE’s guideline on major trauma service delivery](https://www.nice.org.uk/guidance/ng40). This supports those with a severe injury medically. However, more often than not many with a brain injury may just attend A and E and not be diagnosed or may not even attend hospital (eg concussion). This places them at risk of falling through the cracks.

#### 8.2.4 Neurorehabilitation phases

Neurorehabilitation can be divided into three stages of recovery, each requiring tailored interventions:

* (Hyper) acute focuses on medical stabilisation and is usually within an acute setting.
* Subacute focuses on maximising functional restoration and neurorehabilitation and may be in an inpatient setting, on a specialist neurorehabilitation ward, or in the community.
* The chronic phase addresses long-term consequences of ABI.

There are also different levels of complexity within rehabilitation service provisions (BSRM, 2015).

Level 1 is tertiary ‘specialised’ rehabilitation services through NHS England specialist commissioning. Services can be further subdivided into:

* level 1a – high physical dependency
* level 1b – mixed dependency
* level 1c – patients with cognitive/behavioural disabilities

Level 2 is local specialist rehabilitation services.

Level 3 is local non-specialist rehabilitation services.

See [BSPRM rehabilitation guidelines](https://www.bsprm.org.uk/mp-files/specialist-neuro-rehabilitation-services-providing-for-patients-with-complex-rehabilitation-needs.pdf/) for more detailed guidelines including key features for a specialist rehabilitation service. These outline the need for a multiprofessional team that has non-specialist training in rehabilitation and that works in a coordinated way towards an agreed set of goals.

### 8.3 Assessment and intervention

ABI is complex and it can be difficult to pick apart what is solely a communication disorder and what is, for example, a pure cognitive impairment or where the overlap is. It is unlikely to be able to be fully picked apart and therefore it is important to work with the MDT using an IDT approach to be able to see the communication and/or EDS in different contexts.

Conditions often do not happen in silos; they are multifactorial, affecting several aspects. Therefore, it is important to see the person as a whole to enable the most effective and person-centred outcomes.

Assessment and intervention are dependent on the phase of recovery and rehabilitation. Subsequently, the professionals you need to work within the MDT may be different at each phase of recovery. These may include:

* At the acute phase these may include medical consultants, nurses, physiotherapists (PTs), occupational therapists (OTs), SLTs, psychologists, dieticians, doctors, nurses and pharmacists.
* At the inpatient phase these may include neurorehabilitation consultants, PTs, OTs, SLTs, dieticians, neuropsychologists, rehabilitation nurses, therapy assistants, hospital pharmacists, social workers and family members.
* At the community phase these may include solicitors, case managers, support workers, GPs, PTs, OTs, SLTs, neuropsychologists, dieticians and community nurses.

An SLT should be part of the MDT assessment and intervention (NICE, 2022). An MDT rehabilitation strategy should consider comprehensive recovery. The strategy should focus on formulating hypotheses and help with the generalisation of communication goals and strategies.

#### 8.3.1 Considerations when working with individuals with a brain injury

There are a number of aspects that SLTs need to bear in mind when working with individuals with a brain injury.

##### Executive dysfunction

Executive dysfunction is highly prevalent after TBI due to the frontal lobes being finally developed and the area most vulnerable to damage (Wood and Worthington, 2017).

Executive dysfunction can affect rehabilitation and therapy, making it more difficult for individuals to take on board, remember and implement strategies, or to carry out self-management and restorative exercises.

##### Insight

Reduced insight is common after an ABI. Lack of awareness of their own impairments can affect individuals’ compliance with rehabilitation, particularly with aspects such as staying in rehab units, participating in sessions and setting goals.

Individuals with ABI may often deny they need rehabilitation or support around their communication and/or EDS. This denial can lead to frustration, poor judgement and conflict. Equally, as insight is raised, individuals become more aware of the full impact of their injury, which can lead to a fall in their mood and levels of participation.

Once the challenge is acknowledged, therapy becomes more effective (Grace et al, 2009).

##### Motivation

Motivation is a key factor in the recovery and rehabilitation of individuals with ABI. However, many individuals experience reduced motivation following their ABI due to:

* apathy (lack of initiation or interest)
* low self-awareness (not recognising their challenges)
* emotional factors (depression, anxiety, frustration)
* executive dysfunction (poor planning, problem-solving, impulsivity).

Strategies that may help Increase motivation include:

* goal setting with personal meaning
* motivational interviewing (MI)
* positive reinforcement
* making therapy fun and engaging
* social support and group therapy
* self-monitoring and progress tracking
* metacognitive and self-regulation strategies
* environmental and routine modifications
* family and carer involvement.

Effective motivation strategies are personalised, structured and positive.

##### Positive communication styles

It is important to adopt a positive communication style when interacting with individuals who have experienced a brain injury (Ylvisaker, 2008). Implementing positive communication strategies can significantly enhance interactions, promoting engagement and aiding in neurorehabilitation.

##### Positive risk-taking

Positive risk-taking can be used to help individuals with ABI regain independence, rebuild confidence and resilience and develop problem-solving and self-monitoring skills. By using structured challenges, safety planning and gradual exposure, SLTs can help individuals balance risk and reward effectively. Fear of failure is reduced by promoting small manageable challenges, giving individuals control over their own decision and actions, supporting them to engage in new tasks and reducing learned helplessness.

##### Setting expectations

It is important for SLTs to talk to family members and carers and to manage expectations around rate and recovery (Code et al, 2016).

##### Fatigue

Neuro- or cognitive fatigue is highly prevalent post-ABI and can persist chronically, impacting the neurorehabilitation process (Mollayeva et al, 2014; INCOG 2.0 guidelines - Togher et al, 2023).

##### Medications

Some medications may impact or prolong cognitive recovery. Medications and polypharmacy should be considered as a team.

##### Social network and support

Social network and social support considerations are integral to speech and language therapy assessment and intervention post ABI, as they influence communication outcomes and quality of life (Brunner et al, 2025).

##### Co-occurring conditions

ABI may frequently be seen in individuals who have other health conditions as well, most commonly F**unctional Neurological Disorders (FND).** People with FND commonly present initially to neurology services with brain injury-like symptoms. However, the two conditions can commonly co-occur. It is important for SLTs to differentially diagnose and identify aetiology of communication and/or EDS difficulties so as to support recovery and rehabilitation.

Other health conditions often seen in individuals with ABI include:

* mental health disorders
* alcohol, drug and substance abuse
* learning disabilities
* neurodivergence
* spinal cord injury

Many of the symptoms across the conditions overlap and they may often mask the true extent of the ABI and its effects. Consequently, it is important that SLTs:

* ask about other conditions
* ask about mental health
* consider implications for medications that may need to be adjusted
* listen.

Use of the neurorehabilitation principles will also need to be adapted for each individual.

#### 8.3.2 Screening and referral to speech and language therapy

Given the high prevalence of communication disorders after ABI, it is important for SLTs to be involved to assess or at the very least screen for communication difficulties; SLTs play a role right from the start of the injury (NICE, 2023).

There are different screening tools that can be used by professionals to identify an ABI or communication needs. The Brain Injury Screening Index (BISI; BrainKind, n.d.) or Brain Injury Needs Indicator (BINI; BrainKind, n.d.) are often used to identify an ABI. The Cognitive-Communication Checklist for Acquired Brain Injury (CCCABI) referral tool (MacDonald, 2024) may be used to identify communication needs.

Individuals who are on the neurorehabilitation pathway will likely be seen by an MDT, including an SLT. However, given the different types of ABI and its hidden disability, they may not have been highlighted to the SLT on the team or been seen by an ABI specialist team.

If they have reduced self-awareness and/or reduced self-advocacy, individuals will be unlikely to seek speech and language therapy themselves. Therefore, it important that MDT professionals understand the communication and EDS sequelae following ABI and the role of the SLT in addressing them.

SLTs should play an active part in raising this awareness across the MDTs, including through training and CPT, to ensure communication and EDS impairments are recognised and appropriately supported. See RCSLT ABI MDT pages [link to be added when published].

#### 8.3.3 Speech and language therapy assessment

The key principles of speech and language therapy assessment are that it should be:

* person-centred and holistic – assessment should be tailored to the individual and their needs, background and goals
* functional and context based – performance in structured settings doesn’t necessarily reflect real-life communication contexts. For example, they could be great with social interactions with family members but fail in professional settings such as at work.
* 360 assessment – information should be gathered from the individual, their family, friends and other professionals in order to build a comprehensive picture of their communication profile and needs.

The goal is not just to assess what is difficult, but why, when and how it affects the person's life, laying the foundation for truly effective, person-led intervention.

When working with an individual with ABI, initial evaluation of their communication needs should include a thorough case history and information gathering.

Key areas to explore during initial evaluation include:

* pre-injury communication profile, looking at communication style, strengths and any prior difficulties and considering the usual communication contexts and demands (eg work, social roles)
* current communication abilities and challenges
* functional impact, considering how communication difficulties are affecting their daily life, independence and relationships, and looking at specific breakdowns in individually meaningful contexts (eg in the workplace)
* environmental and emotional factors including support systems in place (eg social network) and the impact on their confidence, identity and wellbeing
* the individual’s own perspective, including insight into their ABI and any difficulties, their goals, values and what matters most to them, and their understanding of neurorehabilitation
* observations of them in different communication contexts
* their education level and pre-morbid history
* the perspectives of the MDT and the individual’s friends and family on their communication and communication changes.

No one assessment exists for communication after an ABI. Many speech and language therapy assessments for ABI may not be formal or standardised, particularly in the acute setting.

Whilst formal assessments exist for specific aspects of communication, it is likely that information gathering, observations and informal dynamic assessments tailored to the individual will support an SLT’s clinical reasoning.

There are a number of standardised/formal assessments which may be used.

##### La Trobe communication questionnaire (LCQ)

The LCQ is a self- and other-report questionnaire assessing communication difficulties, especially pragmatic language impairments after ABI (Douglas, 2010).

##### Montreal evaluation of communication (MEC)

The MEC assesses higher-level language functions including lexico-semantic processing, metaphor comprehension, pragmatic inference, discourse and prosody (Jonette et al, 2003).

##### Cognitive linguistic quick test (CLQT)

The CLQT is a brief cognitive screening tool that assesses attention, memory, executive functions, language and visuospatial skills. It is widely used in neurorehabilitation (Helm-Estabrooks, 2001).

##### Adapted Kagan scales

These scales assess communicative participation and social communication abilities, often adapted for aphasia and brain injury (Kagan and Simmons-Mackie, 2007).

##### Profile of pragmatic impairment in communication (PPIC)

The PPIC is a tool to evaluate pragmatic language impairments in adults with brain injury (Douglas and Snow, 1999).

##### Functional assessment of verbal reasoning and executive strategies (FAVRES)

The FAVRES assesses higher-level communication, reasoning and executive function skills in real-world contexts post-brain injury (Coelho, 2002).

##### S-FAVRES

S-FAVRES assessment is specifically designed for adolescents aged 12-19 (McDonald et al, 2015).

##### TASIT: A new clinical tool for assessing social perception after traumatic brain injury

TASIT is a clinically-validated assessment tool designed to evaluate social perception and social cognition, particularly in people with TBI (McDonald et al, 2003).

##### Informal assessments

Other informal assessments that may be used include:

* clinical interview
* discourse analysis
* social communication
* videoed baseline.

#### 8.3.4 Goal setting

Goal setting is a key element in ABI and neurorehabilitation. It provides direction, motivation and measurable success through a structured approach to neurorehabilitation and recovery.

SLTs can create structured, realistic and individualised goals and plans and meaningful outcomes and identify areas of focus that may require assessment in order to achieve the individual’s goals.

Individuals’ goals for rehabilitation vary according to the trajectory and stage of their condition (Turner-Stokes et al, 2008; 2010). Goals may be short-term with an overarching long-term goal. They should be collaborative, with the individual and health professionals working together with communication partners, family and carers. They should be meaningful to the individual to ensure buy-in and they should be made salient so that individuals can remember and keep referring back to them.

Goal-setting enables individuals to take control and promotes independence in managing their own difficulties. This requires adequate communication skills or support (eg by using Talking Mats) (Murphy et al, 2009).

Developing inter disciplinary team (IDT) goals also allows an IDT approach (Doig et al, 2023).

Common tools used to support goal-setting in neurorehabilitation include:

* Goal Attainment Scaling (GAS) (Turner-Stokes, 2009) (often used as part of UKROC outcome measures)
* SMART goal setting (Wade et al, 2009)
* BRIDGE self-management
* values-based goals (Rose and Rendell, 2022)
* [Talking Mats](https://www.talkingmats.com/about/what-is-a-talking-mat/) (Murphy et al, 2009)
* formulation (eg MacDonald, 2017)

#### 8.3.5 Speech and language therapy intervention

Assessment and intervention in brain injury are not time linear but are dynamic. Key areas for further assessment are often identified only after goals have been set and intervention has started. For example, psychoeducation may be required before assessment can be undertaken.

The main focus of intervention is on maximising functional communication, including improving the understanding and competence of communication partners, in contexts that are most relevant to the individual with ABI (MacDonald and Wiseman-Hakes, 2010) and ultimately supporting reintegration into their community (Powell, 2004).

It is important to remember:

* to test real-world situations and skills so as to make realistic multidimensional cognitive and social demands
* that communication and cognitive recovery are much slower and longer than physical recovery due to the complexity and diffuse nature of cognitive and communication functions in the brain as well as the vulnerability of these high order functions.

There are several approaches SLTs can take:

* restorative or compensatory
* impairment or functional
* 1:1 or group

It is likely that a multi-modal approach will be used.

Speech and language therapy for individuals with ABI can encompass a wide range of techniques and interventions designed to improve the individual’s daily function and social integration and thus improve quality of life.

##### Psychoeducation

Psychoeducation plays a critical role in neurorehabilitation and speech and language therapy intervention. It allows the individual, and others, to understand their type of brain injury, the effects and resultant challenges specific to them, and subsequently the strategies and interventions that may help their prognosis and recovery.

For individuals with ABI, it enables them to recognise the wider aspects of their injury and hidden disability and the wider aspect of the role of SLTs. Having this knowledge can empower individuals to self-advocate and positively adapt to the event.

By contrast, psychoeducation for friends, families, carers and children can support with managing expectations and the varied role of an SLT.

Providing psychoeducation in a group format can give individuals peer support and an opportunity to share experiences and different strategies that have worked or not worked. This peer feedback can be particularly useful for those with reduced insight.

It’s important to highlight that this will need to be a reiterative process throughout the recovery (Grayson et al, 2021; Grayson et al, 2020).

It is also important to consider different cultures and beliefs around medical input (eg religious beliefs).

##### Communication partner training (CPT)

Communication partner training (CPT) can be carried out one-to-one or as a group and face-to-face or online.

##### Project-based interventions

Using project-based interventions creates a concrete goal (a project) for therapeutic activities that are contextualised and meaningful to work towards. Topics can be easily adapted to the individual and can be offered one to one or in a group setting.

This approach can target high-level communication difficulties as well as executive dysfunction and CCD. It can also be used for low-level communication challenges.

##### Group-based interventions

Group-based interventions are a powerful tool in ABI rehabilitation, offering social connection, cognitive training, emotional support and practical skill development. By fostering peer engagement and feedback, shared experiences, structured learning and goal-oriented practice, group-based therapy enhances rehabilitation outcomes and promotes long-term recovery and independence.

Virtual/online social groups have also been shown to be effective (Keegan et al, 20122; Brassel et al, 2021, Brunner et al, 2023).

##### Discourse and social communication

Discourse and social communication interventions are promising. Specific training interventions include:

* [Interact-ABI-ility](https://abi-communication-lab.sydney.edu.au/courses/interact-abi-lity/)
* [*Social-ABI-ility*](https://abi-communication-lab.sydney.edu.au/courses/social-abi-lity/)(Brunner et al, 2023)
* [Cyberability](https://cyberability.org.au/)

##### Metacognitive strategy training

Metacognitive strategy training is a highly effective approach for individuals with ABI, particularly those who experience cognitive changes, enabling them to develop self-awareness, problem-solving skills and cognitive compensation strategies. By fostering independence, adaptability and self-regulation, metacognitive strategy training can significantly improve rehabilitation outcomes and quality of life.

Commonly used metacognitive strategies include:

* the Goal-Plan-Do-Review (GPDR) method (Ylvisaker et al, 1998; Sohlberg and Turkstra, 2011)
* verbal self-instruction
* time management and organisation techniques
* errorless learning approach
* self-monitoring checklists
* mindfulness and attention strategies
* self-coaching (Ylvisaker, 2006)

IMPACT (Copley et al, 2021) – manualised approach

##### Insight raising

Many individuals struggle with self-awareness of their communication difficulties, due to its saliency as well as insight impairment following ABI. This can lead to misunderstandings, frustration and strained relationships. Gradual insight development is key to preventing defensive reactions and increasing participation.

Insight raising is a crucial but delicate process in rehabilitation. By using self-monitoring techniques, feedback mechanisms and experiential learning, SLTs can help individuals develop self-awareness, accept challenges and implement effective compensatory strategies. This fosters greater independence, engagement and emotional well-being post-injury.

It is important to identify the level of insight (intellectual, emergent, anticipatory) as part of an MDT with the aim to move individuals towards anticipatory awareness specific to their communication.

It is also important to differentiate between insight and denial (eg Prigatano and Sherer, 2020).

Strategies for raising insight of individuals’ communication challenges include:

* feedback and self-reflection (Finch et al, 2017; Copley et al, 2020)
* video or audio feedback (Wadams et al, 2022)
* experiential learning (error awareness training)
* role reversal exercises (Finch et al, 2017)
* self-monitoring and journaling
* motivational interviewing (MI) (Medley and Powell, 2010)
* cognitive rehabilitation strategies (eg Goal-Do-Plan-Review; Method - Ylvisaker et al, 1998; Sohlberg and Turkstra, 2011)
* family and carer feedback (eg IMPACT; Copley et al, 2021)
* peer feedback in group interventions
* metaphoric identity mapping (Ylvisaker et al, 2008)

Metaphoric identity mapping can facilitate meaningful goal setting and enhance engagement in rehabilitation by identifying metaphors that resonate with the individual's sense of self, fostering greater engagement and commitment. Metaphoric identity mapping offers a novel framework for identity reconstruction and goal setting in rehabilitation contexts.

Individuals require support from an MDT to address emotional, cognitive and psychiatric symptoms that may result from loss of identity.

##### Self-regulatory scripts

Self-regulatory scripts empower individuals with ABI to take control of their behaviours, emotions and cognitive processes. By reinforcing structured self-talk and problem-solving techniques, these scripts support long-term independence and rehabilitation success.

##### Positive behaviour support (PBS)

SLTs can play a crucial role in assessing and addressing communication difficulties that may contribute to challenging behaviours.

Individuals may exhibit various behavioural challenges following their ABI including:

* impulsivity and disinhibition – saying or doing inappropriate things
* aggression or irritability – verbal outbursts or physical aggression
* social communication difficulties – difficulty interpreting social cues or maintaining conversations
* self-injurious behaviour (SIB) – harm to oneself due to distress or frustration
* non-compliance or resistance – difficulty following routines and refusal to accept help
* emotional dysregulation – mood swings, anxiety or depression.

PBS can be used to improve QoL by reducing challenging behaviours, increasing independence and participation and enhancing relationships.

##### Communication-specific coping intervention (CommCope-I)

CommCope-I is an evidence-based intervention program that targets coping in the context of communication breakdown (Douglas et al, 2019).

##### Self-advocacy

Individuals with ABI often struggle with self-advocacy and may have difficulty expressing their needs, making decisions and navigating services to support their recovery. This can result in unmet medical, social and personal needs, leading to frustration, dependence on carers and family members and reduced quality of life. This is further compounded if their communication abilities are affected. By building awareness, developing communication strategies and gradually increasing independence, SLTs can empower individuals to advocate for themselves in medical, social and familial settings. It is also important to the rehab process for individuals to know and articulate their needs and wishes and to make informed decisions about addressing them.

##### Working with family, friends and carers

SLTs play a pivotal role not only in the rehabilitation of the individual but also in supporting and educating their families and caregivers. They may struggle with changes in family dynamics and the burden of caregiving. Effective communication strategies and understanding the nuances of cognitive-communication difficulties for example, are essential components of our input and support.

Key aspects of the role of SLTs when working with family and carers include:

* education and information about the injury and its effects, rehab process, recovery (Grayson et al, 2020)
* signposting to support services (Grayson et al, 2020)
* communication partner training(Grayson et al, 2020a; Grayson et al, 2020b)
* emotional and psychological/social support (Grayson et al, 2020a; Grayson et al, 2020b)
* respite care and assistance.

Involving families, caregivers, friends and children throughout the rehabilitation process is crucial for effective recovery after brain injury. SLTs play a vital role in providing the necessary support, education and training to ensure families are well-equipped to handle the challenges associated with communication difficulties after brain injury, particularly CCD.

##### Alternative and Augmentative Communication (AAC)

Some individuals with an ABI may require AAC. AAC can be used to supplement speech, or in some cases people may communicate fully through AAC. Some individuals with ABI may require AAC.

There are a number of variables to take into account when planning AAC including physical, sensory and psychosocial factors.

Other co-morbid physical sequelae such as balance disorders, dizziness or vestibular issues, visual disturbances, hearing deficits, sleep-wake disorders and pain can impede participation in conversation and should be addressed by and with the MDT.

Remember that AAC needs may change over time, especially when an individual is recovering from an ABI. Assessment should be provided to determine appropriate AAC intervention (Togher et al, 2024) and individuals should be reviewed regularly to ensure their AAC is meeting their needs as they recover and develop new skills and abilities, particularly during the initial recovery phase.

SLTs should also consider changes in communication partners, environments, ability and pre-injury skills.

AAC should be routinely offered for severe communication impairments and communication partners should be trained to interact using AAC. The training should be ongoing as needs change and technology evolves (Togher et al, 2024).

It is important to match an AAC system with the goals and preferences of the individual and include the person with ABI throughout the entire assessment, recommendation and implementation phases to reduce the risk of AAC abandonment and maximise acceptance.

It may be useful to consider AAC within the WHO’s 5P people-centred assistive technology model, which looks beyond the assistive product alone (WHO, 2022).

For more information see [RCSLT’s guidance on AAC.](https://www.rcslt.org/members/clinical-guidance/augmentative-and-alternative-communication/)

##### Working with third sector organisations

Collaboration with third sector organisations is vital to support extending rehabilitation beyond clinical settings and allow continuity of care. They can provide signposting, education and resources as well as holistic neurobehavioural therapy (Turner-Stokes et al, 2022).

#### 8.3.6 Discharge and onward referral

Successful SLT assessment and intervention needs to be at a time when the individual is ready (Grace et al, 2009). Not receiving therapy does not mean the individual did not need it or that it should not be explored further down the recovery line when the individual may be more accepting and aware of the need.

Communication changes may not be obvious in acute or even inpatient settings as communication is context dependent. Therefore, it is important to highlight in any documentation that although no communication needs/difficulties were identified or highlighted in the current setting, that does not mean there aren’t any difficulties, and further assessment may be needed in the future as the individual recovers and/or moves to new environments and settings. It is important to highlight the potential risks if they do not.

If there are ongoing needs, access to therapy should be provided and appropriate referrals should be made (NICE, 2023). This includes to third sector organisations, social prescription and specialist rehabilitation eg vocational rehabilitation.

#### 8.3.7 Measuring outcomes

There is no one standardised tool for measuring outcomes after ABI or the outcome of speech and language therapy input for these individuals.

A useful resource is the UK Rehabilitation Outcomes Collaborative (UKROC) programme and database that systematically collates data on needs, inputs and outcomes for all patients admitted to Level 1 & 2 rehabilitation services. Includes:

* Needs and inputs: the rehabilitation complexity scale (RCS-E) and the Northwick Park nursing and therapy dependency tools (NPDS & NPTA).
* Outcomes: the UK functional assessment measure (UK FIM/FAM) and the northwick park nursing dependency Scale (NPDS).

In addition, there is a ‘basket of outcome measures’ [UKROC (Turner-Stokes et al, 2012)](https://www.ukroc.org/) which are commonly used within neurorehabilitation. These include:

* UK rehabilitation outcomes collaborative
* goal attainment scaling (GAS)
* functional independence measure/ functional assessment measure
* therapy outcomes measures (Enderby and John, 2015)
* observer-reported
* clinician-reported
* patient-reported
* EQ-5D (EuroQol research foundation, 2019)
* quality of life after brain injury (QOLIBRI)
* adapted kagan scales

Given the heterogeneity of communication and/or EDS difficulties, functional outcomes are also often used and can be more powerful. Examples include:

* reintegration into society
* return to employment/education
* increased quality of life
* regaining independence and autonomy
* patient stories.

For more information see [RCSLT's guidance on measuring outcomes](https://www.rcslt.org/members/delivering-quality-services/outcome-measurement/outcome-measurement-guidance/).

#### 8.3.8 Eating, drinking and swallowing (EDS)

EDS in ABI requires prompt assessment and a comprehensive management plan tailored to the individual’s needs. Clinical EDS assessment should be completed by the SLT to differentially diagnose and identify the level of impairment.

Considerations for instrumental assessment and EDS intervention include cognitive, physiological and functional. These are likely to impact clinical decisions made specifically for this clinical population. Close liaison with dietetic colleagues is important in these cases.

Swallow rehabilitation follows similar principles and (multi) approaches to communication. These include:

* EDS education
* rehabilitation exercises to promote recovery
* electrical stimulation
* dietary modifications
* postural adjustments
* adaptive equipment
* discussions around eating and drinking decisions and alternative feeding.

Note that needs may change as the individual recovers and therefore should be regularly reviewed.

For further information see the [RCSLT eating and drinking with acknowledged risk guidance](https://www.rcslt.org/wp-content/uploads/2021/09/EDAR-multidisciplinary-guidance-2021.pdf).

### 8.4 SLT involvement along the pathway

#### 8.4.1 Prolonged disorders of consciousness (PDOC)

PDOC can occur following severe brain injury and is a relatively rare but complex condition.

There are currently four types of PDOC:

1. coma/persistent vegetative state
2. vegetative state
3. minimally conscious state
4. emerging awareness

SLTs working in ABI are increasingly likely to come across this clinical population, as medical advances mean there is a higher incidence of individuals surviving severe brain injuries and disorders of consciousness (DOCs) following profound brain injury, leading to significant and complex cognitive, communication and physical impairments.

SLTs have a significant role in the assessment, observations, monitoring and management of communication and/or EDS skills in individuals with DOCs.

For more information see the guidance and information for SLTs working in [prolonged disorders of consciousness (PDOC)](https://www.rcslt.org/members/clinical-guidance/brain-injury/brain-injury-guidance/prolonged-disorders-of-consciousness) and [Putney PDoC toolkit](https://www.rhn.org.uk/wp-content/uploads/2019/05/Putney-PDoC-toolkit-v1.0-WEB.pdf).

#### 8.4.2 Acute ABI

After a period of unconsciousness, individuals may go into post-traumatic amnesia (PTA).

The length of time someone remains unconscious or in PTA can vary. The longer these stages last, the more severe the brain injury is likely to be.

Confabulation often occurs during this time. It is important to involve others who can corroborate information and work as part of the MDT to support the individual through this (Fish and Forrester, 2018; Francis, MacCallum and Pierce, 2022).

SLTs have a role within the MDT and are well placed to assess, monitor and manage people during this stage. This is likely to be through informal screening and assessment, by identifying communication and swallowing needs, by communicating basic needs and by educating the family. They may also determine the individual’s rehab needs and make timely onward referrals.

Access to written information and communication partner training should be available to families at various time points following TBI and not just in the early stages (Grayson et al, 2020).

#### 8.4.3 Inpatient/specialist neurorehabilitation

Inpatient or specialist neurorehabilitation enables detailed assessment, formulation and differential diagnosis in liaison with an MDT. It also enables psychoeducation to be continued and creates the time and space needed to plan for ongoing input into the community and discharge.

#### 8.4.4 Vocational rehabilitation

Vocational rehabilitation may be required to facilitate return to work with necessary accommodations.

Specialist vocational rehabilitation services are limited across the UK. There is a lack of speech and language therapy input in vocational rehabilitation. However, many SLTs work on workplace communications within neurorehabilitation. The role of an SLT involves assessing how communication affects job performance and exploring if return to work is possible with adjustments. This includes gathering detailed information, determining feasibility and considering alternatives such as volunteering or career changes.

Intervention will mirror neurorehabilitation but be tailored to work settings. It may involve workplace visits, employer discussions and training for colleagues such as in using compensatory strategies. SLTs may provide direct intervention (eg e-mail script training) or consultative support.

Ongoing and frequent reviews and flexible support are essential to adjust strategies and guidelines as the individual progresses or if initial plans prove ineffective. Vocational goals are a critical part of rehabilitation.

#### 8.4.5 Community neurorehabilitation

ABI neurorehabilitation may be provided to support discharge and transition home and is likely to continue into the community.

It may also be provided later down the line when context or role changes. Consequently, reassessment and intervention may be required.

Community-based intervention should be provided to encourage social integration, self-advocacy and independence.

#### 8.4.6 Long-term monitoring

ABI is a life-long condition, not only for the individual but also for their friends and family. Long-term negative effects of ABI are significant if not addressed at the appropriate time and long-term monitoring is needed.

Changes to physical, cognitive, emotional and behavioural states can impact the person’s ability to function and changes in life, context and roles mean that SLT input should not only be provided at the time of the injury but may also be needed to a greater or lesser extent throughout life.

Individuals should understand this and be given information about how to access SLT services in future, as and when wanted and needed.

Whilst many strides have been made to increase the provision of communication support in acute and inpatient rehabilitation services, there are still challenges in the level of support provided in community settings or longer-term services.

Consideration for coordinated long-term care can help prevent or reduce many costly consequences of ABI including reduced life expectancy, poor physical and mental health, limited functions and low quality of life.

As a long-term condition, ABI should follow the long-term conditions framework (DOH; 2005).

### 8.5 Paediatric considerations

ABI is a leading cause of disability for children and young people (CYP) (WHO, 2009) and outnumbers any other neurodevelopmental disorder in the paediatric population. However, with 90% of ABI in CYP being classified as ‘mild’ and often not requiring hospital admission or being given a formal diagnosis, ABI sequelae are even more hidden; they may not be easily identifiable and require long-term monitoring.

An added challenge in this age group, especially in infants, is that they may not be able to communicate their physical symptoms. This can lead to delays in recognising the problem until it presents behaviourally or clinically.

Widespread impairment and dysfunction in cognitive, motor, behavioural and social functioning commonly impacts development and education, as well as relationships, behaviour and self-regulation of thoughts, feelings, emotions and actions. This can impact on the CYP’s ability to carry out activities and participate, which are crucial for development (Kreutzer et al, 2016).

Unlike in adults, ABI in CYP is not a single event; it is dynamic and occurs in the background of a developing brain. This means the effects may not only be immediate but there can be differing impacts over time.

The initial effects of ABI are visible or noticeable at the time of injury. These are often physical or physiological effects such as limb weakness or headaches.

Late effects of ABI are not apparent until the area of the brain fully develops (eg Limond, 2015; Klonoff et al, 1993). If the ABI occurred when the individual was a child, these may include issues with growth or autonomy, or social behaviours not seen until adolescence or puberty.

There may be persistent effects or difficulties after the injury such as fatigue, pain or memory difficulties (eg Catroppa and Anderson, 2007; Shakalai et al, 2014).

There may also be cumulative effects which become increasingly more impeding as demands increase (eg Sans et al, 2009) eg emotions and emotional regulation.

Whilst it was once thought that younger brains are more plastic, it is now known that the younger the individual is at the time of injury, the more vulnerable they are (Alighieri et al, 2021). A better prognosis is thought to be only on skills that were already present at the time of injury. For skills that develop after the injury, the prognosis is worse the younger the individual is at the time of injury (Chapman, 2019). Children and young people “grow into their effects” (Anderson, 2005). The older the CYP is at the time of injury, the better the functional outcomes as the injury occurs on a more mature neural system (Alighieri et al, 2021).

CCD is complicated in CYP and needs to be considered in a developmental context and against the background of a developing brain. Where some aspects of cognition wouldn't reasonably be expected to be fully developed CCD may not be the most helpful diagnosis.

#### 8.5.1 Assessment and intervention

While presentation of communication and/or EDS in CYP can be similar to adults, it differs in relation to time of presentation, recovery, prognosis and management as well as the context and environments in which it is seen. Therefore, it is important to take these into consideration when assessing and intervening with this age range.

Assessment and intervention should focus on education attainment and friendship development and maintenance and on social interactions and development. Interventions may include play-based activities as well as brain injury education for example.

Instead of returning to employment, the focus with CYP will be on returning to education, attainment and future potential contribution to the workforce and society.

#### 8.5.2 Context

Concussions are highly prevalent in CYP through play and contact sports (Lumba-Brown et al, 2018; DeLuigi et al, 2023; Karlin, 2011), although with the introduction of preventative guidelines, this has been reducing (Eliason et al, 2023).

Adolescence as a critical period of development adds further complexity after ABI (Ciccia et al, 2009; Turkstra, McDonald and Kaufmann, 1996).

#### 8.5.3 MDT

Parental/caregiver involvement is critical when working with CYP. Much more collaboration with family and friends is needed than when working with adults. MDTs will include educational professionals (eg teachers, teaching assistants, SENCos) and may include children’s social services and educational psychologists.

Professionals’ knowledge of ABI will be dependent on the setting. Acute and inpatient paediatric neurological wards will be aware of both developmental and acquired conditions and are likely to have an MDT to support. By contrast, access to specialist support in the community is scarce, with neurorehabilitation specialist MDT teams severely lacking in paediatric teams.

Paediatric SLT services may not be set up as MDT teams in the way adult services are, and the expertise of paediatric teams are likely to be more focused on high frequency conditions seen such as developmental disorders, rather than on acquired difficulties.

Therefore, SLTs working in paediatric settings need to raise awareness and provide training to health and social care professionals as well as to family and school staff around the trajectory of ABI in CYP.

#### 8.5.4 Communication effects

Psychosocial difficulties are one of the most common consequences following ABI, affecting 1-3 per 1,000 children (NHS England, 2013), with executive dysfunction, CCD and social impairments the most common impairments post paediatric ABI (Desai et al, 2017).

CCD may be more commonly identified as social communication difficulties or pragmatic disorders in CYP.

Communication difficulties present differently depending on the unique cognitive, linguistic and physical profile of the child but can include verbal fluency, concisely getting their ideas across, forgetting what they are saying and going off topic (Crook et al, 2023).

CYP may also have co-occurring and/or pre-existing developmental language difficulties or speech disorder (eg developmental language disorders). These need to be considered alongside acquired speech, language and communication needs.

Additionally, there is some evidence to demonstrate distinct challenges in executive functioning and persistent language effects in multilingual CYP when compared to monolingual CYP.

Clinical recommendations (Linden et al, 2024) include the following:

* An MDT approach is needed (inc. psychology).
* Intervention needs to be individualised, context-based, holistic, functional, goal- based and structured.
* Interventions should focus on addressing activity and participation in relation to CanChild’s ‘F’ words (Rosenbaum and Gorter, 2012).
* SLTs should raise awareness of the immediate, long-term and hidden effects of ABI.
* Systematic long-term monitoring is needed throughout development.
* Work should be carried out across environments.
* SLTs should consider developmental-based intervention.

#### 8.5.5 Eating, drinking and swallowing difficulties (EDS)

ABI in CYP can result in changes to EDS abilities. For some children, these changes may be temporary, whilst others may have long-term changes requiring alternative methods of enteral feeding. For some CYP, even after intervention and rehabilitation, swallowing problems may persist (Moll et al, 2022).

Any assessment and intervention for EDS issues in CYP should recognise the developmental context of EDS skills. Consideration of parent choice and the child-parent dyad is also essential in optimising participation and wellbeing.

As examples, EDS skills can be affected by prolonged intubation, neurological disruption to the brain stem or cranial nerves, or trauma to the head and face. Whilst intervention should focus on optimising safety, in the paediatric context, consideration of EDS skills in participatory, social, emotional and developmental contexts is essential in supporting rehabilitation.

Intervention ideally focuses on rehabilitation and development of functional skills, again acknowledging developmental age and stage, in personally meaningful contexts.

#### 8.5.6 Goal setting and outcome measures

The ICF (WHO, 2001) has been adapted specifically for the age group: ICF-CY (WHO, 2007). The F-words framework (Rosenbaum and Gorter, 2012) is now more commonly used for goal setting and outcome measures. It is designed and underpinned by the ICF-CY to focus on a holistic view emphasising participation, strengths and family-centred care in paediatric rehabilitation.

Other frameworks used include:

* GAS-light
* The Canadian Occupational Performance Measure: An outcome measure for occupational therapy (COPM) (Law et al, 1990)

Outcome measures include:

* FIM/FAM (for > 8 years old) and WeeFim (< 8 years old) (Marshall et al, 1994)
* [PEDQoL](https://www.pedsql.org/) (Varni et al, 2001)
* adapted Kagan scales
* CPIC
* TOMS paediatric dysphagia
* TOMS tracheostomy
* CEDAS (Hanks et al, 2023)

#### 8.5.7 Neurorehabilitation principles

Consideration of rehabilitation principles, including motor learning principles and neuroplasticity, inform intervention for ABI in CYP (Torchia et al, 2024).

Caution should be exercised in the use of ‘standardised’ paediatric assessments for CYP with ABI, as across the lifespan these assessments provide important insight into skills and needs, but assessments often require cautious interpretation with acknowledgment of the limitations.

#### 8.5.8 Speech and language therapy across the pathway

##### PDOC

CYP who are believed to be in PDOC should be assessed carefully by a specialist MDT including an SLT*.* PDOC assessments should be carried out by at least two MDT members and these assessments should be carried out regularly (at least weekly).

The SLT plays an important role with PDOC patients as they have the unique skills to determine whether language processing and/or production issues could be impacting on responses and they are best placed to rule out that a child is experiencing ‘locked in syndrome’ rather than PDOC.

The recommended assessments for children in PDOC are the Coma Recovery Scale – paediatric (CRS-p) – although this is limited to children aged between one and five years (ie peak language development), Wessex Head Injury Matrix (WHIM) and the Sensory Modality Assessment and Rehabilitation Technique (SMART). Although the latter two are adult-based assessments, they can be used for children in specialist settings with experienced clinicians.

##### Acute setting

Depending on the severity of the ABI, medical treatment may be received in a local hospital, or it may be in a specialist tertiary centre where rehabilitation can also be provided at the level needed.

SLTs have a role throughout the duration of an acute admission after ABI. In critical care SLTs can provide guidance for families on how to optimise communication, often through education and strategies to support understanding of the impact of ABI, as well as by implementing low tech and, where appropriate, high tech AAC.

When the CYP is ready, the SLT can also guide transition to oral intake when there is evidence of readiness to do so. Once the CYP transitions to the ward they are often ready for more regular SLT as part of a neurorehabilitation programme. This can include both work on rehabilitating EDS function and work on assessing and managing their communication abilities and needs.

During the acute phase of recovery, a CYP’s needs can change daily. The SLT can work with the CYP by providing ongoing assessment of their needs whilst also giving advice and therapy targeted to their stage of recovery. This can include teaching/education with parents, carers and MDT members, direct therapy with the CYP, implementation of compensatory strategies, AAC if appropriate and strategies to optimise functioning.

SLTs working in an acute setting with a CYP who is likely to need ongoing speech and language therapy for EDS or communication needs should make early referrals to community services to enable a good transition from acute to community services.

It may not be appropriate to carry out formal assessments during the acute phase of recovery due to the changing abilities week on week. Formal assessment scores can be invalidated quickly for children who are rapidly improving. It can be most helpful to use assessments informally to inform onwards referrals if needed and give advice on return to school. However, if there are circumstances where formal assessment is needed, it is important to highlight that results should be interpreted in the context of a recent ABI and needs are likely to need frequent re-evaluation.

##### Inpatient rehabilitation units

This is likely to be provided within hospitals as opposed to specific rehab units, with only one dedicated national specialist inpatient rehab unit based in The Children’s Trust in Tadworth, Surrey.

##### Community setting

Variability exists across community speech and language therapy services for ongoing support of CYP after an ABI. However, there are limited community neurorehabilitation services in the UK. One example is BRILL (The Nottingham Children’s Hospital’s Brain Injury Living Life post-acute service) (Keetley et al, 2020) and another is The Children’s Trust’s Brain Injury Community Team (BICT).

Where CYP have considerable needs impacting health and education, it is likely that an application would be initiated for an education, health and care plan (EHCP) in England, co-ordinated support plan (CSP) in Scotland or individual development plan in Wales and more defined access to ongoing neurorehabilitation would be offered.

##### Long-term outcomes

Ensuring early liaison and collaboration across the rehabilitation pathway is essential to optimising both short- and long-term outcomes.

The effects of ABI in CYP can not only be subtle but may not even be immediately apparent until that area in the brain fully matures. These deficits form part of a ‘hidden’ disability of brain injury which can impact long-term participation within society and academic attainment.

As CYP will grow into their effects, impact on communication may not be easily identifiable and therefore long-term monitoring is especially needed here.

#### 8.5.9 Mental capacity

Anyone aged 16 and over is presumed to have capacity and the Mental Capacity Act (2005) applies. Children aged 16-18 years old can consent themselves to, or refuse, treatment in their own right.

The Gillick Competence (Griffith, 2016) and Fraser guidelines (Fleming, 2006) are often used for children under the age of 16 years old, to determine whether they are able to consent to their own treatment without the need for parental permission or knowledge. This is mainly used for medical treatments, but it may also include therapeutic support that they do not want their parents or guardians to know about.

It is possible for SLTs to make a decision that is likely to deprive a young person of their liberty, but this should not be done unless it is the least restrictive option.

#### 8.5.10 Alternative and Augmentative Communication (AAC)

Some CYP who have sustained an ABI may need AAC. AAC can be used to supplement speech as a ‘back up’, or in some cases a child may communicate fully through AAC. AAC can range from low tech options such as picture charts, choice boards, signing etc, to high tech options such as apps on tablets or in some cases eye gaze.

Depending on the age of the child and their cognitive levels, symbols or picture-based options may be advised, or for those who can text, word-based AAC may be used.

AAC needs may change over time, especially when recovering from a brain injury. Children who need AAC following a brain injury should be reviewed regularly to ensure their AAC is meeting their needs as they recover and develop new skills.

### 8.6 Transitional stages

Changes in the individual’s environment and circumstances may take place at various times during their lifespan, resulting in a change in communication needs. SLT input is likely to be needed to support the process and address the needs of the new context.

There are a number of key transition stages.

#### 8.6.1 Return to or change in employment

In Western culture, employment is closely tied to personal identity. However, difficulties with communication and/or EDS after an ABI can make returning to work challenging and failure to do so may lead to social isolation, reduced mental wellbeing and lower quality of life.

Communication issues and other effects of ABI may lead to misunderstanding (eg irritability following fatigue can be misread as rudeness or reduced initiation of tasks could be interpreted as laziness). Reduced insight (ability to accurately self-monitor and adjust performance) is regarded as a poor indicator for return-to-work success, even when daily functioning is intact.

Communication changes should be assessed in individuals with ABI returning to employment after ABI (Meulenbroek and Turkstra, 2016). Specialist vocational rehabilitation may be needed to optimise work participation through supporting:

* returning to work
* maintaining employment
* changing vocation
* exploring volunteering.

Under the Equality Act (2010), employers must make reasonable adjustments for disabilities, including communication and cognitive impairments, not just physical ones. These adjustments may include shorter hours/days, change in start times, personal office space or regular breaks.

For more information see [BSPRM guidelines on vocational rehabilitation](https://www.bsprm.org.uk/mp-files/vocational-rehabilitation-bsrm-brief-guidance.pdf/) as well as outcomes measures specific to vocational rehabilitation.

#### 8.6.2 Moving from paediatric to adult services

Young people should move from paediatric to adult wards in hospitals at 16 years old and the move to adult community services should take place at 18 years old.

Planning for this transition should take place in good time. Adult services should meet the individual before they transition to adult services and having a named worker to coordinate care and support before, during and after transfer is beneficial.

#### 8.6.3 Return to school/education

Following an ABI, an education and health care plan (EHCP) or a statement of needs may be required. These set out the legally required support that should be put in place for the CYP to support their learning and academic attainment.

Individuals with ABI can apply for an EHCP and recommendations do not need to only be about therapeutic input; they may also include strategies that need to be adhered to such as a later start in school.

An SLT’s assessment and statement of needs will play an important part in supporting the EHCP application for CYP with communication and/or EDS difficulties.

Even when the plan is in place, educational staff will require education and training on how to support and identify changes in the CYP’s communication and/or EDS abilities as they grow and continue to progress throughout education.

#### 8.6.4 Moving between education levels

There are a number of transitions that occur throughout education that may require SLT support.

##### Primary education to secondary education

SLTs may support with:

* managing larger more complex social environments
* preparing for increased academic demands
* developing independence and self-advocacy
* collaborating between schools’ staff to ensure consistent support plans and communication and EDS strategies are transferred

##### Secondary education to college

SLTs may support with navigating less structured environments and transition planning.

##### College to university

SLTs may support with:

* becoming an independent learner
* developing complex communication for learning
* liaising with adult services
* handing over to learning and disability support teams in university

##### Leaving education/gaining employment

SLTs may support with:

* workplace readiness eg interviews and professional communication
* working with employers to put reasonable adjustments in place
* considering alternative pathways eg volunteering

## 9. Future directions and research

Given the heterogeneity of the population, there is a lack of large RCT studies. However, many single case studies support the need for tailored approaches to meet the specific needs of the individual.

Whilst it does exist, general research into the value of speech and language therapy in ABI is not as conclusive as equivalent research in other populations eg aphasia and stroke. There is further limited UK-specific research. Therefore, it is important to continue to add to the evidence base. Particular gaps include:

* speech and language therapy and paediatric ABI
* speech and language therapy and long-term outcomes of ABI
* resource implication of speech and language therapy in ABI
* workforce development of SLTs in ABI
* health economics of speech and language therapy in ABI
* AAC and ABI
* global majority and EDI outcomes following ABI
* health inequality of individuals with ABI

ABI needs to be recognised as a chronic health condition and policies should reflect this.

A speech and language therapy research strategy and guidance for commissioners are needed to support workforce development and reduce resource implications.

Greater awareness, policy improvements and multidisciplinary involvement are necessary to address the societal and economic burdens associated with brain injury.

Awareness of, advocacy for, and research into ABI and its subsequent impacts are required, specifically relating to communication skills.

## 10. Summary

ABI has a significant impact for individuals, their families and the wider community and long-term negative effects of ABI are significant.

SLTs play an important role in supporting individuals, friends, families, carers and other professionals to help increase HR-QoL and support individuals with ABI to reintegrate into and contribute to society.

They also play a key role in helping individuals find life meaningful and therefore not only survive but thrive.

## 11. References

[full reference list will be added at publication]