

Aquired brain injury (ABI) is a leading cause of long-term disability worldwide, associated with substantial social and economic costs. Brain injuries can be due to a physical injury, or an illness such as stroke. In the UK alone, ABI contributes to an estimated £43 billion in annual healthcare and societal expenditure (UKABIF, 2025), with approximately 350,000 hospital admissions each year (Headway, 2015) and an estimated 1.3 million in the UK living with the effects of a brain injury (UKABIF, 2025). Globally, the burden of brain injury has been estimated at £282 billion annually (Maas et al, 2017).



Cognitive communication disorder

Nicholas Behn brings us the latest insights into diagnosing and supporting people with cognitive communication disorder (CCD)



Cognitive communication disorder

Cognitive communication disorder (CCD) is common after a brain injury. CCD is a complex, multifaceted condition arising from disruptions to cognitive processes that underpin communication, including attention, memory, executive functioning, and social cognition. It can be distinguished from other communication diagnoses where language functions are impaired, as is often the case in people with aphasia post-stroke.

One of the first most widely accepted definitions of CCD was set out by the College of Audiologists and Speech-Language Pathologists of Ontario (CALSPO) in 2002: “[CCD means] communication impairments resulting from underlying cognitive deficits due to neurological impairment. These are difficulties in communicative competence (listening, speaking, reading, writing, conversation, and social interaction) that result from underlying cognitive impairments (attention, memory, organization, information processing, problem solving and executive functions).”

The term CCD also extends to include impaired pragmatics, social communication and social cognition. It is a departure from previously used terms from the 1970s to the 1990s which attempted to define CCD under wide-ranging headings such as sub-clinical aphasia, cognitive-linguistic difficulties, cognitive-language and cognitive-pragmatic difficulties, higher level language difficulties and complex language difficulties.

How does CCD happen?

CCD can arise from both traumatic (eg road traffic accidents, falls, assaults) and non-traumatic brain injury (eg right hemisphere stroke, tumours, anoxia, infectious diseases, metabolic conditions, encephalitis and long COVID). It can happen in mild as well as more severe brain injuries (Maas et al, 2017).

CCD has been reported to occur in more than 66% of people with brain injury (Hewetson et al, 2017; Kelly et al, 2017) although some researchers have suggested



CCD has been reported to occur in more than 66% of people with brain injury

that the true rate may be greater than 75% (MacDonald, 2017).

Clinical presentation of CCD

CCD is highly heterogeneous, and characterised by a range of communication, emotional and physical changes.

Communication-related signs of CCD include:

- excessive talkativeness (verbosity) or paucity of speech
- difficulties with initiation and turn-taking
- tangential discourse
- perseveration and impaired topic management
- disinhibited social behaviours
- breakdowns in pragmatic use of language.

Discourse profiles

In the past, Hartley and Jensen (1992) presented three different discourse profiles to describe the communication abilities of people with traumatic brain injury based on their narrative discourse: impoverished, confused, and inefficient. While these profiles remain relevant today, researchers mainly acknowledge a range of communication changes that extend from ‘impoverished’ (flat affect, speak slowly, use few words, word finding difficulty, trouble starting conversation) to ‘inefficient’ (verbose, talkative, tangential, dominate conversation, interrupts others, repetitive and perseverative) (Sim et al, 2013).

Other changes in CCD

The communication issues in CCD rarely occur in isolation, and are often accompanied by emotional (eg mood swings, anxiety, depression), behavioural (eg impulsivity, aggression, apathy), and physical changes (eg, fatigue, balance problems, vision and hearing), making rehabilitation complex.

Most importantly though, CCDs have been shown to be pervasive and long-term, persisting for many years post-injury (Olver et al, 1996; Snow et al, 1998).

Impact of CCD

These effects of CCD can have a significant impact on person’s life. A person with ABI may experience negative feelings and emotions from communicating with others including frustration, anxiety and isolation (Kelly et al, 2023; Shorland and Douglas, 2010). This may lead to the loss and disruption of friendships and relationships and have a negative impact on engagement and participation in activities with others (Grayson et al, 2021; O’Flaherty and Douglas, 1997).

Changes in communication can hinder social integration (Dahlberg et al, 2006; Struchen et al, 2008), limit opportunities for return to work or education (Meulenbroek & Turkstra, 2016; Rietdijk et al, 2013) and reduce quality of life (Dahlberg et al, 2006; Galski et al, 1998). Over time, people with ABI may experience loss of income due to an inability to work, and in some cases, face homelessness or involvement with the juvenile detention system or prison services.

This disorder can also take an emotional toll on those who communicate with the person with ABI including family, friends and carers, who are often required to provide increased support to their loved ones (Grayson et al, 2021; O’Flaherty and Douglas, 1997). Family members often bear the brunt of managing the changes in the person with ABI, navigating social situations and taking on the burden of facilitating conversations. As a result, family members experience emotional stress, disrupted relationships and reduced wellbeing.



Assessment and diagnosis of CCD

Making a diagnosis of CCD is complex and depends on type and severity of injury, neurological presentation, cognitive and communication profiles. The heterogeneous profile of communication changes can also make CCD and its severity difficult to diagnose. Given these considerations, it is not surprising that there is no single objective tool for the assessment of CCD with sufficient sensitivity or ecological validity (MacDonald, 2017). Consequently, the difficulty in diagnosing CCD increases the risk of under-recognition of the condition, particularly in mild brain injury, as people with ABI may present with intact surface-level language that may be mistakenly judged as communicative competence.

Use a range of assessments

A first consideration when making an initial or early diagnosis is to identify the primary impairment using a range of assessments.

- **Linguistic vs cognitive:** where difficulties are mainly linguistic, a therapist is more likely to consider a language diagnosis such as aphasia. However, if the difficulties are primarily cognitive (attention, memory and executive function), the diagnosis is more likely to be CCD.
- **Neuropathology:** In addition to assessment information, it is important to consider neuropathology based on evidence such as brain scans. Neurologically localised damage to the language centres of the brain may lead to an aphasia diagnosis, with more diffuse damage involving the frontal lobes leading to a CCD diagnosis.
- **Co-occurring diagnoses:** to further complicate the picture the two diagnoses of CCD and aphasia may co-occur in some cases; and CCD may also co-occur with other communication diagnoses such as dysarthria, dyspraxia and dysfluency.
The distinct lack of consensus amongst researchers and therapists as to which tools should be used to assess CCD makes

diagnosis difficult. That said, many agree that an assessment for suspected CCD should span several levels of language and communication including observation of discourse (monologic and conversation); pragmatic skills; social cognition; and perceived communicative ability (insight and awareness of difficulties) (Sohlberg et al, 2019; Steel and Togher, 2019).

Some would also argue that a static or dynamic assessment of cognition that shows impairment in multiple domains (eg attention, memory and executive function) is more likely to indicate CCD. For example, a person with word finding difficulty who benefits from slowing down or repeating an instruction due to attentional and memory impairments may indicate CCD more than aphasia.

An assessment of conversation should also consider the real-life environment for the person (eg family, social, education, work), social context, goals and demands of the conversation, the communication partner, and social and cultural roles they assume, as they may all impact conversation (Keegan and Müller, 2022; Togher et al, 2023).

Management of CCD

Management of CCD is just as complex as diagnosis, but recommendations from an international group of cognitive researchers and clinicians (also known as INCOG, Togher et al, 2023) and systematic reviews of interventions for people with CCD provide guidance to therapists (Finch et al, 2016; Le et al, 2022; Tobar-Fredes et al, 2023). There should be consideration of communication partner training,

individual or group treatment (including communication strategy training, and training of metacognitive awareness) and social-cognitive skills training. Treatment should



REFERENCES

For a full list of references visit: [rcslt.org/references](https://www.rcslt.org/references)



Through clear and early diagnosis of CCD ... we are more likely to influence change

provide the opportunity for practice and rehearsal of communication skills in real-life contexts and with people the person with ABI regularly communicates with.

Advocating for CCD

The identification, assessment and management of CCD is becoming more common for SLTs not only for people with ABI but other conditions including neurodegenerative diseases such as dementia, functional neurological disorders and mental health conditions.

Diagnosing CCD in mild brain injury would also be beneficial given the high likelihood of return to work or education



insight and awareness of any presenting difficulties. There is also growing importance for the assessment of social cognitive skills (eg theory of mind, emotional processing, social inferencing) which underpin social competence (Togher et al, 2023).

Collaboration

In clinical practice, the successful identification and management of CCD relies not only on assessment but also on effective collaboration, education, and awareness. One key consideration is working closely with the multidisciplinary team, including the family.

CCD changes may be first noticed by occupational therapists, psychologists, nurses or family members rather than SLTs. Actively encouraging members of the team to report observed communication breakdowns in everyday tasks (eg conversations, goal setting, group work) or subtle changes in how a person communicates compared to their pre-injury communication style can support earlier referral and more accurate diagnosis.

Things to look out for

Increasing awareness of CCD amongst families, healthcare professionals and the wider community is essential for effective identification and management. Some key signs of CCD that may help to raise awareness include:

- People with CCD may speak fluently yet struggle in conversation and social situations. The changes in communication may be subtle but highly disabling, often varying depending on who is being spoken to, the demands of the task and the context in which the interaction occurs.
- Fatigue and reduced insight can further exacerbate these difficulties.
- Frequently, it is those closest to the person who sustained an ABI who first notice these subtle changes, describing the person as “not themselves” or different from their pre-injury self.

and back into society. Through clear and early diagnosis of CCD, and further research that improves assessment and management, we are more likely to influence change not only for people with CCD but for the speech and language therapy profession.

Practical tips and resources

Choosing assessment tools

Therapists can benefit from using brief, structured tools to support clinical reasoning and discussion, such as:


- Checklists such as the CCCABI [rcslt.info/cccabi](https://www.rcslt.info/cccabi) can help organise observations of communication change after ABI and provide a shared language when discussing CCD with colleagues, patients, and family members.
- Discourse-focused resources such as those from TBI TalkBank [rcslt.info/tbi-bank](https://www.rcslt.info/tbi-bank) can support more ecologically valid assessment and provide exemplars for analysis beyond standardised testing. An SLT should assess a person’s conversational skills and the degree of

Communication partners

There is a need to support communication partners. CCD often places a significant burden on family members, friends, carers and employers, who may struggle to understand the nature of cognitive-communication changes. Providing knowledge of CCD, practical strategies and the ability to actively practice those strategies can improve communication outcomes and reduce frustration on both sides.


- Structured partner training programmes, such as the free online self-guided programme Interact-ABI-lity, offer accessible ways to extend intervention beyond individual therapy sessions [rcslt.info/interact-abi-lity](https://www.rcslt.info/interact-abi-lity).
- There is further research that is currently exploring communication partner training such as the TANGO study [rcslt.info/training-communication](https://www.rcslt.info/training-communication).

Focus on long-term needs

Finally, therapists should consider service pathways and the timing of intervention. CCD commonly persists beyond discharge from acute rehabilitation, with its impact often emerging once individuals return to community life, relationships, or work and education. Enhancing public awareness and advocating for appropriate follow-up may help to address these longer-term needs. Practical, functional and collaborative approaches are therefore essential to ensuring that CCD is recognised and meaningfully addressed in everyday contexts. 

DR NICHOLAS BEHN, SLT, Senior Research Fellow, City St Georges, University of London
 Nicholas.Behn@citystgeorges.ac.uk

Find out more

New RCSLT guidance on cognitive communication disorder and brain injury
 [rcslt.org/brain-injury](https://www.rcslt.org/brain-injury)