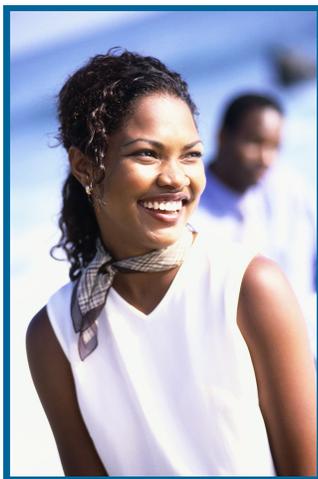


Social Communication and Traumatic Brain Injury (TBI):

A Guide for Professionals



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An educational product of the
Texas Traumatic Brain Injury Model
System of TIRR Memorial Hermann



Definition of Social Communication:

- **Social communication involves sending and receiving messages to and from others.**
Social communication involves being able to understand others and what others meant to communicate. It also involves being able to express your thoughts and feelings to others in a way they can understand. Another term for aspects of social language is **pragmatics**.
- **Social communication includes many skills.**
These skills can be **verbal** (the words that you say or write) or **nonverbal** (intonation, voice volume, use of gestures, facial expressions, body positioning). In fact, how something is said can be more important than *what* is said. Some examples of social communication skills include:
 - **Starting and ending conversations**
 - **Showing feelings with facial expressions**
 - **Staying on topic**
 - **Using gestures**
 - **Selecting and changing conversation topic**
 - **Speaking at appropriate rate**
 - **Inhibiting inappropriate communication behaviors**
 - **Using tone of voice to express meaning and feelings**
 - **Turn-taking**
 - **Eye contact**
 - **Asking for clarification**



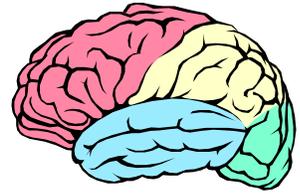
- **Social communication must be evaluated in relation to context.**

A person needs to adjust how they communicate depending on the situation in which they are involved and the persons with whom they are talking. Context includes the physical setting, the social demands of the situation, and one’s relationship to the conversational partner(s) (e.g., friend, co-worker, stranger, neighbor, doctor, stranger).

Social Communication Changes after TBI:



- **Impairment in social communication is common following moderate to severe traumatic brain injury.¹⁻²**
- **Changes in social communication can be relatively mild, such as having problems with word-finding in conversation, or more widespread, affecting several aspects of communication.**
- **Problems with social communication abilities following TBI result from both cognitive and personality changes that can be caused by injury to the brain.³⁻⁴**
- **Other factors such as premorbid ability, emotional reactions to disability, and environmental factors may also contribute to social communication outcomes after injury.^{3, 5-6}**



Focal injury, occurring primarily to orbital and lateral surfaces of the frontal and temporal lobes, can result in problems such as:

- **Executive dysfunction**
 - Problems with goal-setting
 - Planning difficulties
 - Sequencing difficulties
 - Concreteness of thought
 - Impulsivity
 - Poor initiation
 - Impaired self-monitoring
- **Memory difficulties**
 - Difficulty with learning new information
 - Problems with retrieval of information from memory store
 - Recall confounded by difficulty discriminating between target and intrusion material.

Diffuse axonal injury (DAI), a primary injury mechanism caused by shearing strains occurring during incidents such as motor vehicle accidents, is thought to contribute to some of the most common cognitive problems, including:

- **Slowed processing speed**
- **Difficulty with attention and working memory functioning**
- **Reduced cognitive efficiency**

These cognitive problems can contribute to social communication difficulties:

Attention/Concentration problems can lead to:

- Difficulty resisting distraction during conversation
- Problems keeping track of what other people are saying
- Problems in staying on-topic

Memory problems can lead to:

- Repeating oneself when talking
- Losing track of the conversation topic
- Mixing up instructions or messages

Executive Functioning problems can lead to:

- Having trouble starting conversations
- Interrupting others
- Poorly organized speech
- Excessive talking

Impaired Social Cognition can lead to :

- Difficulty understanding sarcasm or “getting the joke”
- Poor use of feedback from others
- Difficulty taking someone else’s perspective



Social Communication and Outcome:



- Changes in social communication can be one of the most difficult problems for persons with traumatic brain injury (TBI) and their loved ones.
- Social communication skills play a key role in being successful in one's home life, work, and school following TBI. Communication difficulties can affect the ability to get and maintain a job after injury. They can also affect the ability to make and keep friendships and can impact family relationships. The following illustrates some research literature in this area:

"After my injury, a lot of my old friends didn't seem to want to come around. I think they felt uncomfortable because I talked and acted differently than I had before. Loneliness was a big problem."



Social Integration:

- Nearly half of patients with severe TBI had limited or no social contacts and few leisure interests one or more years post-injury.⁷
- 92% of both family members and persons with TBI reported that the person with TBI had changes in his/her friendships; while 75% reported that the person with TBI had difficulties in making new friends.⁸
- Discourse measures of conversation samples (analyses of language behavior such as syntax, vocabulary, conversational skills, cohesion) were related to social integration.⁵

Employment:

- Conversational skills were identified as a major predictor of failure to return to work following severe TBI, in addition to personality problems, behavioral disorders, and cognitive status.⁹
- The most common causes of job separation in persons with TBI were found to be "interpersonal difficulties," "social cue misperception," and "inappropriate verbalization."¹⁰
- Persons with TBI who failed to return to work were rated by informants as displaying significantly more undesirable personality changes and by independent raters to be significantly less socially skilled.¹¹

Family Relationships:

- Several studies have shown that behavioral and emotional changes in the persons with TBI outranked cognitive changes in contributing to family burden.¹²⁻¹⁵
- Family members of persons with TBI reported both elevated distress and impaired family communication functioning when compared to family members of persons without TBI.¹⁶
- Less socially skilled persons with TBI showed less positive affect and required more effort from their family member to maintain a problem-solving interaction, which was interpreted to suggest that extra burden was placed on family members of individuals with social skill deficits.¹⁷

Assessment of Social Communication Abilities:

At present, a standardized approach to the assessment of social communication abilities is not uniformly used in clinical settings. Evaluation of social communication is challenging in a clinical setting, as context is a critical feature of these abilities. There are several questionnaires and tests that have been developed which address aspects of social communication. Consistent with an information processing model of social communication skill,¹⁸ there are three major areas that should be addressed:

- **Receiving Skills/Comprehension:**
 - Perception of affect and prosody
 - Perception of social problems
 - Perception of sarcasm/irony
- **Processing Skills:**
 - Generation of alternative responses
- **Sending Skills/Production:**
 - Verbal skills
 - Nonverbal skills



The following briefly highlights some approaches to measuring aspects of social communication for persons with TBI, as well as examples of a few specific measures:

- **Self-Report Questionnaires:**
 - **La Trobe Communication Questionnaire (LCQ):**¹⁹⁻²⁰
30-item, self- and other-report questionnaire specifically designed to address communication problems after TBI. Good internal and test-retest reliability have been demonstrated. (Sending skills)
 - **The Social Communication Skills Questionnaire (SCSQ):**²¹
Self-report questionnaire designed to address communication and social skills problems after TBI. Information on psychometric properties is unavailable. (Sending skills)
- **Social Problem-Solving Measures:**
 - **Assessment of Interpersonal Problem-Solving Skills (AIPSS):**²²
13 video vignettes, 10 of which depict a social problem situation, are viewed with evaluation of problem identification, generation of alternative responses, and performance of response. (Receptive, processing, and sending skills)
 - **Social Problem-Solving Inventory (SPSI):**²³
70-item measure of social problem solving comprised of two scales: problem orientation and problem-solving skills. Items are self-statements depicting either positive (facilitative) or negative (inhibitive) responses to real-life problem-solving situations. Adequate reliability and validity demonstrated. (Receptive, processing, and sending skills)
- **Measures of Receptive Communication Skills:**
 - **Florida Affect Battery (FAB):**²⁴⁻²⁵
The battery consists of 10 subtests (5 facial, 3 prosodic, and 2 cross-modal), assessing perception of five different emotions (happiness, sadness, anger, fear, neutral). (Receptive skills)
 - **The Awareness of Social Inference Test (TASIT):**²⁶
Three subtests composed of audiovisual vignettes which measure one's ability to name 7 basic emotions, to interpret conversational remarks that are either sincere or sarcastic, and to interpret conversational remarks in which speaker is either lying to be kind or is being sarcastic. Good test-retest reliability and validity. Australian actors perform vignettes, thus language accent may impact performance of U.S. respondents. (Receptive skills)
- **Behavioral Rating Scales:**
 - **Profile of Pragmatic Impairments in Communication (PPIC):**²⁷
10 feature summary scales along with 84 specific behavior items that assess the frequency of various communication behaviors. The feature summary scales have been found to have acceptable interrater reliabilities, high internal consistency, and high concurrent validity. (Sending skills)
 - **Behaviorally-Referenced Rating System of Intermediate Social Skills-Revised (BRISS-R):**²⁸
The BRISS-R provides an intermediate level coding system of social skills provides qualitative ratings of specific behavioral components of social skill, each of which are rated on a 7-point scale ranging from "very appropriate" to "very inappropriate." Behaviors are both verbal and nonverbal in nature. (Sending skills)

Approaches to Treatment:

The following illustrates some of the common approaches that are used clinically in both neurological as well as other clinical populations (e.g., persons with social anxiety). This information is provided to summarize current clinical practice approaches, but is not intended to be a prescriptive list.

- **Structured Feedback:** getting information from someone who is trusted about what aspects of communication went well and what aspects need to be worked on can be useful. This is especially helpful if the feedback can be given immediately after the conversation takes place. Feedback should address both positive aspects of communication abilities as well as areas that need improvement.
- **Use of Videotaped Interactions:** videotaping conversations and then playing them back can be very helpful in increasing awareness of communication strengths and weaknesses.
- **Modeling:** a therapist or other communication partner may demonstrate ways to handle different communication situations.
- **Shaping, cueing, and fading:** shaping refers to reinforcing behaviors that approximate the target communication behaviors until the target response is reached, cueing refers to hints or guidance to help increase the likelihood that a particular communication behavior will occur, and fading refers to the gradual reduction in the amount of guidance that is needed from cues.
- **Role-play and rehearsal:** practicing different communication situations can be very helpful.
- **Positive Reinforcement:** providing praise and encouragement for positive communication behaviors can help. For some clients, setting up a system for the provision of material rewards may also be useful. For example, a client could earn points for each occasion in which he or she engaged in a positive behavior (e.g., initiating a conversation) or failed to exhibit a negative behavior (e.g., interrupting others) that could be used to earn a reward (e.g., an article of clothing or a dinner out at a restaurant).
- **Homework:** working on communication skills in daily life is especially important. The more opportunities that a person can work on communication behaviors outside of therapy, the more likely that positive changes will be made.
- **Environmental Modifications/“In Vivo” Skills Training:** context-specific interventions that address modifications to the person’s environment and use of supported relationships to address skill-building in the natural environment may help address problems with generalizing treatment effects to the community.



A key factor in improving social communication skill is often perceived to be the involvement of family members, friends, and others in the community in helping to develop and practice skills and to provide feedback and support. A trusted family member or friend can help provide feedback, can provide coaching and encouragement, and can help practice communication skills.

Evidence Base for Clinical Practice:

- Three randomized controlled clinical trials have been published since 2008, all of which demonstrate evidence that supports use of social communication interventions for adults with TBI. Additional support has been demonstrated by a number of well-designed case studies and clinical series with independent outcome assessment.^{3,27-28} The following details the evidence from published clinical trials:

Helffenstein and Wechsler (1982):²⁹

- **Participants:** 16 persons with “non-progressive” brain injury.
- **Treatment:** Equally randomized to 20 hours of either interpersonal process recall (IPR) treatment or non-therapeutic attention. IPR sessions consisted of participation in a videotaped interaction; structured review of the taped interaction with feedback provided by self, conversational partner, and therapist; development of alternative skills; modeling; and rehearsal.
- **Results:** Significantly reduced anxiety and improved self-concept at post-treatment for those in IPR. Additionally, those receiving IPR rated with significantly greater improvement in specific interpersonal skills by professional staff and independent observer raters masked to treatment assignment. Communication improvements maintained at 1-month follow-up period.
- **Strengths:** Randomized controlled design, independent outcome ratings, reliance on multiple outcome measures, and multiple methods to assess generalization of skills to outside-treatment settings.
- **Weaknesses:** Characterization of the small study sample limited, and sample selection criteria unclear and description of process of selection (e.g., consecutive series, convenience sample) lacking.

Dahlberg et al (2007):³⁰

- **Participants:** 52 adults with TBI
- **Treatment:** Equally randomized to either 12-session social skills group (SSG) intervention or standard of care (SOC). Initial sessions focused on self-assessment and goal-setting, the next several sessions addressed practice of communication goals and feedback provision, and final sessions focused on practice of problem-solving in other social situations.
- **Results:** SSG scored significantly better than SOC in 7 of 10 areas rated on the Profile of Functional Impairments in Communication (PFIC).²⁹ Additionally, treated group self-reported communication improvement and greater life satisfaction, with maintenance or continued improvement noted at 6-month post-treatment follow-up.
- **Strengths:** Randomized controlled design, homogeneous sample with regard to etiology, a moderate sample size, use of independent raters for primary outcome measures, and use of communication rating scales designed for persons with TBI.
- **Weaknesses:** Lack of nontherapeutic attention control, selection criteria regarding severity of social communication impairment was poorly characterized.

McDonald et al (2008):³¹

- **Participants:** 51 adults with acquired brain injury recruited, 39 completed trial
- **Treatment:** Equally randomized to either social skills treatment (SST) program, social activity (SA) alone, or deferred treatment control. SST program consisted of 12 weeks with 4 hours treatment per week (2-hour group focused on social behavior, 1-hour group focused on remediation of social perception, and a 1-hour individual session addressing psychological issues such as mood and self-esteem). SA group consisted of 12 weeks of 4 hours of social and leisure activities on a once weekly basis.
- **Results:** The SA group did not have significantly improved performance relative to waitlist controls on any outcome measure. The SST group improved significantly relative to other groups on the Partner Directed Behavior Scale of the BRISS-R, yet did not do so for other outcome measures.
- **Strengths:** Randomized controlled design, use of both deferred treatment and nontherapeutic attention controls, multiple outcome measures, use of independent raters for primary outcome measures.
- **Weaknesses:** Small sample with subsequent reduced power, mixed etiology population with no characterization of sample by etiology, selection criteria for study unspecified, compromise of study randomization scheme due to scheduling difficulties and other logistical constraints.

Application in Clinical Practice:



Implications of Evidence Base:

- Social skills interventions for persons with TBI have demonstrated modest treatment effects resulting in improved communication skills as measured by independent raters. Thus, there is support for the use of these interventions in clinical practice.
- The greatest impact of social communication interventions from two of the studies appeared to be in the modification of partner-related behaviors, or the ability to adapt to the social needs of others (e.g., reduced egocentricity, increased encouragement of the partner to contribute to the conversation).³⁰⁻³¹
- Structured feedback, use of videotaped interactions, modeling, role-play, rehearsal, and training in self-monitoring have been shown to be useful.
- Across the studies, variable impacts have been noted for secondary outcomes, such as mood, social perception, psychological well-being, and social participation.

Therapy Manuals and Resources:

- The manual utilized in the Dahlberg et al study (2007) is available and may be used in clinical practice. To obtain the manual, please contact:
Lenore Hawley MSW, CBIT; E-mail: LHawley@CraigHospital.org OR Jody Newmann, M.A., CCC-SLP; E-mail: JNewman@CraigHospital.org.
- Although a treatment manual for the use of interpersonal process recall (IPR) approach to intervention for social communication skills (Helffenstein and Wechsler (1982) is not available, an ongoing clinical trial that is part of the Texas Traumatic Brain Injury Model System at TIRR Memorial Hermann that attempts to replicate this approach has produced a manual, which will available for dissemination to interested professionals at the conclusion of the trial. If interested, please contact:
Margaret A. Struchen, Ph.D.; E-mail: struchen@bcm.edu; Phone: (713) 630-0522.
- Additionally, there are a number of manuals and book chapters that have been produced which may provide useful practical suggestions that could be utilized in your clinical setting. A sample of these resources is available in the reference section of this brochure (cites 32-34).

Future Directions:

- Additional investigation of approaches to social communication intervention will be important to demonstrate the impact on specific communication behaviors, to better understand which interventions work best for which clients, and to better address the issues of treatment intensity, treatment length, and maintenance of treatment effects. Various approaches can contribute to our evidence base, including well-designed case studies and case series as well as additional randomized controlled clinical trials.
- One area that deserves increased attention is the evaluation of and intervention for social perceptual deficits that may be contributing factors to social communication difficulties for some individuals with TBI. Improving our understanding of the relationship between impaired self-awareness, impaired social perception, and social communication will also be an important future endeavor.
 - In addition to the approaches that are more traditional within the clinical setting, an increasing emphasis has been placed on the use of context-specific environmental modifications (e.g., in the workplace or during leisure activities), such as training and coaching of work supervisors and other communication partners so that they know how to provide appropriate types and amount of support and are able to reduce those supports effectively as the individual improves his or her performance.³⁵⁻³⁷



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This educational brochure was sponsored by a grant from the National Institute on Disability and Rehabilitation Research, U.S. Department of Education, for the Texas Traumatic Brain Injury Model System at TIRR Memorial Hermann (Grant #: H133A070043).

