Table 3

*Communication functions displayed by persons who are minimally conscious as perceived by familiar caregivers (application to Communication Matrix, Rowland, 2011)*

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| **Matrix**  **Level** | **Nr** | Communication function | | Definition | Behaviour observed by caregiver | **Mentioned by (Part nr)** |
| ***Level 1:***  ***Pre-intentional behaviour*** | **1** | Wakefulness and alertness | | Displaying signs of coma recovery coma / regaining consciousness. | Prolonged eye gaze | P3, P7 |
| **2** | Disorientation | | Disorientation of person, place and time. |  | P3, P7 |
| **3** | No recognition | | Not recognising familiar objects or people. | Prolonged eye gaze, eye blinking or frowning | P5, P6 |
| **4** | Searching behaviour | Object | Searching for an object in the environment. | Lateral eye movement or prolonged gaze | P7 |
| Person | Searching for a person in the environment. | Lateral eye movement, reaching, turning head slowly | P1, P4, P5 |
| **5** | Expressing components related to physical functioning | | Communication regarding the physical functioning of the person. | Reflexive behaviours (see Figure 2) | P2, P3, P4, P5, P6 |
| **6** | Expressing | Pain | Physiological expression of pain. | P3 |
| Discomfort | Expressing components related to discomfort. | P2, P3, P4 |
| ***Level 2: Intentional behaviour*** | **7** | Recognition | Object | Recognising an object such as a photo of a past event or a book. | Smiling, laughing, photos of real objects and people | P1 |
| Familiar person | Recognising a familiar person such as a friend, relative or corporate connection. |  | P1, P2 |
| **8** | Drawing attention | | Focusing the communication partner’s attention on a specific object, person or event. | Prolonged eye gaze, pointing, reaching, saying the initial sound or naming the object/person or event | P2 |
| **9** | Expressing affect | Positive | Communicates positive emotions (e.g., happy). | Smiling, laughing | P1, P2, P6 |
| Negative | Communicates negative emotions and feelings (e.g., anger, stress, fear, frustration). | Frowning, crying, pulling mouth, prolonged eye closure | P1, P2, P3, P4, P5, P6, P7 |
| ***Level 3: Unconven-tional communi-cation*** | **10** | Communication intent (basic) | | Indicating an intent to communicate. | Reaching, grabbing hand, pulling head and body | P1, P2, P3, P4, P5, P6, P7 |
| **11** | Refusing to communicate | | Indicating no desire to communicate despite having communication intent. | Prolonged eye closure, pulling mouth, sign language, shaking head | P7 |
| **12** | Comprehending messages (basic) | | Understanding the intent of a message produced by a communication partner. | Eye blinking, nodding, vocalizations | P7 |
| **13** | Choice making | | Conveying personal preferences to the communication partner. | Eye blinking, nodding, shaking head, pointing, vocalizations | P1, P2, P3, P4, P5, P6, P7 |
| **14** | Expressing basic wants and needs | | Expressing wants and needs. | P1, P2, P3, P4, P5, P6, P7 |
| **15** | Beginning communication support | | Using unaided communication to represent basic messages. | P1, P2, P3 |
| ***Level 4:***  ***Conventio-nal communi-cation*** | **16** | Greeting | | Following social etiquette rules, e.g., saying “hello” or “goodbye”. |  | P4, P5, P6 |
| **17** | Engagement in interaction | Active | Attending to the communication partner through active listening and body engagement. | Prolonged eye gaze, nodding, vocalizations, silences | P1, P2, P3, P4, P5, P6, P7 |
| Passive | Being physically present during communication but not actively engaged (i.e., disinterested in communication). | Prolonged eye closure | P1, P4, P5, P6 |
| **18** | Turn taking | | Displaying turn-taking (i.e., reciprocity) with communication partners. | Prolonged eye closure, nodding | P4, P5, P6, P7 |
| **19** | Following of instructions | | Understanding an instruction by a communication partner. | Gestures | P1, P2, P3, P4, P5, P6, P7 |
| **20** | Functional use of objects | | Knowing the function of an object (e.g., using a comb). | Gestures functional use of object | P7 |
| **21** | Requesting | Object | Requiring the communication partner to provide an object (e.g., toothbrush or comb). | Pointing, turning head slowly, prolonged eye gaze, reaching, licking lips, PCS symbols, alphabet chart | P4 |
| Action | Requiring the communication partner to fulfil a task (e.g., pointing to the light-requesting the light on/off). |  | P4 |
| Physical presence | Requiring physical closeness from the communication partner. | Reaching, grabbing hand, prolonged eye gaze | P1, P2, P3, P4, P7 |
| Information | Requiring the communication partner to provide more information. |  | P7 |
| **22** | Responding (basic) | | This refers to a voluntary response to a communication partner’s initiation to communicate. | Nodding, vocalizations and word approximations | P1, P3 |
| **23** | Refusing | Object | Requiring the communication partner to provide an object (e.g., food, toothbrush or comb). | Prolonged eye closure, shaking head, | P3, P4 |
| Action | Requesting partner to fulfil a task (e.g., take food away). | Spitting food out, pulling mouth, pulling head and body away, reflexive behaviours | P5 |
| Physical presence | Requiring a lack of physical closeness from the communication partner (e.g., requesting the partner to leave). | Prolonged eye closure | P1, P2, P3, P4 |
| Information | Requiring the communication partner to provide no information. |  | P7 |
| ***Level 5:***  ***Concrete communi-cation*** | **24** | Imitating/ Repeating | | Imitating or repeating an action, object or person. |  | P7 |
| **25** | Naming | | Labelling an object, person or event in the person’s environment. | Word approximations, vocalization, gestures | P2, P5 |
| **26** | Commenting | | Providing comments during the conversation. |  | P7 |
| **27** | Answering | Yes/no questions | Responding to the communication partner’s questions (yes/no). | Word approximations, vocalizations, eye blinking, nodding, shaking head, smiling, frowning, squeezing hand. | P1 |
| Concrete questions | Responding to general contextual questions focusing on the current environment (e.g., “*What are you doing*?”). |  | P4, P5, P6 |
| Abstract questions | *Responding to simple abstract questions from the communication partner (e.g., “How do you feel today?”).* | Lightwriter, WhatsApp, writing, tablet | P2 |
| **28** | Requesting a turn | | Initiating interaction or requesting to participate in the conversation. | Grab hand, prolonged eye gaze, silences | P7 |
| **29** | Initiate conversation | | Requesting reciprocal interaction from a communication partner. | P4, P7 |
| ***Level 6:***  ***Abstract*** | **30** | Modelling | | Using simple gestures to demonstrate what is required of the communication partner (e.g., “*I am hungry*”). | Gestures | P2 |
| ***Level 7:***  ***Linguistic*** | **31** | Narrative | | Telling a story. | Word approximations, vocalizations, sign language, Lightwriter, alphabet board, writing, WhatsApp | P4, P5, P6, P7 |
| **32** | Arguing | | Debating the person’s point of view. |  | P7 |
| **33** | Leading the conversation | | Leading the conversation by discussing topics related to the person’s concerns or interests (e.g., humour and gossip). | Physical objects such as Lightwriter, writing, WhatsApp | P6, P7 |
| **34** | Observing social etiquette | | Using words that are socially appropriate or inappropriate. | Alphabet chart | P4, P5, P6 |
| **35** | Termination/disengagement | | Withdrawing from the conversation. | Prolonged eye closure | P1, P2, P6 |
| **36** | Conversational pause | | The speaker takes a rest, hesitates, or temporarily stops. | Silences or gesture | P4, P5, P6 |