

# Global Conference on Physiotherapy, Physical Rehabilitation & Sports Medicine

November 13-14, 2025 | Lisbon, Portugal



**Orin Yardeni & Michal Scharf,**

Loewenstein Rehabilitation Medical Center, Ra'anana, Israel

Anna Oksamitni, Hiela Lehrer, Ilana Gelernter, Michal Scharf, Lilach Front, Olga Bendit-Goldenberg, Amiram Catz, and Elena Aidinoff.

## Reliability and Validity of the Lowenstein Communication Scale

### Abstract:

**Background/Objectives:** The Lowenstein Communication Scale (LCS) is a tool for the evaluation of communicative performance in patients with disorders of consciousness (DOC). This study investigated the reliability and validity of the LCS.

**Methods:** We evaluated 23 inpatients with unresponsive wakefulness syndrome (UWS) and 18 in a minimally conscious state (MCS), at admission to a Consciousness Rehabilitation Department and one month later. The evaluations included assessments of LCS by two raters, and of the Coma Recovery Scale-Revised (CRS-R) by one rater.

**Results:** Total inter-rater agreement in LCS task scoring was found in 58–100% of the patients. Cohen's kappa values were  $>0.6$  for most tasks. High correlations were found between the two raters on total scores and most subscales ( $r = 0.599-1.000$ ,  $p < 0.001$ ), and the differences between them were small. LCS subscales and total score intraclass correlations (ICC) were high. Internal consistency was acceptable (Cronbach's  $\alpha > 0.7$ ) for most LCS subscales and total scores. Moderate to strong correlations were found between LCS and CRS-R scores ( $r = 0.554-0.949$ ,  $p < 0.05$ ), and the difference in responsiveness between LCS and CRS-R was non-significant.

**Conclusions:** The findings indicate that the LCS is reliable and valid, making it a valuable clinical and research assessment tool for patients with DOC.

**Keywords:** minimally conscious state; unresponsiveness wakefulness syndrome; consciousness disorders; reliability; validity; assessment of communication

# Global Conference on Physiotherapy, Physical Rehabilitation & Sports Medicine

**November 13-14, 2025 | Lisbon, Portugal**

**Biography: Orin Yardeni** is a Speech-Language Pathologist at the Department of Rehabilitation of Communication Disorders, Loewenstein Rehabilitation Medical Center, Israel. With extensive clinical expertise, she specializes in the rehabilitation of patients with disorders of consciousness (DOC), implementation of Augmentative and Alternative Communication (AAC) strategies, and facilitating group therapy for communication recovery. Her work focuses on improving the quality of life and functional communication outcomes for individuals with severe neurological impairments. Orin is an active contributor to the field of neurorehabilitation and cognitive recovery, sharing her knowledge through oral presentations and professional collaborations.

**Michal Scharf** is a dedicated Speech-Language Pathologist in the Department of Rehabilitation of Communication Disorders, where she specializes in the assessment and treatment of speech, language, and communication challenges across diverse patient populations. With strong clinical expertise and a commitment to evidence-based practice, she plays an essential role in supporting patients with communication impairments resulting from neurological, developmental, and acquired conditions. Michal contributes to advancing rehabilitation outcomes through individualized therapy, interdisciplinary collaboration, and a patient-centered approach, helping individuals improve communication skills and enhance overall quality of life.