

## **EEG-based assessment of disorders of consciousness in children from The Alarm Clock Clinic**

Piotr Durka, Anna Duszyk, Anna Chabuda, Magdalena Zieleniewska, Marian Døvgialo, Marcin Pietrzak, Piotr Róžański

Owing to the progress in medicine, intensive care and technology, more patients survive traumatic accidents and diseases causing brain damage. Some of these patients do not recover from their coma within days and weeks and stay in a state of wakeful unawareness, specified as vegetative state (VS) or recently unresponsive wakeful state (UWS). Apparent unawareness of some of these patients is merely a consequence of the loss of all motor functions, with full consciousness retained—this state is called locked-in syndrome (LiS). Other patients may reveal at least transient signs of consciousness—this state is defined as minimally conscious state (MCS) and may potentially lead to full recovery.

Clinical diagnosis of these patients is based upon behavioural scale, with Coma Recovery Scale-Revised considered the most accurate. However, precise identification of signs of conscious perception versus sometimes reflex, ambiguous behavior and differentiation between these states is difficult, which causes misdiagnoses of VS/UWS and LiS and of VS/UWS and MCS. This problem turns our attention to potentially objective neuroscientific methods.

We shall present example measures derived from EEG event-related potentials and overnight polysomnographic recordings performed in The Alarm Clock Clinic (klinika "Budzik").

<http://www.klinikabudzik.pl/pl/badania-eeg>