

Quantifying the brain's level of and capacity for consciousness has major implications for the assessment of unresponsive patients. The brain is an inherently dynamic organ, whose capacity for consciousness requires the ability to continuously react and adapt to environmental changes. Perturbation has long been a key concept for the assessment of human consciousness. However, the requirement of specialized stimulation techniques, and contraindications for sedated patients prevent existing brain perturbation-based measures from being used in the intensive care unit. This presentation will outline different pathways and propose novel techniques to better understand brain mechanisms underlying consciousness and to improve assessment of unresponsive patients. This has significant implications for clinical teams in determining treatment, setting realistic goals, and providing family with adequate information.