Non-invasive therapeutic intervention for impaired insight in psychiatric disorders: A repeated vestibulocortical stimulation (rVCS) study protocol

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Vestibulocortical stimulation (VCS) is a simple, inexpensive, non-invasive, well-defined, widely utilised and safe neurodiagnostic test for balance and brain death. Also known as caloric stimulation, the technique involves slowly irrigating the external ear canal with cold/warm water while the head is reclined at 30° from the horizontal plane. Remarkably, over recent decades VCS has also been shown to consistently activate a multimodal endogenous brain network (e.g., modulating mood, pain, cognition, attention, perception). In particular, it has demonstrated positive effects on impaired insight in post-stroke syndromes, bipolar disorder and schizophrenia — via VCS-induced right-hemisphere activation — underpinned by decades-long evidence for a fundamental (complementary) hemispheric asymmetry in cognitive style and goal-directed behaviour (approach/avoidance). In anorexia nervosa (AN), a case study report of the technique’s effect on body perception and awareness (Schönherr & May, 2015; CSJ 4:13–7) overlooked this well-established evidence in designing the administration protocol. We will present an overview of current research on VCS, including putative mechanisms of its multimodal effects, along with a study protocol for repeated VCS (rVCS) in AN. This work will form the basis of a clinical research project (registered report) examining whether repeated VCS administration improves impaired insight in AN as a potential therapeutic window for enhancing interdisciplinary clinical management and patient outcomes, particularly as effective treatments for AN are lacking and consequently, it has the highest mortality rate of any psychiatric disorder. Further translational research is thus critically needed into novel interventions that advance the treatment and prevention of eating disorders and other psychiatric illnesses.