

Tinnitus and Virtual Reality Therapy

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It is considered that up to 10% of general population experiences tinnitus. Pathophysiology of subjective tinnitus remains incompletely understood but it emerges that tinnitus perception is the result of central reorganization within cortico sub cortical neural circuitry linked to deafferentation after peripheral cochlear or auditory nerve damage. Involvement of central auditory and non-auditory cerebral structures is then related to tinnitus conscious perception but also to tinnitus related distress experienced by some patients (sound hypersensitivity, sleep disorders, attention deficit, anxiety, depression). These patterns are also present in post amputation chronic pain syndrome. In this indication virtual reality techniques have already proven theoretical and practical interest. The aim of this study is to test virtual reality techniques in tinnitus patients. The study main goal is to evaluate if virtual reality treatment (visual and auditory 3D) is equivalent to Cognitive Behavior Therapy (CBT), which is considered a validated and standard management of tinnitus sufferers. We will only test chronic stable unilateral (or mostly unilateral) tinnitus with normal or slightly impaired hearing. We will measure therapeutic effect by comparing mean scores, pre and post protocol, of "Subjective Tinnitus Severity Scale" a French validated tinnitus questionnaire. Equivalence will be established if both therapeutic strategies do not differ for more than a predetermined limit. This is an open, monocentric, and therapeutic randomized equivalence trial. The aim is to show equivalence (bilateral testing) of two therapeutic strategies for tinnitus: Virtual Reality (VR) versus Cognitive Behavior Therapy (CBT) a standard treatment for which our team has a good experience. The study includes also a control group (waiting list) allowing an assessment of spontaneous tinnitus evolution. After an initial, 3 months, period devoted to technical set up, inclusion period will last 12 months and each patient will be followed up 9 months. Then total trial duration will be 24 months.

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