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Biofeedback and Virtual Reality: The INTREPID Project

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Generalised anxiety disorder (GAD) is a psychiatric disorder characterised by a constant and unspecific anxiety that interferes with daily-life activities. Its high prevalence in general population and the severe limitations it causes, point out the necessity to find new efficient strategies to treat it. Together with the cognitive behavioural treatments, relaxation represents a useful approach for the treatment of GAD, but it has the limitation that it is hard to be learned.

The INTREPID project is aimed to implement a new instrument to treat anxiety-related disorders and to test its clinical efficacy in reducing anxiety-related symptoms. The innovation of this approach is the combination of virtual reality and biofeedback, so that the first is directly modified by the output of the second. In this way, the patient is made aware of his or her reactions through the modification of some features of the VR environment in real time.

Using mental exercises, the patient learns to control these physiological parameters and using the feedback provided by the virtual environment, is able to gauge his or her success.

The supplemental use of portable devices, such as PDA or smart-phones, allows the patient to perform at home, individually and autonomously, the same exercises experienced in therapist's office. The goal is to anchor the learned protocol in a real life context, so enhancing the patients' ability to deal with their symptoms.

The expected result is a better and faster learning of relaxation techniques, and thus an increased effectiveness of the treatment and reduced treatment costs if compared with traditional clinical approaches.

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