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## The use of physical exercise in psychiatry: prescribing aerobic exercise in panic disorder

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### Background

Physical exercise plays an increasingly important part in the management of most psychiatric disorders. The precise mode of action of exercise therapy is unclear, but there is growing evidence that it does change cerebral functioning. In panic disorder, panic attacks result from the misfiring of the brain's asphyxiation alarm following increases of PCO<sub>2</sub>. Panic patients tend to chronically hyperventilate in the attempt to keep PCO<sub>2</sub> low. Hyperventilation causes systemic alkalosis, cerebral vasoconstriction and cerebral hypoxia. Panic patients in the non-panic state have been shown to have abnormal cerebral activity, probably as consequence of chronic hyperventilation secondary to panic attacks. As panic disorder is chronic, panic patients are exposed to long periods of cerebral hypoxia, which in turn may perpetuate anxiety and panic symptoms. By restoring physiological breathing patterns, aerobic exercise regularly may resolve cerebral dysfunction secondary to hyperventilation, thereby mitigating panic symptoms.

### Materials and methods

We performed a Medline search on the use of exercise therapy in psychiatric disorders. The search included about 800 publications on panic disorder from 2000 to 2004, which revealed just a few studies on the use of exercise therapy in panic patients.

### Results

Reviews on the use of exercise therapy in depression have consistently concluded that, provided it is done regularly, both aerobic and non-aerobic forms of exercise significantly reduce depressive symptoms. Exercise therapy is also helpful in the chronic fatigue syndrome, premenstrual dysphoric disorder, psychotic disorders and substance abuse disorders. In panic disorder, randomised

controlled trials comparing aerobic exercise with antipanic agents and placebo showed that both exercise and clomipramine treatments significantly reduced panic symptoms, but clomipramine ameliorated anxiety symptoms earlier and more effectively than exercise. Aerobic exercise also proved an effective adjunctive treatment in middle-aged female patients who met criteria for panic disorder, with a duration of illness spanning over 25 years, in some of whom the illness had followed a particularly crippling course. In addition to antipanic drugs, the patients were advised to engage in a graded programme of aerobic exercise involving swimming or running three times a week, at least 30 minutes each session. Their symptoms resolved within three months after commencing the exercise programme.

### Discussion

Exercise therapy should be considered an integral part of the therapeutic repertoire in psychiatry, including panic disorder. If it is true that panic patients develop respiratory abnormalities that alter brain functioning and that this, in turn, may perpetuate their panic and anxiety symptoms, performing aerobic exercise regularly is likely to be an acceptable and effective method to dispel this cycle. Residual or persistent symptoms associated with the panic syndrome, which may otherwise not respond to conventional antipanic treatments, may attenuate or resolve as a result.

### References

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