

Possible mechanisms for the effect of exercise on depression

There are several theories about the mechanism of the antidepressant effect of exercise, both biological and psychological,⁹ but these are not necessarily mutually exclusive. Increases in endorphins²⁶ or correction of defects in the hypothalamic-pituitary-adrenal axis^{27,28} have been suggested. Treatment of depression, whether with SSRIs, tricyclic antidepressants or indeed exercise, shows a therapeutic lag (commonly of several weeks) despite demonstrable rises in monoamines within hours. This may imply a fundamental adaptation at a cellular or molecular level, rather than a simple change in neurotransmitter levels.²⁹ Research into the biological basis of this effect is ongoing.

Exercise has been shown to improve feelings of self-efficacy,³⁰ the sense of being able to cope with the tasks of life. Low self-efficacy occurs in, and worsens outcomes in, depression. This may explain the non-cumulative effect of adding exercise to antidepressant medications, although exercise reduces relapse rates. Perhaps taking the tablets attenuates the improvement in self-efficacy.