



## **Exercise – It Goes to your Head**

We hear a lot about the benefits of regular exercise on physical health. But what about mental health? Think about this: Your best exercise machine may be your dog! Just taking the dog for a daily walk can yield some surprising benefits—for you, as well as Bowser!

### **Reduces Stress**

Even a single bout of exercise can be a valuable short-term therapy for reducing tension, depression, anger, and confusion.<sup>1,2</sup>

A ten-minute brisk walk will yield one hour of increased energy and reduced tension, whereas a sugary snack will ultimately result in fatigue and tension.<sup>3</sup>

Moderate-intensity exercise is even more beneficial than high-intensity exercise for anxiety reduction.<sup>4</sup>

Regular exercise increases the ability to handle stress by causing fewer stress hormones to be released when stress does occur.<sup>5</sup>

### **Improves Mood**

Students who regularly exercise show lower levels of anxiety, shyness, loneliness, and hopelessness than their less-active peers.<sup>6</sup>

Moderate, regular exercise has a positive impact on mood, vigor, psychological well-being, creativity, and self-esteem in all age groups.<sup>7,8,9,10</sup>

Animal studies show that regular exercise can reduce symptoms of depression and may alleviate some major depression.<sup>11,12</sup>

## **Boosts Brain Power**

Exercise increases cerebral blood flow, increases neurotransmitter availability and efficiency, and affects brain structure.<sup>13</sup>

Small increases in aerobic fitness improve mental fitness, particularly executive control functions of the brain, which have to do with planning, coordinating, and filtering out distracting information.<sup>14</sup>

Animal and human studies show that repeated physical activity triggers chemical changes in the brain that enhance learning and memory.<sup>15,16</sup>

Children learn better when the brain is stimulated by exercising.<sup>17</sup>

People over age 60 who walk rapidly for 45 minutes 3 times a week can significantly improve mental- processing abilities that would normally decline with age.<sup>18</sup>

## **Helps You Sleep**

Exercise can help alleviate sleep problems in older adults.<sup>19</sup>

Exercise can be effective in improving reported sleep quality, depression, strength, and quality of life.<sup>20</sup>

Treating chronic fatigue with appropriate exercise can improve sleep and mood.<sup>21</sup>

Exercising in the evening does not disturb sleep.<sup>22</sup>

1. The acute effects of exercise on mood state. Yeung RR. *J Psychosom Res* 1996 Feb;40(2):123-41). Review.
2. Mood alterations with a single bout of physical activity. McGowan RW, et. al. *Percept Mot Skills* 1991 Jun;72(3 Pt 2):1203-9.
3. Energy, tiredness, and tension effects of a sugar snack versus moderate exercise. Thayer RE. *J Pers Soc Psychol* 1987 Jan;52(1):119-25.
4. Influence of resistance exercise of different intensities on state anxiety and blood pressure. Focht BC, Koltyn KF. *Med Sci Sports Exerc* 1999 Mar;31(3):456-63. Erratum in: *Med Sci Sports Exerc* 2000 Feb;32(2):549.
5. Habitual physical activity facilitates stress-induced HSP72 induction in brain, peripheral, and immune tissues. Campisi J, et. al. *Am J Physiol Regul Integr Comp Physiol* 2003 Feb;284(2):R520-30. Epub 2002 Oct 24.
6. Psychosocial discomfort and exercise frequency: an epidemiological study of adolescents. Page RM, Tucker LA. *Adolescence* 1994 Spring;29(113):183-91.
7. Relationships between self-efficacy and mood before and after exercise training. *J Cardiopulm Rehabil* 1994;14:35-42.

8. Improved psychological well-being, quality of life, and health practices in moderately overweight women participating in a 12-week structured weight loss program. Rippe JM, et. al. *Obes Res* 1998 May;6(3)208-18.
9. Mood changes following exercise. Lane AM, et al. *Percept Mot Skills* 2002 Jun;94(3 Pt 1)732-4.
10. Mood change through physical exercise in nine- to ten-year-old children. Williamson D, et. al. *Percept Mot Skills* 2001 Aug;93(1)311-6.
11. Exercise treatment for major depression: maintenance of therapeutic benefit at 10 months. Babyak M, et. al. *Psychosom Med* 2000 Sep-Oct;62(5)633-8.
12. Exercise in treating depression: broadening the psychotherapist's role. Pollock KM. *J Clin Psychol* 2001 Nov;57(11)1289-300.
13. Brain function and exercise. Current perspectives. Etnier JL, Landers DM. *Sports Med* 1995 Feb;19(2)81-5.
14. Aging, fitness and neurocognitive function. Kramer AF, et. al. *Nature* 1999 Jul 29;400(6743)418-9.
15. Prolonged exercise induces angiogenesis and increases cerebral blood volume in primary motor cortex of the rat. Swain RA, et. al. *Neuroscience* 2003;117(4)1037-46.
16. Exercise, experience and the aging brain. Churchill JD, et. al. *Neurobiol Aging*. 2002 Sep-Oct;23(5)941-55. Review.
17. Healy J. *Endangered Minds: Why Our Children Don't Think and What We Can Do About It* ( New York, NY: Simon and Schuster, 1991).
18. Fitness effects on the cognitive function of older adults: a meta-analytic study. Colcombe S, Kramer AF. *Psychol Sci* 2003 Mar;14(2)125-30.
19. Physical exercise for sleep problems in adults aged 60+. Montgomery P, Dennis J. *Cochrane Database Syst Rev* 2002;(4)CD003404. Review.
20. A randomized controlled trial of the effect of exercise on sleep. Singh NA, et. al. *Sleep* 1997 Feb;20(2)95-101.
21. Treating chronic fatigue with exercise. Exercise improves mood and sleep. Michael, A. *BMJ* 1998 Aug 29;317(7158)600.
22. Is sleep disturbed by vigorous late-night exercise? Youngstedt SD, et al. *Med Sci Sports Exerc* 1999 Jun;31(6)864-9.