**Exercise and Psychological Health**Len Kravitz, Ph.D.

Study Reviewed:
Scully, D., Kremer, J., Meade, M.M., Graham, R., Dudgeon, K. 1998. Physical exercise and psychological well being: a critical review. British Journal of Sports Medicine, 32, 111-120.

Introduction
The literature continues to expand supporting major health benefits of regular physical activity and exercise including a reduced risk of cardiovascular disease, hypertension, and stroke as well as protection against some cancers and osteoporosis. However, there is also a growing body of knowledge that substantiates that physical activity also improves psychological well-being. This article will highlight a more recent review article on the effects of physical activity and mental health variables such as depression, anxiety, stress, mood state, and self-esteem (Summary in Table 1). It is important to note that much of this research is referred to as correlational, which means the scientists are studying associations that exist between exercise and mental health variables, and not actual causal relationships. Because of this, although some exercise prescriptions for certain psychological health variables are presented, at this stage they must be interpreted and used with prudence.

Exercise and Depression
It should be noted that individuals with clinical depression tend to be less active than healthy average adults. Therefore, from a general health perspective, physical activity should be encouraged for this population. It is interesting to note that aerobic and anaerobic exercise seem to be equally effective in producing anti-depressive effects. Perhaps most interesting has been the response of patients (with diagnosed depression) describing exercise as "the most important element in comprehensive treatment programmes for depression."
It appears that acute exercise bouts (single sessions) as well as chronic exercise training programs (over a period of time) have a positive effect on those with clinical depression. The research does infer that the greatest anti-depressive effects seem to occur after 17 weeks of exercise, although observable effects begin from 4 weeks onward. In addition, the effects of exercise on depression seem equivalent with both genders and uninhibited by age or health status. Although no research guidelines exist for an actual exercise prescription, some researchers suggest following the ACSM Guidelines for the Recommended Quantity and Quality for Developing and Maintaining Cardiorespiratory and Muscular Fitness in Health Adults (Pollock et al., 1998).

Exercise and Anxiety
According to Webster’s Unabridged Dictionary, anxiety is "distress or uneasiness of mind caused by fear of danger or misfortune." It is a stage of apprehension. The results of over 30 published papers substantiate an indisputable link with exercise (acute and chronic) and the reduction of anxiety. Most of the research on exercise and anxiety has been of an aerobic nature. The few studies with resistance training and flexibility have actually shown a slight increase in anxiety, but more research in this area is warranted. In regards to the actual aerobic exercise prescription, there appears to be much debate as to whether low-intensity (40-50% maximum heart rate [MHR]), moderate intensity (50-60% MHR), or high intensity (70-75% MHR) is most beneficial. The best compromise from the research suggests that exercise intensity be set at an adjustable level agreed upon by the individual in consultation with a physician (or health practitioner). It appears that even short bursts of 5 minutes of aerobic exercise will stimulate antianxiety effects. The research also indicates that those individuals training for periods of 10 to 15 weeks will receive the greatest beneficial effects.

Exercise and Stress
Published investigations conclude that exercise can help individuals manage stress much more effectively. It appears that the mode of exercise that most effectuates stress reduction is aerobic exercise. Some research is starting to hint that the more aerobically fit an individual is, the better they manage stress. This research is preliminary at this time, although quite fascinating. Studies describe the role of exercise as a preventative intervention in managing stress as opposed to a corrective intervention. Numerous questions still exist between the physiological and psychological mechanisms involved in how exercise helps to mediate this increased ability to manage stress.

Exercise and Mood State
It appears that aerobic and anaerobic exercise can positively help effect different mood states including tension, fatigue, anger and vigor in normal and clinical populations. Mood state is affected by psychosocial, psychophysiological, and pharmacological factors that make explaining the exercise-induced mechanism quite difficult. Interpretations from the research appear to suggest that following ACSM guidelines is a most suitable exercise prescription.

Exercise and Self Esteem
As with the other psychological health variables, exercise has a positive connection in improving self esteem. This link also appears to be mightier with those who have lower self esteem. At this time, it appears that aerobic exercise may have a more pronounced effect, perhaps because there is so little research available with resistance training exercise and self esteem. However, self esteem is quite complex and studies suggest that certain subcomponents exist such as perceived sport competence, physical condition, attractive body, and strength, which may differ within a person. In other words, a person may highly value their physical condition and yet have a negative evaluation of their body.

Promotion of Psychological Benefits (as well as Physiological)
From this brief review, it is clear that personal trainers and health/fitness professionals may enthusiastically exclaim the psychological benefits of exercise in addition to the physiological assets. For some clients, these psychological factors may indeed be more relevant to their present life situations

Table 1. Effects of Exercise on Psychological Health Variables



Additional Reference:
Pollock, M. L., Gaesser, G. A., Butcher, J. D., Despres, J., Dishman, R. K., Franklin, B. A., & Garber, C. E. (1998). The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. Medicine and Science in Sports and Exercise, 30, 975-991.

Based on the reading: Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define “aerobic exercise” at a moderate level.
2. Describe the link between exercise and stress.
3. Outline how exercise may impact stress on a biological level.
4. State the role of exercise in treating the effects of depression.