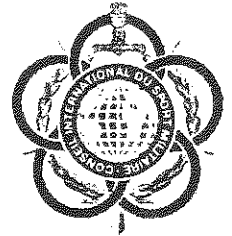


# International Symposium on *Sport for all!*



## THE BENEFITS OF EXERCISE ON HEALTH AND WELL-BEING

Lieutenant KIRWAN (Ireland)

It takes time for exercise to benefit health-related physical fitness. Many people after short periods of exercising expect to see losses in body fat and great increases in muscle strength. It can take several weeks before any improvements in health and health-related physical fitness can be seen. Physiological changes, for example cardiovascular fitness, take considerably longer to be realised. Psychological benefits, such as „Confidence“ and „Independence“, have been reported almost immediately after beginning regular exercise.

Lack of physical activity or exercise is thought to contribute to a number of health problems, i.e., high blood pressure, chronic fatigue, physical inefficiency, premature aging, poor musculature and a lack of flexibility. It can also cause low back pain, injury, mental tension, obesity and heart disease.

Physical fitness, the ability to function efficiently and effectively is achieved by performing regular exercise. A number of physiological and psychological changes have been shown to occur as a result of continuous exercise and activity.

The following table summarizes some of the physiological changes and the health benefits of proper exercise.

### PHYSIOLOGICAL CHANGES

#### BODY COMPOSITION

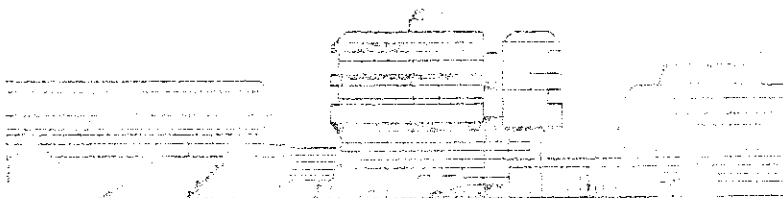
„Relative percentage of muscle, fat, bone and other tissues of which the body is composed“.

Increased lean body mass.

Decreased body fat.

### HEALTH BENEFITS

- Satisfaction with one's appearance.
- Decreased risk of obesity.
- Increased ability to work efficiently
- Less susceptible to disease.



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## CARDIOVASCULAR FITNESS

„Ability of heart, blood vessels, blood and respiratory system to supply fuel, oxygen, to the muscles which utilise the fuel to allow sustained exercise“.

Increased cardiovascular fitness.

## FLEXIBILITY

„Measure of the range of motion available to a joint or group of joints“.

Increased flexibility.

## PHYSIOLOGICAL CHANGES

### STRENGTH AND MUSCULAR ENDURANCE

Strength - „Ability to exert an external force or to lift a heavy weight“.

Muscular endurance - „Ability of muscles to repeatedly exert themselves“.

Increased strength.

Increased muscular endurance.

Apart from the major physiological changes that occur as a result of regular exercise there have been shown to be other related health benefits. Regular participation in an exercise program can decrease the chance of the onset of adult diabetes (Type 2 diabetes - non insulin dependent). Exercise helps reduce body fatness and improve insulin sensitivity and glucose tolerance that will control the disease.

An active lifestyle positively affects the neuromuscular functioning of individuals.

Research has shown, (Spiriduso and Clifford, 1978), that older men who have retained an active lifestyle for twenty years or longer have reaction times that are equal if not faster than inactive men in their twenties.

The aging of certain neuromuscular functions may be slowed by regular participation in physical activity. Proper exercise programmes and positive health behaviours can aid in slowing down many physiological processes. In older adults, especially women, osteoporosis (lack of calcium) is common. It is caused by decreased oestrogen production that accompanies the menopause as well as a lack of physical activity.

Exercise can have many benefits for older adults and special populations e.g., asthmatics.

It enhances the endurance of the respiratory musculature and reduces submaximal exercise ventilation (e.g., in walking). This delays the onset of ventilatory fatigue in the previously

- Decreased heart rate resulting in less stress being placed on the heart muscle.
- Stronger heart muscle.
- Decreased blood pressure.
- Decreased low density lipids which contain the greatest fat and least protein component therefore decreasing the risk of coronary heart disease.
- Increase in high density lipids which protect against heart disease.
- Decreased risk of atherosclerosis - "Depositing of materials along the arterial walls causing the arterial walls to become thick, hard and nonelastic".
- Decreased risk of muscle and joint injury.
- Increased ability to work efficiently.
- Permits freedom of movement.
- Greater care of the back and improved posture.
- May bring about improved athletic performance.

## HEALTH BENEFITS

- Decreased risk of muscle injury.
- Increased ability to work efficiently.
- Decreased chance of lower back pain.
- Resistance to fatigue.
- Increase in high density lipids and a decrease in cholesterol, therefore reducing risk of cardiovascular disease.

untrained, which is associated with feelings of breathlessness etc. Improved physical fitness, as a result of regular exercise, may help retard the aging process and offer protection to health in later life.

Some evidence suggests that people who do regular exercise have increased protection against certain forms of cancer such as colon, reproductive system, and breast cancer, (Vena et al, 1987). The reason may be the reduced intestinal transit time among regular exercisers which reduces the risk of colon and rectal cancer.

Those suffering from arthritis can be in a deconditioned state due to a lack of physical activity. Carefully prescribed exercise, such as aqua-aerobics, can improve general fitness for arthritics and may reduce the symptoms of the disease.

Regular exercise is important during pregnancy. It has been shown to increase energy levels, maintain balance, lessen back pain, improve circulation, enhance body awareness, improve sleep patterns and control weight gain. Research suggests that the second stage of labour can be reduced and post natal recovery speeded up as a result of moderate exercise.

Many physiological changes occur due to continuous participation in exercise and activity amongst all age groups and physical conditions. These changes help promote a greater level of physical health and well being within the individual. They also impact on their mental state including a number of psychological benefits.

When an individual engages in a bout of regular vigorous physical exercise the following psychological effects have been found.

#### **INCREASE IN ASSERTIVENESS**

Silva (1980 a) defines assertiveness as the use of legitimate physical or verbal force to achieve one's purpose. As partaking in strenuous exercise is attention demanding, regular exposure to exercise causes an individual to hone in on the task at hand and focus upon it. This increased assertiveness reflects back into the person's life and helps structure one's life better, creating greater efficiency, better academic performance and intellectual functioning. Hartung and Farge (1977) found regular exercisers had increased self-sufficiency, forthrightness, imagination and intelligence compared to non-exercisers.

#### **INCREASE IN CONFIDENCE**

Regular physical exercise causes the individual to become more progressive. When the right internal climate has taken form performing well occurs naturally and spontaneously. The ideal mental state includes having a high degree of confidence. Martens (1975) found that in formal games playing situations being good at the activity was found to be important. Being good at the activity amongst peers boosted one's confidence level and filled the need for social recognition.

#### **INCREASE IN EMOTIONAL STABILITY**

The International Society of Sport Psychology (I.S.S.P. 1992) carried out a review on the relationship between exercise and psychological benefits. In its review it states that exercise can have beneficial emotional effects across all ages and both genders. Chronic long term bouts of exercise (10 - 12 mths) have been shown to decrease negative psychological moods in contrast to acute bouts of exercise (thirty minutes). Long and Haney (88) indicate that long term chronic exercise and progressive relaxation are equally effective in decreasing anxiety and enhancing self - efficiency in stressed working women. Berger and Owen

indicate positive mood enhancement is associated with long term exercise in the form of swimming, conditioning, yoga and fencing.

### **INCREASE IN ATTENTION**

The participant's ability to „gate-out“ or „home-in“ on specific cues in performing exercise gives the person a training in select attention, which reflects back on the individual's life outside exercise. As stated Hartung (77) found increased intelligence levels with regular exercise compared to non-exercisers. One of the ways' exercisers learn to deal with large amounts of new information is to concentrate on relevant cues or chunking (breaking long sequences of information into smaller chunks of information). Therefore attention is very closely tied to the degree of mental and physical activation.

### **INCREASE IN POSITIVE BODY IMAGE**

Men view their bodies as functional so decreasing functional ability will result in negative body image and decreasing self-esteem. The onset of puberty is stressful for both sexes but following menstruation and adolescent weight spurt girls become more progressively dissatisfied with their bodies compared to boys. Exercise is an important factor in minimising this. Exercise promotes feelings of confidence,, control, identifies self-concept and self-esteem.

### **PERCEIVED HEALTH**

Every person lives on a biological continuum that extends from a state of complete physical and mental and social health to clinical illness (Herzlich 1973). The location on the continuum influences the likelihood of symptoms and the demand for medical services. The improvement of mood state that accompanies regular bouts of moderate endurance exercise tends to displace personal perceptions of health in a positive direction. One factor that contributes to an enhanced mood state is the secretion of B-endorphins; this response is associated with prolonged endurance activity (the distance runner's high, Harber and Sutton 1984).

Controlled studies of the general population have now documented that regular involvement in a moderate endurance training program reduces the demand for both physician and hospital services with parallel reductions in absenteeism from work and the purchase of non-prescribed medications.

### **INCREASE IN PSYCHOLOGICAL FUNCTION**

In children exercise is linked to an increase of body awareness including more accurate perception of body dimension which helps reduce the possibility of disordered eating during teenage years. There have also been reports suggesting that regular physical activity improves the intellectual performance of young children. In older children it is speculated that exercise slows the deterioration of neural functioning by increasing blood flow to the brain and increasing alertness.

### **DECREASE IN STRESS**

Hans Selye (1975) defined stress as the nonspecific response of the body to the demand made upon it with the negative effect causing fear, apprehension and worry. Exercise is one of the best ways to relieve stress and aid muscle tension release. Studies show that regular exercise decreases the likelihood of stress disorders and reduces the intensity of the stress response.

Some stress related conditions associated with inactive lifestyles are insomnia, depression and type A behaviour. Regular exercise has proven to be beneficial to sufferers of these conditions. (Type A personalities are stress prone individuals with a greater than normal incidence of disease. They are tense, too competitive and worried about meeting time schedules).

#### IMPROVED PERSONAL LIFESTYLE

It seems likely that involvement in sport/exercise would have a beneficial influence upon aspects of personal lifestyle such as diet, the consumption of cigarettes, alcohol and other drugs.

This paper highlights the primary health benefits associated with a varied exercise programme. These benefits result in a heightened state of physical, psychological and social well - being resulting in an increased ability to cope with the rigours of day to day living.

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