INTRODUCTION
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1. SIGNIFICANCE OF EXERCISE IN HUMAN BEING

When the history of evolution of human beings is studied, it is found that the survival of human race is dominated by outdoor activities. Walking and tool making seem to be the unique adaptation of early phases of evolution of human beings. Hunting and searching for food and other necessities in wilds have been the conditions of human life for millions of years.

Archaeological records of tools, pebbles, choppers of more than three million years old are available in natural history (museums). About 10,000 years ago the transition from roaming hunter and gatherer to a stationary farmer began (Astrand P. O. and Rodahl K., 1986a).

We have adapted to that style of life. This applies to our emotional and social life and also to intellectual skills.

Some animals could walk or even run as soon as they were born. (Astrand P. O. and Rodahl K., 1986b). Old forms of animals became extinct and new forms developed. Genetic evolution occurred. With changing time,
after a brief spell of an agrarian culture, we had ended up in an urbanized highly technological society.

Development of brain occurred, as men is destined to move locomotive apparatus constitutes the majority of body mass. Basic instrument of mobility and locomotive apparatus is skeletal muscle (Astrand P. O. and Rodahl K., 1986c). During activity metabolic rate can increase fifty times.

There is obviously no way to revert to our natural way of life which, by the way, was not without problems, but we may yet be able to modify our current life style. Knowledge of the physiological functions of the body at rest as well as during exercise and after exercise training under various conditions is important for understanding the human existence.

Exercise training is important for the improvement of cardio-respiratory efficiency, work performance and the functioning of other systems. The teaching of Barach A. L. and his co-worker in the end of 1950 has been the rest and avoidance of work for the treatment of patients with certain heart and lung diseases (Barach A. L. et al., 1952).
However, the present line of treatment suggests, gradual pick up of mild to moderate exercises in most of the cardio-respiratory diseases except in acute conditions. There are specific exercises for sports training, heart diseases and lung diseases. Patients are to be convinced that symptoms associated with exercise like shortness of breath are not harmful. In many advance laboratories of exercise physiology specific exercise programmes have been developed for specific training and conditions. As a rule the best training for an activity is achieved simply by carrying on that activity, for which training is required. The individual response to exercise training is associated with genetic factors (Bouchard & Malina, 1983). Exercise training may influence a number of factors which effect on exercise performance; that is, it may cause changes in muscle strength. Maximal $O_2$ uptake, structural and functional changes in number of organ systems and there are psychological changes as well.

2. EXERCISE PHYSIOLOGY HAS BECOME A SEPARATE BRANCH, HAVING DIFFERENT SPECIALIZATIONS LIKE SPORTS PHYSIOLOGY

Exercise physiology has become a separate study, having different specialisations like sports
physiology; exercises for bronchial asthma and other respiratory diseases; exercises for neurological and cardiovascular diseases and so on. Training produces structural and biochemical changes in the muscles which exercise; this increases ability of trained muscles to perform aerobic and other exercise in a better way.

Healthy subjects are to be exercised 30 minutes per day five days a week for four to eight weeks to achieve physiological training effect. After a training effect is achieved, regular exercise must be continued or the gains of training will be lost (Casaburi R., 1992)

3. RELATIONSHIP OF EXERCISE WITH LONGIVITY OF LIFE

Although it cannot be said that there is a definite relationship between exercise alone with the longivity of life because there are many other factors which are also considered as related with longivity of life. These factors are nutrition, hygienic conditions of living and stresses of life. It has been found that persons living in certain parts of the world have greater longivity of life. These parts are located usually in less accessible areas like hills and mountains. Inhabitants of these areas have to cover long distances for bringing
their water, food and other items of daily need. These persons have been found to live more than hundred years and their life has been reported to be mostly disease free.

4. QUALITY OF LIFE AND PSYCHOLOGICAL BENEFITS

Aerobic exercise training has been found to have an anti-depressive effect. The study suggests that a moderate increase in maximum $O_2$ uptake (15.3%) was sufficient to obtain this result. It was shown by a training programme of psychiatric patients upto 60 years age in a hospital (Martinsen E.W. et al., 1985).

It has been suggested that exercise should be done as first activity in the morning to give it, it's due importance. Otherwise it is neglected under the pressure of other activities. According to observation the first thing in the morning should be walking the dog.

Exercise training has been found to improve respiratory, cardiovascular, muscular, digestive, mood-elevating and other various bodily activities in normal as well as in diseased persons.
5. ROLE OF EXERCISE IN CURING CERTAIN CHRONIC DISEASES

It is known that physical exercise improves the quality and span of life and also makes a person physically and psychologically better fit to face stresses of life. Physical exercise is also well known to cure certain chronic diseases like

(i) Diabetes mellitus
(ii) Chronic Coronary Atherosclerotic heart disease
(iii) Benign essential hypertension
(iv) Osteo-arthritis
(v) Prolapse of intervertebral disc

Physical exercise has preventive value for above and other diseases.

With these ideas sedentary human were trained in different forms of exercises and their cardio respiratory efficiency, exercise performance and psychological changes were measured and compared before and after exercise training.