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Review Article

Health and fitness through cardio training for old adults

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INTRODUCTION

Health and fitness are interrelated if an individual wants to live healthily he needs to have some degree of fitness. This varies on the age and composition of the body. Fitness can be said in two ways as muscular fitness and cardiovascular fitness. This again varies sportsmen and non-sportsman. Here, we are very much concern about the older adults who needs to maintain health-related fitness to carry out their routine activities in day-to-day life.

"Fitness is the ability to carry out one's own routine activity without fatigue".

PHYSIOTHERAPY BASED CARDIO

Physiotherapy base cardio programming combines low-impact aerobic activity and strength training movements in basic patterns of reaching turning, pushing, and pulling. This scientifically-based exercise program was developed by a group of physiotherapists and sports trainers from Switzerland and Germany. Their goal was to introduce a new functional exercise as an alternative to traditional group exercise programs. The combine exercises with functional movements patterns to improve strength, balance, flexibility, mobility, and cardio fitness and they choreographed the program to music. This program is unique as it incorporates elastic resistance bands and tubing, adding resistance to the basic movements. The elastic resistance also allows for resistance progression as strength and endurance improve.

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WATERS NATURAL RESISTANCE (AQUATIC CIRCUIT TRAINING)

Another exercise mode that is appropriate for older adults and other special population is aquatic training. Aquatic circuit training is a combination of water aerobics and muscle strengthening exercises. Water is nature's resistance tool and is about twelve times more resistant than air and has a stabilizing affect that is especially helpful in strengthening the trunk and postural muscles to improve balance and it is minimally weight-bearing. When exercising in water people bear only about thirty percent of their actual weight. In deep water exercise programs, they bear no weight. For these reasons, doctors recommend water exercise for adults whose joints cannot tolerate weight-bearing and exercise programs.

AQUA AEROBICS

The fun and exciting way to fit this exhilarating of exercises combines the format of land aerobic with the no-impact advantage of exercising in the water definitely more pleasant and easier on the body. Loads of fun too- you won't stop smiling.

Benefits Include

- Stress and tension reduction
- Improves cardio-vascular fitness-heart and lungs
- Tones the muscles
- Great for men and women of all ages
- Alleviates arthritis, back and knees problems
- Weight loss- reduces fat
- Helps with pregnancy
- Cross-training, flexibility, increases strength
- Improves motivation and self-esteem
- Work at your own pace and level
- Great for meeting new friends its fun and laughs too.

CLASS SCHEDULE

Day	AM	PM
Monday	9.00–9.45	5.45–6.30
Wednesday	9.00–9.45	5.45–6.30
Friday	9.00–9.45	5.45–6.30

EFFECTS OF AQUA AEROBICS ON CARDIOVASCULAR FITNESS IN RELATION TO DEVELOPMENT OF PHYSICAL FITNESS

- Develops a feeling of pride in yourself
- Improves your posture
- Helps you think clearer and faster
- Corrects your body alignment
- Boosts your morale and confidence
- Makes you stronger more coordinated, flexible, peaceful, and energetic. Trims and shapes your waist, hips, thighs, buttocks calves, ankles, upper arms abdomen
- Enhance your ability and performance in other activities
- Improves the capacity of your heart, lungs, and circulatory system
- Eliminates back and neck pain. Increases your stamina
- Improves Diet and Burns fat and calories. Gives you glowing skin
- Contributes to healthier looks prevents falling hair.

Cardiovascular functions such as the potential it has for preventing circulatory diseases, improving work capacity, and providing greater distance fatigue, this component if properly developed can reach a major contribution to individual's health. According to Robert cardiovascular endurance is the ability to continue or persist the strenuous task involving large muscle groups for a long period of time. By combining strength and aerobic exercises one can help older adults live longer and improved their ability to perform the activities of daily living.

POSITIVE EFFECTS OF EXERCISES

Many studies are documents benefits of resistance exercise for cardiovascular and pulmonary health, it increases blood flow to the heart, lower the number of cardiac event, reduces coronary risk factors, lower resisting heart rate and blood pressure, improves functional capacity among victims of heart disease. Resistance exercises are advisable to older adults who are capable of increasing their strength through exercise just as

ten to thirty percent of gains in strength. Those strength gains result in improved body composition and lipids, lower resting heart rate and blood pressure, and increased endurance, in other words, better cardiovascular health.

POOR NUTRITION AND SEDENTARY LIFE STYLE

Global Impact

- Poor nutrition and lack of physical activities are responsible for an estimated 300,000 to 600,000 preventable deaths each year
- An estimated one-third of all cancers are attributable to poor nutrition, physical inactivity, and being overweight
- Since nutrition and physical activity are associated with many chronic conditions, it is important to note that more than 90 million Americans live with chronic illnesses, which represent 70% of all deaths, 60% of medical care costs, and one-third of the years of potential life lost before age 65 in the US
- Approximately 50% of America's youth aged 12–21 are not regularly, physically active, moreover, physical activity declines dramatically during adolescence
- Those who are physically inactive have between 1.5 and 2.4 times risk for developing coronary heart disease, comparable to that observed for high blood cholesterol, high blood pressure, or cigarette smoking
- A sedentary lifestyle increases the risk of developing diabetes, hypertension, colon cancer, depression and anxiety, obesity, and muscles and bones
- Regular resistance will allow your body to burn more calories while at rest. Regular resistance exercise been proven to prevent and reverse osteoporosis has.

CHOOSING EXERCISE FOR BETTER HEALTH

If a miracle drug could help you lose weight, build muscles, avoid disease, stave off bone loss, and improve your mental health, would you take it. Before you answer, know that you need to take the drug 3–5 times a week, and each dose takes 30–45 min to administer. Furthermore, the drug causes most people to sweat and breathe heavily, but only during its administration.

WEIGHT CONTROL

Obesity is a risk factor for heart disease and a culprit in other diseases as well. Exercise coupled with a healthy diet is the key to effective weight loss.

MENTAL HEALTH

Physical activity can improve self-esteem and impart a general sense of well-being. It can also augment medications to improve depression and anxiety.

REGULAR AEROBIC EXERCISE

Regular aerobic exercise will increase your energy level. An active person has 40% more energy available than a sedentary person. Regular aerobic exercise is effective in helping you to manage your stress. Will make you hardier (stress-resistant) can enhance your mood “Runners high” is a physiological fact. When you exercise, hormones are released that make you feel better.

Regular aerobic exercise will increase your endurance. A fit 50-year-old will have more endurance than an unfit 20-year-old. Regular aerobic exercise when done often and at low to moderate intensity can help to elevate your HDL cholesterol (the good kind). Regular aerobic exercise is the best way to burn body fat. Regular aerobic exercise will help to control your appetite and promote weight loss by moderating your body's insulin production. Regular aerobic exercise can give you a greater of control, a sense of self-mastery.

REGULAR RESISTANCE EXERCISE

- Regular resistance exercise will increase your strength
- Regular resistance exercise will help you to tone and shape your body.

DESIGNING EFFECT EXERCISES

- We must teach exercises that are safe and effective. Designing effective group exercises is a real challenge
- Posture and core conditioning use exercises on the floor, both prone and spine. Never stop talking about neutral posture

- Stay vertical as much as possible. Keep in motion. Move the spine in every direction. Just do not stay in any one position for too long
- Look for simple vertical core exercises. The simplest way to activate the anterior core is to water walk forwards, and/or run forwards
- The simplest way to activate the posterior core is to water walk and/or run backwards. Emphasize back extension, but do not stay there for extended periods of time
- Limit the amount of repeated hip flexion. Stretch the hip flexors and the hamstrings
- Stretch the abductors, adductors, and rotators. Do not use hip flexion for abdominal training
- Heighten awareness by placing hands on hip bones, ribcage, and pelvis. Instead of running in a circle, I use individual challenges like run for 8 counts and then strike a pose
- Strengthen the core buy using blending static, held contractions with moving contractions. Use “bracing” exercise to help strengthen the deep spinal muscles. Maintain strength and mobility in the upper and lower body, because they are connected to the core

When you only have an hour with your class, prioritize the areas that are classic problems-over stretched middle back, tight hip flexors, head too forward, anterior pelvic tilt, tight hamstrings, round shoulders, tight pecks, and breathing. Find more ways to teach posture successfully.

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Review Article

Foundations of physical education – Biological aspect

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ABSTRACT

Biology is a science which deals with life and life processes, all living beings are naturally active. The major differences between the animate and inanimate things are that the former can generate their own power movement while the latter cannot. Biology tells us that even the plants having the lowest form of life move and grow. Such movements of the body by which development of the total body is precipitated are called developmental activities. Education and learning are aspect of growth. Acquisition of more knowledge and skills points toward better growth of an individual.

Keywords: Biology, Life processes, Living beings etc.

INTRODUCTION

Biology is a science which deals with life and life processes. This includes zoology (the study of animal life). Botany the study of (grass and vegetation-life), microbiology (small life science). Man is a biological entity and the human life has been considered as the most developed form of life. This science has revealed to us an irrefutable fact that man such as other animals has a long and natural evolution. It is long way that man has travelled from the primitive type of existence to the present highly complex life.

The name of Darwin the great naturalist and scientist is very closely associated with the science of biology especially in the interpretation of human evolution. He put forth certain hypotheses which are of utmost importance in understanding evolutionary processes in human life. He says that in the course of evolution man's ancestors lost certain characteristics either fully or in part a keen sense of smell the hairy covering on the body the majority of the dermal muscles the tall prehensile feet pointed ear lobes etc. In discussing the cause that led to the erect mode of locomotion Darwin assumed that a change of feeding was of great importance. This occurred when our

ancestors began to spend more and more time on the ground in search of food.

Biology has revealed to us quite clearly as to what changes took place in human physique in the long span of biological evolution. The changing environment on the earth forced the changes in human body which subsequently brought innumerable changes in his mode of walking, running, climbing, hitting, leaping, bouncing, thinking, and understanding his environment the evolution as not come to an end and it is gradually and imperceptibly going on. Perhaps none can predict what shall be the final outcome of such an unceasing process not only on the surface of the earth but also in human body as well.

ACTIVITY-AS THE BASIS LIFE

All living beings are naturally active. The major differences between the animate and inanimate things are that the former can generate their own power movement while the latter cannot. Biology tells us that even the plants having the lowest form of life move and grow. As and when the power of moving ceases, man ceases to live. Movement is born with living beings and life is characterized by movement. All functions of the organism-unicellular or multi cellular depend on movement. The movement starts in an individual right from the very moment of conception. These are two types of activities

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which form the basis of our life (a) Survival activities and (b) Developmental activities.

SURVIVAL ACTIVITIES

Such movements in the body without which the organism cannot survive are called survival activities. Beating of the heart, respiration, circulation, peristalsis etc. are some of the instances of these activities, heart never stops beating nor do lungs stop dilating and contracting, if they do even for a second, the organism is dead. Ordinarily, these activities are spontaneous, natural, and need no stimulation; these are involuntary and cannot be kept under conscious control. Often these are termed as biological reflexes. If at any stage one or the other of these activities stops, the existence of the organism is put into jeopardy. Ideal state of health cannot be ensured until and unless all these functions of the body are efficiently carried on. For this purpose, one shall have to depend on developmental activity.

DEVELOPMENTAL ACTIVITIES

Such movements of the body by which development of the total body is precipitated, are called developmental activities. These activities as supposed to survival activities are conscious and within voluntary control of the individual and are generally the result of the external stimulation. Due to the survival activity and hidden forces, an organism has to grow but it will not acquire any qualitative change or efficiency without indulging in developmental activities such as running, jumping, climbing, bouncing, and hitting. These activities are the legacy of our primitive life. Not only did they provide ancient human beings with an opportunity to procure food by running after and killing wild animals but also increased the effectiveness of body in combating the forces of nature aiming at this extinction. Muscles gain strength good reaction time etc. only through such activities which are vigorous and enhance the capability of the body to act react and even counter-act.

This has also to be borne in mind that the qualitative change in survival activities is only possible when there is sufficient and vigorous developmental activity especially in the modern age. He shall see later that the vital organs concerned with survival activities cannot be stimulated to bear heavier load unless limbs are desirably exercised.

GROWTH AND DEVELOPMENT- CONSEQUENCES OF PHYSICAL EXERCISE

Growth and development of the human organism are generally used interchangeably without being properly understood.

Ordinarily, the term growth refers to the increase caused by becoming larger and heavier as we generally talk of the enlargement of the muscles elongation of the skeleton and growth of the body in general. Growth denotes increase and enlargement of the limbs and organs. It can be measured quantitatively in points, pounds, and inches. The heart grows and becomes larger and heavier. The body grows in height, weight, and volume.

A person can develop even after his physical growth has topped and maturity attained. He can develop optimally by making fullest use of the capacities; he has biologically inherited. He can acquire many skills and habits. The development of the body from the physical point of view can easily be noticed in the trainees at a physical training institute or at place where exercise is a regular feature of the daily routine. Intellectually, he develops by becoming more broadminded and acquiring vast knowledge by rigorous study. Quantitative and qualitative changes in human organism at various levels of age can easily be visualized by comparing children with adults from the point of view of body structure, mental growth, and skills.

Moreover, it is imperative that the principles of growth and development may be widely known by the physical educator so that he could construct his curriculum accordingly.

PRINCIPLES OF GROWTH AND DEVELOPMENT

- Growth is a creative process in that it increases behavior-variability. As a child grows year by year, marked changes can be seen in his behavior. His natural behavior to instinctive behavior is canalized into variable type of behavior the one he acquires from society.
- Mental growth is dependent on changed structure and experience. A child a small organism is not capable of doing mental acrobatics like an adult who has fully grown and has accumulated rich
- Growth in some direction is inevitable. This denotes that a living organism has to grow come what may. The organism must become bigger though it might not have development due to lack of nutrients and other environmental factors.
- Characteristically, children are ego-centric and mature persons are socio-centric. In childhood, no individual can resist the inner drives but gradually with the growing in years, every one learns to be conscious of society around him and so behaves accordingly.
- Growth is the result of interaction of the organism with his environment. Leaving aside the germ-plasma all other factors which turn a speck into full grown adult come from environment.
- Patterns of behavior tend to follow an orderly sequence of appearance. Each child learns to sit before he can stand

draws a circle before he can draw a square etc. In each case, there is an orderly sequence of behavior which cannot be over-looked.

- Heredity sets limits for development in terms of potential even if environmental factors such as good food, Exercise etc. are sufficiently available; an organism cannot grow beyond the limits, heredity has already set in regard to various species. This also elaborates that a mouse can in no case gain enormity of an elephant. This factor is one of the most important factors in the choice in suitability of activities for individuals and groups.
- The effect of training varies with the stage of maturation, this is more important for a teacher of physical education due to various characteristics physical, mental, and social appearing at various levels of age the effect of an exercise and that of a skill invariably varies on each individual. Certain motor skills can only be learnt and others learnt at a particular period of time. At the same time, there are skills which involve a high degree of complexity and cannot be effectively learnt in the early year if the process is reversed the effect of the skill on the individual would be annoying rather satisfying.
- Growth proceeds most rapidly in the early years. With the advancing of organism in years, the speed of growth goes on slowing down. One of the psychologists tentatively calculated that if the rate of growth that a human embryo

has during the first 6 months continued as it is for 25 years without any impediment in the way the human organism would become as big as the whole solar system. Thus, nature has kept a system of checks and balances.

- Each individual has his own rate of growth. In some child, sex grow faster while others lag behind some mature earlier whereas others are still childish at age of eighteen and even after. That is, each individual is individuality in him and so is his pattern of growth.
- Growth is characterized by fluctuation. Many factors should be held responsible for fluctuation in growth. In general, the early childhood and puberty are the period of faster growth whereas later childhood and adulthood are periods of consolidation. Then, slowly the growth tapers off. Nutrition, happiness, and good environment are conducive to growth. If such factors are constant, there would probably be less fluctuation in growth
- Education and learning are aspect of growth. Acquisition of more knowledge and skills points toward better growth of an individual.

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