



TRANDS IN SPORTS MEDICINE

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Abstract

Introduction:

Health is a state of complete physical, mental and social well-being & not merely, absence of disease. The fitness is generally explained as “the ability of an individual to live happy and well balanced life. It involves not only physical but intellectual, emotional social and spiritual aspect of an individual or athlete. Interaction and interdependence of these phases of a man’s health are such that any deviation from normal in any aspect of these components of fitness will make an individual unable to meet the demands placed on him by his work, exercise or way of life.

It means the health and fitness are relative words. A doctor after doing his daily routine remain fresh he is fit but for an athlete two work-outs of the day makes him fresh and energetic. In this context the field of sports medicine has a very wide range and it is expected that people from all walks of life should be benefited by its approach. Its role on one side starts from Health Club, latest exhaustive sports, while on other side it should take care of aged and child population also. We can say yoga to drugs falls under the coverage of sports medicine. Sports medicine has an inter-disciplinary approach.

“Sports medicine includes those theoretical and practical branches of medicine which investigate the influence of exercise, training and sports on healthy and ill people, as well as, the effect of lack of exercise. It also produces useful result in prevention and rehabilitation of Sports Injuries among athletes.

Sports Medicine comprises the treatment of injuries that occur due to any sort of physical activity, which may or may not be associated with sports. The injuries may be the subsequent result of overuse, sudden collision, over exertion, or over-extension of the muscles of the joints. Sports medicine is a practice that treats all sorts of musculoskeletal injuries.

Sports Medicine services primarily focus on: Biomechanics, conditioning, synvisc, cortisone, platelet rich plasma, hyaline, injury prevention, injury management, euflexxa, viscol supplementation, rehabilitation.

Present Trend:

In present the sports medicine is being practised not only by an expert but also with the help of group of experts. It is divided in sub-group for effectiveness of the gained scientific knowledge in the last fifty years.

- 1) With the context of physical activity :General, Sports, games and exercise.
- 2) As an individual influenced by: Environment of the individual place and locality. Intellectual, emotional and genetic status. Aging, growth and development. Use, misuse of drugs and latest methods of their detection.
- 3) As physical activity applied on: Prevention of disease and injury, i.e., Diabetic, I.H.D. etc. Physical activity to Handicaps. Rehabilitation in general and with specific reference to sports injuries. Safety and protective measures and devices.

The developing trend of sports medicine is in the form of team medical care and to deliver the goods to the trainer and trainee directly. Sports physician receives information from physiologist, psychologist, biochemist, physiotherapist, diet expert and other specialist involved in game and sports situation. Finally, needed theoretical and practical aspects are analysed and support is provided to athletes and coaches

Some of the latest groups and sub-groups of sports medicine are as follows:

- The impact of regular training on human being- The musculoskeletal system, cardiovascular and respiratory system, metabolic capacity, C.N.S. and endocrinology related to activities and sports.
- Assessment of physical and functional capacity. It includes general and specific physical performance capacity, physiological, medical, biomechanical and measurement. Exercise testing and ergometer.
- It includes study of various effects environmental condition on athletes such as heat cold, altitude and air pollution.
- The process and implementation of physical training. Advance research is going on basic factors responsible for developing strength and power, coordination and balance, flexibility, speed and acceleration. Anthropology and different aspect of female athlete has itself become a separate science group.
- Training children and adolescents. Paediatric sports medicine is now a developing discipline. It generally covers adaptability important system at every age; identification of performance potential; somatic development in children; Age and general development.
- Geriatric sports medicine- maintenance of physical fitness, relation to chronic degenerative disease, osteoporosis and its due care in the elderly people.
- Prevention and management of sports injuries, specific causes of injuries; diagnostic principles; principles of diagnosis and management of traumatic injuries and overuse injuries; clinical

implication of youth participation in sports and high performance sports; principles of rehabilitation after injuries.

- Exercise in the prevention and management of internal disease- Cardio-respiratory and metabolic diseases.
- Medical care of sports teams: Relationship between athlete, physician, trainer and coach, latest safely restriction and hygiene and sport. Sport medical examination of an athlete; infectious diseases and effect tropical and temperate climates; athletic nutrition and dietics; over training and sports psychology and standardization of medical care during international sports events.
- Drugs and doping control; the doping problems; clinical aspects of doping agents; classes and methods and dop analysis.

Future trend:

There is no doubt that sport medicine can make contribution and a new field of contribution to physical education and a new field of adapted physical education is likely to develop. It is well known that through research in exercise physiology, new trends have been opened to improve performance and break the records (especially in endurance type of events).

A new era of preventive medicine is also likely to develop. In this area lies the greatest possibility for future achievement. Physical recreation will play an increasingly important part in the lives of the world's population in future which is facing the trend of psychosomatic diseases, tensions, frustrations etc. The steps taken so far by sports medicine to make it safe as well as enjoyable to masses must be continued and greatly expended, i.e. programmes like 'Bharatiyam', their effectiveness and importance. Though there is a mad race for top performance, new records and gold medals, but their harmful effects on individual lives should not be overlooked.

There is fast emerging field in biotechnology. During the decade, recombinant DNA technology also known as Genetic Engineering has taken giant strides in dealing with problems in medicine,

pharmaceuticals, agriculture and veterinary fields. With these techniques, it is possible to produce any hormone, enzyme and antibodies. The genes coding for amino acids are incorporated in the plasmid of E Coli bacteria. The bacteria will synthesize these proteins in abundance. After purification, they can be used in treatment of diseases and diagnosis. With this technique, any hormone or enzyme can be synthesized. Insulin, growth hormone, urokinase, streptokinase, single cell protein and host of other protein is bulk produced by biotechnology. Many of these enzymes and hormone indigenously produced in the system play vital role in sports. Supplementing these hormones will increase the performance at the same time will be difficult to attribute the excess hormones to drug abuse. For example, sympathoadrenergic regulation by catecholamine for epinephrine, epinephrine and dopamine have control over cardiovascular and metabolic function. These functions as neurotransmitters and play vital role in physical exercises. By careful combination new formulations can be prepared to give beneficial effects.

Administration of growth hormone have produced rates three times larger in size. It may now be possible to create super sportsmen at will. Administration of growth hormone in regulated doses to a promising child will blossom into an athlete required size and height. Size, height and strength play key role in all sports.

Similarly, sex and pituitary hormone have many beneficial effects for sportsmen. These hormones can be produced in large quantities by recombinant DNA technique. Administration of these hormone will improve the performance of the sportsmen. Detection is also difficult under the present condition on most of the developing countries.

Glucoregulatory hormone and thyroid hormone also play an important role in sportsmen. These can be also available by biotechnology. During the next decade, sophisticated methods will be evolved in producing the hormones and their detection.

The problem of drugs abuse can be solved only by bringing awareness of the period and promises to the sportsmen.

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