CHAPTER-I

IMPORTANT FACTORS IN RELATION TO SPORTS INJURIES
INTRODUCTION

Sports injuries occur as a result of physical activities carried out either for general recreational purposes or with more professional goals in mind. They may be caused by accidents or by overuse, and they do not necessarily differ from injuries sustained in non-sporting activities.

Most sports injuries are minor and would not prevent the average athlete from continuing his daily work, but as many people become more seriously committed to sporting activities, continuing daily work is no longer the only consideration. The injury must be treated effectively so that leisure activity can also be resumed at the earliest opportunity.

Those athletes who participate at championship level require not only correct diagnosis of their injuries but also early treatment with complete healing so that they can continue to produce good performances with as short an absence as possible from their sporting activity. Even the more casual enthusiast, upon whom demands are not so great, may suffer both physically and psychologically as a result of minor injuries and may be prevented from pursuing the sport, which usually contributes significantly to his sense of well-being and to the quality of his life.

SPORTS INJURIES Injuries are a part of sport, as they are of all our activities of daily living. In sports the difference
is that there is a better opportunity to prevent injuries, and in organized sports activities to identify them more promptly, provide appropriate emergency and definitive management and help to prevent injury by effective rehabilitation and proper advice regarding the return to practice and competition. The tremendous universal interest in sports medicine today among people in all walks of life who are involved in many different types of physical activities has supported development and improvements in all of these aspects of prevention and management of sports injuries so that they are currently more effective than ever.

Injury prevention begin with the physical evaluation of athletes before entering their sports seasons. Today we know better the particular hazards of each sport are able to identify the physical deficiencies or defects that increase the chances of injuries when those who have them are exposed to such hazards.

An important factor in preventing sports injuries is the physical conditioning of the athlete. Strength, coordination, flexibility and power are being more seriously considered in the training of athletes today and we have developed better techniques and equipment to help us.

When injuries occur, recent advances in understanding the bio mechanics to stress have made it possible to make accurate diagnoses more rapidly. This has been facilitated by the introduction of such sophisticated devices as the arthroscope, computerized automated tomograph and radio-
isotope bone scanning.

The rehabilitation of the injured athlete has become more effective through recognition of the desirability of restoring early range of movement as soon as consistent with appropriate tissue healing time and through other measures taken to preserve muscle strength and to prevent atrophy during the treatment process. Correct timing of the return to sports practice and competition helps to reduce recurrent injury and shorten temporary disability.

Sport: The Essence of Keeping Fit.

Even in the absence of scientific proof, few people doubt the beneficial effects of sport on their fitness and sense of well being. They see physical effects in the strengthening of muscles; improved mobility and balance; increased stamina and better weight control and at the same time it extends their recreational and social lives. In medical terms there are strong indications that regular physical activity contributes towards preventing cardiovascular disease and delaying the onset of those degenerative disorders which are an inevitable part of aging.

Awareness of the potential benefits of exercise together with a changing social and economic climate, has meant that most of us now have a considerable amount of leisure time at our disposal, and has led to an explosion in the number of people participating on a regular basis. Simultaneously there has been a change in attitudes in competitive sport which has meant greater pressure upon individuals to produce
even more spectacular results. Both developments have involved increased pressure on medical services fortunately, there has not been a marked increase in the incidence of injuries caused by accidents, perhaps because basic training and equipment have improved. The incidence of injuries caused by overuse, however, has increased as more people have started jogging and taking part in events such as marathons which were once regarded as being suitable only for experienced athletes. Many overuse injuries can and should be prevented by a wider knowledge of preventive measures and their application.

**Important Factors In Relation To Sports Injuries:**

For every sport, a number of factors of varying degrees of importance must be considered in relation to injury.

1. **The Athlete’s Qualifications**

   Age affects the strength and resilience of the tissues. Muscular strength begins to decline at the relatively early age of thirty to forty years, while elasticity in tendons and ligaments decreases from the age of thirty and bone structure of bone after the age fifty. Inactivity accelerates the natural degeneration of muscles, tendons, ligaments, articular surfaces and bone structure, while activity tends to delay it.

   --- Personal characteristics such as temperament and maturity may affect athlete's tendency to take or to
avoid risks.

--- Experience is important. Beginners often suffer more injuries than experienced athletes.

--- Level of training is significant since injuries occur more often at the beginning of the season and towards the end of matches and are caused by inadequate basic physical fitness. Too much training, on the other hand, may cause injuries as a result of overuse.

--- Technique is of the greatest importance to anyone taking part in such sports as high jump, throwing, and tennis. Faulty technique can contribute to overuse syndromes and cause traumatic injuries.

--- An insufficient warm-up period may contribute to muscle and tendon injuries.

--- Intensive competition and training programmes which do not allow a sufficient recovery period after maximum effort increase the risk of injury.

--- Health problems (for example, infection and flu-like illness) increase the risk of complications such as inflammation of cardiac muscle.

--- A balanced and nutritious diet, including adequate fluids, is a prerequisite for sporting activities.

--- General measures, including sufficient rest and sleep, avoiding alcohol, reduce the risk of injury.

2. Sports Equipment and facilities:

--- Equipment used in any sport may be inadequate, properly designed and or defective.
--- Protective clothing can be faulty, insufficient or even discarded.
--- Sports facilities are not always suitable for the activities for which they are used.
--- Lightning of the sports area may affect the judgement of distances, perception of colours and athlete's visual activity.
--- Unsuitable weather condition increase the risk of injury.

3. Characteristics of sports:

Differnt sports makes different demands on the athletes. Competitive sports perhaps involves an increased risk of injury, but some people have a positive need to participate at this level and gain great satisfaction from doing so. Top athletes are often held up as examples to the young who are encouraged to attend sports grounds and running tracks as a results. Also top level sports arouses great public interest and play an important part in the everyday life of many people so it is not to be discouraged. Regardless of the level at which it is played, each sport is unique in terms of the demands it places on participants and its special characteristics which can cause both overuse and traumatic injuries.

4. Preparation and Training:

Includes instruction in training methods technique, dietary requirements, the negative effects of drugs and
alcohol, and psychological preparation for competition.

Training Methods: A good general conditioning achieved through for example interval and Endurance training programmes, is the basis of all sporting activities. Strength training includes isometric exercise and different types of dynamic training. Increased flexibility can be achieved by stretching exercises - a modern form of mobility training has proved to be very effective in preventing injuries to muscles tendon and joints.

Technique: is improving constantly in most sports. As sport becomes more demanding, correct techniques are crucial if inadvertent overuse injury is to be avoided.

Diet: It is important for the athlete to follow a balanced diet before and after training sessions and competitions and to compensate for fluid loss during and after exercise.

Drugs and alcohols: Taking drugs to improve performance is nothing short of cheating and can increase the risk of injury. Alcohol has deleterious effects upon performance for up to 48 hours after consumption, which again increases the risk of injury and tends to cancel out beneficial effects of training.

Psychological preparation: Performance in many ways depend upon psychological preparation and a well-balanced and motivated athlete will usually perform well.
Prevention of Injury and Illness

The prevention of illness and injury in sport depends, at least, in part on appropriate clothing, equipment, rules, facilities and health control.

Clothing: In many sports, shoes or boots are the most important items of clothing. They should be designed to meet the demands made on the foot by each particular sport. Jogger, for example, requires shoes which give adequate support and a sole thick enough to provide shock absorption on hard running surfaces, whereas those involved in court games such as squash require shoes which provide them with a closer contact with the court surface.

Protective clothing: Specialized protective clothing has been developed for many sports such as fencing, cricket, baseball. Pioneers in sports have made efforts not only to ensure that such protective clothing (Equipment) achieves the required standards but also to ensure that it is used.

Equipment and rules: Equipment used in sports can itself cause injury particularly if it is used incorrectly. Both Equipment and the rules of the game should be emended if they are in any way likely to contribute towards causing injury.

Sports Facilities: At one time technology and Economics were considered when sports facilities were built medical expertise was not consulted. The authorities have realized for instance, that surfaces and turfs should be designed and
contructed to take accounts of the demands to be made upon them by different sporting activities.

**Routine Medical Examinations:** - Routine medical examinations can never entirely eliminate the possibility of latent cardiovascular disease, but they can be useful in revealing hidden infection and areas weakened by injuries. Examination before competition and at the beginning of the season are important because they highlight the athlete's risk areas and help the trainer to design specific programmes.

**Diagnosis and treatment of injury and illness:** - Serious acute injuries are generally treated adequately in hospital and it is the sub-acute chronic injuries which present more of a problem to the coach or trainer in sport.

**Rehabilitation and return to sporting activities:** - Injuries heal at varying paces depending on their severity and location. If rehabilitation is to be complete, it is essential the person treating injury should have a thorough knowledge of the healing process in different tissues & also be familiar with the demands of the sport concerned. Then the various elements of the Rehabilitation programme can be introduced appropriately to ensure a successful return to active sport.

**PRESENT PROBLEM**

People play or engage in sports and games because of the inner desire or innate tendency. Sports and games have been part of human life and also part of man’s cultural
heritage. History tells that sports and games were in practice in some form or the other right from the beginning of man's evolution.

Games and sports involve big muscle movements like running, jumping, throwing etc. Therefore games and sports are not only vigorous but also interesting and enjoyable. Many people who engage in physical activities do so neither well nor wisely. To enjoy, one has to be free from injury and illness. Disabilities in sports stem primarily from accidental causes.

Injury to sportsmen are frequent, and often particularly sad leading to the disappearance from the scene of several bright stars who bring pleasure to millions and prestige to the country. The benefits of a sport depend upon efforts to prevent and control injuries. The recent growth of sports equipment and facilities and the number of participants has far outstripped the controls designed to make play safe yet enjoyable. When injuries are measured in days and years of lost time and productivity, it is evident that sports accidents are a major safety problem.

OBJECTIVES OF THE STUDY

The object of the study is to know and judge the "Efficacy of Physiotherapeutic Exercises for the Removal and Improvement of Physical Defects Caused during Sports and Development of Physical Fitness". The study undertaken
aimed at judging the effectiveness of physiotherapy particularly in the sports field.

RESEARCH METHODOLOGY

The data required to judge the efficacy of physiotherapeutic exercises was collected through a sample of 50 cases. The sample was selected randomly. From the sample, the information was collected by way of questionnaire. From the literature available and the sample analysis conclusions were drawn.

Since, the topic is entirely new, inspite of the researcher’s wish and will he could not collect more exhaustive information from various players who could have been considered for the survey of the proposed topic. As such, conclusions and suggestion are drawn from a small sample survey.

LIMITATIONS OF STUDY

The present study is based on the sample of 50 cases of sport injuries. Since the topic is new and limitations at the disposal of researcher conclusions are drawn based on sample and relevant literature available.