

## AETIOLOGICAL CLASSIFICATION OF INJURIES IN SPORTSMEN

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Both in the management and prevention of injuries in sportsmen a clear understanding of the aetiology as well as the pathology is required. Even when the exact mechanism of injury remains in doubt it should always be possible to determine the aetiological type. Logical treatment, to say nothing of prevention, is impossible unless the type of injury as well as its pathology is determined.

Previous attempts at aetiological classification (Williams, 1965 Corrigan, 1968) have failed on the basis of over-simplification. A more extended classification is therefore proposed which appears to take into account all possible types of injury and which provides a useful framework against which to set the aetiology of any sports injury.

In the first instance all injuries occurring in sportsmen are divided into two basic categories:-

1. CONSEQUENTIAL
2. NON CONSEQUENTIAL

Consequential injuries are those that arise from participation in sport or training for sport.

Non consequential injuries are those which are due to other non-sporting causes but which interfere with the practice of sports or training for sport.

Consequential injuries (TRUE SPORTS INJURIES) are then divided into two further categories:-

- A. PRIMARY
- B. SECONDARY

Primary consequential injuries are those directly due to sports activity.

Secondary consequential injuries are those which arise because of the immediate or past presence of some other untreated, partially treated or mistreated injury. Within this latter category are included also such conditions as an overuse injury in one leg due to "favouring" of the other (injured) leg, weak quadriceps syndrome and degenerative joint disease. All secondary injuries are intrinsic (see below).

Primary consequential injury is sub-divided into:- EXTRINSIC and INTRINSIC injury.

Extrinsic injuries are all primary injuries. They may however have their origins in some earlier injury, but because they are due to the direct application of some external force they must always be regarded as primary.

Extrinsic injuries are classified according to causative agents, and there are HUMAN (i.e. another person) IMPLEMENTAL (due to some mobile implement - including wearing apparel) VEHICULAR (in which a car, horse, cycle etcetera is involved) or ENVIRONMENTAL.

In general EXTRINSIC injuries are usually INCIDENTAL, that is to say they occur due to the application of traumatic forces during some single incident. However, for the sake of completeness it must be noted that some implemental injuries may be of the OVERUSE type.

Intrinsic injuries are essentially self-inflicted and may occur as the result of a single incident (INCIDENTAL) or from OVERUSE. Overuse injuries may be either ACUTE or CHRONIC.

This classification can be set out in a satisfactory schema. The examples included to illustrate each category of injury should make the system quite clear.

#### NON CONSEQUENTIAL INJURY

(Discus thrower 's sprained ankle falling down stairs at home)

#### CONSEQUENTIAL INJURY

##### 1. PRIMARY

###### A. EXTRINSIC

- i. Human  
(Front row rugby forward's "black eye")
- ii. Implemental
  - a. Incidental  
(Cricket ball into Silly Mid-Off's midriff)
  - b. Overuse  
(Oarsman's hand blisters)
- iii. Vehicular  
(Steeplechase Jockey's fractured collarbone)
- iv. Environmental  
(Highboard diver's sprung back)

B. INTRINSIC

1. INCIDENTAL

(Track sprinter's pulled hamstring)

2. OVERUSE

i. Acute

(Canoeist's tenosynovitis of wrist extensors)

ii. Chronic

(Middle distance runner's chronic Achilles' peritendonitis)

11. SECONDARY

i. Short-term (weak quadriceps syndrome)

ii. Long-term (degenerative joint disease)

The development of an effective classification is the key to understanding in any complex area of study. The system proposed herein is not a mere academic exercise, but has proved to be of some value in the day to day practice of clinical sports medicine. The very process of fitting each injury as it presents into this classification leads to a clearer understanding of the injury - and in fact the more difficult it is to fit any given injury into this classification, the more can be learnt about it by the very process of fitting it in.

References:

Corrigan, A. B., (1968) Hosp. Med. 2. 1328.

Williams, J.G.P. (1965) "Medical Aspects of Sport and Physical Fitness"  
Oxford: Pergamon Press.