

## MAJOR INJURIES IN NORWEGIAN FOOTBALL

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### ABSTRACT

All Norwegian football players are insurance covered and most of the severe injuries occurring in Norwegian football are therefore reported to the Norwegian Football Association. Based on these reports a survey of major injuries in Norwegian football in the period 1970-1974 is given. This study has already led to recommendations to the Football Association in order to reduce the number of severe injuries. A more extensive registration form is now used which probably will give more and better information about injuries in Norwegian football in the future.

The most popular sport in Norway is football (soccer). Ten percent of the country's 4 million inhabitants are registered as members of the Norwegian Football Association. More than 110,000 of them participate as amateur players in organized football. As in other contact sports, football has a certain injury risk. Also in amateur football, injuries, and especially severe ones, can have substantial economic consequences for the players, their clubs and for the whole society. The purpose of this paper is to analyse the more severe injuries occurring in the Norwegian football.

### METHODS

All Norwegian football players, both boys and girls as well as top players, have insurance coverage by collective agreements between the Norwegian Football Association and an English insurance company. No team is allowed to play official matches before the insurance premium is paid. The premium rate is low and the insurance compensates only partly for the economic loss suffered in an injury. This compensation comes in addition to compensation paid through the National Social Security System. Nevertheless the payment in major injuries is sufficiently high so that almost all serious injuries occurring in Norwegian football are reported. We have analysed all the claims made to the Football Association for the period 1970-1974. Data obtained from the reports have been coded and analysed.

### RESULTS

During the 5-year period, 3,616 injuries were registered. These injuries resulted in 91,500 days lost from work, and a total of 1,5 mill N.kr. (£150,00) was paid from the insurance company.

Most injuries were found in the fourth and fifth divisions, but when related to the number of clubs in each division the highest injury rate was found in the top divisions (Table I). Of the total number of injuries 3,136 occurred in adult players and only 480 in adolescent players. However, the insurance covered 2,289 senior teams and 3,782 teams of adolescent players respectively. This gives ten times higher injury rate in adult players.

TABLE I  
Football injuries 1970-1974

Division	Number of injuries	Number x 10 Clubs
1	143	119
2	230	64
3	463	46
4	816	27
5	852	22
6	478	11
7	84	5
Old boys	70	
Adolescents	480	
Total	3.616	

The distribution of injuries to the different body regions is shown in Table II. More than half of the injuries were located in the lower extremities. Head and neck injuries accounted for 22 percent of the total number, but of these damage to teeth alone accounted for 3/4 of the injuries in this region.

Forty-two percent of the total number of injuries were fractures (Table III). Most of the 248 fractures located in the lower arm and wrist were fractures of the radius. This injury was almost exclusively found in adolescents. Almost 1/3 of the fractures were located in the legs. Leg fractures represented only 13 percent of the total number of injuries, but being more severe, accounted for 30 percent of the number of days lost from work and 25 percent the insurance payment.

**TABLE II**  
Localisation of injuries

	N	%
Head, neck	785	22
Upper extremities	633	17
Trunk	132	4
Lower extremities	1.872	52
Unclassified	194	5
	3.616	100

**TABLE III**  
Localisation of fractures

	N	%
Head, neck	136	4
Upper extremities		
Clavicle	120	
Upper arm	18	
Lower arm, wrist	248	
Hand	94	
"Arm fracture"	17	497
Trunk	46	1
Lower extremities		
Thigh	10	
Knee	24	
Leg	465	
Ankle	225	
Foot	71	795
Unclassified	36	1
Total	1,510	42

Another 13 percent of the injuries were located in the knees (Table IV). An exact clinical diagnosis of a knee injury is often difficult to make. In more than 1/3 of the knee injuries the doctors had used the diagnoses haemarthroses swelling or "knee injury". At least some of these are certainly injuries of the meniscus and ligaments. Twenty percent of the total number of injuries were located in the ankle and/or foot region, and 214 fractures of this area were confined to the lateral or medial malleolus. Most of the ligament injuries were located to the lateral ligaments. Many of the cases where the doctors had used the diagnosis "ankle/foot injury" are probably also ligamental tears.

## DISCUSSION

Our study seems to show that the injury rate in Norwegian football is higher in the top divisions. This corresponds with data reported from Swedish football (1).

**TABLE IV**  
Injuries of knee and ankle/foot

	N	%
Knee		
Fractures	24	
Meniscus injuries	122	
Ligament injuries	136	
Swelling/Haemarthroses	23	
Lacerations/abrasions	19	
"Knee injury"	147	471
Ankle/foot		
Fractures	296	
Ligament injuries	178	
Lacerations/abrasions	11	
"Ankle/foot injury"	227	712
		20

However, we have related the injuries to the number of clubs in each division. Since the number of players are higher in the clubs in the top divisions, and these players spend more time training and playing games, we cannot conclude that top division football have a higher injury rate than football played in the lower divisions. Studies where the number of injuries in top and low divisions are compared with the time spent playing football seem necessary to evaluate this.

The frequency of injuries in adult players in our material is ten times higher than in adolescent players. Adolescent players spend less time playing football (fewer games and less frequent training) than adults. Also, they did not receive compensations for lost days of work, and this could have led to fewer claims.

Players suffering from severe fractures (fractures of the tibia, femur and humerus etc.) will always receive N.kr. 500, – (£50) regardless of the players age. Therefore all these fractures are reported. When studying the distribution of these injuries in adult and adolescent players we found that major fractures occurred five times more often in adult players. This leads to the conclusion that adolescents suffer fewer and less severe injuries than adults.

During the five years this study covers, 1,5 million N.kr. (£150,000) was paid to injured players. Since the compensation money did not cover all the expenses or all the economical losses when a player had to stay home from work, no conclusion can be drawn with regard to the economic consequences of football injuries. The number of days lost from work gives a better clue, but the number is an absolute minimum, since days lost from work are only compensated when disability time exceeds 14 days.

More than half of the fractures were located in the lower

extremities. The largest group was fractures of the leg, and every year nearly 100 such injuries occur in Norwegian football. These injuries are usually serious and require hospital treatment, often including operation.

The disability time is long with large economical consequences for the players. Complicated fractures of the leg after a direct trauma result in additional problems.

We believe that consequent use of leg pads can reduce the number and gravity of these injuries. In this respect it is important that the players always use leg pads during games. We have consequently recommended to the Norwegian Football Association that leg pads should be obligatory protective equipment and the insurance company have decided that players with fractures of the leg only can claim compensation money when they can prove that they used leg pads when the injury occurred. In order to see if this will reduce the number of leg fractures in Norwegian football we plan another study five years from now.

This preliminary study has led to the development of

a better registration of major injuries occurring in Norwegian football. In the future more and better information will be obtained, not only about the injuries, but also about the causative mechanisms and the type of treatment the player receives after the injury. We also hope to determine if some players are more accident-prone than others or if there are certain playing positions in the field which lead to more injuries. The key stone in this system is a new and more extensive registration form, which the clubs have to fill in correctly in order to have their claims registered.

More than 110,000 football players of all ages train regularly at least two times a week and play matches every Sunday for more than six months of the year in Norway. When one takes this into consideration, our preliminary data seems to indicate that the occurrence of major injuries in Norwegian soccer is low. The data also seems to indicate that the injury rate is lower in adolescents than in adults, which leads to the conclusion that football is a safe sport for adolescents provided that the equipment, playing area and coaching are up to normal standards.

## REFERENCE

Folksam's hälsoråds skriftserie: 1971. Idrottsskador. Olycksfa lsrisk i bandy, fotboll, handboll och ishockey. (Sports injuries. Injury risk in bandy, football, handball and icehockey). HS 10 Ny följd, Folksam, Stockholm.

## BRITISH ASSOCIATION OF SPORT AND MEDICINE

### IRISH AREA

Some members of the British Association of Sport and Medicine resident in Northern Ireland and in the Irish Republic have been exploring the possibilities of forming an Irish Area of the Association. As there are now forty members in Ireland, and more would probably join if local meetings could be arranged, this idea, if supported, would appear viable. Would anyone interested please contact:

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*The long continued postal strike in the Irish Republic will hold up any immediate organisation, but STD phone calls are unaffected.*