when they have just a minor injury. This, however, was not the case — for the frequency of patients needing further treatment was likewise significant, indicating that the injuries *were* more serious. More than half of the injuries sustained by football players required further treatment, while only 23% of the badminton players needed re-examination.

A little less than 25% of the injuries were sustained at top-performance level, which implies that this level of sport is associated with a higher rate of injuries than expected. 15% of football injuries occurred in

tournament matches which is 15 times more than expected.

Apparently, there was a difference in the necessity for further treatment, since about half of all injuries sustained in tournament matches had to be re-examined, while only 38% of injuries sustained while training required further treatment. Since the majority of tournament injuries were football injuries, this difference is not real. If correction is performed for the many football injuries the significant difference disappears.

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SOCIAL COSTS OF SPORTS INJURIES

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Sports injuries figure prominently in the sickness statistics of young people and consequently have a negative socio-economic influence.

In Denmark, we have looked at (a) the social costs per sports injury in different sports, (b) the athlete's private loss per injury, and (c) Denmark's annual social costs of acute sports injuries.

For our calculations we have used a conventional model which divides the costs into:

1. The expenditure of the health services and the loss of production. Five weeks after the injury every athlete was asked about his further treatment, number of days lost through sickness, sick pay, and so on. Loss of production was calculated for each individual by

multiplying the number of sick days by the athlete's daily wage.

- The expenditure of the athlete on the basis of the hospital's operating expenses in 1975. The costs of a hospital bed in an orthopaedic department is 723 D.kr. (=£62). Every time a patient is seen in the casualty ward the public expenditure is 288 D.kr. (=£25) and that does not include transportation to and from the casualty ward.
- The distribution of sick days for the 353 injured athletes in our investigation shows that more than half of them went to work the next day.

The average number of sick days was 8 days and one athlete was reported sick for 215 days.

Fig. 1 Duration of disability following sports injuries.

- The average social costs per injury were calculated at 2,497 D.kr. (=£215) of which the loss of production

made up 2/3. On an average football and handball caused the highest social costs compared with other types of sport. The social costs of badminton were 50% below the average of all types of sport.

- The athlete's private loss from injuries amounted to an average of 371 D.kr. (= £30), of which the main part derived from loss of earnings. The most serious and expensive injuries are sustained in football. In addition, the figures demonstrate that the social security system is well-functioning in Denmark.
- The annual number of sports injuries treated in the Copenhagen University hospital is estimated at 830. By relating the number of inhabitants in the admission area to the total number of inhabitants in Denmark, a conversion factor is calculated for the social costs on a national basis. This gave a factor of 36. The expenditure of the health services in Denmark on acute sports injuries is estimated at 12 mill. kr. (=£1.0 M). The loss of production is estimated at 15 mill. kr. (=£1.3 M) annually. This figure is corrected by a factor of .75, since the mean income of the entire population is lower than the mean income in the admission area. The annual social costs of injuries thus amounted to 27 mill. kr. (=£2.3 M) in 1975 prices.
- The 27 mill. kr. (=£2.3 M) must be related to the public subsidies to sport. In 1972 these amounted to 378 mill. kr. (=£33 M) in Denmark. In 1969 Denmark's annual social costs caused by road traffic accidents were estimated at 1,500 mill. kr. (=£129 M) when using a similar model of calculation.

The socio-economic influence of sports injuries is insignificant when considering the positive effects of sport activities.