

mouse brain than adult mouse brain and mainly for this reason the former is used for vaccine production. Though there are few reports of serious reactions to the vaccine, the virus was grown in tissue containing a potentially harmful allergen.

<sup>1</sup> Sabin, A. B., et al., *Journal of the American Medical Association*, 1943, 122, 477.

### Vaccination of Hospital Staff

*Should staff in a general hospital be encouraged to accept primary vaccination against smallpox?*

The World Health Organization's smallpox eradication programme has reduced the number of countries in which smallpox

was endemic from 42 in 1967 to four in 1973. The disease, however, is still rife in Bangladesh, India, and Pakistan, so that the possibility of importation into Britain still remains. The advantages and disadvantages of vaccination have to be constantly considered, with reference to the chances of importation, the efficacy of the vaccine, the incidence and nature of vaccine reactions, and the section of the population most likely to be exposed to the disease were it to be imported. After considering these factors, the committee inquiring into the London smallpox outbreak of 1973 emphasized the importance of regular vaccination of all hospital and public health department staff and undertakers every two years. By implication, previously unvaccinated health service staff should accept primary vaccination.

Committee of Inquiry into the Smallpox Outbreak in London in March and April 1973, *Report*, p. 117. London, H.M.S.O., 1974.

## For Debate

## Why Sports Injuries Clinics?

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### Summary

**"Sport for all" means sports injuries for all. Facilities for their treatment are inadequate in the United Kingdom. An analysis of 1750 cases indicated that many injuries are specific to sporting activity and that the problem of their treatment cannot effectively be solved by the organization of special clinics for sportsmen based on existing services. There is a case for establishing regional or area clinics manned by appropriately trained, recognized, and committed specialists.**

### Introduction

Arrangements for the proper treatment of sports injuries in the United Kingdom are inadequate,<sup>1</sup> but they will not necessarily be improved by reshuffling existing facilities. Sportsmen as such need not be provided with special clinics, and neither should they have preference over other patients in a district general hospital. Our experience indicates the need for a totally different approach to the problem.

*Incidence.*—The yearly incidence of injury in sport is estimated at about 4% of total casualty attendances<sup>2</sup> or 10% of the sporting

population.<sup>3</sup> Weightman and Browne<sup>4</sup> calculated crude accident rates of 36.5 per 10 000 man-hours of play for soccer and 30.5 for rugby, based on epidemiological data.

To examine some implications of planning a medical service for injured sportsmen we studied 1750 patients attending athletes' and sports injuries clinics held in three district general hospitals north-west of London over two years.

### Patients and Injuries

The age, sex, and sports of the 1750 patients were broadly in line with previously published data,<sup>5-10</sup> and we want to highlight from our findings only those points which are relevant to any discussion of the provision of clinical facilities for sports injuries. These derive from, firstly, the domicile of patients in relation to our clinics; secondly, previous hospital treatment; and, thirdly, classification of diagnostic patterns relating to injuries seen in specific sports.

### DOMICILE

We classified the domicile of our patients as follows: *local*, 444 (25%) patients lived in the recognized catchment areas of the hospitals in which they were seen; *regional*, 459 (26%) patients lived in the area covered by the former North-West Metropolitan Regional Hospital Board, within which all our clinics lay until recently; and *remote*, 847 (48%) patients came from outside the regional board area. Most came from England, with smaller numbers from Wales and Scotland, and a few from abroad.

### PREVIOUS HOSPITAL TREATMENT

Of the 1750 patients referred to us, 365 (21%) had previously been seen in another hospital department—156 (9%) in casualty departments, 178 (10%) in consultant clinics, and 31 (2%) in sports clinics

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outside our area. A further 58 (3%) had been seen by casual medical, paramedical, or unqualified attendants before being referred. Many injured sportsmen seemed to have passed through a hospital department unhelped by the normal services.

#### TYPES OF INJURY

Injuries due to sport have been variously classified.<sup>11-14</sup> The common thread is acceptance of the specific nature of some sports injuries. Except for those which are also caused by industrial overuse such injuries are rarely met outside sport.<sup>15</sup> We attempted to classify the 1750 cases in the series into three clinical management groups. The types of injuries in each group are given in the table.

*Analysis of 1750 Cases by Site of Lesion and Specialist Management Group*

Group:	1	2	3
Neck, trunk, and back .. .. .	71	239	0
Shoulder girdle and chest wall .. .	33	6	4
Shoulder joint .. .. .	5	64	6
Arm and elbow .. .. .	1	68	4
Forearm, wrist, and hand .. .. .	18	40	8
Pelvis, hip, and thigh .. .. .	100	44	53
Knee .. .. .	125	63	258
Calf .. .. .	41	23	175
Ankle and foot .. .. .	131	41	61
Sport-specific medical problems .. .	0	0	68
<b>Total</b>	<b>525</b>	<b>588</b>	<b>637</b>
<b>Grand total</b>		<b>1750</b>	

Group 1 consisted of 525 (30%) sportsmen normally capable of being dealt with in any accident or casualty department. Their acute injuries were all severe enough to prevent further participation in their sport; most were due to direct violence and included bruises, fractures, dislocations, and severe sprains and strains. Most patients in this group had either not attended a hospital or general practitioner immediately (generally for geographical reasons) or had done so and received more or less adequate primary treatment but inadequate follow-up and rehabilitation, so that their injuries became chronic.

Group 2 consisted of 588 (33.6%) patients capable of being dealt with by any clinician in orthopaedics, rheumatology, physical medicine, or rehabilitation. This group presented with a wide range of conditions, many of which were relatively insidious in onset. Among the most common were low back pain syndromes, painful shoulders, and "subacute" knees. Though many were related to particular activities—for example, the low back pain syndromes to weight training—they fell within this group because of their similarity in aetiology and clinical presentation to conditions not induced by sport. Other examples in this group included "tennis elbow," shoulder injuries related to throwing, and the less dramatic knee injuries, including some meniscus lesions.

Group 3 consisted of 637 (36.4%) patients presenting with problems peculiar to the particular movements of habits involved in various sports—for example, Achilles peritendonitis, hip and thigh muscle injuries (such as "rider's strain"), and functional derangements of the knee joint including chondromalacia patellae. Other conditions in this group were anaemia, asthma, cramp, diarrhoea, dyspepsia, haematuria, haemoptysis, hypertension, myocardial ischaemia, sinusitis, anxiety, and depression. While most of the problems in this group could be partially solved with available facilities full resolution in every case demanded a particular understanding by the clinician of sport-specific biomechanics and physiopathology. Such an understanding could be developed only by special training.

This categorization is obviously crude, but any adjustments made to take into account overlap between categories could not significantly weaken the evidence to support our concept that many injuries occur only as a result of sporting activity and should be seen in that light.

#### Discussion

That injured sportsmen will travel so far for advice and treatment indicates a need that is not being met at local or even regional level. This is confirmed by the disturbingly large proportion of patients (21%) who had not received satisfactory treatment in local hospitals. Admittedly the figures seem excessive, since several patients were referred direct and

untreated from other departments in our own or distant hospitals—for example, many of those with Achilles tendon pain. Nevertheless, the figure for "failed previous hospital treatment" was still large and the causes seem to us noteworthy.

In many cases an inaccurate or no diagnosis was made, which seemed to be due directly to a failure to relate mechanism to injury.<sup>16</sup> In those cases where accurate diagnosis was made the treatment and rehabilitation programme did not relate to the patient's sporting activity.<sup>17</sup> Under such circumstances relief of symptoms was usually partial with recurrence on resumption of full training or competition. It was not enough to treat the lesion: what was needed (but not provided) was total patient management including all the necessary technical advice on future training programmes, equipment, etc. In a few cases patients had been treated by people connected with the sport who would not normally be regarded as competent to deal with the conditions in question.

If 63.6% of injured sportsmen attending our sports injuries clinics could be dealt with satisfactorily in accident, orthopaedic, and rheumatological clinics there is a strong case for improving services generally without special reference to the injured sportsmen. Furthermore, the organization of a special service whereby "injured sportsmen may be referred directly by their own local doctor or by hospital casualty departments to specialists in orthopaedics or rheumatology for further assessment and follow-up treatment"<sup>18</sup> is unnecessary, since interested consultants have always provided such a service.<sup>7</sup>

On the other hand, the argument seems equally strong for defining along our indicated lines those injuries peculiar to sport by which 36.4% of our patients (including many from outside the region) became disabled. The management of such injuries calls for as much knowledge of sports techniques and training methods as of medicine, and a case could be made (as implied in the regulations for the Diploma in Medical Rehabilitation) for the special recognition of this problem. Special knowledge and experience based on appropriate postgraduate training is required<sup>19</sup> if such injuries are to receive the particular care and attention they need,<sup>7, 8</sup> and the training should be no less stringent than that required in other fields of special clinical interest.

This level of interest and special skill in the management of patients disabled by sports injuries cannot be expected of all accident and orthopaedic surgeons and rheumatologists. Therefore, a limited number of trained specialists manning area and regional clinics for sports injuries should be recognized as providing a second-tier service complementing the facilities at present available.

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