

# The value of sport for the severely physically handicapped

by Sir Ludwig Guttmann,

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*We are starting here a series of articles devoted to physically handicapped sportsmen. All these articles will bear the signature of Sir Ludwig Guttmann, world renowned neurologist, chief artisan of sport's use in the re-education of the physically handicapped and whose presence honours all sporting circles.*

*We should like to thank Sir Ludwig. As an introduction to his papers, we present the tribute made to him by the international medical review Hexagon, and with which the Olympic Review warmly associates itself.*

*"Any doctor who was active in the Second World War will still be able to picture vividly the virtually hopeless predicament of spinal cord paraplegics. The more fortunate among them had the benefit of the immersion bath, where ascending urinary tract infection and inevitable death by pyelonephritis was regarded as a merciful release.*

*Sir Ludwig Guttmann touches only lightly upon the enormous change that has since come about in this field. True, he experienced this change and yet did not really participate in it — because it was he who brought it into being. His optimism prevented him from accepting (as we did) the gloomy outlook for paraplegics and tetraplegics; his thorough training in neuropsychiatry and neurosurgery helped him to understand the need of men afflicted by devastating catastrophe to be regarded in their entirety, and provided him with the means for prompt, unrelenting and appropriate medical action. And all this in the uncertainty of his own existence, jeopardized as it had been by catastrophe, but which he took in his hands with as much resoluteness as optimism—for himself and for the salvation of the countless individuals who, so often in the flower of their youth, after the slaughter on the battlefields of yesterday are now paralysed for life by the slaughter on the*

*roads of today. Professor Guttmann the emigré became Sir Ludwig Guttmann, whose eminence extended world-wide when the enormously high mortality among spinal cord paraplegics gave way to an equally high chance of survival.*

*This is not of course the achievement of one man alone, but the interaction of the fight against infection, of neurosurgery, anaesthetics, rehabilitation techniques, physiotherapy, occupational therapy, orthopedics and the efforts of social medicine in general. Thus the pioneer after whom streets and hospitals have been named can devote himself to what might appear to be lighter, secondary concerns. Yet here too, appearances are deceptive: for Sir Ludwig the lighter side is something to be taken seriously, and the seriousness of the whole range of human—including, therefore, medical—endeavour is something to be seen from its relaxed, sunnier side. "Mind over matter"—and this mind, still master over matter when the object is sport, is healthy, and is the hallmark of man, even when his body is severely and irrevocably paralysed. Sir Ludwig Guttmann has helped the paralytic to overcome his despair by teaching him to integrate, accept and dominate what cannot be changed. In so doing he rose above the age-old maxim, mens sana in corpore sano, which for so long had held the doctor in its sway because it sought to wrest total health from him. The doctor's time has always been precious, too precious to be wasted on illusions. To show the*

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<sup>2</sup> Titles and decorations.

*sufferer how to come to terms with his suffering, and thus to overcome it—that is the true duty of the doctor. And then, suddenly, miracles can happen, miracles such as Sir Ludwig Guttmann has brought about.”*

## Introduction

Sport in one form or another is today generally accepted by modern society as one of the most popular means of recreation. This is, no doubt, largely due to a better understanding of the value of sport, both physical and psychological, but also for sociological reasons. Consequently, the demand for greater variety in recreation and more adequate facilities for sport has dramatically increased in recent years, and this applies today as much to the severely disabled as it does to the able-bodied in the community. It is just ten years since Prince Philip, Duke of Edinburgh, in a speech on recreation at a conference of the Playing Fields Association said: “It is no longer a question of encouraging people to take part; from now on we have to concentrate on providing facilities of the right sort and in the right place.”

### 1. Sociological aspects

In analysing the driving forces which have unleashed the pressure of demands on local, regional and governmental authorities to provide more and better facilities for recreation and sport, some of the sociological aspects are:

#### a) Growth of population

It is an undeniable fact that in most countries the population has considerably increased in the last two decades. This applies not only to larger cities but also to smaller towns, for instance, the population in Aylesbury in Buckinghamshire, England, has increased to almost double—from 21,050 in 1951 to 40,569 in 1971, and that of the whole county of Buckinghamshire has increased in that same period from 386,291 to 578,559.

The increase in the population applies to youngsters as well as to older people, thanks

to the greatly reduced infant mortality and to the increased life expectation of people over sixty years of age. Moreover, it also applies to the section of severely disabled people in many countries. Thanks to the great advances made since the last world war in the medical management and social, professional and industrial rehabilitation, the life span of even the most severely disabled people, such as spinal cord paraplegics and tetraplegics, has enormously increased, and in many instances may not be materially altered from that of the able-bodied. Furthermore, in some countries, continuous immigration also contributes to the overall increase of the population. This population explosion has created a situation of more people living in a more constricted space in blocks of flats and high buildings with infinitely less garden space available.

#### b) Effects of automation on the working life

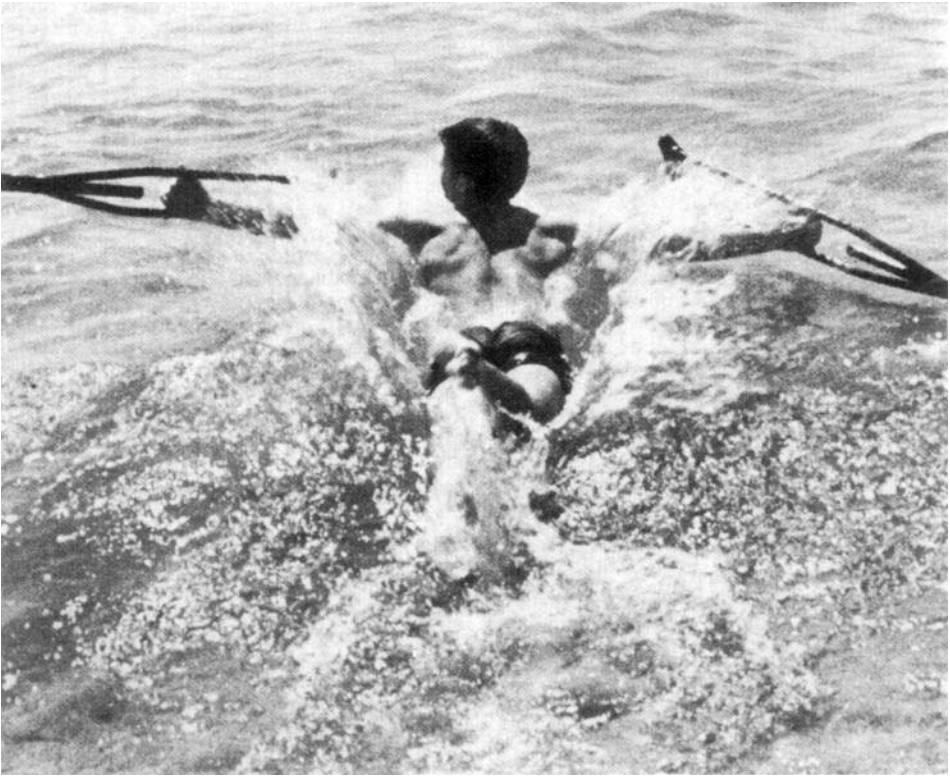
The rapid progress of technology and industry in the last twenty years or so has created more automation of production. Therefore, industrial work has become more and more repetitive and in the long run the monotony of automation may have adverse psychological effects on the worker by creating boredom resulting in frustration. To counteract frustration there is an increased desire, often unconscious, for recreational activity to preserve and promote interest and enjoyment in life.

#### c) Increased leisure time

Keeping step with automation of production has been the reduction in basic working hours, including overtime. Moreover, according to statistics the length of paid annual holidays has increased for both manual as well as office workers, which leaves more time for recreational activity. The holiday industry has taken great advantage of this as evidenced by the enormous flood of advertisements which appear on television and in the press.

#### d) Raised standard of living

With the increase of wages and salaries in many countries the living standards of the working population have gone up significantly and an expression of this is undoubtedly



the tremendous growth of car ownership over the last ten years, and a greater percentage of car owners are using their cars for non-business purposes. This means that people walk less and, therefore, there is a greater need for various forms of active exercise.

#### *e) Changes in education*

With the raising of the school-leaving age in Great Britain and other countries and the development of higher education for a greater number of young people, the need for increasing recreational facilities and sport for this section of the community is obvious. One can, therefore, whole-heartedly support the recommendation made some years ago in the report of the Committee on Sport and the Community set up under the chairmanship of Sir John Wolfenden by the Central Council

of Physical Recreation in England, that "more should be done to ensure that young people in their last months at school and their first months at work are well informed about opportunities open to them in the field of sport". If at that time the Central Council of Physical Recreation and the Wolfenden Committee had paid as much attention to the needs of the disabled, I feel that we would have been much more advanced in providing facilities for the disabled than we are today.

Sport, in particular competitive team sport, has proved a most relaxing form of recreation and plays an essential part in directing the increased leisure time of young and old into the proper channels. For the youth, sport and play represent a natural outlet for abundant energy and their natural competitive and aggressive instincts. Moreover, for some young individuals it helps in character building, by providing certain moral qualities, thus preventing misfired

energy through boredom which all too often deteriorates into violent hooliganism and criminal behaviour. The destructive activities of “mods”, “rockers”, “greasers” and the various types of “angry brigades” have been a serious nuisance to society at large for some time. However, it must be admitted that there is no statistical evidence as to whether or not engagement in sport constitutes a means of preventing delinquency, nor can it be said that engagement in sport represents in principle a barrier to violence. Actually, there are certain sports such as boxing, professional wrestling, soccer, baseball and rugby football which have the tendency to promote violence amongst both the players and spectators. This can be greatly diminished by education and stricter control, and such phenomena in any case cannot outweigh the overall benefits of sport.

## **2. Sport for the severely physically disabled— a national and international problem**

### *a) Attitude of society to the disabled*

It is an undeniable fact that for thousands of years, the attitude of society towards the severely physically disabled was basically negative, and these unfortunate people were looked upon by the community as out of the accepted norm and outcasts of society. Many were hidden by their families from the eyes of the community as if they would bring shame on the family. The two world wars with their millions of disabled people have certainly changed this attitude, and in particular the introduction of the modern concepts of rehabilitation after the Second World War has resulted in a different approach and attitude towards the severely disabled, who are now more and more accepted as part of the community itself. In this respect, the Disabled Persons Employment Act in 1944 and the Chronically Sick and Disabled Persons Act of 1971 in Great Britain have been charters of humanity in improving the attitude of society towards their disabled fellow men.

### *b) The attitude of the disabled towards the community*

It must be remembered that any severe injury or disease resulting in severe disability, such as blindness, loss of limbs and partial or complete paralysis due to affliction of the nervous system, upsets to a greater or lesser degree the precision, economy and course of the normal movement patterns of the body.

The abnormal patterns are characterized by paralysis, weakness, spasticity, stiffness and discoordination. The realization and sudden awareness of the changed body image resulting from these abnormal patterns of movements is often the cause of a psychological tension between the severely disabled person and his surrounding world, which makes social contact with his able-bodied fellow men difficult and sometimes even impossible. If regarded as out of the ordinary by society and continually confronted with embarrassed countenances and staring eyes, a disabled person's attitude to himself may deteriorate into an inferiority complex characterized by anxiety and loss of self-confidence and personal dignity, and resulting in self-pity, self-isolation and antisocial attitudes.

All these adverse psychological reactions apply to disabled people with otherwise normal intellectual faculties. However, one has to consider also those severely disabled people with congenital or acquired mental disorders such as cerebral palsy children (wrongly called “spastics”) or people of any age who have sustained cerebral injuries resulting in partial paralysis. These disabled individuals need special consideration for sportive activities as their aptitude is less great, and assigning them to the various sports events is more difficult, requiring specialized medical and psychological assessment. However, the beneficial effect of sport on the well-being of mentally affected people in promoting interest, concentration and relaxation is in no doubt. Certain psychiatric in-patients of a nearby mental hospital in Aylesbury come three times a week with their nursing attendants to the Stoke Mandeville Sports Stadium for the Paralymped and other Disabled for swimming sessions, which have been a valuable therapeutic factor in the treatment.

From all this, it is not difficult to understand why sport is of even greater significance for

the well-being of the severely disabled than it is for the able-bodied. In the following, the aims of sport for severely disabled as a result of spinal cord injuries will be discussed, but what is said can be applied to any other form of severely disabled.

### 3. The aims of sport

These can be summarized as follows:

#### *a) Sport as a curative factor*

It is a proven fact that sport can be of immense therapeutic value. It represents the most natural form of remedial exercise and can be successfully employed as a complement to the conventional methods of physiotherapy. It is invaluable in restoring the disabled person's strength, coordination, speed and endurance. In contest with himself to improve his performance, the severely physically handicapped patient learns to overcome fatigue—a prominent symptom in the early stages of rehabilitation, and this applies as much to amputees and the blind as it does to the spinal paraplegic and even tetraplegic.

#### *b) The recreational and psychological value of sport*

However, the disabled should regard training in sport not just as a muscular struggle for strength and victory, but as a source of pleasure. The great advantage of sport over formal remedial exercise lies in its recreational value which is an additional motivation for the disabled by restoring that pattern of playful activity and a desire to express joy and pleasure in life deeply inherent in any human being. There is no doubt that much of the benefit of sport as a form of rehabilitation is lost if the disabled does not derive pleasure from its recreative value. This is of particular importance for those many severely physically disabled who, today, are

employed. Many of them work in factories or offices and for them sport can have the same beneficial effect in counteracting boredom and frustration produced by the monotony of work as it does for the able-bodied.

Sporting activities with others, practised already in hospital and continued after discharge, are ideal in preventing the disabled from resigning themselves to their disability. For sport counteracts the development of those abnormal psychological and antisocial attitudes mentioned above, which follow with monotonous regularity in the wake of any severe disablement. The aims of sport are to develop self-discipline, self-respect, competitive spirit and comradeship—mental attitudes which are essential for the disabled person's integration or reintegration into the community. And indeed, it has liberated in some disabled people certain moral forces such as idealism and readiness to help others by creating sports clubs for the disabled.

#### *c) Sports as a means of social reintegration of the severely disabled into the community*

Sport should become a driving force for the disabled to seek or restore his contact with the world around him, and thus facilitate and accelerate his reintegration into the community, and his recognition as an equal and respected citizen. In fact, there are certain sports and games in which severely disabled, especially those in wheelchairs, are capable of taking part in competition with the able-bodied; for instance, archery, bowling, snooker and table tennis. For amputees, the blind and the deaf, swimming is also a sport where the disabled can compete with the able-bodied. There are severely disabled who have joined sports clubs of the able-bodied. It may be noted that outstanding sportsmen and sportswomen who suffered injuries or disease resulting in physical abnormalities such as amputation or paralysis have succeeded by intensive training of compensatory techniques to overcome their abnormal pattern of movements and regain their previous high athletic performance, including Olympic championship. There is, for instance, the Hungarian Karoly Takacs, one of the outstanding

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marksmen in pistol shooting, who lost his right arm following an accident in 1938. He transferred his skill by intensive training to his left arm, which he had not used previously, and became Olympic champion in this sport in London in 1948 and Helsinki in 1952 (Frucht, 1960). Harold Connolly, an American, suffered a brachial-plexus lesion of his left arm at birth. By systematic training he overdeveloped his right arm and shoulder musculature and eventually became a champion hammer thrower, winning the Olympic gold medal in this event in 1956. Mrs Lis Hartel, whom I referred to in detail in a previous publication in 1956, was an accomplished equestrienne who suffered poliomyelitis in 1944 at the age of 23 during pregnancy, resulting in extensive paralysis of all four limbs. She recovered partly and took up riding again. By perseverance and intensive training she regained her skill and at the Olympic Games in Helsinki in 1952 won a silver medal in the dressage competition.

Group Captain Bader, a double-leg amputee, who gained great distinction as a fighter pilot in World War II, became an accomplished golfer in spite of his severe disability. Several of my former paraplegic patients who were trained in archery at Stoke Mandeville, continued this sport later as their favourite pastime and recreation and, in due course, became outstanding archers, winning the FITA Star. One of them, Mrs Margaret Harriman, who lived in South Africa, was chosen to represent that country in a championship competition of the able-bodied held some years ago in Norway.

These facts prove that some gifted physically handicapped individuals through their own initiative and efforts may achieve outstanding success and recognition as members of sports organizations for the able-bodied.

L. G.



A second article will deal with the development and organisation of sport for the disabled, including discussion of architectural and other problems and means of overcoming them.