

Sports medicine for creating the athlete of tomorrow*

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When a sportsman is sufficiently well trained, provided he possesses the necessary technical skill, his organism becomes a wonderful tool for expressing and fulfilling himself. In some cases, the body becomes an obstacle restraining the bursts of enthusiasm of a heart that is often warm and generous.

In any branch of sport therefore, the body is a fundamental element without which nothing else could exist. Nature and living conditions have given the Africans special predispositions for sports participation. Consequently, they have tended to reign supreme in all events requiring heart and muscle.

But now, suddenly, a new dawn is breaking for the western countries which have always found it hard to believe and accept that underdeveloped peoples could prove better than themselves. They have now made sport a matter of science and technology, a field in which they easily outclass the Africans.

The West now "mass produces" athletes in the laboratory. The "product" is followed medically, sometimes from early youth. Consequently, Europe and America are endeavouring to manufacture supermen who will reign supreme in the stadium and on the sports field. The rapid progress made by countries like the USA and the GDR only emphasise this point of view.

It is becoming vital therefore for Africa too, in spite of its limited resources, to reap the benefits of Euro-American medico-sports policy. Its indispensable tool will be sports medicine. The advantage to be gained is obviously tremendous, for we shall have the benefit of avoiding the errors that have led the western countries to alienate the true purpose of sports medicine. Doctor Amadou Lamine Thiam makes a number of edifying observations here.

Sport is a phenomenon that defies any attempt to arrive at an excessively brief definition, but it has a number of very clear-cut characteristics.

It is above all recreational, essentially somatic, often competitive, and always appeals to the imagination.

Insofar as it is a physical activity, sport is responsible for *physiological stresses* varying in intensity and resulting in a sports pathology of which traumatology is but one aspect.

Sport is part of daily life, an indisputable fact of society. The jogging craze is a remarkable illustration of this. Jogging is the modern term for running, but running in town, in the streets.

This modification of the personal behaviour of our compatriots with regard to sport has not been accompanied by any modification of esoteric practices or by a search for medico-sports supervision, which is however indispensable.

Thus the development of sport becomes synonymous with risk since a sudden strain will lead either to total collapse, repeated exhaustion or injuries.

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Once this risk has been perceived, the intervention of a doctor is inevitable. Unfortunately the latter is not always very well received in sports circles unless he himself is a sportsman and often nobody pays any attention to him. If he is persevering he will try to be accepted and to impose his presence by virtue of his competence in addition to gaining credibility for his unique nature. Above all, his relationship with officials, trainers, athletes and players must be based on mutual confidence.

He must, however, place himself beyond the reach of partisan pressure and, when faced with unlawful practices, remain true to medical ethics.

He must make it clear from the outset that a sports doctor is just one link in the chain of success and that he cannot on his own be held responsible either for an athlete's success or for his failure. The trainer, whom he assists, is in the same position. Both must co-operate continuously in their efforts to achieve physical fitness through proper training.

The doctor will give his opinion, at the same time respecting professional secrecy. He will have to try and moderate the impatience of an athlete eager to start up again after an injury and remain firm concerning any decision to stop training for a while.

Psychological behaviour

He must act as a psychological buffer between a coach and the sportsman but must avoid interfering in technical problems except in cases of obvious technical error. The doctor must make allowances for the psychological behaviour of the sportsman ; the long-distance runner lives in narcissistic isolation while the members of a team gravitate in a state of interdependence.

Relationships cannot be standardised but must be adapted to the person in question. In spite of their willingness to help and their value, certain men of goodwill have been cast aside, others have grown tired, and unlike the case in the so-called developed countries, the medical requirements of a sports club in the third world are inversely proportional to the development of sport. Which explains the longevity of our champions who shine on the national and even continental level for a great many seasons, but who become mere "also-rans"

as soon as they come up against opponents from overseas.

The new wave has not been properly prepared and medical checks are particularly discreet.

The exceptional success of east African athletes has been explained by eminent experts as being due to their living and training at high altitude. This is true to a certain extent, but is far from being the whole explanation. There is a tendency to forget that these prodigies are "made in Great Britain" or "made in the USA", where they went for their education, to attend training courses or quite simply to prepare themselves physically and biologically under the supervision of the top specialists and coaches who are not only pastmasters in their field but also possess equipment that is continually being improved and renewed.

Cuba is a good example. In the sports field, this comparatively poor country, to which can be applied the slogan "Do more with less", adapted the methods of the German Democratic Republic to the conditions of an under-developed country... The results were not long in coming : 13 medals at the last Olympic Games in Montreal.

Incompatibility

In our countries we are hampered by the inadequacy of our equipment which, when it exists, is completely out of date and no longer satisfies the needs of our sportsmen. More serious still, we often have to cope with the manifest ill will of coaches who refuse to listen to what the doctor has to say. This attitude on the coaches' part increases the risks for the athletes they are training ; sometimes, for example, they place a young athlete in too high a category without consulting the doctor or give him musculation exercises before his growth has been completed. If they do not notice or choose to ignore the signs of fatigue, injuries or serious damage can be caused to the health of their trainees. Many promising young athletes quickly return to anonymity after being injured several times and allowed back into training too early, with or without the advice of the doctor.

Sports doctors are not only concerned with pathological conditions, but look systematically for means of improving health to the maximum, that is to say ensuring the

plenitude of the physical and psychological powers of each of the sportsmen for whom they are responsible. Sports medicine is born of the need to improve the human body through physical energy and, according to the annals, it dates back to the 10th century B.C.

We know that the first Olympic Games took place at Olympia in 776 B.C. Two centuries later, gymnasia sprang up all over Greece. In those days, rules of hygiene and diet were drawn up for the athletes, and the injured were treated on the spot by gymnasts who were skilled at setting fractures. In addition, on Greek frescos we see scenes depicting the supervision of athletes and the use of massage. But already a certain antagonism existed between gymnasts and doctors, the gymnasts blaming the doctors for all the ills experienced by the athletes. In the 3rd century B.C., for example, Philostratus exclaimed: "Everything started to go wrong as soon as the athletes listened to the doctors instead of following the advice of the gymnasts".

This antagonism still exists between doctors and gymnasts, who have been replaced by coaches, masseurs, medical technicians and even "witch doctors", to mention but a few. The first real incursion of sports medicine into international sport occurred at the 1936 Olympic Games in Berlin, when Japanese, American and German doctors accompanied their respective teams.

The progress of sport and the great variety of events mean that today we have to speak of sports doctors and not doctors for sport in the singular. Sports medicine is a modern specialty like occupational medicine or school medicine. The definition is not mine, it was made by one of my teachers, Professor Fernand Plas, a French heart specialist who is an expert on the matter.

Fractures and other injuries

One in every ten injuries is severe enough to prevent the victim from performing any activity, even of a professional nature. To these must be added the sum total of all the minor repeated injuries (micro-traumatisms) which culminate in the long run in progressively worsening degenerative effects. And this problem assumes fearsome proportions, especially as the majority of victims are under 30. The most serious

injuries (fractures of the two bones of the leg for example) are obvious. Ideally, treatment should aim at restoring the athlete as quickly as possible to perfect health and complete recovery of his functions.

Early functional recovery is obviously the ideal to be aimed at in the treatment of any injury. This is particularly true of sportsmen whose functional level to be restored is very high, no matter how much it may differ from one case to another.

In the less serious injuries, detection can be difficult, and their seeming mildness is perhaps only the result of a lack of medical perspicacity in the diagnosis. Unfortunately, a large proportion of injuries that have been neglected tend to become chronic.

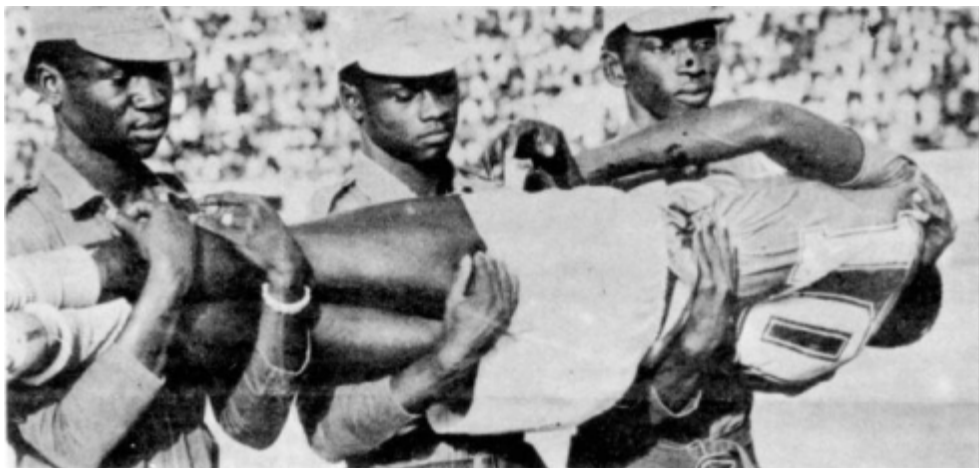
Injuries

It is therefore the long-term complications of badly diagnosed and poorly treated sports injuries that are so much to be feared. The growth and multiplicity of sports injuries are considerable. The policy of society, which sees in the encouragement of active sport and physical activity a means of improving the health and well-being of a community, risks being hampered by its inability to prevent the long-term establishment of physical disablement among those who take part in it, if it does not succeed in offering the indispensable fundamental care.

From the etiological point of view, injuries of purely sports origin can be divided into two fundamental groups, the first of which is the intrinsic so-called autogenous injury. This category covers all kinds of strain. Classical examples are fractures caused by excessive effort, as well as the injuries, like pulled muscles, which are specific to the activity carried out, and are not caused by any external agent.

Extrinsic lesions on the other hand are a result of contact with an external object, whether animate or otherwise. They cause the majority of injuries which occur in rough sports (football, boxing and those involving vehicles — horse, car).

Let us take a look now at the medical problem of the duality of sport and women. Certain writers considered that, automatically and morphologically, women were not made for sport.



Physical difficulted, if not given proper medical treatment, may involve serious consequences

This sports segregation, which dates back to ancient times, did not come to an end until the 20th century, with the one and only women's event (swimming) held at the 1912 Olympic Games in Stockholm. Since then, women's sport has grown steadily although female participation in sports activities is still small.

It is worth pointing out here that sport in no way affects the normal functioning of an athlete's sexual organs.

A very large number of writers agree that the practice of sport has a beneficial effect on the regularity of a woman's menstrual cycle and very often helps the slight pain accompanying the first menstrual periods to disappear.

Women's sport

When a woman becomes pregnant, it is important for her not to stop all physical activity, but competitive sport should be forbidden.

At present, most obstetricians are of the opinion that, owing to their good abdominal muscles on the one hand and excellent breathing control on the other, sportswomen have fewer problems in giving birth.

If a sportswoman often has a more "virile" look than her non-sporting companions, it is mainly a question of a certain lack of coquetry in her clothes. And very often, this look is quite different once she walks onto the sports field.

From the point of view of sports injuries, a woman requires the same supervision, the same preventive measures and the same treatment as a man. The accidents peculiar to her as a woman are naturally the injuries affecting the internal and external genital organs or possibly a miscarriage due to a violent fall while competing.

To conclude, the medical problems involved in women's sport centre mainly around a woman's genital organs. Doctors responsible for medical tests carried out on young people, whose organism is in full growth, will have to persuade their young lady patients that physical exercise can only be beneficial. They must refuse to sign medical certificates out of a false sense of kindness just to excuse them from sport and should encourage them rather to practise as much sport as possible.

Our second main point of discussion concerns the doping of athletes. The notion of doping comes from the word "dope", derived from the Flemish "dop" : mixture, liquid, viscous.

Anabolic substances

Doping in sport is taken to be the use of any unfair means of improving the performance of athletes, which is likely to harm their health. This is the case, for example, of anabolic substances, still sometimes called "muscle fertilisers", which can be extremely dangerous for the user.

When comparing doping substances and anabolic products, the following remarks can be made :

DOPING SUBSTANCES

Purpose : To increase performance during intense effort.

Effect : Short term ; very temporary (a few hours).

Use : Single administration immediately before the contest.

Ill effects : Immediate mainly ; sometimes very serious.

Regulations : Clearly codified.

ANABOLIC SUBSTANCES

Purpose : To increase muscular strength.

Effect : Medium and extended long term (several days or even months).

Use: Course of treatment lasting over five weeks during preparation and actual training.

Ill effects : Delayed mainly. Sometimes very serious with hormonal steroids.

Regulations : Nil.

There are 2 classes of anabolic substances :

- androsteroids, the most important of which is testosterone ;
- products improving the enzymatic mechanisms of the proteinic anabolism.

This is the place to call attention to the serious drawbacks inherent in their use :

- the possibility of causing a tumour of the prostate in men, an irreversible virilisation in women ;
- to a lesser degree they may cause cholestatic-type hepatitis, or hydrosodic retention leading to obesity and cardiovascular fatigue ;
- in the locomotive system, the aggravation of arthroses and muscular hypertrophy accidents (tendinitis, partial or total ruptures of tendons) are now typical.

It should not be imagined that an ordinary individual need only take such drugs to become a champion, for while taking such products it is vital :

- to follow a diet rich in calories and proteins ;
- to follow a course of intensive muscular training in order to strengthen one or several groups of muscles.

Only subject to these additional conditions can anabolic substances have any real effect.

On average, the gain in weight can be estimated at between 10 and 15% of the total body weight for a course of treatment lasting from 15 days to three months.

REINJECTION OF BLOOD

Unlike anti-doping tests, where any traces of amphetamines can be rapidly detected in the urine, since the product has been absorbed only a few minutes or a few hours before the effort to be made, it is important to proceed differently with the endogenous steroids. Such is the case because a course of treatment can be stopped several weeks before the actual competition, that is to say before the medical test, without the effectiveness of the product being diminished in any way, the myotropic effect still continuing.

One may well feel pessimistic about the future, for other non-hormonal substances and other equally effective techniques have been introduced. The most striking example is the reinjection of an athlete's own blood. This blood, taken three weeks beforehand, is sedimented and the red corpuscles are taken out for subsequent reinjection. This creates a temporary polyglobulia whose supposed beneficial effects are contested by the Americans. On the other hand, this method represents a certain risk for the athlete.

Present attitudes to sport, the conception of physical effort and the role of sport in society will lead to the introduction of new tests.

In the eyes of the medical corps, a sportsman is generally a healthy subject and there is no question of approving of such practices. Nothing replaces training...

As far as we are concerned, to give a top competitive athlete the best possible chance

of success, a course of treatment based on biological means and backing up the actual training is open to him. Three main groups of substances are used :

- energy-giving substances,
- vitamins,
- and finally, mineral ions.

Today we are witnessing a phenomenon that is probably unique in the history of mankind. Young individuals of both sexes submit voluntarily to programmes of prolonged physical activity. Consequently, a whole category of new physiological and medical problems is arising and requires increased attention. Sport is one of the rare fields of human activity which can still offer new summits to climb and new challenges to meet. It is in the process of becoming a good policy, which is not restricted to social or national aims but contributes to the health and well-being of the community. That is why it is so important for the clinical problems of sport to be examined in a new light.

Sports surgery

“The coach’s friend”, an outdated and very unsatisfactory conception, which was and sometimes still is the method of recruiting medical staff, even at the highest sports level, is no longer an acceptable solution. The treatment of an injured athlete is an all-absorbing field of activity and a source of great satisfaction, largely exceeding the ambitions of orthodox surgery and traumatology. As in all other fields of medicine, progress is only achieved thanks to direct contact with the clinic and the injured athlete himself as well as, naturally, by means of a series of case studies. Sports medicine is part of occupational medicine and sports surgery as a specialty is about to acquire growing consideration all over the world. It nonetheless remains true that the daily treatment of injured sportsmen, provided it does not present special problems, is the appanage of every practitioner. It is certainly not beyond his capabilities, and if he does take it up, he will notice not only that the effort is well worthwhile but that it allows him to contribute to ensuring the future health of his patients and the community as a whole.

A. L. T.

