

# Ethics and sport : compensation of hormonal deficiencies in highly trained athletes. Report.

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## Opinion

Intensive athletic training and the participation in sports contests are often associated with endocrine progesterone and oestrogen deficiencies in women, and endocrine testosterone deficiency in men. The short-term manifestations of these deficiencies are often those characterizing any endocrine deficit of this type : amenorrhea in women, growth and puberty disorders in children, and a tendency to osteoporosis. However, these anomalies are a consequence of the extreme nature of sports training and constitute, as it were, alarm signals that it may be dangerous not to take into account, because intensive training and sports contests involve many short and long-term risks, including injuries to muscles and tendons, and osteoarticular and cardiovascular damage. The frequency and seriousness of these disorders might be increased by any measure that allows athletes to continue training and participating in contests despite the alarm signals that endocrine deficiencies constitute. These deficiencies are reversible if sports are practised less intensively. The long-term consequences of endocrine deficiencies in athletes have never been the subject of controlled studies, and neither have the possible consequences of endocrine compensation. The French Law of June 28, 1989 concerning the prevention and repression of the use of stimulants in sports contests bans the use of substances designed to improve performance during intensive training, whether or not they exist in the organism in the basal state. The limits are narrow between what is considered endocrine stimulation and endocrine compensation, one of whose aims may indeed be to maintain athletic performances, as they run the risk of declining if an endocrine deficiency is allowed to persist. Such a policy would lead to a situation in which athletes would no longer be doped, but only undergo compensation for endocrine deficits.

The National Consultative Ethics Committee reiterates that in the field of sport as in any other field, professional athletes and their employers are subject to Labour Legislation. The general function of doctors is to protect health, and that of medical officers at work, especially those working in the field of sport, should be first and foremost to protect athletes from the possible pathological consequences of their sport, whether they are professionals or amateurs. Vigilance is all the more necessary as athletes often live in an environment where they are subject to many kinds of pressure (for instance, the aspiration to star status, and economic demands).

Such pressure can lead them to undergo badly adapted training, or to participate too often in contests. The world of sport and its environment are responsible for ensuring that athletes do not sacrifice their health to the pursuit of outstanding performance. In conclusion, the National Consultative Ethics Committee considers that the endocrine deficiencies associated with the intensive practice of sport are the result of the excessive nature of this practice and constitute its alarm signals. It is therefore advisable to remedy the causes of these deficiencies, and not compensate for them while at the same time maintaining the conditions that caused them. Such compensation may be harmful to the

health of athletes, who would be made to run risks, often under the pressure exerted by the needs of spectacular performance and economic interests.

## Report

The conclusion of the interesting report which was sent to us by Doctors Koralsztein and De Lignières and was countersigned by leading physicians and scientists, is the following : " We call upon the CCNE to adopt a position on the question of the ethical limits to medical intervention in sports activities, and more generally, on the question of controlling the health of highly trained athletes and man in general" .

The above report deals chiefly with the problem of doping among highly trained man and woman athletes. On the ethical level, the fact of being an amateur or a professional does not change the problem confronting us. However, it should be noted that professionals and their employers are bound by Labour Legislation, and it is up to the Conseil Supérieur de Prévention des Risques Professionnels (Council for the Prevention of Professional Risks) to study the aspects of this Legislation connected with problems relating to the protection of professional athletes. Controversy essentially concerns one point : whereas everyone seems to agree on the need to condemn all endocrine stimulation when preparing for a performance, this agreement no longer exists as regards the compensation of the endocrine deficiencies, especially gonadal deficiencies, induced by intensive training and unduly frequent sports contests that do not leave participants sufficient time to recuperate. In this connection, although there is general agreement on the need to compensate for deficiencies of water, minerals and indispensable molecules such as vitamins, it is true that present antidoping practices ban the compensation of progesterone and oestrogen deficits in women and testosterone deficits in men, and that the frequency of these deficits among highly trained man and woman athletes is starting to be established. However, hormonal compensation is nevertheless demanded by the authors of the report, in order to prevent immediate or delayed disorders that might be triggered by hormonal deficiencies.

Although no valid epidemiological study seems to have been organized, the medical problems arising from the practice of competitive sport, or from the initiation into such practice, appear to be numerous. They include effects on growth and puberty, frequent bone and joint injury by microtraumas or by more obvious traumas whose long-term consequences are starting to be known, short-term pathogenic effects in adults (3% of hospitalizations, 5% of re-education sessions and 10% of days of sick leave are due to the risks of sport), and the long-term pathogenic effects - still insufficiently well evaluated - of the practice of competitive sports and intensive training. In particular, the effects concerned are vascular risks and bone loss. There again, it emerges that no systematic research has been organized or warning issued. The risks are greatest in mass sports competitions and high-level sport, especially when intensive training starts early, during childhood, for instance in gymnastics, swimming and tennis.

The ethical problems encountered by sports physicians are not very different from those governing all medical practice. Sports physicians cannot prescribe with the aim of safeguarding performance at any price. Their goal is to ensure optimal good health for athletes by suitable medical methods of prevention and treatment. As regards the precise question we were asked concerning the doping of athletes, we can reply as follows, while at the same time recalling that doping is forbidden by the Law of June 28, 1989 concerning the prevention and repression of the use of doping products on the occasion of sports competitions and demonstrations :

### **With respect to doping :**

That all doping -that is, the use of substances which may or may not exist in the organism in the basal state - particularly all endocrine doping, to accompany intensive training

designed to improve performance is, from the medical point of view, ethically inadmissible and condemnable for its effects on health.

## **With regard to medical compensation :**

Although the preventive use of endocrine compensation to enable the athlete to improve his performances is precisely a form of doping, one might at first sight consider that the act of restoring physiological endocrine levels to normal constitutes a genuinely medical therapeutic measure. However, this reasoning is not ethically defensible, for the following reasons : as we said in the introduction, and as mentioned in the report requesting our opinion on this issue, there is no valid systematic scientific study of the short and long-term consequences of hormonal changes due to the intensive practice of sports, be they reversible or irreversible. Similarly, as far as we know, the effectiveness of hormonal treatment -or even its harmlessness- has never been demonstrated in athletes by any convincing scientific study. In other words, although, as regards these subjects, there is no scientific argument founded on epidemiological studies that forbids biological supplementation or the restoration of the biological balance, there is on the other hand no demonstration of the effectiveness or harmlessness of compensatory hormonal treatment, especially in the long term.

In addition, such practices would have the drawback of blurring the respective definitions of doping and compensatory therapeutic treatment, so that there would be no more doped athletes, but only those undergoing compensation for endocrine deficiencies. Hormonal compensation would also have the dangerous effect of suppressing an alarming situation in athletes who go beyond the limits of their strength. If in the future the effectiveness and need for compensatory treatment were scientifically demonstrated, doctors could then have recourse to such therapy, but in that case the athletes treated should be explicitly excluded from sports contests. The doctors treating them should therefore concentrate primarily on identifying the causes that trigger endocrine disturbances, which means they should intervene to slow down or even suppress all sports activities in order to allow biological parameters to return to their normal levels. Unfortunately, athletes often live in an environment in which they are subject to many kinds of pressure, such as the aspiration to stardom and economic demands, which leads them to continue unsuitable training or take part in contests too frequently. This situation should in no way change the position of the CCNE on the question before it, a question that involves a great responsibility for all those concerned with sport : to make sure that athletic performance is not pursued at the expense of athletes' health.

This obligation exactly ties in with the second subject of concern on the part of those seeking our opinion, that is, the question of controlling the health of the athlete and of man in general. Attention should focus on certain sports practices, especially those damaging to personal integrity (the athlete exploited by others may also exploit himself), practices engendering violence or mental derangement, and those resulting from pressure in the national interest or more often, pressure by financial interests. In other words, certain practices in the world of sport must be seriously reviewed in order to combat the excesses and deviations that endanger its educational, cultural and humanistic values. The same need for reflection on this issue, and the same warnings, also apply to the mental preparation and psychological manipulation that certain highly trained athletes undergo, especially when those concerned are children, for instance as regards the relations between trainee and coach, the role of the parents, etc. In particular, the joint vigilance of the national education authorities and of those responsible for medicine in schools and in the fields of school sports is necessary to avoid lack of balance and harmful effects in the training of adolescents belonging to combined sports and study classes. The best students succeed in acquiring all the proficiencies necessary, but the less gifted sacrifice school learning to sport, although their chances of success are very uncertain. This situation may endanger the professional aptitudes and future of these young people. In addition, the gap between the level to which they aspire and their actual capacities, and the resulting

disappointments, are also harmful to adolescents' mental health. In conclusion, several ethical problems in the field of sport are obviously due to ignorance concerning the existence or non existence of long-term pathogenic effects resulting from the practice of sports, as well as to the lack of scientific evaluation of methods of protecting and curing athletes. Priority should be given to systematic studies of the long-term follow up of athletes.

The ethical principles of the life sciences and health already defined by the CCNE for adults and children should apply to all studies and research concerning athletes in the fields of nutrition, medicine, surgery, or physical and psychological activities, whether the aim of such studies is preventive or curative. These principles should also apply, among other domains, to research on extreme physiological states, the adaptation of sports to the chronically handicapped or ill, and the epidemiology of sports practices and their impact on health.

In France, ethics, professional etiquette and the Huriot Law (concerning the protection of subjects participating in biomedical research) form the basis of these studies and research in sciences concerning the life and health of athletes. Nevertheless, reflection is necessary regarding the specific problems involved in the application of the Huriot Law to the field of sport.