Medical aspects of women’s sport: some questions answered *

The regular or occasional practice of a sports activity by women or girls has been the subject of numerous studies from the physiological, the endocrinal and the psychological points of view, and it must be admitted that the opinions stated are often widely different and indeed even contrary.

We do not intend to review here the various viewpoints, much less to draw any original or final conclusions on a subject so vast.

After recapitulating the morphological, physiological and psychological particularities of the sportswoman, we are going to consider the attitudes desirable in the face of the various situations encountered in the day-to-day practice of sports medicine, especially in relation to:

– the practice of sport before puberty;
– the practice of sport in the period before and during puberty;
– the menstrual cycle and sports activity;
– contraception and the sportswoman;
– the sportswoman’s skin;
– sport and pregnancy;
– virilisation of sportswomen;
– the detection of sexual ambiguities;
– sports activity for over-60’s.

1. PARTICULARITIES OF FEMININE SPORT

There is no question of arbitrarily separating feminine sport and treating it in isolation, for there are numerous points in common between men and women, and specific examples prove that certain sports are practised indiscriminately by both sexes and with equal success (sailing, shooting, canoeing [kayak], hockey, etc.).

However, certain aspects of sexual differentiation make it undeniably evident that the sportswoman is either at an advantage or a disadvantage.

A recent investigation, conducted by the Medical Bureau of the Ministry for Youth, Sport and Leisure Activities, among the Federations and various personalities in medico-sporting circles, has enabled us to isolate and regroup various aspects, positive or not, of feminine physiology, as well as the widely accepted ideas which often prejudice the progress of feminine sport at all levels.

1.1 The myth of the weak sex stems from objective facts which are well-known.

1.1.1. Morphological
– smaller size with greater development of the trunk compared to the legs;
– smaller thoracic cage;
– wider pelvis;
– converging thigh-bones: genu valgum.

1.1.2. Physiological
– lower muscular quality, contractability, fatigability and lower output, weak muscular tonus and ligamentary system, muscular tissue representing 33% in women and 40% in men (as opposed to fatty tissue);
– active respiratory capacity lower, respiratory rate at rest higher, maximal ventilation and oxygen consumption lower;
– heart which weighs less, heartbeat at rest higher, volume of blood in circulation and quantity of haemoglobin (oxygen carrier) lower;
– hormonal cycles and their repercussions.

1.1.3. Psycho-sociological
– problems of woman and family, cessation of all physical activity after marriage or a pregnancy.

1.2. Positive aspects of differences

1.2.1. Articular
Suppleness of movements through the action of muscular hypertonus, increased amplitude of movements by ligamentary hyperlaxity.

* Extract from the study made by the National Board of Feminine Sport of the French Ministry of Youth, Sports and Leisure activities published in the magazine "Médecine du Sport" T. 53 - 1979 - N° 3.
1.2.2. Nervous system
More rapid movement of the motor centres
and neuro-vegetatives.

1.2.3. Psychology
Closer application in training, perseverance,
importance of relations between sportswomen
and trainer (greater sensitivity to praise or
reprimands).

2. IN PRACTICE, THE MOST FREQUENTLY
POSED QUESTIONS ARE THE FOLLOW-
ING:

2.1. Sports activity before puberty
In the first stages after early infancy, games
form the initial form of physical expression.
At this stage, jumping, running, throwing balls
constitute spontaneous exercises—factors of
prime importance in the development of
muscular strength and of skill in a young girl.
On the other hand, however, intensive prac-
tice of a highly specialised sports activity at
an early age, which takes place in certain
disciplines—dancing, figure skating, swim-
mimg, Alpine skiing—poses difficult problems
of another kind.
This particular aspect of female sport has,
until now, only interested a small minority of
high-level sportswomen, but lately increased
participation of the very young may be the
cause of difficulties.
The doctor is often called upon to give his
advice, and he takes the risk of being made
the judge between the parents’ wishes, who
see a future champion in their child, or the
preoccupation of the trainer to push a particu-
larly brilliant pupil, and the preoccupation
of preserving the physical, psychological, in-
tellectual and cultural developments of the
adolescent in this formative period.

2.2. Sports activity in the pre-puberty and
puberty period
At the risk of appearing negative, let us con-
sider first and foremost, the different counter-
indications of sport. It must be said, in fact,
that this question is often raised, whether it
relates to genuine counter-indications or,
as is more and more often the case—false
pretexts which are quoted in order to obtain
a certificate of exemption.
School sports, and open-air sessions are ha-
bitedly considered as forced labour or extra
recreation by the schoolchildren, rather than
a necessary “subject”.

Mothers of families, in their turn, have a ten-
dency to believe that this is wasted time,
which would be better devoted to study of
the major subjects.

This gives rise to requests for certificates of exemption, on a great variety of pretexts.

It is not for us to criticise school sport,
which is often inefficient because of a lack of
instructors or poor use of even less adequate
equipment. Nevertheless, one must bear in
mind that a taste for physical activity is ac-
quired right from early adolescence. It is too
late to see developments of a sporting voca-
tion at the end of secondary education: to
convince oneself of this it is only necessary
to look at the poor attendance at university
sports installations.

However, if one has the impression that the
child itself refuses to practise this school
sport, it is better to accept its exemption. It
is, therefore, for the doctor to explain to the
parents the necessity of physical activity,
carried out in favourable conditions. Enrol-
ment in a sports club where an activity fa-
voured by the young girl could be practised
regularly could be recommended.

2.3. Sports activity in periods of genital
activity

2.3.1. Menstrual phenomena
The unexpected arrival of periods during
sports activity raises a certain number of
questions. Family tradition, and popularly
supposed good sense have multiplied recom-
mendations and restrictions regarding physi-
cal activity during this time, whilst the major-
ity of sportswomen continue their training
during menstruation.

On the other hand, the onset of periods is,
for very young girls, a too recent pheno-
omenon to be totally accepted. Psychological
preparation, when this is carried out, does
not succeed in dissipating the emotional bur-
den connected with the appearance of men-
strual blood.

It is therefore necessary to explain the natur-
al character of the phenomenon in order to
make it lose its morbid or impure aspect,
connected with the survival of ancient tradi-
tions. Sport must be presented as therapeu-
tic, which allows adolescents to be more
aware of their new body, changed by puberty.
Menstrual discharge brings about, however, a degree of constraint because of the necessary protection it implies, but it does not constitute a counter-indication to the practice of sport.

From the moment when the discharge is slight and painless, there is no reason to forbid physical activity during periods, and we have had regular confirmation that female swimmers can take to the water at such times with no problems and we even know of athletes who have won medals when the onset of the period was on the morning of the competition itself.

2.3.2. Contraception and the practice of sport

The oral method of contraception has spread widely amongst the younger members of the population, and sportswomen, like everyone else, use oestroprogesterones. The advantages of these, in addition to the security which they offer from the point of view of contraception are undeniable: absolute regularity of discharge, absence of pain, regular decrease in blood loss.

These advantages have led a certain number of people to request this “therapy”, regardless of the contraceptive angle.

As far as sporting ethics are concerned, does one have the right, through a permanent prescription for oestroprogesterones, to do away with the discomfort of the menstrual phenomenon during competitions?

This final point alone would merit lengthy consideration, and can only be discussed in particular cases, in an atmosphere of trust between doctor and sportswoman.

2.3.3. Sports activity and pregnancy

The question most often posed is to know whether the onset of a pregnancy must stop sports activity.

What, therefore, is the greatest risk run by women during the first term of pregnancy?

Of course, the possibility of miscarrying brings about excessive precaution. In fact, it is true that the risk of spontaneous miscarriage during the first months is fairly high, for ten percent of pregnant women are disappointed in their wish for motherhood.

It stands to reason, moreover, that ten percent of women who practise some form of sport will also miscarry, which will, inevitably, be attributed to the sport which they practise.

We may rightly affirm that physical activity cannot play any direct part whatsoever in the aetiology of miscarriages, and can only be a contributing factor in a pregnancy which is virtually jeopardised or has even ceased.

Concerning various shocks, agitation and traumatisms experienced during the practice of sport, these do not appear to be any more severe than those which are imposed on women who work in everyday life. Think of public transport in the Paris region, or riding a bicycle over the cobbled streets of the low countries.

What is more, sexual abstinence is not prescribed to future mothers in good health.

As a consequence, therefore, all sports activity should not be forbidden during the first term of pregnancy, if the clinical and hormonal aspects of the pregnancy are normal. Since, in this area, the greatest caution must be exercised, and in order not to run the risk of being too liberal, it would be sensible to have a hormonal and echogram check towards the sixth week of pregnancy, for women practising a considerable amount of sport.

2.3.4. Virilisation in sportswomen

Contrary to what has been published abroad, we have no confirmation of more frequent cases of development of body hair amongst sportswomen in comparison with the rest of the population. Moreover, in the cases of certain girls who have been studied since their pre-puberty period up to maternity, we have confirmed that there has been no modification in hair growth, despite the fact that they have experienced greatly varying periods of sports activity.

The only modifications which were noticeable were of a morphological nature.

Concerning psychology, the spirit of competition which accompanies all sporting activity brings about, perhaps, a certain aggressiveness in women. This psychological attitude, however, is one which must exist prior to the practice of sport, and conditions the choice of taking up sport.

We must not speak of “virilism through sport”, therefore, but of the broadening of a certain degree of previously existing virilism, through sports activity.
2.3.5. **Detection of sexual ambiguities**

For several years, the increasing calibre of performance has forced sports leaders to select athletes according to their particular morphology. This search for success through the participation of "phenomena" is particularly noticeable in certain sports, such as basketball, sports involving throwing, or more recently swimming.

In this connection, women have appeared at sports grounds who have such a particular type of morphology that their femininity is placed in doubt, and for which reason the chromosome tests for femininity were introduced.

The aim of this section is not to study the different sexual ambiguities, nor their detection by modern methods, but simply to define a precise manner of conduct, which would avoid, and permanently, certain unpleasant and scandalous situations which have been a feature of certain international competitions.

Although it is true that a diagnosis of sexual ambiguity must be established as early as possible, in order to avoid mistakes in civil status, as regards sports medicine the possibilities of action come much later.

The chromatin femininity test is a simple examination for a specialised laboratory, and only necessitates an oral smear.

Only by the early discovery of an anomaly in this area may these always delicate problems which occur with high-level athletes be avoided.

2.3.6. **The sportswoman's skin**

One point is worthy of being stressed, regarding protection of the skin, and that is that one must not lose sight of the fact that even though the fashion may be for tanned skin, this pigmentation is one way in which the skin protects itself against the ultra-violet rays, and which also brings about premature ageing of the skin.

This ageing is connected with irreversible deterioration of the elastic tissues, giving rise to wrinkles.

This change in the skin may encourage sportswomen to protect themselves. It is true that some sportswomen-particularly in certain disciplines-skiing yachting, are more exposed to the sun than other women.

All these reasons show that sportswomen should be encouraged to use sunfilter creams on regions exposed to the sun.

2.4. **Sports activity in retirement**

It has been well proved, nowadays, that regular practice of physical activity is the most effective means which the human race possesses for slowing down the unpleasant and inescapable effects of age on the body, on condition that at each session, a sufficient level of physical activity is achieved, and that the sessions are also sufficiently frequent that they may be termed real sports training. If the physiological effects of training are compared with those of ageing, it can be seen that both affect the same parts of the body, and are diametrically opposed in their effects. Physical training, as long as it is practised, is likely to compensate the harmful effects of ageing.

If there are possibilities for carrying out this physical training, it would appear that group activities, led by a competent instructor, are preferred by women. Out of the 9,000 members who are over 60 of the FFEPGV, more than 85% are women. Ageing does not usually come about without several articular, muscular, and internal handicaps. This should not restrict, but encourage the practice of physical exercise, and make it necessary to take these points into account. For this reason, despite the non-competitive character of these activities, an annual medical examination is to be strongly recommended.

3. **CONCLUSIONS**

If female sport is to be promoted at all levels, from school into active life and even after retirement, whether as leisure sport or at competition level, it is above all necessary to do away with all pre-judgements which hinder development, and to adopt, as far as sportswomen are concerned, an understanding and coherent attitude, which is adaptable to all particular cases.