GENERAL CONSIDERATIONS REGARDING THE VOLLEYBALL SELECTION

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Abstract

The selection has a permanent character, differentiated through stages (children, youth, famous athletes) and value levels (divisions, lots national, Olympic, etc.).

For sports classes, annual inspection standards must remove the unfit, which will be immediately replaced with others thus the system is closed and coaches will be forced to work with uncompetitive children.

The selection represents a continuous process held in order to achieve the performance limits. This process is directed toward a specific specialization for the child and the junior.

Keywords: *selection, criterions, indices, motric capacity, volleyball*

JEL classification: *I19, I21*

Introduction

The concept of selection was firstly used in an economic and social movement, scientifically-based since the beginning of the twentieth century, for a proper evaluation of professional skills and talent orientation towards a profession or another, based on tests and methods designed to highlight manual dexterity, accurate and fast receiving and learning of a motric scheme. By extension, the selection concept has been taken over by the sportive activity in the third decade of the twentieth century, to nominate a similar screening action of motric availability for performance sports.

For a practical approach of selection, the couch must prove flexibility skills, clear vision and innovative spirit, considering that even the scientific evidence is rapidly evolving. For example, it is well known that in the composition of human muscle fibers, there are fast white fibers (FF – „fast fibers" or FT – „fast twitch") with enzimatic equipment designed for explosive speed and power-speed effort and red fibers, which are slower (SF – „slow fibers" or ST – „slow twitch") whose enzimatic equipment is designed for lenght effort. Moreover, there are the intermediate fibers (mixed) (MF – „mixed fibres" or MT – „mixed twitch"), being accepted for all of them a genetic conditioning.

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Looking through a didactic point of view, the selection includes 3 stept:
- The primer selection of skilled kids detection is made at young age, depending of each particular kind of sports. At this point of evaluation, it is required a medical examination, looking for: health assessment by a clinical examination through complex apparatus, completed by laboratory analysis, assessing the functional integrity of cardiopulmonary, endocrinometabolic, neuromuscular and mentally level, specifying the level of general physical development by age and sex using the following exams: anthropometric (Determination of stature, length of legs and scope), somatoscopic (detection of physical deficiencies grade II, III, IV against volleyball, joint mobility examination). The dynamic evaluation of biological, functional and neuro parameters must conclude a perfect health associated with physical development and optimal functional state for performance. The volleyball selection process can begin at the age of 8-10 years, or even earlier.
- Secondary selection occurs between 11-16, at the beginning or during the time of early puberty, at which point there is a psychobiological stabilization. In some sports the selection is applied after 4-5 years of training.
- The final selection (18-20 years) is devoted to the established athletes and it is based on the worldwide performer's profile, but will also appreciate the ability to adapt quickly to underprivileged psychological factors, resistance to maximum efforts and the existence of reserves to improve performance. Optimal biological potential is found regularly through medical examination, which is the filter for admission to the lots.

These three stages of selection meet in order the preparation stages: children, juniors and seniors.

The criterion which provides the scientific basis of the selection process are: sanogenetic, genetic, somatic, neoropsihic, functional, biochemical.

1. Sanogenetic criteria - the indices used for expressing this criterion are: clinical and laboratory indices (laboratory tests, radiology, ultrasound, immunology, physiology, etc.)
2. Genetical criteria - genetic and anthropological indices comprise both personal and family history (morphological configuration of the child and parents,

the cultural and educational level, sports attitude toward parents, family sports history, psychomotor behavior, intelligence, etc.).

3. Somatic criteria - Indices: height, body weight, volume, diameters and perimeters, dynamometry indices proportionality and nutrition, body composition, palm diameter etc.

The success in high performance sport is favored in certain sport subjects (samples) with a specific somatic type (Even for certain departments or team positions or some sport games).

Obtaining performance in a contemporary volleyball game requires a high or very high waist. It has been found however that overall, children with waist above the national average of their age, shows lower motric values. To ensure successful training for some children who could become performers, it has been introduced, for some sport (athletics, sportive games and higher categories of wrestling and boxing), a bonus for exceptional class. The children with impressive waist are considered to be the boys over 191 cm and girls over 175 cm. Height for most athletes is a first parameter selection. Studies to determine its height by correlating genetic parents and offspring (D.A. Bailey) showed great variability between both upward and downward depending on age and sex and the material status of the population. It is considered that between the height of the children and the parents there is a correlation $r = 0.5$ (average) after Dragnea A. -1996.

Definitive stature forecast can be made with the help of some formulas, like V. Karkud formula's:

For boys: **S.D = S.father + S.mother x 1,08 /2;**
For girls: **S.D = (S.T x 0.923) + S.M /2**

This formula is applicable with good results especially up to age 10. After that it is recommended the use of estimative following table:

Table 1

Varsta în ani	Boys I definitive stature	Girls I definitive stature
7	69,0	73,6
8	72,2	77,1
9	75,4	80,5
10	78,3	83,8
11	81,3	87,3
12	84,1	92,2

Varsta în ani	Boys I definitive stature	Girls I definitive stature
13	87,1	96,7
14	92,0	98,9
15	96,6	99,8
16	98,8	100
17	99,8	
18	100	

The weight and somatic type – the suitable constitutional type is the longilin type, with harmoniously developed muscled, with a good joint mobility and a large scale that exceeds with 6-8 cm. the waist. The scale has implications both in terms of the height of the point of impact of the ball, and the size of the area of operation of the player, it must reach values of around 110% of the height of adults. Height growth until puberty is mainly on account of lower limbs.

Harmonious body proportions can be assessed using Adrian Ionescu's index

I.AI = Bust Stature / 2 (normal 3-4 boys, 4-5 girls)

Length and width of the extremities (hand, foot) are dimensions that can predict increase in height.

It is a presumption that leaves the finding that bone maturation occurs first metacarpal and metatarsal bone.

Active mass of the body - a new parameter functional correlate well with VO2 max. with muscular strength and endurance. The most important aspect for selection and sports orientation of children is the data on the structure of the body. This (particularly "active mass of the body" - MAC) is, as has been established in recent years, a new parameter of the functional capabilities of the human body. MAC correlates well with VO2 max., with muscular strength, endurance and other qualities motive. Differences between individuals in body structure is manifested as a result of the interaction between physical activity, nutrition and, as research showed genetic factors.

Some reports of the segments can be calculated from the height: span in boys is equal (or + 1 cm), the height beginning from 10 years; it grows 5-6 cm until 18 years old at a height corresponding to 2 m, or 4-5 cm from 1.80 to 1.90 cm boys. Girls normally are below 4-5 cm tall (M. Georgescu).

The critical periods in terms of morphology are preadolescence and the next period: 11-12 for boys and girls 16-17 years old.

- abilities Movement
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Movement abilities are required for: conditional abilities: speed in all its forms (reaction, execution, repetition), force and strength and coordinative abilities (ability for combining and coupling movements, the ability to orient in space and time; kinesthetic differentiation capacity, balance ability, response capacities).

Children how own speed lift indices are advantaged because the possibilities for substitution rather limited movement capabilities in complex manifestation of the efforts of all who claim extends more towards the direction of the force or speed than strength.

The substrate morph functional speed matures at the age of 14 years but prediction capabilities speed is from 10 years (G) and 12 (B), when they realized about 80% of the speed that will be 16 years old. If by 14 years it hasn't developed the three manifestations of speed, the subject is not genetically equipped for volleyball performance.

These manifestations of speed we can consider on first plan for shooters (mates) and centers. Coordinative capacities intensively develop until the beginning of puberty (11-12 years). Spontaneous movement learning disappears with age, to make way for more rational learning processes, like the one from adolcence.

4. Neuropshihic criteria - Indices: type of central nervous system, psychoreactivity, attention (concentrated and distributive), neuromuscular excitability, the sense of anticipation, stress resistance, visual-motor coordination, etc.

Psychomotor skills needed in volleyball, which is currently playing at grown parameters of intensity, speed, strength and complexity are: the central nervous system strong, balanced, mobile, emotional balance, combativeness, team spirit, good attention concentrated and distributive sense, speed and promptness in thought and execution, kinesthetic sensitivity and orientation in space, intelligence, creative imagination. Identifying, measuring and implementing the psychological attributes have a significant impact on achieving success in sport.

5. Functional criteria- Indices: exercise capacity, heart rate and blood pressure, respiratory rate, vital capacity, spirogram, aerobic and anaerobic power.

Volleyball is a sport where the request on the body is in variable intensity: maximum intensity and effort of short duration (a few seconds) ex: attack strikes, blockages and submaximal efforts (movements), assists. Metabolic substrate is

mixed (aerobic and anaerobic), but with predominance of anaerobic effort. The two types of exercise depends on the composition of muscle fibers: white fibers are specialized for anaerobic efforts while red ones, also called slow fibers are much better equipped with enzymes characteristics for aerobic metabolism.

The proportion of these fibers can be modified by training but is mostly genetically determined. White fibers have a high speed of contraction, develop a force of 3-5 times greater than slower fibers, but get tired faster. The white color is because of its low myoglobin. Such fibers are recruited during anaerobic effort. They have a high amount of contractile proteins, which gives them more volume. As the amount of mitochondria is reduced, restoring ATP is limited, which leads to a lower speed recovery after exercise.

The cardiovascular system and respiratory function have medium to maximum request, depending on the stages of the game in volleyball.

At the secondary selection, especially for the dominant aerobic sports, we have some favorable cardiovascular profile (conformation and volume cardiac, functional indicators: maximum O_2 consumption - VO2 max., maximum heart rate, cardiac equivalent volume etc.) to motivate selection of such athletes, as same indicators can be used to forecast the final selection for aerobic and cardiac performance.

The continuing increase capacity for oxygen consumption is a basic requirement of developing these kinds of skills.

Vital capacity to the volleyball players were heavy duty is often insufficient. In these cases and oxygen consumption is lower, and general and specific resistance is diminished.

   6. Biochemical criteria - Indices: complete blood count, blood glucose. Some biochemical parameters favors sports performance, like blood hemoglobin, a growth factor of aerobic capacity or protein anabolic effects somatotrope pituitary hormone.

Biotype anthropological determinism biochemical parameter of constitutional human somatofiziologic with parameters, motor and mental, are an essential element both for selection and for training. Things are explained by the fact that the functioning of the body in general and in terms of effort, in particular, is conditioned, firstly, the energy factor, involved in the formation and restoration of complex molecules from simple ones, in thermal energy production the for mechanical and internal movements (heart, lungs, digestion etc.) and for external, whose effects are osteo-articular and muscular systems.

Biological model of the volleyball player

The valuable player in volleyball world today can be characterized as follows:
- optimal Age: 20 -26 years for women and for men 22 -28 years;
- harmoniously developed musculature, good joint mobility, with a tall stature according to posts in the team, as follows:
- high: G= 1,72-1,80 m, average 1,75m; M = 1,88- 1,95 m, average 1.90 m
- main players: G = 1,78-1,85m, average 1,80m; M = 1,92- 1,98 m, average 1,95 m
- players mates: G = 1.82-1.90 m, average 1,85m; M = 1,95- 2,05 m, average 2.00 m
- the span must be high, exceeding 6 -8 cm body height;
- big slap - longitudinal diameter greater than 1/8 of the waist;
- optimal nutrition status in relation to stature: muscled harmoniously developed, MA = 85.5 -90% and Fat=10-10.5%

Movement capabilities required are:
- expansion -to achieve and maintain high values (jumping off place - 70 cm for men and 85 cm for girls and enthusiastically - 80 cm for girls and 100 cm for men).
- reaction speed as optical exciting 12 -14 hundredths of a second;
- skill and coordination developed at a very high level;
- global anaerobic capacity to very good: 35 -40 kgm / kg / 60s girls, 40-45 kgm / kg / 60s and over for boys
- maximal aerobic capacity, good values and very good;
- VO2 max.: 55-60 ml for girls and 65-70ml for boys
- Neuropsychiatric qualities: high capacity for concentration, stability and distribution of attention; special temperamental traits (courage, militancy, boldness); speed in thinking; responsibility, discipline, team spirit, desire to win; tactile perception, spatial, visual and motion perception well developed.

Early proposals for the selection:
- to widen the selection base, by including all children, knowing that the skills development have different dynamics from one individual to another;
- to consider that widening the base of selection favors individuals detect carriers of alleles (different forms of the same gene expression character) with high capacity adaptation in the antenament;

- „secular trend phenomenon", resulted in accelerated growth of indices (height, scale etc.) in the last decades of the century, this interesting biological phenomenon, it constitutes a real support;
- to take into account as early selection must be done carefully training, each individual selected should be treated differently, depending on the physical and mental development and the stage where they are.

The selection has a permanent character, differentiated through stages (children, youth, famous athletes) and value levels (divisions, lots national, Olympic, etc.). For sports classes, annual inspection standards must remove the unfit, which will be immediately replaced with others thus the system is closed and coaches will be forced to work with uncompetitive children

Conclusion

In conclusion, it is clear that the selection process conducted is continuous, representing an essential factor of performance, permanent correlated with other criteria assembled into a system that theory and practice of our sport created it and apply it successfully.

<div align="center">REFERENCES</div>

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