

## AN ADAPTABLE POTENTIAL OF SPORTSMEN OF YAKUTIA, WHO GO IN FOR SINGLE COMBAT

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Modern sport of the higher achievements puts before sportsmen necessity to overcome the heaviest, and in some cases both other-worldly psycho emotional and physical activities.

Necessity of growth of sport achievements make to raise continuously volumes and intensity of trainings, therefore loadings increase that usually adversely influences on a condition of health.

**The aim of research:** to estimate degree of pressure functional and regular systems of an organism of young sportsmen of Yakutia, who go infor a single combat depending on sports qualification.

There was carried clinical and laboratory investigation of 100 qualified sportsmen (50 boxers and 50 fighters of a freestyle) of Yakut nationality, male, at the age from 17 till 26 years (middle age  $18,2 \pm 2,3$ ), pupils of the State budgetary establishment «School of the higher sports skill» (GBU Sh.V.S.M) and the Specialized School of the Olympic reserve name after R.M. Dmitriev (GOU SSOR) of Yakutsk (basic group). All surveyed were winners and prize-winners of the international and All-Russia competitions with the experience of going in for sports from 9 till 16 years, with sports qualification a candidate in master of sport (CMS) (48 %) and a master of sport MS (52 %). By results of the profound medical inspection, annually spent by experts of the Republican physical clinic all are recognized as healthy.

As a comparison group investigation of 100 beginning sportsmen (pupils of the specialized school of the Olympic reserve and sports schools) 15-16 years (middle age  $15,6 \pm 0,6$ ) with the sports experience from 3 till 4 years (juniors) is carried. Among them there were 57 boxers and 43 fighters. According to medical inspection all have been recognized as healthy and are admitted to trainings.

Into control group have entered almost healthy 50 male students of Medical institute SVFU who never went in for sport professionally. At the moment of inspection at active poll students didn't show complaints to a state of health and had (within last 6 months) no instructions on presence of the sharp or transferred aggravations of any chronic diseases. On national and age stuff the group was representative to the basic group (middle age  $17,0 \pm 1,5$ ).

Inspection of sportsmen included: questioning, gathering of the sports anamnesis, clinical survey by different experts, functional, laboratory and hardware-software research methods.

The computer express diagnostics of level of adaptation to physical activities spent on a hardware-software complex "Omega-S" (the state Registration FS №022a 2005/1434-05 from 18.03.05). Defined:

A - level of adaptation to physical activities;

B - level of training;

C - level of power maintenance of an organism;

D - psycho emotional condition;

H - an integrated indicator of "the sports form»

**Table 1**

**The average indexes of a physical condition (M±m)**

	<b>Indicators</b>	<b>CMS, MS (n=100)</b>	<b>Juniors (n=100)</b>
A	An adaptation to physical activities	67,04±18,21	53,1±21,9*
B	The training	69,36±23,02	59,9±27,8*
C	About Power supply	59,46±17,30	53,5±19,9*
Д	The psycho emotional condition	61,57±14,72	55,0±18,9*
H	The Sports form	60,96±21,10	55,1±21,0*

\* - the difference is statistically significant ( $p < 0,05$ )

The basic indicators of a physical condition (PC) are calculated in percentage (the norm from 60 to 100 %). The decrease of indicators below norm border testifies about decrease of functional reserves of an organism and an overstrain of adaptable processes.

The histogram. By the received results the average integrative indicators of the adaptive-kompensatorny reactions (PC) at young sportsmen have turned out below norm and more low than at sportsmen of the basic group.

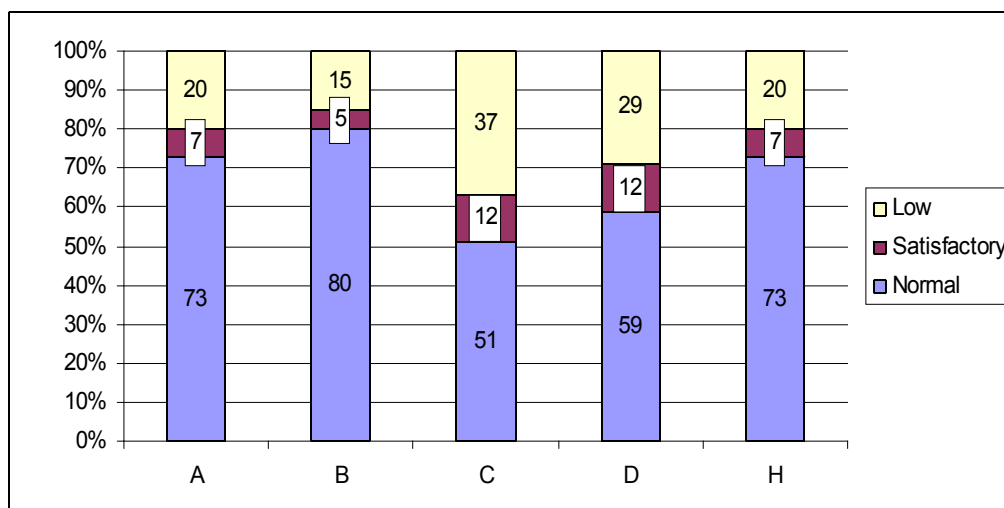
This computer method of diagnostics defines more than 1000 various conditions of an organism which are divided into three basic groups for convenience:

1-high and normal level PC = 4-5 points

(The satisfactory condition, all systems of an organism work optimum),

2-average level PC = 3 points (pressure of systems of an organism, the reserve possibilities of an organism are spent not effectively),

3-low level PC = 1-2 points (the unsatisfactory condition, organism reserves are lowered, the organism is in a stress condition, adaptation failure is possible



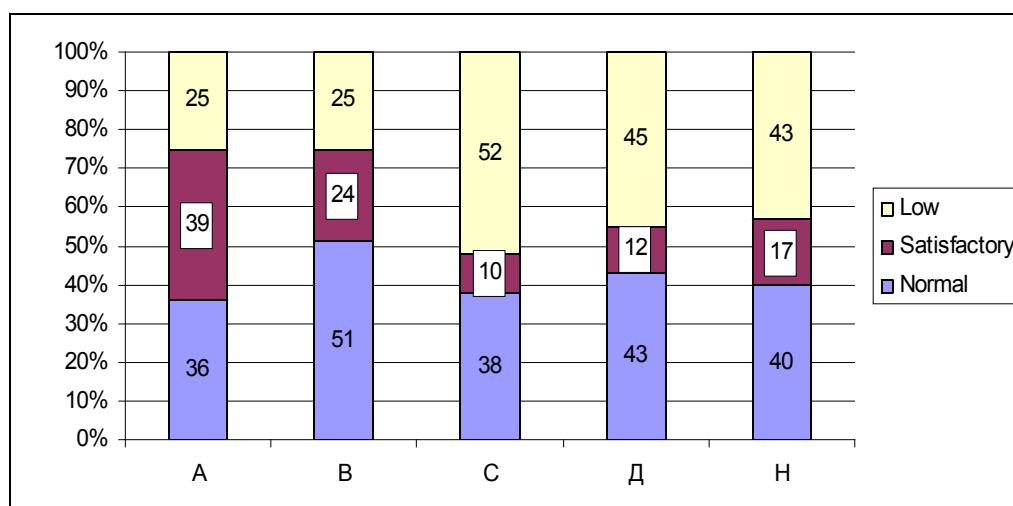
**Fig. 3 Distribution of the qualified sportsmen on indicators PC (in %)**

At the individual analysis the high and normal level of indicators is revealed:

A-adaptations - at 73 %, B-training-80 %, C-power supply – 51 %, D- psycho emotional condition-59% of experienced sportsmen.

The indicator of "the sports form», equal 4-5 points is revealed at 73 %, 3 points – at 7 % and to corresponding 1-2 points – at 20 % of sportsmen.

Thus, at inspection of the qualified sportsmen it is established that the lowered adaptable potential to physical activities 20 % surveyed had, the lowered level training -15 %. In 20 % of cases the integrated indicator of "the sports form» corresponded to an unsatisfactory physical condition.



**Fig. 2 Distribution of juniors on indicators PC (in %)**

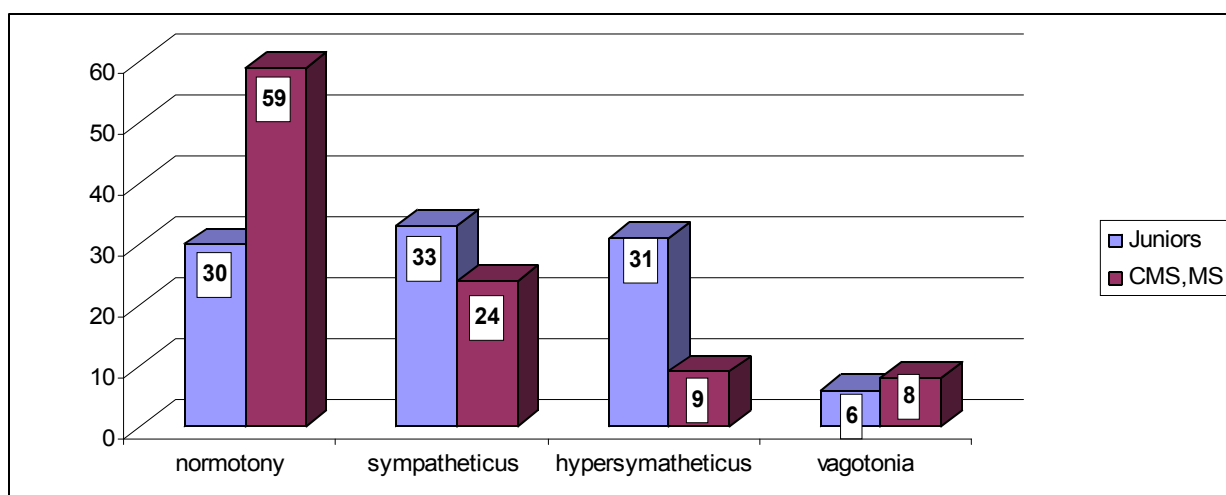
By the results of the spent researches (a Fig. 2) high and normal level of adaptation (A) is established at 36 juniors (36 %), average – at 39 %, and low level – at 25 % surveyed. High and

normal level training (B) is revealed at 51 %, the average level – at 24 %, low at 25 % (among them, 10 % had a minimum level) surveyed. A- level of power maintenance (C) within "norm" and «the maximum values» is revealed at 38 %, low level at 52 %, «signs of an exhaustion of power resources» are revealed at 4 % of the surveyed. The psycho emotional condition (D) is estimated as excellent and good at 43 % surveyed, signs of a nervous overstrain are revealed at 45 % (among them signs of nervous stress and depression – at 4 %). An indicator of «The sports form» (H), corresponding 4-5 points 40 %, 3 points – 17 % and 1-2 points – 43 % of juniors.

Thus, low level of adaptation and training is revealed at 25 % of the surveyed young sportsmen. 43 % surveyed had the integrated indicator of the sports form, correspond to an unsatisfactory (1-2 points).

At the comparative analysis the average indicator physical condition sports form has made  $3,2 \pm 1,0$  points at juniors, at the qualified sportsmen  $3,8 \pm 0,8$  points that testifies about bigger degrees of adapted ness of an organism of the qualified sportsmen to physical activities.

The condition of vegetative regulation of systems of an organism estimated on scatterogramme and to a pressure index (PI):



**Fig. 4 A vegetative status of juniors and the qualified sportsmen**

By results of the spent researches (fig. 4) at sportsmen with sports qualification CMS and MS prevailed normotonical regulation type (59 %), the sympathetic type of regulation has made 33 % of cases and parasympathetic type 8 of %. At juniors the sympathetic type of regulation (64 %) prevailed. The normotonical type is revealed at 30 % and parasympathetic at 6 %.

To early objective signs of disadaptation of vegetative nervous system concern a replacement of a normotonical vegetative tone sympathetic, increasing of an index of pressure that testifies about strengthening of influence of a sympathetic tone and increasing of degree of centralization of management by a rhythm, restoration delay. It is known that at lower adaptive

possibilities there is a strengthening activity sympathetic nervous system that is a sign of the big power inputs regular organism systems on homeostasis support.

### **Conclusions:**

1. An adaptable potential at qualified sportsmen in 2 times above than at juniors
2. Decrease of an adaptable potential is revealed at 20 % of the qualified sportsmen (MS and CMS) and 43 % of the beginning sportsmen
3. At the qualified sportsmen prevalence normotonical type of vegetative regulation (59 %), and at juniors – sympathetic type (64 %) is established

Practical recommendations:

1. It is necessary to carry out computer express diagnostics of a physical condition (PC) sportsmen on a hardware-software complex «Omega - S» regularly and to divide surveyed on 3 groups:

The persons having high and normal indicators of the sports form (4-5 points)

The persons having average indexes of the sports form (3 points)

The persons having low indicators of the sports form (2-1 points)

2. The sportsmen, who have low points, it is necessary to survey in dynamics after rest and then to solve a question on the admission to competitions.
3. At sportsmen with raised tone CNS is it necessary to exclude stress presence, to remove a psycho emotional pressure, to adjust training loading.
4. Medical supervision in dynamics, individual correction of training loading, a correct mode of time of trainings and the rest, the balanced food, reception adaptogens is recommended to all sportsmen having signs of an overstrain of adaptive processes (disadaptation).

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