

**VEGETATIVE REACTIONS TO
VESTIBULAR IRRITATION AT SKI
JUMPING PRACTICE**

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There were surveyed vestibular reactions of ski jumpers in sportsmen groups of 9, 11, 14 and 17 years (96 persons), having sports qualification from beginners (9-years) up to masters of sports of Russia (17-years). Control groups included children of the same age who are not going in for sports (58 persons). A functional condition of the vestibular analyzer was judged by the size and duration of the vegetative reactions arising in reply to vestibular irritation - rotary test of I. Vojachek.

Researches have shown, that sportsmen's pulse of all age groups after rotary test increases, but at children groups of 11 and 14 years which are not going in for sports, decreases. Thus the least increase of pulse at sportsmen group and least decrease of pulse at control examinees in age group of 17 years have been revealed. Reactions of systole pressure upon vestibular irritation at sportsmen group and their control contemporaries also have essential distinctions. The systole pressure has increased in age groups of 14 and 17 at sportsmen groups, and it has decreased at control examinees. In age groups of 9 and 11 years the reaction of systole pressure mainly decreases both at trained, and at control examinees. Hence, in all age groups of control examinees negative reaction of systole pressure on the vestibular irritation, gradually weakening from age to age and achieving a minimum level by 17 years.

Diastole pressure in reply to rotary loading in all researched groups has changed in the opposite direction to the change of systole pressure. The different reactions of systole and diastole pressures on rotary test has essentially influenced on expressiveness of changes of pulse pressure: at control examinees it has decreased in all age groups, and at sportsmen of advanced ages has essentially increased. As a whole, the age changes of pulse pressure in reply to rotary loading repeats changes of systole pressure, but it is more expressed. The negative orientation of changes of these parameters at control examinees, no less than changes pulse, is

connected, obviously, with weak activation sympatho-adrenale system at vestibular irritation. The proper response testifying to greater stability of vestibular sensory system to irritants, prevalence of sympathetic influences (Kurashvili A.E., Babijak V.K., 1975 is; Janov J., etc. 2000).

At studying vestibular stability by technique of Lozanov-Bajtchenko in both groups of examinees of 9 years it has been revealed that it is essential below, than in other age groups. The increase of vestibular stability is observed in age groups of 11 and 14, however at sportsmen group it was considerably above, than at their contemporaries from control groups. At the same time the average indices of researched sportsmen groups and control examinees of 17 years in essence do not differ. It means, that the tendency to rapprochement of parameters of sportsmen and control examinees down to their full alignment by 17 years is observed at comparison of all vestibular-vegetative reactions. It is obvious, ski jumping practice accelerates functional becoming of the vestibular analyzer, promote development of physiologically expedient orientation of vegetative reactions to vestibular irritation, but provide, finally, only usual or a little above usual level of its stability to angular accelerations. We shall note, however, that such conclusion fairly only in the event that the estimation of vestibular stability is carried out on size of vegetative reactions. It, probably, is connected by that the level of achievements in ski jumping, unlike cyclic kinds of sports, does not depend directly on development of vegetative functions. Thereof vegetative reactions to vestibular irritation, no less than vegetative functions, at even enough qualified ski jumpers, not so considerably differ from parameters of unexercised persons.

At ski jumping the main role is played with receptors of muscles of a neck, the impellent device and impellent sensory system as a whole in preservation of balance and optimum aerodynamic position of a body in flight and in maintenance of greater range of a jump. These structures reach greater functional perfection with improvement of professional skill of sportsmen, than vegetative bodies, and they also reach much greater stability to forcing down influences of vestibular irritation. On our data, the vestibular irritation causes increase in force of a brush at sportsmen group of 17-years, does not render

negative influence on kinesthetic sensitivity whereas at control examinees these parameters worsen. Also that is remarkable, intergroup distinctions do not decrease on these parameters with the years, and tend to increase.

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