

AUXOLOGY AND ENVIRONMENT SPORTS

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Environment sports offer the possibility of multidisciplinary approach to all physical activities and thus become a support of training for all other sports activities. They facilitate the development of different physical capacities related to the specific period of growing up.

They teach the youth to compare themselves with the environment.

The nature that finally dictates the rules and regulations of the games even re-dimensioning those who are stronger.

To help the physiological development in the time being, means to create the capacity that remains unchangeable in the human body for the rest of the life. To put in actice this kind of concept, it is necessary that the instructors, sports doctors teachers and relatives etc know the opportunity that is offered by mountain schools, sailors schools and all the stages in the environment.

For this reason, Scienze Motorie e Sportive University of Perugia has also a teaching about Mountains Sports in collaboration with Truppe Alpine Esercito Italiano.

To teach sports in accord with the auxology means:

- to develop physical and sports exercises that help develop the physical capacity in the moment of physiological development.
- to teach a specific sports technique that is responsible in their own relationship and that of the others, through the rules of sports and that of athletic sports.
- Induce a mentality ready to the welfare through sports and physical exercises in such a way that it can create an adult who will never be an 'ex-athlete'

The activities in the environment involve these necessities whereby:

- Climbing, nord skiing, mountaineering skiing, sailors sports, help in the coordination, mobility and reactivate the limbs.
- Hiking, nord skiing / long distance racing and mountaineering skiing help in the development of the aerobic resistance capacity and above all, in the youths, teach to dose the individual capacities compared to prolonged time of exercises.

The sports in the environment, finally, reduce the risk of cronic fatigue.

Person in the age of growth - Physical activities - Game exercises

The growing period is the process in which a human body changes in quality and form.

Growing period is subdivided

Infant until 10 years old

Adolescent 10-19 years old

Infant

I° infant up-to 4 years old

II° infant 5- 10 years old

Adolescent

pre-puberty 10-13 years old

puberty 14-15 years old

post-puberty 16-19 years old

We would like to particularly put emphasis on the biological growth, and that is the biological age, (the physiological and psychological) characteristics of the youth between the chronological age of 8 and 18 years .

10-12 years of age marks the phase of reasoning (ratiocination) with a sense of critic, to the instinctive activities and reflexive activities.

13-14 years of age, the youth present emotional imbalance and inconstant moods, a boy can have a cold attitude, apathetic, shy or on the contrary exuberant and very lively.

There is disharmony in the movements and can be clumsy. There isn't a full control of the body in the youth. A young boy needs to know his new body with longer arms and legs (bones and muscles):

- He also needs to coordinate the movements of these new levers.
- 15-18 years of age, marks the beginning of psycho-somatic orders, evident and elevated in the capacity in the youth's performance. His thoughts are calm and the reflex reaches a psycho-physical balance.

A fast movement is guided instinctively, but the reaction is calculated and guided by a will that gets stronger always. At this age a youth is in structure and mentally similar to an adult, therefore all that he does physically and intellectually are practically not impossible for him.

Physical, Sports and Training Exercises

At 11 years- pro-sensitivity

At 12-13 -Coordination, and limb mobility- High capacity for hard exercises (anaerobic alattacid) and aerobic capacity The muscular skeleton system is immature for difficult exercises.

The neural-psychological system, that is learning through imitation prevail instinct on reasoning. Learning should be done through games (technique through games as a source of encouragement).

At 13- 14 years of age – pre-puberty period –Development of muscles for the hard difficult work (growth of hair etc. due to hormone activities.) At this age their is a development of muscles that mature to a trophic state (for force strong and hard work). The limbs and articulations are still immature and the connecting cartilages join at the age of 18-19. At this age the sports and games become technical and competitive and therefore the learning is now more with reasoning.

At the age of 15-16 years- this is the age of competition: the body and the mind are mature for competitive activities.

Energy consumption

There is a major physiological predisposition between the ages of 8 and 11 for doing aerobic type of activities and anaerobic alattacid (with the maximum duration of every repetition of about 7 to 8 seconds) somehow like the anaerobic (due to muscles that are still not possible to perform until the age of puberty). Instinctively the young prefer short and intense movements with breaks to recuperate (physical anaerobic exercises) than intense and long exercises (e.g. long distance running, or aerobics) even though the physiological characteristics permit this kind of activity. Therefore the maximum force for anaerobic lattacid is lacking during the growing age. Games or activities that involve hard resistance and speed which are based on energetic sources should be avoided in the youth.

Cardio-circulatory system

The heart beat in the youth increases with the measurements of more work given to a youth than to that of an adult. For example the heart beat of an 11 year old, for work of 8kg/ sec is about 127b/m against 106b/m that of an adult, even though the activities to recuperate is at it's disadvantage in time among the youth due to minor cardiac range of the (small) heart. Even the time to recuperate is more in the youth than the adults. In a well trained youth, this time of recuperation is less, anyhow and above all in childhood this is in the pre-puberty period, where the cardio-circulatory system is not fit for hard work.

Respiratory system

The static and dynamic pulmonary volume increases progressively during the period of growth. The maximum ventilation reaches between the ages of 14 and 18 years. With physical exercises the youth increases the frequency of breathing more than that of an adult. In the youth, there is more ventilation efficiency that helps in the air expansion, since there is a favourable exchange of gas at a cellular level and has a better and dynamic cost due to high diaphragm respiratory frequency.

Locomotory organs- (limbs)

In the phase of growth, the development of bones and muscles do not always proceed in a parallel and uniform manner. There is therefore a disharmony in the physiological development. In the period between 2 to 4 years, there is a considerable development in stature. While that is on the contrary in the period between 5 to 7 years (here there is growth in height). What follows is 'Turgor Secundus' that is the second period, and that is between the ages of 8 to 12 years, there is a major growth in height than in stature. Then in the 'proceritas secunda', comes in puberty, characterized by a remarkable and fast growth in the stature that doesn't correspond to the increase in height. In the post puberty period, there is growth in height not only due to the accumulation of fats but above all also due to the increase in the volume of the muscles. Besides in the pre-puberty period the bones grow in length (endocondral growth), in the pre-puberty there is growth in width(periosteum). In the pre-puberty period the muscles grow in length while in the puberty and post puberty periods, there is growth in volume. Until the age of 14 games and competitive sports are possible in the youths considering the joining cartilages which are developing at the maximum resistance, and youths must avoid heavy exercises that is exercises of muscles with maximum weight .

Nervous system

Until the age of 12, the youth are not coordinated in as far as neuro-muscular is concerned, that is , they cannot use properly their muscular power properly and therefore they have to put into consideration the weight in certain movements. This is the period in which they have to be taught how to walk, run, and jump. From the ages of 12 to 15 years, this is the best period for learning complex sports gestures. A child is unable to have the same athletic training as that of an adult and so you have to put into consideration the safety system act , to protect the body from excessive muscular exercises.

Psychological

Until the age of 10 the youth doesn't have a critical sense. They have an instinctive behaviour and they learn through imitation. You have to go over long explanations and long stand stills or pauses, exercises have to have pleasure and the fantasy of a game.

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