Sport and Behavior

Healthcare

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Abstract

In the last decade postural gymnastics has fully entered, to be part of educational and re-educational quellemetodiche which offer a wide range of operating conditions in the various sporting disciplines. The posture that is assumed spontaneously reveals the true self of the person in a particular circumstance, in a determined moment; that's why anatomical, biomechanical and kinesiological evaluations should be considered of anthropological and psychological nature. [1]

Introduction

The notion of body image plays a major role to define completely, the phenomenon of "postural adjustment" which has a strong psicomotoria value. The "postural vice" very often hides a bad knowledge of "own body" or a difficulty in relating to the world or with the others.The first to introduce the notion of postural pattern was Head in 1920; referring to the most recent studies Gurfinkel has managed to highlight some important aspects about the issue. The postural pattern is in fact based on an internal model, and is constructed from two types of information that are of metric nature (information on the position of the segments relative to each other) and the other side of a dynamic nature (information on the mass and inertia of the different segments as well as the strength of support on the ground).[2]

While the role of the dynamic information is still little known, that of the metric information is well acquired; it comes to muscle own receptive afferents that reveal information about the body segments relative to each other, whose role has been largely demonstrated through the use of artificial stimuli selective of these afferents due to vibration applied to the tendons[3.4].

Neuro-physiological studies have always considered separately the organization of the posture, which has the role to stabilize the position of the body segments, and that of the movement that tends to move them to the contrary. The brain structures involved in the regulation of posture and movement are, incidentally, considered different because the first is treated in the spinal and brainstem, and the other is made, however, to a level more high (cerebral cortex, cerebellum, basal ganglia)[5].

Some studies have shown that the fracture between posture and movement in reality does not exist because the postural adjustment plays an important role in the organization of movements. In some conditions is also possible to say that the posture organizes the movement[6].

To examine the first studies on the link between physiological activities and psychological activities must instead go back to Dupré who, seventy years ago, stated that certain mental disorders and movement disorders are corresponding with each other so closely related and represent such similarities to constitute real psychomotor copies[7]. The variations in postural tone have a close correlation with the psyche. This does not mean that the psyche represents the tone and vice versa, but that we must consider these two elements in a unitary manner: the body is the psyche and the psyche is the body.[1]

According to H. Wallon, the tone is crucial in the emotional life and relationships. This author identifies it with the way in which postural attitudes relate with each other and how these vary with the adaptation (or perceptual understanding) and emotional life.[8] Practicing postural gymnastics means first of all taking account of the unity between body and mind, creating a relationship with the person before dealing with its deficiencies, attaining a good morpho functionality which passes through a mastery of the body.In school-age and preschool activities of the "introduction to the sport" must provide postural education aimed at acquiring an image of their own body, in space dynamic. A work based on education sense-perception for children from six to eight years can be of great help for the structuring of postural pattern. From about nine years, is necessary to provide exercises that relate more closely the coordinative capacity, so that we can get to a decided enrichment of postural patterns and engines.

These exercises should provide mobility multipurpose activities in which the child lives and experiences many situations, so coming to define his map motor[9]. With the very young the initial work is based on sense perception which can be defined as the set of sensory and neurological relation that the subject has with his own body and with the outside world (feeling) and their psychic awareness (perception)[10]. The first administrative attention of sense-perception is thanks to receptors that are sensitive anatomical structures deputies to the collection of different stimuli. You can distinguish the external, own and the internal receptors which are distributed over the entire surface of the body (touch receptors), or in specialized sense organs (eye, ear, etc.).

They are sensitive to all stimuli from the outside world. The own receptors, localized muscle tendons and joint capsules, tell us, however, on internal stimuli caused by the movements, but also on any suffering muscle or tendon. Finally, inner receptors are located inside the viscera, and provide information on the vegetative system. The stimulus is adequate became receptor in nerve impulse, which, through the afferent pathways, reaches the central nervous system where it takes exercise and reconstruction of the message. The stimulus produced by exercise sense-perception cannot be purely biological interaction (feeling), but it has to get to the level of conscience (perception).

This process, which takes place in the cortical association areas, means the integration and practice of the mnemonic information.It is necessary, therefore, to act on the different analyzers as powerful information devices: kinesthetic analyzer (information on the spatial and temporal components of human perception) tactile analyzer (information tools) analyzer static-dynamic (body position during exercises of balance) Optical and acoustic analyzer (receptors remote, very important for learning)[11]. For a long time the studies on the activity agonistic us or directed, almost exclusively, to the progress of the abilities: strength, endurance and speed.

In recent years, however, the research on the physical preparation of the athletes have turned also to another aspect of the muscle physiology that included the muscle elasticity, seen not only in view of a functional rehabilitation but, also, to the improvement of mobility joint and then the technical act. Of particular interest is the approach of the French school postural and particularly of Mezieres Method; that is defined by Souchard as a series of postures of active muscle strain that aim to stretch together the antigravity muscles, muscles rotators and aspiratory muscles in order to go from the symptom to the cause of the injury, to return good morphology and regain function.[12] Inspired mesmerist is also the method of Three Teams where you have to make a tensioning progressive, through three basic positions, to arrive at a "static global harmonization."

Referring to the studies of the brothers Tardieu the authors of the latter method highlight some aspects of muscle physiology. The muscle is composed of two different parts, but functionally inseparable: 1) From the contractile elements, i.e. the sarcomeres. 2) From all of fibrous connective of aponeurosis, tendons, ligaments, i.e. the elastic part.The great error of the gymnastics classical was to identify the pathology of a muscle with its weakness, ignoring, thus, the connective tissue.It is necessary, in fact, to distinguish the dynamic muscles from tonic muscles. The first is a rapid muscle which can be tired by the everyday gestures but also by technical gestures (throwing the disc, kicking the ball, shooting for goal etc.). The tonic muscle is, however, a slow muscle; whose main function is to ensure the static.It is little tired and its mechanic agent is the mitotic reflex. Being reflective, the pathology of tonic muscles is never identifiable with the weakness but with the shortening and retraction. The muscles working in tension stretch and grow sarcomeres in series; otherwise, muscles working in relaxation thicken and sarcomeres are installed in line. According to this principle it seems, therefore, that the increase in length of the muscles follow the same laws of the connective tissue and the voltage aponevrotica actions of muscle growth.Bone growth controls the growth of connective tissue and the muscle; therefore, the length of the muscle depends on the voltages that growth has caused. For example, in the scoliosis the muscles of convexity lengthen more than those of the concavity.

Logically, to operate on these reports it is necessary to use a power-up that might overcome the phenomenon of unbalanced static and above all, to the evolution of pathology. They are, in fact, the retractions that are responsible for permanent pain, because the set of aponeurosis, ligaments and tendons of all the muscle layers together form an immense sensory receptor. Thousands of sense-receptors respond to the under voltage; deductions do nothing but make them a source of pain. These pains let you locate tensions to get from the symptom to the cause. In this school the symptom only serves as a guide to trace the origin of the disease: the whole treatment is focused on the search for the causes of the injury. Each symptom appears at a certain distance from the cause (then delayed) accordingly throughout the treatment should be as comprehensive and personalized.[13]

Souchard, student of Mezieres, following the principles of the Global Postural Re-education, says that unlike the dynamic muscles, those of the static never rest. This affects our whole muscle pathology as the former can relax excess for lack of sporting activities, as there is for the abdominal muscles. The latter, however, are always fatigued muscles because they are constantly urged by gravity, always evolve towards hypertonic, the rigidity and shortening[14].

The contraction of a muscle chain reduces the articular mobility, consequently, in many sports (such as football, volleyball, basketball etc.) or otherwise it is a work aiming at strengthening muscles dynamic. We should program a job elongation to prevent and treat any rachialgia, but also to achieve a high degree of elasticity. The success of a gesture of great technical difficulties (such as the one that is run by a gymnast on the rings) depends not only by coordinative capacity or conditions but also by an excellent posture that requires an excellent joint mobility and muscle elasticity.

In educational setting studies of McKenzie and Williams, processed in New Zealand, which illustrate the phenomenon of centralization of pain which may occur to the person proposing a number of situations involving variations of positions, have found ample credit. The "centralization" according to the term adopted by Mckenzie, relates to a rapid change in the perception of localization of the disease from a distal site or device to another, more proximal or central, and is a phenomenon that can occur in the time period of only one evaluation survey[15].

Unlike the French school, the problem of posture Mc Kenzie does not have much educational values, in the sense that it does not have to order a acknowledgement of body attitudes usual to vary the deficiencies and compensatory phenomena in time to prevent painful situations, as is directed to propose to subject a series of postures that tend to reduce pain in fairly short time.

For this reason in athletes that have to compete weekly and therefore need recovery time not too long, this technique found a wide use. The work of the French school is oriented in the search for the causes of the disease; in this context, it justifies the high importance attached to the foot, the breathing and the study of the subject and related phenomena. Mc Kenzie in the treatment of low back pain tends, however, to focus on the effect without seeking the causes of the spine pains.

The back school, finally, literally "back school" is organized for the first time in 1969 at the Dandery Hospital, near Stockholm, to enable the person suffering from spine pains handle a situation unfortunately liable to relapse, whatever therapeutic treatment.Fundamental elements of the back school are the ergonomic advice and directions of character postural especially in relation to the acts of daily life.

The subjects are involved through a series of theoretical and practical lessons in which we discuss general aspects of vertebral pain, the general mechanisms that facilitate the onset. The anatomy and physiology of the spine are clearly explained as well as the results of epidemiological studies. Starting from biomechanical principles are taught techniques to lift and carry light or heavy loads rational and postures of the trunk[16].

In recent years it has been discussed, even in sports, of which Lecomte defined as the set of psychomotor behaviors that man must integrate (education postural and gestural) to act with maximum comfort, safety and efficacy.[17]

As emphasized Lempereur, gestures and postures are inspired by four key principles:

1) Use of the lower limbs
2) Use of the upper limbs
3) Overlay of the centers of gravity
4) Using front feet

The postures that are rational proposals do not relate only to situations where you have to raise the weight, but illustrate the positions of "discharge" for the column that should become part of the sports program of all athletes. These postures should involve not only the weight lifter but, in general, athletes who require, for their preparation, use of a more or less continuous, overloads. The knowledge of gestures and postures key allows you to deal with any situation of displacement of the body in space, reducing and preventing the risk of trauma to the column.

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