

## Reasons for the Formation of Scoliosis, A Factor in the Functioning of the Body

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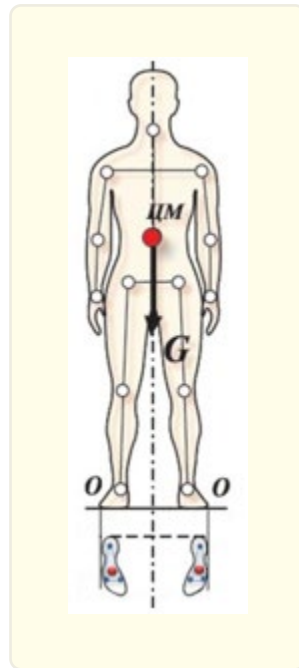
Speaking about the causes of disturbances in the functioning of the self-regulatory system that is our body, the question arises: why does it get sick? Each doctor will give you hundreds of factors, not forgetting to mention heredity. But our forefathers lived up to 150 - 300 years. At the celebrations dedicated to the centenary of the Battle of Borodino in 1992, many such centenarians were present. Academician Bekhtereva N.P. She said that in our time there are many such people. She explained this phenomenon by the presence of program matrices in the brain, which fail over the years.

Not everyone today knows that the renewal of brain cells and their charging occurs from the muscles of the body that are tired during the day. But today human activity has decreased by 200 times. In such a situation, the principle no longer works: movement is life. In addition, human movements have become unnatural due to the use of shoes and deformities in the joints of the feet and spine, which are already diagnosed in 95% of the population of developed countries. Movement contains mechanisms for maintaining the vital functions of a self-regulating organism: cell metabolic processes. The movement of blood and lymph in the capillaries of the body is ensured by the musculoskeletal frame of the body, which, together with blood and lymph, makes up 83% of the body weight.

The position of the skeletal bones is associated with walking upright, maintaining an upright position of the body, on which the body spends up to 94-96% of its energy. Regardless of our consciousness, the brain and its unconditioned reflexes compensate for the anatomical difference in leg lengths, displacing the bones in the overlying joints of the skeleton, giving the spine a scoliotic shape and the body a stable vertical position. This occurs with simultaneous continuous displacement and oscillation of the General Center of Gravity (GCG) of the body in each of the planes within 20-40mm. Thus, with the continuous fall of the body, the work of the venous-muscular pumps and the movement of liquid media in the body are maintained.

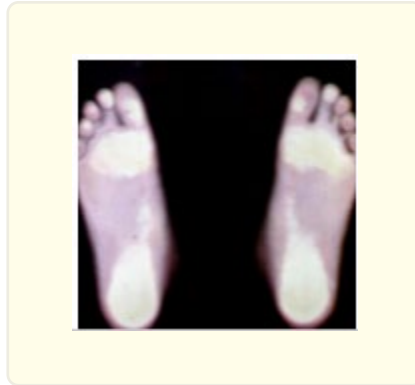
The performance of muscles is provided by internal organs. Their weight does not exceed 17% of body weight. What is called a disease is the result of a violation of the metabolic processes of organ cells. It occurs due to deformations in various skeletal structures, when the pumping function of the muscles is disrupted and a lack of oxygen in the blood occurs, pain occurs. With spinal deformities, the processes of innervation of organs are also disrupted. Unsuccessful attempts to straighten the spine can only be explained by a lack of understanding of the role of unconditioned reflexes in maintaining a stable vertical position of the body, when bones in the joints of the skeleton are displaced by changing muscle tone. The main and main reason for the displacement of the body's central gravity

from the vertical is the difference in leg lengths that each individual has. It is then compensated by unconditioned reflexes, forming scoliotic rotations of the spinal discs, displacing bones in the joints of the legs and other parts of the body.

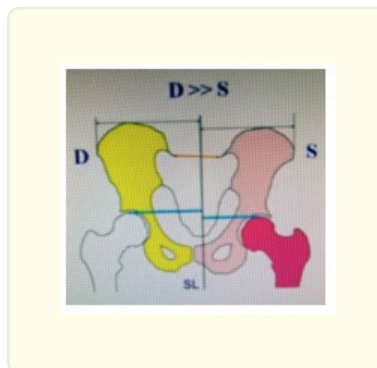
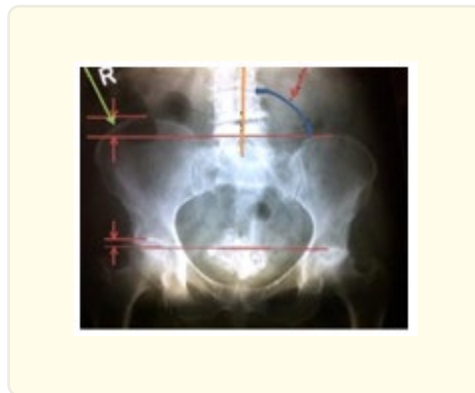


The bones in the arches of the feet begin to shift, and the heel bone on the long limb rotates. Then the internal arch rotates, the height of the ankle joint decreases to the surface of the support. This process is also enhanced when walking with the feet turned outward. In this position, the projection of the body's central core extends beyond the area of the supporting triangle of the feet, which will cause the internal arch to tip over and create moments of force on the knee joint, causing pain in it.

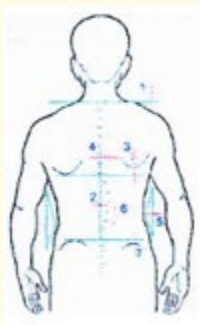




When medicine places an insole with support under the arch, it not only disrupts its shock-absorbing function, but also contributes to the development of scoliosis, restoring the difference in leg lengths. The relationship between flat feet and scoliosis is indicated by the results of a general medical examination carried out in Russia in 2000. They say that the first place for diseases is flat feet and scoliosis, the second place is gastrointestinal diseases. But all these are interconnected things in a self-regulating system. But we are treated without eliminating deformities in the structures of the musculoskeletal framework of the body, the spine.



The influence of pronation of the internal arch on the position of the spine is manifested at the level of the first movable discs after the sacrum (L3--L6). With an anatomical difference in leg length of up to 6 mm and weak muscles (hypotonicity), the rotation of the spinal discs occurs towards the long limb. With increased muscle tone (hypertonicity) and a difference of more than 6-10mm, the spine tilts and falls on the short limb. This is how the C-shaped form of scoliosis is formed, which is tested in 65-80% of individuals. As we can see, the position of the body's center of gravity is influenced by the anatomical difference in the lengths of the legs and the resulting functional displacements in the joints of the skeleton. The hip bones receive a frontal tilt and rotation in the horizontal planes. The reversal of the wings of the pelvis, the size of the wing of the pelvis laid back in the perspective in the picture is perceived as smaller in size, which is not true. The main problem is that the surfaces of the iliosacral joints are always asymmetrically located to each other in each person. All this does not allow us to correctly determine and perform pelvic correction. When the patient stands, one can only observe signs of body asymmetry. They indicate the presence of a difference in limb lengths, but not how short the leg is anatomically and by how much. A long limb can functionally shorten itself so much that it becomes short in total. You can guess which limb is shorter by the difference in heights in the position of the fingers, the abduction of one of the elbows behind the back, the difference in the heights of the hips and folds in the lumbar region, the position of the shoulder blades and the tilt of the head. But even radiography or another method cannot determine the magnitude of functional deviations and the angles of rotation of the discs. Consequently, it is impossible to eliminate and control the correctness of the correction. So, every time after replacing a joint on the next leg, the surgeons lengthened the short limb, so much so that the patient could no longer get up from the chair. Each time a really long limb lengthened. Standing on the hydraulic system, my left leg turned out to be short, not my right.



For the same reasons, it is impossible to determine an anatomically short leg without eliminating the entire amount of functional shortening in the joints. These displacements are inherent in unconditioned reflexes, and therefore changing the position of the bones, subjectively correcting the joints and spine, is at least not competent, and it is impossible. This is evidenced by the successful attempts of doctors to correct scoliosis, or when they say that the cause of scoliosis is not clear.



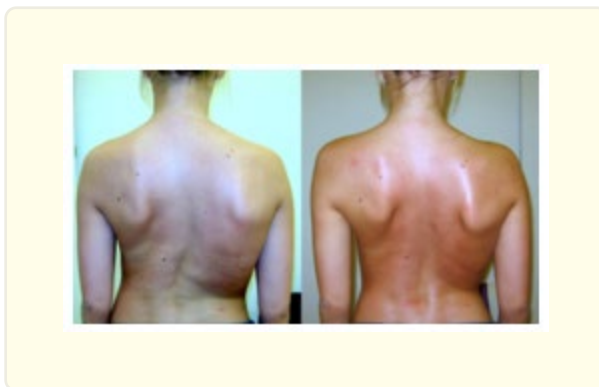
As follows from the above data, the root cause of all deformations and disruption of the metabolic processes of the body's cells is the anatomical difference in leg lengths ( $U_{an}$ ). The functional displacements ( $U_{fun}$ ) of bones in the joints observed in this case are a reaction of the central nervous system, the work of unconditioned reflexes to keep the body in a stable vertical position.



That is why, by bringing the body into a vertical position, when the projection of the body's central center of gravity is brought to the center of gravity of the support triangle of the feet, standing on the communicating vessels of the hydraulic system, and then on the insoles of the sub-correctors, the spine is straightened and the energy state of the body is normalized. This is the cause and effect of the difference in lengths.



The total difference in leg lengths can be described by the following formula:  $U_{sum} = U_{an} + U_{fun}$ . This difference occurs only in a standing position, and it is also eliminated by standing on a hydrostatic platform of communicating vessels working on the principle of a spirit level. This method is widely used in determining the levels of corners of houses under construction, installing machines on foundations and other equipment.



Depending on the magnitude of the total shortening and muscle tone, the spine at the level of the first mobile vertebrae after the sacrum (L3-L6) turns and deviates towards the long or short limb. Therefore, the actual anatomical shortening will be greater or less than the measured value.  $U_{an} = U_{sum} - U_{fun}$ . This is how C-shaped or S-shaped scoliosis is formed. Eliminating scoliosis means eliminating the functional and then the anatomical difference in leg lengths. To do this, you need to correctly correct the arches of the feet, the heel bone with the insole, and then compensate for the anatomical component of the difference in leg lengths. This is performed on diaphragms using a measuring device. Since on the plates of the scales the pressure under each limb is equalized and the anatomical component of the shortening is compensated. Only half of the measured difference is compensated. One limb rises, the other falls by the same amount. Only after this, standing on the podo-correctors, the central nervous system brings all the joints of the skeleton and the head with the vestibular apparatus into a symmetrical vertical position. And all this happens instantly. Comparing the state of the body before correction, standing on the floor and on sub-correctors, you begin to understand what a self-regulatory system is, what the role of orthopedics is in maintaining the normal state of the body, and that it is necessary to stop existing practices of subjective correction of the feet and spine. The quality of orthopedic insoles should be assessed by their effect on the body, and the insoles should be classified as medical products.

