

Protrusions and slipped discs as phenomena originated by compression

A new approach with the global non-compensated muscular stretching

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It is easy to understand that protrusions or slipped discs are connected to compressive phenomena, both direct such as a bad fall from a horse and indirect such as lifting excessive weights in the wrong way, practicing violent sports, undergoing frequent micro traumas or assuming bad postures. All these factors can be responsible for such pathologies.

Let us now look at the relationship between the correct curvatures of a healthy vertebral column and a column with non-physiological curvatures.

Vertebral column has an engineering structure: when its curvatures respect articular physiology, they work as shock absorbers and allow the right movements. The Delmax index (see Kapandji) expresses very clearly that mechanical resistance to compression is directly proportional to the number of curvatures (number of curvatures squared plus one). So, a column having reduced, rectified, or inverted curvatures will inevitably lose part of its abilities of resistance, flexibility and adaptability to the circumstances it has to face.

It is impossible to think that a column with incorrect curvatures can enjoy the same good health as one with physiological curvatures. It is like saying that a car, which has just had an accident and has therefore a deviated axis, can have the same stability in curves as a perfectly functioning one. It is a factual data that in the presence of curvatures alterations (hyperkyphosis, hyperlordosis, scoliosis, hypolordosis, hypokyphosis, curvatures inversion), major problems are detected.

Due to incorrect curvatures, for instance, also the stability of the articular facets can be lost (their aim is to "articulate" the underlying vertebra with the one above), since they lose part of their possibility to act in a correct and dynamic way and are exposed to a typical pain, i.e. the "articular facets syndrome".

Also ribs, which articulate at the level of ribs-vertebral processes, finding incongruous curvatures (thoracic hyperkyphosis, thoracic hypokyphosis, or even thoracic infrascapular inversion), lose their possibility to do the right movements that are needed to breath adequately. If the rib insertion point

has been altered over the time, inevitably the thorax will not be able to maintain its proper movements either.

With regard to protrusion or slipped disc, the most worrying regions are the ones related to lordosis, i.e. cervical and lumbar areas. Hernias at thoracic levels are very rare, both because the movement there is restrained (due to rib-vertebral articulations that limit the flexion) and because in that region vertebrae are adequately thought to act mainly in kyphosis.

Very frequent are instead hernias at lordosis level, since these areas are less adapted for wide movements in anterior flexion, which inevitably cause an increase of the posterior intradiscal space (technically, we say vertebrae “posteriorly yawn”) favoring the leak of the nucleus pulposus backwards towards the external part.

It is easy to understand that between the two types of morphological alterations (hyperlordosis and hyperlordosis/rectifications/inversions), the reduction/rectification and the inversion of the curvatures is worse, because from a physiological point of view these alterations go in the opposite direction from the one they are done for. If hyperlordosis can lead to arthrosis, reductions or inversions cause instead protrusions and slipped disc. Being the lumbar region more subjected to loads than the cervical one, it suffers more from this pathology. Many weights are offloaded here: the weight of trunk and head, and the weights carried by the arms. The cervical region has instead just the weight of the head to carry.

The lumbar area, thanks to its mobility, allows us to bend forwards. For this reason, people often badly abuse it, we should in fact remember that the task of the hips is to bend the trunk towards the thighs, allowing people to flex. Also the lumbar region has to be flexible, but it is above all a shock absorber and an adjuvant of hips movements.

Let us now understand why excesses or reductions of the curvatures appear.

Although it seems a contradiction, both the alterations are connected to an excessive muscular tension. These abnormal tensions, acting on the column, create adaptive curvatures that can develop in an hyper/hypo sense. The result is in any case an articular coaptation.

Remember that an excess of tensions, stress, and strong muscular tensions modify quickly, following a law of “body economy”, evolving into “permanent muscular retractions”. It happens because sarcomeres get “fixed” by the connective tissue and sheaths in a shorter than usual position, determining a shorter muscular tissue than the original one.

Retraction, which cannot reverse autonomously, becomes responsible for protrusions, slipped discs, tendinitis, bursitis, capsulitis and arthrosis.

Only through the techniques of “**Global Non-Compensated Muscular Stretching**” it is possible to modify the retracted muscular tissue and to give joints their freedom back. The explanation for this is that any time we try to create a muscular stretching in a muscular district or in a single muscle (classical stretching), the body inevitably activates mechanisms of defense called “*mechanisms of antalgic compensation*” or, more simply, *compensations*. It means that the body, in order not to suffer and modify a current situation, finds ways that allow it to move tensions/retractions to other districts (compensations), giving the illusion of having created a real stretching in that area... However, after one day everything returns to how it was before!

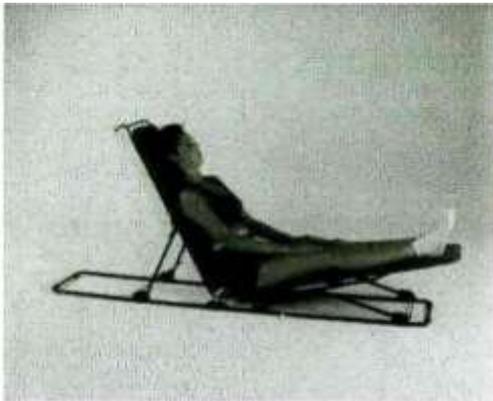
These compensations, i.e. temporary or permanent adaptations, work through the muscular chains (a series of muscles which inevitably interact from head to feet), which can “move” a problem from a point of the body to another. Here is how it is possible to find out that an old problem to the foot has moved to the lumbar region and has provoked a hernia, or even to the cervical area, and vice versa. In fact, not only does the body start the antalgic mechanisms autonomously, but also local therapies can provoke these kinds of migrant pathologies if the above-mentioned mechanisms are not taken into consideration. For all these reasons it is therefore necessary to have a global vision of the problem and to know the principles of the body antalgic mechanisms. It is at the same time fundamental to know the parameters of postural and functional evaluation of the body, so that the therapists can “read” a posture and act, not where the effect is, but on the cause, i.e. on what remained in the shade, in order not to ruin the “status quo” reached by the antalgic mechanisms.

It is appropriate to mention a statement of Dr. Nackemson, one of the most well-known experts of disc pathologies in the world: according to him, 50% of people who undergo a slipped disc surgery continue to have the same pain they had before the intervention. When it happens, it means that the real cause of the patients’ pain was not the hernia, but an effect of phenomena having a compressive origin caused by the muscles, which, like “rings” of the muscular chains, go on pushing on and disturbing the

nervous roots. That is why people who undergo surgery without stretching the responsible muscles first, happen to have the same symptoms or even a new hernia, appearing in the intervertebral space, right above or under the previous one. When these conditions are shown, it is therefore necessary to look at the problem with a wider vision: the pathology is the result of a series of muscular interactions which are so strong that they will make a local treatment be useless or even become damaging.

What can mass physiotherapists do than in order to act in a simple way and to work and be sure that they are doing the right thing to give the patient a more intra-articular freedom?

To answer this question, I will show you how “**Global Non-Compensated Muscular Stretching**” works through some images and my commentaries on some exercises done with a new approach for mass physiotherapists. They will have great satisfaction thanks to the results they can obtain with their patients.



This exercise done on Pancafit® - a small but very efficient tool for posture and all muscular and articular pathologies – acts on the whole posterior muscular chain, which is the main responsible for protrusions and hernias. It is enough to maintain a correct posture by following the fixed principles, unblock the breathing through particular expiration and create an auto-stretching of the neck in order to put in tension the whole posterior muscular chain, from head to

feet. The position has to be kept at least for some minutes, avoiding creating excessive tension that would lead to defensive attitudes.

The second exercise is less intense than the first one and allows the column to lay down thanks to gravity. In this case, the major work is done by the diaphragm, which will then transmit the effects on the lumbar region through the release of its pillars. If the working angles should result too closed for the patient, they have to be opened. They can be regulated up to 180°.



For more information on the Raggi Method®- Pancafit® please address to Posturalmed S.A.

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