

## Knee pain and posture

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Although legs sustain our body and take us wherever we go every day, few people remember their existence, except when they feel them heavy or have knee pain and need to sit down or take a break to find some relief.

We ought to remember that pain, inflammations and annoyance should be considered as "important signs", "alarm bells"; therefore they should neither be underestimated nor ignored.

When knees, like any other joint of the body, are not treated, they can become so painful that they can limit a simple walking.

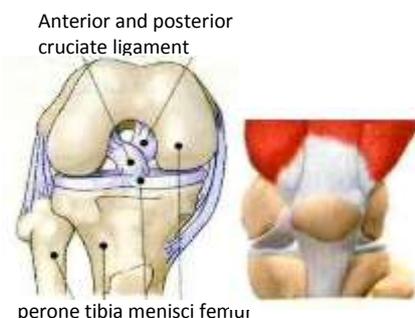
As inflammatory processes and arthrosis prevail (due to usury of the cartilage, articular spills, bursitis, synovitis, tendinitis, etc.), they lead people to limp and drag themselves. This forces to load and use shoulders and back in the wrong way to help walking more freely.

Due to the frenetic life people live, their high-level of stress and a missing education on auto-observation, almost nobody can identify the first signs of the body or see through posture whether there are any alterations. Almost everybody becomes aware of the problems when it is a bit too late, when a simple inflammation has already become a chronic pain because of joint usury, limiting people movements and in some cases forcing them to stop. It is important to remember that a joint is designed and programmed to last for at least hundred years.

Acute pain and arthrosis are able to modify posture and knee shape. Over the years, also in adults, these joints can "deform" becoming *valgus* (x-shaped knees), or *varus* (parenthesis knees, typical in soccer players) and sometimes bigger, irregular, gnarled and warmer than usual.

Let's now focus on this particular joint, which is situated between the hip joint and the tibiotarsal joint, i.e. between hip and ankle.

It is formed of two bones, **femur** (thigh) and **tibia** (leg). In front of the joint there is the **patella**, which protects the knee and facilitates the extension of the anterior muscle of the leg, multiplying its strenght. A fourth thin bone situated by the tibia, the **fibula**, completes the joint. Other important structures of the



knee are cartilage, a special protective tissue reducing the internal frictions of the joint; the two menisci, working as cushions facilitating the movements and protecting the whole knee; ligaments, increasing their stability; articular capsule (a fibrous sleeve covering and lubricating the joint).

Knee is a very exposed joint, which makes it easy for it to experience traumas such as falls, frontal and lateral bumps, sprains, etc. What is neither well-known nor easy to understand is that knees, like any other part of the body, are connected through muscles and muscular chains to the whole postural system, so to all the other joints as well. Every chain can affect the others, whether they are close to it or not.

It is also useful to specify that brain, the central station managing the whole postural system according to the information it receives from every part of the body through various receptors: teeth, temporomandibular joint, eyes, skin, inner ear (vestibule, digestive/visceral system, feet, etc.).

If one of these is suffering, the Tonic Postural System (TPS) will try to reduce the pain putting to use some “help” (muscular tension, spasms, gestures, movements, etc.) in order to alleviate the disturbance in the painful area.



Fig. 1 Raggi Method®- Pancafit®

These antalgic adjustments, called *compensations*, do “help” the suffering part, but they also alter posture leading to consequences over years in different areas of the body. For instance, it is common to feel knee pain due to *compensations* put into use by the Tonic Postural System trying to escape from a malocclusion, neck pain, visceral conditions, ankle sprain, etc.

The contrary is possible, too, as we said before: after a knee trauma the whole body will react in order not to load the suffering knee by downloading the disturb in another part of the body which can compensate for it (lumbar area, hips, shoulders, ankles, elbows, wrists, etc.).

The system of compensations explains the statement used in posturology: “Where there is pain, there is no cause, except for direct traumas”. Thanks to specific exercises of postural rebalance (Raggi Method® - Pancafit®) it is possible to find and treat the origin of the problem, which is the real cause, instead of treating the direct painful area as it is usually done.

Our knees can suffer from patellofemoral chondropathy, Osgood-Shlatter disease, gonarthrosis, chondromalacia patellae, meniscus problems, bursitis, tendinitis, patellar instability, valgus/varus condition, genu recurvatum, etc., because of postural alterations, of *adaptive compensations*.

Muscular chains, involved in any kind of postural problem, participate in almost all the skeleton-musculo-articular conditions, therefore it is necessary to consider them, to treat them and to rebalance them.

### How can we estimate the condition of our knees?

There is a simple test that you can do at home in front of a mirror: the feet close to each other, malleoli, calves and condyles touching lightly. Above and under the calves and above and under the condyles there has to be an empty space. The patellae, seen from the front, have to be at the same height, centered with the thigh and forward-oriented. The quadriceps, the anterior muscles of the thighs, have to stay relaxed while we are standing with no effort. Some people may be shocked by the fact that their knees do not respect the postural parameters, since they had always thought to have “beautiful legs”. There are of course other important benchmarks to carry out an in-depth postural analysis, but it is not possible to deal with all of them here.

### What can be done to improve the situation?

Any pain the body displays is the expression of a cause. If there are not direct traumas, it is necessary to start from a global examination of the posture and the history of traumas and pain of the person. Once the Posturologist has found the cause of the pain and the logic of how it developed, he will work out the most suitable intervention strategy made of specific exercises and maneuvers aimed at the rebalance of muscular tensions.



Fig. 2 An example of a posture in global non-compensated muscular stretching which allows a deep rebalance of muscular tensions. One of the aim is to reach a correct alignment of the knees.

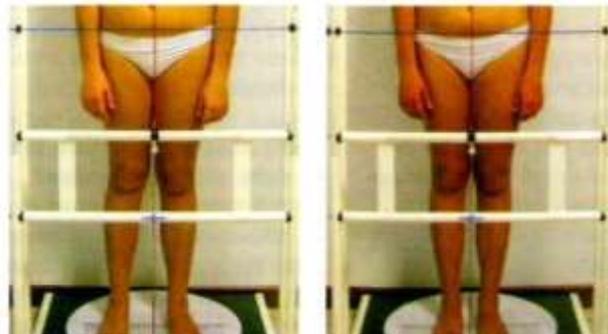


Fig. 3 Reduction of a valgus condition after 10 sessions of postural rebalance with Raggi Method®- Pancafit®.

Just by working on postural rebalance it is therefore possible to reduce and remove the pain, without directly working on it.

Many people ask us if and when it is important to strengthen muscles, especially in presence of pain in order to fight it. It is fundamental to know that muscles are the pillars of our posture; if posture is altered, some muscles are responsible for this, so it is necessary to find them and to balance their tensions. If you strengthen something that is “bent” or “altered”, it is inevitable to strengthen its problems, too. Never strengthen an altered system before having it rebalanced.

### **A patient says: I have painful knees. Is it possible to do something through postural exercises?**

Francesca, a 17-year-old student and volleyball player, comes to our Posturology Studio because of a sharp pain she has in her left knee. During her last training she was running when the knee blocked completely and remained blocked until her arrival to our studio. Any common activity, such as bending and climb the stairs, results to her very painful and almost impossible.

Investigating on her pain history, Francesca reports that two years earlier both her knees had sudden stabs and pain, especially after practicing sports. These signs were associated to light pain in the lumbar region. Moreover she remembers about a bad fall she had in the gym about four years earlier and after which she stayed on the ground for some minutes feeling she “could not breathe”. She also reports that she had to wear a retainer at the age of thirteen and that at the same time she suffered from neck pain. Analyzing her posture, her knees result valgus and internally rotated. Her back muscles are so stiff that they prevent her from touching the ground with her hands while flexing (about 20 cm left to reach the ground).

We begin the session with exercises for the rebalance of back muscles, which suffered from the fall at the gym (any muscle involved in a trauma becomes naturally stiffer as a defense, usually staying tense). At the end of the first part of the session, we repeat the flexing test and the hands can almost reach the ground and the knee results less painful, too. The second exercise, done for few time since it is quite intense, aims to work on posterior muscular chain and on posterior traversal chain (Fig.2). Repeating the flexing test, now the hands touch the ground very easily and the knee is even less painful.

When Francesca comes back, she reports that she maintained most of the benefits she had from the previous treatment. We proceed in the same way, changing only intensity and duration. Again, the result is positive. The knee is painful only when she makes a double jump.

Francesca also reports that she does not feel the sense of heaviness she had in her neck and back before. The alignment of the knees and the valgus condition have improved. During the following sessions, in respect of the global approach of this method and remembering the retainer she had to wear when she was thirteen, we introduce exercises and maneuvers specific for the temporomandibular joint. It is possible to hear little noises as she opens and closes her mouth. According to Doctor B.Bricot, any kind of orthodontics, apart from doing its job, inevitably triggers a modification in the whole postural alignment. This postural modification, an inevitable adjustment to the modifications that are taking place inside the mouth, should always be monitored, evaluated and combined with postural realignment treatments. This is the reason why nowadays Orthodontics and Odontology work together with Posturology.

By the tenth session, knee pain has completely disappeared. Francesca resumes sport without any problem, practicing volleyball three times a week plus on Sunday. Lumbar problems have disappeared and knee valgus condition results definitely reduced (Fig.3). She moves better and feels faster and more dynamic. We will work on the valgus condition for some more sessions, until we have perfectly physiologically aligned legs.

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

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