

Postisometric relaxation

Introduction

Postisometric relaxation (hereafter PIR) combines manual medicine and self-rehabilitation. It is a technique that **affects muscle spasms and overloaded muscle fibers**, especially trigger points. At the same time, it eliminates pain and prepares the muscles for subsequent physical activity. PIR achieves muscle tension that is suitable for coordination-demanding movement stereotypes. By adjusting the tension of one muscle, we will also affect the tension of all the muscles forming the functional chain. Therefore, chained muscle spasms and trigger points causing transferred pain can also be treated with this method. The therapy can be applied directly to overloaded muscle bundles and overloaded attachment points, which are the source of pain points. The advantage of the therapy is that **the patient can perform it himself** on some muscle groups after education.

General Policy

First, we will examine the ranges of active movement in the segments on which we will focus the therapy. We can palpate muscle tone and trigger points.

At the beginning of the therapy, we achieve the greatest possible stretching of the muscle fibers on which we will act - the so-called **pretension**. At the same time, we do not stretch the muscle and do not go through the pain. In this position, the patient resists the stretching of the muscle with minimal force (isometrically) for about 10 seconds while inhaling. This is followed by the instruction: "allow", which is associated with the exhalation of the patient and the relaxation of the previously activated muscle. There is a phenomenon of relaxation, **the muscle is stretched by decontraction** (not by passive stretching). The therapist waits for the patient to truly relax as long as he feels the muscle relaxes, and thus further pretension occurs. The relaxation time can last up to three times longer than the contraction time. If the relaxation is insufficient and difficult for the patient, we extend the isometric phase and vice versa. We repeat this process until we see its effectiveness. The pretension should not be in a shorter length of the muscle than we achieved during the previous relaxation. For each muscle there is a given position and the correct fixation in which the therapy is carried out, for some muscles it is possible to use autotherapy.

Facilitation Elements

We can improve PIR using various physiological subjects. These include, for example, **inhale and exhale**, which inhibit and facilitate trunk muscles depending on breathing movements. Another such element is **gaze facilitation**. We facilitate some muscles by looking up (e.g. head and neck extensors), others by looking down (e.g. head and neck flexors). We can also use gravity as part of anti-gravity relaxation, e.g. during self-therapy.

Examples of use within overall rehabilitation

Using PIR, we prepare a suitable terrain for further therapy, therefore we perform PIR before mobilization, reciprocal inhibition, before kinesiotherapy itself (to facilitate and improve the quality of movement).

Most Common Therapist Mistakes

Correcting the patient's breathing stereotype is inappropriate, the patient should breathe in his own rhythm and the therapist adapts to him. Another mistake is excessive resistance, with which the therapist tries to facilitate the muscle. We want to achieve that the muscle develops minimal force and thus only **the most overloaded muscle fibers are activated**. If there is too much resistance from the therapist, more fibers are activated and therefore the therapy is not as effective. Bad relaxation of the patient is also an obstacle in therapy, because it makes decontraction difficult. The therapist must pay attention to the patient's ability to relax and adjust the isometric phase accordingly. Use a different technique to influence muscle tension. During decontraction, the therapist does not stretch the muscle fiber, but only relaxes and relaxes the patient.

Links

Related articles

- Mechanical characteristics of muscles

References

- LEWIT, Karel. *Mobilizace měkkých tkání*. In *Rehabilitace v klinické praxi*. 2. edition. Galén, 2009. pp. 246-248.
- LEWIT, Karel. *Manipulační léčba*. 5. edition. Sdělovací technika, spol. s r. o, 2003. pp. 230-232.
- MÁČEK, Miloš - SMOLÍKOVÁ, Libuše. *Respirační fyzioterapie a plicní rehabilitace*. 1. edition. NCO NZO, 2010. pp. 60-61.

