



## Improve Effectiveness with a Five-Receptor Plan

By Allison Ishman, LMT, Fascial Link Therapy Developer

A great way to be more effective in your sessions right now is to use a five-receptor plan. What is a five-receptor plan? It's working with all five different receptors to get the most possible change from muscles, tendons, and connective tissues in each session.

So, to work kinesthetically\*, we have to work with senses and sensory experiences. Clients and therapists seek out improved quality and range of movement, so it is helpful to have a good understanding of the five receptors that serve muscle senses.

### Stretch receptors

The first sensory receptors we will look at are **muscle spindles** and **Golgi tendon organs**. Muscle spindles are important; they have their own motor-nerve system and comprise about a third of the total efferent fibers in skeletal muscle. The spindle is made of a connective tissue sheath 4-10mm long, and contains intrafusal muscle fibers. At the end of the muscle fibers are 2 types of sensory end organs, which both respond to **static stretching**.

Golgi tendon organs are somewhat simpler end organs, and are found in the musculo-tendinous junction and throughout connective tissues around tendons and muscle. They respond to **either static stretching or active shortening of the muscles**. An important difference between the two is that the spindle may cause contraction, where the tendon organ is a protective device that controls both the muscle of origin and the entire functional muscle group! Working with spindles and Golgi tendons can be accomplished in sessions by using some passive stretching activities, and taking your clients into stretches for especially tight areas.

### Pressure Receptors

The third receptors are **Pacinian corpuscles** and **Ruffini receptors**. Pacinian corpuscles are found in joint regions and the sheaths of tendons and muscles. They are large encapsulated end organs made up of several layers of fibrous tissue and nerve endings. Pacinian corpuscles are normally activated when muscles contract, and respond to **deep pressure**. They are important to detect passive movement or the position of a body part in space.

Ruffini receptors are scattered throughout joint capsule collagen fibers, and are generally more superficial. They are usually referred to as sin receptors and respond with joint movements. Even though they are not deep receptors, they are known receptors responding to pressure. The complete sensing of movement is the integrated result of the various responses of many Ruffini receptors.

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## Thermal Receptors

Thermo-receptive sensations are **heat and cold**, and while these receptors are the least understood, they are usually associated with free nerve endings. During the course of a given therapy session, the use of heat or cold may be the extra push you need to get the results you're looking for in your therapy sessions.

The levels of response to each of these types of receptors will vary from person to person. You may get better results using heat with one client that has back pain than you do with another. So, as the professional, you must use your assessment skills and adjust to the needs of each client. But, using all five types of receptors offers you the opportunity to increase your effectiveness.

I also encourage my clients to use all five receptors. I will suggest that they stretch after a hot shower, or heat, stretch and press a problem area on their own. I carry effective massage tools in my office, and recommend them to clients who will use pressure at home. They realize that my understanding of the body's systems and my therapeutic strategies can work well with their own use of a five-receptor approach at home.

Take a closer look at how you spend your session time now, and see how many receptors you are working with already. Can you increase your effectiveness by working with more receptors? With an understanding of kinesthetic receptors, we can improve our effectiveness during therapy sessions right away.

\*Kinesthesia is "a sense mediated by end organs located in muscles, tendons, and joints, and stimulated by bodily movements and tensions; also a sensory experience derived from this sense", as defined by MedLine (<http://www.nlm.nih.gov/medlineplus/mplusdictionary.html>).

DeVries, Herbert A, Housh, Terry J. Physiology of Exercise c.1994 pp 73-77

Tortora, Gerard J, Anagnostakos, Nicholas P. Principles of Anatomy and Physiology, 5<sup>th</sup> Ed. C. 1987 p. 340

*Have questions? Want to share an experience? I'd love to hear it. Email me at [ishman1@ibodycare.com](mailto:ishman1@ibodycare.com).*

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