

UNDERSTANDING PROPRIOCEPTION

Everyone at one time or the other has experienced the loss of proprioception when their arm or leg "falls asleep". You may panic initially because you've lost the sense that your extremity is even connected to your body (this input comes from the sensory receptors in your joints). You can still move your extremity, but not very well. You have also lost the sensory input from your muscles that tell you what they are doing. You can "see" your arm or leg moving but can't seem to make it do what you want when you can't "feel" it.

The proprioceptors are located in your muscles and joints. Each time that you contract, squeeze, or stretch a muscle, or put weight on or stretch a joint, you stimulate the sensory receptors that tell you what your body is doing. You don't have to pay attention to this input at all (which is why most people are unaware that they even have this sense). Your brain takes it in and processes it automatically, so you only need to focus on WHAT you want to do...not how to make your body do it. There are times, though, when you become VERY aware of the senses in your muscles and joints. When you are lifting heavy objects, your muscles are likely to make you very aware of just how heavy this object is...and when you need to put it down because the muscle is getting tired. When you are jogging or jumping rope, you become very aware of the pounding feeling each time your feet contact the ground. The senses in the joints let you know if you are coming into contact with the surface safely and not too hard...so that you can make an adjustment before you twist your ankle or injure a tendon. Injuries often happen when we don't pay attention to our proprioceptors.

Imagine what it might be like to NOT get feedback from your muscles and joints...to not know what your body is doing or how to make it do what you want. Coordinating your movements would be very difficult. You would have to consciously think about controlling your movements, which would make it difficult to stay focused on what you are trying to accomplish. You couldn't even play without it being hard work...or a total disaster as your body simply moves with little coordination between intent and action. Even your speech might be garbled, since your lips and jaw and tongue are also muscles that provide proprioceptive input to allow us to clearly articulate our words...and chew our food.

It is very calming and comforting to each of us to know that our bodies can handle all the complex movements we need to get through a day, without any thought from us (unless of course you are learning a new motor action). Think about

the massage that felt so good, and relaxing. That was stimulation to the proprioceptors by squeezing them. Think about that good, relaxed, feeling you have after exercise (assuming you haven't overdone it...then your muscles and joints are likely to complain quite loudly). Think about what it might be like to NOT have that good feeling about one's body. Would it make you anxious if you never felt you had control over your own body? Why is it that it always feels more stimulating when the hairdresser does your hair than when you do it? The input from the touch to your hair is stimulating. The input from your proprioceptors is calming (or supposed to be). The two together balance each other out, so you don't feel the stimulation of just the touch as much. Think what it must be like to be touched, or come into touch contact with one's environment, and NOT have the calming influence of the proprioceptors to help you modulate it so that you understand what is happening.

The proprioceptive sensory system is the least understood sense we have, but, as you can readily see, the most important to our ability to function easily and comfortably in our world.