

Sensory Integration for Pre and Post-Surgery

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Sensory integration (SI) refers to how people use the information provided by all sensations coming from within the body and the external environment. We usually think of senses as separate channels of information, but they actually work together to give us a reliable picture of the world and our place in it. The human brain uses information about sights, sounds, textures, smells, tastes, and movement in an organized way that will create and assign meaning to sensory experiences. Thus, one will know how to respond and behave accordingly.

When we move, some muscles must contract while others relax. This happens automatically. The central and peripheral neurological systems drive movement commands through sensory and reflex behaviors. The sensory system takes information as the body moves through space; changes position, posture, speed; and responds to gravity and different forms of tactile feedback. The motor system creates and controls tension in stabilizing and moving muscles. It responds to sensory feedback with gross or fine motor control.

For most of us, sensory integration occurs without conscious thought or effort. For others, sensory integration happens inefficiently. A sensory processing disorder (SPD) is a condition in which the brain has struggled to receive and respond to the information that comes in through the senses. The sensory integrative approach is vital to treat SPD. This approach is guided by one important aspect—one's motivation in selection of the activities and well-regulated sensory systems can contribute to important developmental outcomes in the social-emotional-physical communication, self-care and cognitive-adaptive skill development.

However, when we stop moving, the unused muscle and bone atrophy, or waste away. This is exactly what happens to chronic pain populations in need of orthopedic surgery. They would stop normal activities and cut back on the amount of movement and exercise; they lose the muscle tone and strength, and flexibility becomes limited. As a result, the pain symptoms progress more rapidly (Elrod, 2002).

To maximize positive outcome from orthopedic surgery, patients are encouraged to participate in pre and post-surgery conditioning/rehabilitation. Exercise improves muscle tone by increasing the flow of blood into the tissues. It improves flexibility, increases healing endorphins in the immune system, enhances the production of T cells necessary for an efficient immune system, and stimulates the secretion of serotonin and the growth hormone (imbalances of serotonin and growth hormone have been linked to chronic pain).

The exercise is a premeditative physical activity and one of the key components in a healing regimen for those in chronic pain and impacts the individual mentally, physically and emotionally.

Health care professionals are working with patients to cure them of specific health problems.

Health fitness professionals are working with clients to prevent health problems via maintenance and to improve already existing fitness/ overall health condition.

For example, we have a case: Patient/ client with a knee replacement

Health care professional will follow protocol to rehabilitate (rehabilitation phase) of patient's knee function.

Health –fitness professional will work with client (the prevention phase) on fitness conditioning and training of all relevant parts of the body, before the surgery, but not the knee with replacement, This will provide a measure of protection and faster health recovery for the future.

This is a very complimentary approach in the spirit of integrative medicine to combine the best of both professions. Involvement of health fitness professionals have to be recommended and approved by the medical doctor overseeing/treating the case.

The goal of a pre and post- surgery exercise prescription is to individualize an exercise program through functional fitness and to create positive physiological responses in the patient's/client's body. The exercise program can be facilitated by a "one on one" basis (physical therapy session/ personalized conditioning session), or in a group setting (land or water based).

The purpose of the SykorovaSynchro Method is to structure an exercise program with the use of sensory integration/mental imagery, somatic movement, and awareness exercises to enhance communication between the brain and the rest of the body. It helps to achieve positive changes in one's life - a new sense of self awareness and control, stress reduction, revitalization of energy flow, postural alignment and flexibility, circulation, sensory-motor learning ability and creativity. The SykorovaSynchro Method has three stages/ progressive levels:

1. To balance function of sensory-motor cortex via mental imagery (sometimes called visualization, guided imagery), progressive muscular relaxation and control breathing. Result is relaxed but alert state of awareness.
2. To enhance sensitivity/ awareness of somatic movement (movement regulated by feeling, mental imagery, sensation). Result is ability to perform somatic/ intuitive movement.
3. Ability to perform conscious exercises – via mental imagery, sensation. Positive result is in neuro muscular conditioning/ function - postural improvement, balance, coordination, flexibility and agility.

A water environment is an ideal medium for pre and post –surgery physical strengthening and improving sensory integration and by this brain function at any age

Resources:

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4. Sensory Integration International/ The Ayres Clinic. 1514 Cabrillo Avenue, Torrance, CA 90501-2817.
5. Sensory Integration Dysfunction.
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