



YOUR HEALTH AND WELLNESS NEWSLETTER

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Spasticity

What is Spasticity and How is it Managed?

In the rehab world we hear the term *spasticity* a lot. Spasticity is defined by increased muscle tone and exaggerated, jerky movements. Other symptoms that may occur include weakness, stiffness, pain, abnormal posture, bone and joint deformities, and contracture. Spasticity is one of the most common disability and bothersome complications affecting the central nervous system seen with neurological conditions such as spinal cord injury, stroke, traumatic brain injury, cerebral palsy, and multiple sclerosis. Spasticity can occur at rest and during efforts to initiate movement, challenging rehabilitation efforts for neurological recovery, hampering functional independence, and diminishing quality of life. Spasticity management is a major focus in rehabilitation in order to achieve functional independence, promote neurological recovery, and ultimately improve quality of life. There are various interventions that can be utilized, but as always, each individual responds to modalities differently. This is why, there is no "cookie cutter" formula that exists for one diagnosis, and there is not a simple, quick fix.

With spasticity, hyperexcitability of reflexes occurs when there is an increase in muscle tone. What we see are spasms - prolonged, uncontrolled contractions of skeletal muscles. Many things can affect tone such as prolonged immobility, temperature changes, pain, too much tension applied to a structure/joint, infection, and more. This should be taken into account before executing different treatment approaches and modalities. Treatment approaches to manage spasticity may include a combination of stretching, bracing/orthoses, strengthening, biofeedback, electrical stimulation, cryotherapy, thermotherapy, and/or vibration.

Stretching is the most commonly used treatment approach across the continuum. There are several different variations of stretching that can be carried out with consideration on how much force or tension is applied to structure, the speed at which the exercise is carried out, the amount of time the stretch is carried out, and how often. There are

COMMUNITY EVENTS NEAR ROCKFORD

Caregiver's 3-Part Series LBBRG

Saturday 10/5/19 &
10/14/19 9 am-12 pm,
email Andrea
agubbini@lbbrehab.com to
RSVP or request more info

Common Threads Afternoon Hike @ Pickerel Lake

10/19/19 @ 2:00 PM
Please RSVP via email
scstacy@lbbrehab.com;
njolson@lbbrehab.com

Wheeling Warriors Meetup LBBRG

**Will resume in*
November

different techniques to be considered when carrying this out as a home exercise program and should be carefully guided by a skilled therapist to achieve the best outcomes for the individual. Stretching is especially important in the prevention of contractures. For example, children who experience cerebral palsy and spina bifida are at risk for progressive contractures, which will impede their development. "You can't make spasticity go away completely, but what you can do is stay on top of managing it with a home program" says Anna, Physical Therapist at LBBRG.

In addition to stretching, an orthotic may be used to help position and/or restrict movement of an area for spasticity management. It is important to have a proper fitting by an orthotist and to wear as recommended by your therapist.

Strength training in the neurorehabilitation setting has been proven to help with function and quality of life in individuals with upper motor neuron syndrome (such as stroke, spinal cord injury) without adverse effects on spasticity. A strength training program should be executed by a trained therapist in the neurorehabilitation setting, because a therapist best understands how spasticity needs to be modulated and how to stimulate the nerve accurately to achieve a proper muscle contraction, without compensation.

There are many different approaches including Progressive Resistance Strength Training and muscle re-education. Progressive Resistance Strength Training involves small amount of repetition with gradual increase in load as muscle strengthens. Muscle re-education involves a progression from passive/assisted movements to active/resistive movements. Using manual resistance is one way, such as sitting unsupported, standing against the force of gravity. For example, an individual can be supported

by a harness over the treadmill, while therapists assist with movement patterns of the lower extremities and support the trunk. This stimulates the loading receptors and calms spasticity. Weight bearing exercises may be taught by a therapist to the individual and caregiver to help with managing tone at home. In LBBRG's setting, exercises including functional electrical stimulation are paired with a functional task-specific activities. Functional electrical stimulation restores reflex modulation during dynamic, coordinated movements with stimulation to the peripheral nerves, such as during stepping and walking.

Biofeedback is also incorporated to help with conscious control over movement patterns. Biofeedback involves visual or auditory cues. Studies have suggested, when incorporating biofeedback into treatment, spasticity levels are reduced.

Cryotherapy, is defined as applying cold to an area of muscle. It can temporarily decrease spasticity in 5 minute increments (average application is 20 minutes), with relief lasting up to an hour. This modality may be used prior to stretching and/or exercises. At the recent Caregiver's Series, Megan Roe, Physical Therapist and Dereck Chavis, Occupational Therapist presented an application of this with a "Do It Yourself" method. Take a Dixie cup, fill it with 2/3 of water and freeze, then peel off the bottom of the cup, rinse in water, and glide over the affected area from proximal to distal. As always, take caution when applying to skin.

On the contrary, in the aquatic setting heat can be used to help decrease spasticity by reducing tension on the muscles and joints.

Whole body **vibration**, is another modality utilized to quiet down tone, and strengthens muscles simultaneously.

Spasticity affects individuals who have neurological conditions in different ways.

COMMUNITY EVENTS FOR TC

PEDIATRICS OPEN HOUSE LBBRG

10/10/19 4:30-7:00 PM

PWR! Class LBBRG

Weekly Thursdays
4:00-5:00 PM

Caregiver's Table LBBRG

10/15/19 4:00-5:00 PM

Fun and Games LBBRG

10/15/19 4:00-5:00 PM

PNN Support Group

10/1/19 6:00 PM MCHC
10/23/19 10:00 AM TC
Senior Center

Susan Mast ALS

Bethlehem Lutheran
Church
10/9/19 2-3:30 PM

GT Stroke Club

Presbyterian Church
10/9/19 2:30-4:30 PM

Amputee Support

Group Disability
Network of Northern MI
10/9/19 5:45-7:00 pm

There are many evidence-based treatment approaches to manage spasticity, inside and outside of the therapeutic setting. The effectiveness of these treatment modalities may vary from person to person and are therefore tailored to the individual to enhance function, improve quality of life, and promote neurological recovery.