Lumbar Stabilization Why and How?

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Spine stabilization or "core strengthening" are commonly used terms by health and fitness professionals, patients and clients alike. In practice how do the terms translate into effective exercise? What are the components to a stabilization program? Why is it important? Answering these questions will help your patients and clients succeed in reaching their goals.

What is spinal stabilization?

Lumbar stabilization is the ability to transfer loads, disassociate movement of the extremities from the spine and perform motion that is smooth and effortless. This involves muscle balance, coordination, flexibility endurance and strength. The goal of a lumbar stabilization training program is to facilitate function, resolve and prevent symptoms thru education and progressive exercise. The phases of lumbar stabilization guide the patient from basic to advance exercises. The education component focuses on making the patient more aware of their posture and movements and how to control their body position minimizing their pain and symptoms. Promoting lifelong fitness and self management is the key to preventing future back pain.

What are the phases of lumbar stabilization?

Depending on author and reference there can be several phases however there are 3 basic phases. Phase one focuses on specific localized stabilization training in which the client learns to find and maintain neutral, begins abdominal draw in maneuver (ADIM) and multifidus isometrics in multiple positions. Phase two builds on phase one with general trunk strengthening while maintaining neutral and activating local muscles with gradual increase in challenges to spinal position control. Phase three transitions the patient into functional and sport or work specific training. This last phase if missed can lead to reoccurrence of symptoms as the client resumes normal activity

What is the starting position for the exercises?

You will start each of the exercises in neutral position. As the exercises progress your ability to maintain neutral will be challenged, always maintain neutral remembering the practice does not make perfect, perfect practice makes perfect.

What is neutral and how do I find spinal neutral?

Spinal neutral is the position where the spine feels the most stable and there is the least amount of discomfort. To find neutral explore pelvic motion by rotating it anteriorly creating increased lumbar lordosis and posteriorly slouching the spine until there is a sense of a balanced, pain-free, stable spine. Keep in mind the neutral position may be close to perfect postural alignment but each person is different and "neutral" will be influenced by body type, current impairments, pathology present, and symptom irritability.

Why is the Neutral position so important?

The neutral position minimizes stress to the spinal structures allowing for healing. The muscles important to mainlining neutral and stabilizing the spine are the same. In the neutral position there is an increased muscle firing capability of the body's internal corset, the transverse abdominus muscle, decreasing shear and torque forces through the spine.

How often do I need to do theses exercises?

DAILY!

How long should I do each of the exercises?

Because most of the muscles involved in spinal stabilization are designed for endurance they must be trained for endurance, therefore the goal should be to perform each exercise continuously up to 3 minutes.

How long should I do the exercises each day?
An exercise program should start at 30 minutes and work up to a 60 minute session.

How should I breathe with the exercises?
Exhale (breathe out) on effort. Avoid holding your breath because in doing so there is an increase in blood pressure and increased pressure on the spine**.**

Can I do just pool exercises?
Although the water is an ideal environment for stabilization exercise progression, as humans we function on land and against gravity therefore our bodies should be trained to handle these stresses. Combining a land and water exercise program through the phases of spinal stabilization is recommended.

How quickly can I expect results?
Each person will vary and often immediate results are noted with improved position and movement awareness however for symptoms and pathology chronic in nature it can take up to 3 months to realize the results of the exercise.

What else do I need to do to get better?
Understand there is not magic pill, <u>you</u> must be motivated and willing to dedicate the time required for training. Life long healthy habits including balanced diet, consistent exercise, and activity modification are essential. Success lies in realistic goal setting and on-going communication with your therapist. The more you learn about your body and why the stabilization exercises are beneficial the greater you will be able to manage your pain and be successful with the program.

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Example Exercises through Phases of Spinal Stabilization

Pool Exercise	Land Exercise
Phase 1	
Chest deep water walking forward, backward and side step Maintain neutral with UE movement slow and medium speeds. Start leaning against pool side then progress to mid-pool without support ADIM with exercise	Finding neutral in supine, sitting, quadruped and standing. ADIM various positions Mutifidus isometrics (prone, side-lying, quadruped) * able to perform ADIM 30 reps with 8 second holds can advance to phase 2
Phase 2	
Basic Chest deep water walking and exercise: add LE, increase speed and resistance. Deep water: T-hang- SKTC, DKTC, Hip IR/ER, hip abd/add. ½ diamond, w/ wo kick leg stretch sequence dips leg scissors trunk circles pendulums forward and backward bicycle with symmetrical UE	Supine hook-lying: bilateral arms, reciprocal arms, heel slides, bent knee fall outs, crunches, obliques Bridging: lift and lower and holds Prone: glut contraction, single leg extension, single arm lift. Quadruped arm and leg reaches, weight shifts Standing arms overhead, lunges, wall slides Side-lying hip abduction Side support knees flexed
Advanced x-ski seated barbell fwd/ bwd/ arm sequence jacks/ reverse jacks pendulum kicks DKTC to long-sit Long-sit and row Standing Barbell: travel fwd/bwd, squats, squat turns	Supine reciprocal hip and knee flex/ extension Dead bugs w/ wo weight Single leg bridging Prone opposite arm and leg Quadruped opposite arm and leg Plank Side support knees extended Add physioball, foam roller, BOSU ball etc.
Phase 3	
Step over barbell Side tucks Shoot through front to back, side to side Running on side Power walk Push down's with jog Hurdles LE breastroke Run supine to prone to supine Stand on barbell ball toss	Increase aerobic exercise Circuit and weight train Sports specific/ function specific Must include rotation type movement control