



Functional Evaluation



Squat



- o Client stands with feet shoulder width apart & squats down as far as possible
- o Look for point of break when "buttocks tuck under"
- o **Lack of balance or instability** - decreased proprioception or weakness in gluteus maximus
- o **Dorsiflexion in the toes** - indicates tight calves and eccentric weakness in tibialis anterior
- o **Hip dropping** - weakness in gluteus medius
- o **Hip hiking** - weak TFL and/or right QL
- o **Hyperpronation of the foot** due to weakness in the intrinsic foot muscles and lack of proprioception
- o **Knees knocking** - hyperpronation
- o **Heel raise** - tight calves/posterior chain
- o **Tibial torsion** - weakness of popliteus
- o **Pelvic tilt** - tight psoas and hamstrings
- o **Patella femoral shear** - tight quad, psoas and weak gluteus maximus
- o Weak proprioception, balance, hip hinge, hip mobility
- o If quads initiate movement with **little hip flexion**, correct by stretching hip flexor and quads with a warrior lunge, standing quad stretch, glute bridges, side hand walk, supine ball tucks, and foam roller squats
- o **Recommended exercises:** adductor wall stretch, foam roll adductors & hamstrings, side hand walks, clams, and foam roller squats

Toe Touch



- o Have client reach for their toes with straight legs
- o Instruct them to hinge, rather than bend. Measure distance from the floor
- o **Rounding of back** - poor flexibility in the posterior chain
- o **Pain or discomfort**

Hip Hinge



- o Stand with feet shoulder width apart and knees slightly bent
- o Hold a pole from your upper back to buttocks/sacrum
- o Bend from the hips without letting the pole separate from the body
- o If pole moves from body, this indicates **spinal flexion** which increases risk of disc and soft tissue injury
- o Stay in a safe range of motion
- o **Rounding lower back:** tight hamstrings, gluteal fascia, psoas
- o **Going up on toes:** poor core stability, poor motor control, tight posterior chain
- o **Rounding upper back:** tight pecs and lack of motor control throughout spine
- o **Pain:** can be a disc injury or myofascial tension

This is an exercise that every client must master!!!!!!!

One-Leg Stand



- o Test for Gluteus Medius. Gluteus Medius is very important in cases of low back pain. Client with LBP will almost always have a weak gluteus medius on opposite side
- o Stand on 1 leg and hold position. Client has to have the foot high enough so that it isn't touching the floor
- o Legs should not touch each other
- o This should be repeated with eyes closed
- o **Pelvic shifting** - hip dropping
- o **Hyperpronation of foot**
- o **Pelvic swaying**
- o **Knee shaking**
- o **Work** on balance, proprioception, foot stabilization, core

Lunge



- o Start with feet shoulder width apart. Step forward with front knee bent and lower back knee toward floor keeping neutral spine. Then return to start.
- o **Knee adduction** - tight adductors, weak gluteus medius and TFL
- o **Knee shaking** - weak quadriceps, glutes and hamstrings
- o **Pronation of foot** - weak intrinsic foot muscles and poor proprioception
- o **Leaning forward** - tight psoas, weak core
- o **Pause on return** - weak posterior chain
- o **Knee pain**
- o **Can't reach floor with back knee** - tight psoas and quad
- o **Excessive knee over toe** - lack of control
- o **Lateral lean** - weak core, neurological dysfunction
- o **Work** on balance, proprioception, foot stability, hip mobility, core & lower body strengthening

Wall Angel



- o This test reveals shoulder and thoracic immobility, low back and neck dysfunction
- o Client moves feet a foot away from the wall. Shoulders are put into abduction and externally rotated.
- o Slide arms downward keeping entire back flat against the wall then back to start position
- o **Chin poking** – tight SCM and lack of T4 extension
- o **Cannot keep pelvis against wall** – lack of thoracic mobility
- o **Cannot get forearms and hands against wall** – tight pecs and deltoids, lack of T4 extension
- o Work core & scapular stability as well as shoulder and thoracic mobility.
- o **Recommended exercises & stretches to strengthen** – stretch pecs & delts, banded external rotation, brugger, serratus push-up

Push-up



- o This test will reveal shoulder insufficiencies, muscle and/or nerve imbalance, lack of core strength
- o **Delayed scapular movement** – tight rhomboids and traps, weak serratus anterior
- o **Scapular elevation** – weak depressors and hyperactive upper trapezius and elevator scapulae
- o **Scapular winging (full medial border)** – weak serratus anterior/long thoracic nerve dysfunction
- o **Scapular winging (inferior angle)** – weak rhomboids/dorsal scapular nerve dysfunction
- o **Scapular adduction** – tight traps and rhomboids, weak pec major and anterior deltoid
- o **Poor lumbopelvic stability** – weak core
- o Work scapular, rotator cuff, & core stability
- o **Recommended exercises:** serratus push up, knee push up, plank, cat camel, brugger, depression, and work on pelvic tilting & thoracic mobility

Plank



- o Face down on mat resting on the forearms, palms flat on the floor.
- o Push off the floor, raising up onto toes and resting on the elbows. Make sure elbows are underneath shoulders.
- o Average time is 45-60 sec.
- o **Look for lumbar hyperextension** – weak core
- o **Inability to extend hip** – tight psoas
- o **Shoulder shrugging** – weak core and poor shoulder stability
- o **Kyphosis** – tight pecs and lack of T3/4 extension
- o **Shoulder pain**
- o **Recommended exercises:** knee planks, foam roller dead bug, chops, glute bridge, brugger and work on pelvic tilting & thoracic mobilization

Foam Roller Supine Extremity Raise



- o Place roller along spine
- o Plant both feet on floor with knees bent
- o Pick up one foot and stabilize with the other
- o **Knee or trunk shaking:** weak glutes, core, calf and/or lack of proprioception
- o **Can't hold position:** All around weakness/imbalance

Fukuda Unterberger



- o Testing the tonic neck reflex
- o Have client cover their ears/eyes
- o March 30 steps, if they turn more than 30 degrees then it's positive
- o **Positive** indicates balance and proprioceptive dysfunction
- o **Recommended exercises:** proprioceptive movements, chin tucks with tongue on the roof of the mouth, intrinsic foot muscle activation, balance on one-leg, and do foam roller exercises

Respiratory Patterns



- o Lying down with hand on stomach and hand on chest,
- o Ask client to take a deep breath.
- o Notice where they breathe. If they **breathe from the chest** they have poor core control and will have a harder time squatting with a bar on their back.
- o Indicates inhibition of the diaphragm. Diaphragm is important part of the core, so if it is weak, core strength cannot be optimal.
- o **Practice** bracing & breathing on back with knees and hands 90 degrees

One-Leg Squat



- o Client squats down as far as possible on one leg.
- o **Lack of balance or instability** - decreased proprioception or weakness in gluteus maximus
- o **Hip dropping** - weakness in gluteus medius
- o **Hip hiking** - weak TFL and tight QL
- o **Hyperpronation of the foot** - weakness in the intrinsic foot muscles and lack of proprioception
- o **Heel raise** - due to tight calves
- o **Tibial torsion** - weakness of popliteus
- o **Knees knocking** - hyperpronation
- o **Pelvic tilt** - tight psoas and hamstrings
- o **Patella femoral shear** - tight quad, psoas and weak glute max
- o **Recommended exercises** - side band walks, glute bridge, clams, split squat, banded squat, supine ball tuck, airplane

Hip Extension (Prone Hip Raise?)



- o With client face down, have them extend the hip back for a few controlled reps
- o Erector spinae activation at the initiation of movement
- o **Pelvic rotation**
- o **Scapulo-thoracic movement**
- o **Lumbo-sacral hyperextension** - compensation patterns
- o **Decreased hip extension** - tight psoas
- o **Compensating with knee flexion** - hamstring overload, weak gluteus maximus and tight hip flexors
- o Work hip extension, hip mobility, core, proprioception
- o **Recommended exercises & stretches**: stretch psoas & quads, perform the following: glute bridge, side band walk, clams, airplane

SQUAT

Heel Raise ☐ _____
Toe Raise ☐ _____
Knee Knocking ☐ _____
Rounded Back ☐ _____
Pronation ☐ _____
Hip Flexion/Forward Lean ☐ _____
Notes: _____

WALL ANGEL

Pain ☐ _____
Can't Keep Shoulders Flat ☐ _____
Can't Keep Spine Neutral ☐ _____
Hands Move ☐ _____
Notes: _____

ONE LEG STAND

Time Left: _____ Right _____
Pelvic Shift ☐ _____
Knee Shaking ☐ _____
Eyes Closed Time: _____
Lt _____ Rt _____
Notes: _____

HIP HINGE

Rounds back ☐ _____
Maintains neutral spine ☐ _____
Notes: _____

LUNGES

Heel Raise L ☐ R ☐ _____
Pronation ☐ _____
Torso Lean ☐ _____
Knee Shaking L ☐ R ☐ _____
Pain ☐ _____
Notes: _____

PLANKS

Low Back Pain ☐ _____
Pelvis Drop ☐ _____
Thoracic Flexion ☐ _____
Time: _____

PARADOXICAL BREATHING/RESPIRATORY PATTERNS

From Chest ☐ _____
From Diaphragm ☐ _____
Notes: _____

PUSH UPS

Reps: _____
Shoulder Elevation ☐ _____
Lumbar Extension ☐ _____
Scapula Winging ☐ _____
Scapula Retraction ☐ _____
Pain ☐ _____
Notes: _____

TOE TOUCH

Rounds back ☐ _____
Maintains neutral spine ☐ _____
Pain ☐ _____
Notes: _____

PRONE HIP RAISE (HIP EXTENSION)

Hip Rotation L ☐ _____
Hip Rotation R ☐ _____
Knee Flexion ☐ _____
Firing Erectors ☐ _____
Pain ☐ _____
Hamstrings ☐ _____
Notes: _____

SUPINE FOAM ROLLER

Shaking Core ☐ _____
APT/PPT ☐ _____
Can't Stay on Roller ☐ _____
Knee ☐ _____
Notes: _____

ONE LEG SQUAT

Tibial Torsion L ☐ R ☐ _____
Depth ☐ _____
Pronation ☐ _____
Hip Drop L ☐ R ☐ _____
Knee Shaking L ☐ R ☐ _____
Notes: _____

FUKUDA UNTERBERGER

Left: _____
Right: _____
Notes: _____

VELE'S TEST

Rounds back ☐ _____ Falls ☐ _____
Maintains neutral spine ☐ _____
Delayed grip ☐ _____
Notes: _____

SIDE HOP

Pain: ☐ _____
Knee Shaking: L ☐ _____ R: ☐ _____
Torso Lean: ☐ _____

VLEEMING'S ACTIVE

Pain: ☐ _____
Opposite Leg Lifting: ☐ _____
Lumbar Rotation: ☐ _____

CROSSOVER

Can't keep neutral spine ☐ _____

Scapula Winging ☐ _____

Hip Rotation: ☐ _____

Elevated Traps: ☐ _____

Notes: _____

SIDE PLANK

Shoulder Pain ☐ _____

Pelvis Drop ☐ _____

Lower Back Hyperextension ☐ _____

Time: _____

POSTURAL ASSESSMENT

Front: _____

Back: _____

Side: _____

Imbalances: _____

Notes: _____

GAIT

Front: _____

Back: _____

Side: _____

Ipsilateral arm and leg swing _____

Difficulty Initiating Movement _____

Notes: _____

LUMBAR ROM

Pain: _____

Flexion: _____

Extension: _____

Rotation: _____

Notes: _____

SHOULDER ROM

Pain: _____

Abduction: L _____ R: _____

Flexion: L _____ R: _____

Extension: L _____ R: _____

Internal Rotation: L _____ R: _____

Notes: _____

