

Congratulations!!!! You are now the owner of the new EXERTOOLS MAT Tubing System, a multi-functional activity specific training system for therapeutics, sports and personal fitness.

The MAT Tubing System, the brainchild of Mike Voight PT, DHSc, SCS, OCS, ATC, FAPTA and Tab Blackburn Med, PT, ATC addresses the training, conditioning and rehabilitation from the world of science instead of that of a gimmick. This system can be used for training the physiologic basics: **Mobility** (range of motion/movement in all and any joint, **Balance** (maintaining a controlled posture), **Stability** (ability to dynamically lock and anchor from the correct muscles and joints), **Strength** (the highest production of force at one moment in time) and **Speed** (the rate at which a body or body part is able to move with or without controlled acceleration and/or deceleration).

GENERAL PHILOSOPHY

The EXERTOOLS goal is that you have fun and get healthier in a safe and beneficial environment, while working to improve your activity of choice.

The basic goal in rehabilitation and fitness is to enhance one's ability to function within a chosen environment and to better perform the specific activities of daily living better from day to day.

MOBILITY: One can only experience the value of controlled static and dynamic stability without mobility. Mobility exercises are designed to address the flexibility of each joint separately and collectively. Their objective is to mobilize and train the joints, ligaments and muscles. Each is also a "lead up" to strength and speed exercises.

BALANCE: The ability to maintain correct / desired postural alignment through dynamic stabilization is essential to improving any movement pattern.

STABILITY: Stability exercises are anchoring exercises, which are designed to build the functional relationship of each joint and related muscles. The greater the muscles ability to work separately and collectively with related joints, the greater the protection of the protection of the body throughout the performance of any movement pattern.

STRENGTH: is defined as the tension within a muscle at any one time. Increased, controlled dynamic strength allows greater muscle fiber contractility per degree of movement.

SPEED: is defined as the ability to move swiftly yet with perfect form. Speed masks movement flaws thus the progress from slow controlled movements to fast controlled movements is paramount. Mobility and stability must first be established before speed work is performed.

This system allows you to utilize your resistance tubes in an easy and efficient way. The MATS tubing is high quality and multifunctional in nature and with the use of the Activity Column, will allow any number of resistance activities from various positions as well as lifting positions with the two shelves. The MATS tubing design was based on what you the user have asked requested. They are stronger, offers more and better stabilizing straps, and much more comfort in use.

The MAT Tubing System is comprised of five parts (starting from one end of a tube, half of a mirrored image):

1. Two 10 inch long door anchor / handle
2. 5 foot long tube (five different resistances)
3. 24 inch long tube covering foam
4. Two 10 inch long door anchor / handle around tube covering foam
5. 5 inch long foam grips at each end of the tube

MAT Tubing System Inspection (to be executed before each and every use)

1. Check the MAT Tubing System for any tears
2. Check the MAT Tubing System for any cracks
3. Check the MAT Tubing System nylon webbing for any wear and fraying
4. Check the MAT Tubing System door and loop buckles for any wear
5. If any defects are evident do not use the unit and call EXERTOOLS for service and/or a new unit at 1-800-235-1559 x707.

Attaching the MAT Tubing System: The MAT Tubing System is designed to attach within a door jam, to a door knob, around a pole or fence, around a foot and/or to an EXERTOOLS Activity Column.

Within a door jam:

1. Open the door so it opens away from you.
2. Lay the anchor's webbing around the top, bottom or side (middle) of the door so the distant buckle is on the other (opposite) side of the door. When placing the unit on the side of the door it is best to slide it between the door and door jam opposite the doorknob.
3. Close and lock the door.
4. Pull on the unit to make sure it is secure.

To a doorknob:

1. Close and lock the door.
2. Open the loop of nylon webbing so it can easily slide over the doorknob.
3. Tighten the loop around the doorknob
4. Pull on the unit to make sure it is secure

Around a pole (or small tree trunk, a tree limb, a fence, a park bench, etc.)

1. Make sure the pole is secure and will not move once exercising is started
2. Slide the unit around the pole
3. Open the loop of the nylon webbing
4. Slide the end of the unit through the opening of the loop
5. Pull the grip and tubing all the way through the loop so the unit tightens around the pole

On an Exertools Activity Column

1. To mount the Activity Column find a suitable open area that will allow for versatility of standing, kneeling, quadruped, and horizontal activities.
2. Using a drywall with metal studs as an example, locate the studs with a stud finder which are usually 16 inches apart. Cut 2 18" length 2x4's and center them across the studs to mark where you want to drill. You will want to place your 2x4's close to the bottom and close to the top of the column. Use your level when marking these drill points.
3. With the 2x4's on the floor, center the angle iron brackets at the bottom of the 2x4's and mark where 1 $\frac{1}{4}$ inch wood screws with washers are to be placed and pre-drill.
4. Find the center of the stud marks on your 2x4 and drill half way from the top of the bracket and the top edge of the 2x4 with a $\frac{1}{2}$ inch drill bit.

5. Locate and drill through the drywall and metal studs with a metal drill bit. Don't forget to use your level to make sure the drill holes are level.
6. Place 3 inch long and $\frac{1}{2}$ inch wide sleeve anchors through the 2x4 and into the wall. Tighten the sleeve anchors snugly but don't overtighten.
7. Attach the angle iron bracket to the bottom of the lower 2x4 with wood screws and washers and place the column in the sleeve with the holes on the column to the right. Slide the moveable slider over the column with the pin adjuster to the right down to mid-level. Slide the top angle iron bracket on the column and place it over your pre- drilled holes on the top 2x4. Use your level to see that the column is vertical and then attach the bracket to the 2x4.
8. The activity column will have a metal loop on each of the brackets at top and bottom. The adjustable slide has a metal loop also. Use a carabiner on each metal loop to attach the MATS tubing.
9. If you are using the MATS resistance bands in a door. The MATS has safe and easy to use blockers that will securely hold the MATS in place. MATS has several blockers on each tube for full versatility.

RESISTANCE LEVEL(S): There are a few ways to increase or decrease the resistance levels of the unit. To increase the resistance one can move further away from the securing point of the nylon webbing and/or move one's hands towards the end of the grip. To decrease the resistance one can move closer to the securing point of the nylon webbing and/or move one's hands further away from the end of the grip.

The unit is also available in five different resistances.

SO LET'S GET STARTED

MAT Tubing System Exercises...a beginning

*(Anchoring on door, chain linked fence, tree and/or Exertools
Activity Column with a carabiner or Exertools Tubing Door Anchor)*

1. Abduction Deep Squat with MATS
2. Active SLR with Core Activation with MATS
3. Assisted Active SLR with Core with MATS
4. Assisted Crunch with MATS
5. Assisted Deep Squat with MATS
6. Assisted Dorsiflexion/ Resisted with MATS
7. Plantarflexion Wall Slides with MATS
8. Assisted Hip Abduction with MATS
9. Core Activation with MATS
10. Assisted Lateral-Resisted with MATS
11. Medial Single Leg Hip Rotation with MATS
12. Assisted Medial-Resisted with MATS
13. Lateral Single Leg Hip Rotation with MATS
14. Assisted Mountain Climber with MATS
15. Assisted Plantarflexion/Resisted with MATS
16. Dorsiflexion Wall Slides with MATS
17. Assisted Reach, Roll, and Lift with MATS
18. Assisted RNT Prone to Supine with MATS
19. Roll: Lower Body Lead with MATS
20. Assisted RNT Prone to Supine with MATS
21. Roll: Upper Body Lead with MATS
22. Assisted RNT Supine to Prone with MATS
23. Roll: Lower Body Lead with MATS
24. Assisted RNT Supine to Prone with MATS
25. Roll: Upper Body Lead with MATS

26. Assisted Single Leg Bridge with MATS
27. Backward Diagonal Lunge with Core Activation with MATS
28. Backward Lunge with Core Activation with MATS
29. Backward Lunge resisted at shoulder with MATS
30. Double Leg Bridge with Core Activation MATS
31. Double Leg Deadlift with MATS
32. Forward Lunge: Valgus Correction with MATS
33. Front Deep Squat with MATS
34. Half Kneel Alternating Flexion/Extension with MATS
35. Half Kneel Chop with MATS
36. Half Kneel D1 Extension with MATS
37. Half Kneel D1 Flexion with MATS
38. Half Kneel D2 Extension with MATS
39. Half Kneel D2 Flexion with MATS
40. Leg Lowering with Core Activation with MATS
41. Lunge Stance Chop with MATS
42. Lunge Stance Lift with MATS
43. Lunge Stance Press with MATS
44. Lunge Stance Pull with MATS
45. OTIS Progression with MATS
46. Overhead Deep Squat with MATS
47. Resisted Dorsiflexion Ball Roll with Core Activation with MATS
48. Resisted Forward Lunge with MATS
49. Resisted Hop Turn with MATS
50. Resisted Lateral Lunge with MATS
51. Resisted Leg Lowering with MATS
52. Resisted Mountain Climber with MATS
53. Resisted Quadruped Diagonals: Neutral Spine with MATS
54. Resisted Quadruped Diagonals: Scapular Stability with MATS
55. Resisted Quadruped Hip Extension: Neutral Spine with MATS
56. Resisted Quadruped Reach: Neutral Spine with MATS
57. Resisted Quadruped Reach: Scapular Stability with MATS
58. Resisted Single Leg Bridge with MATS

- 59.RNT Closed Chain Dorsiflexion with MATS
- 60.RNT Deep Squat: Lateral Shift Correction with MATS
61. RNT Deep Squat: Rotation Correction with MATS
- 62.RNT Deep Squat: Trunk Flexion Correction with MATS
- 63.RNT Deep Squat: Valgus Correction with MATS
- 64.RNT Double Leg Bridge with MATS
- 65.RNT Single Leg Bridge with MATS
- 66.RNT Single Leg Toe Touch with MATS
- 67.RNT Step Up with MATS
- 68.Single Leg Bridge with Core Activation with MATS
- 69.Single Leg Dead Lift with MATS
- 70.Single Leg Heel Raise with Core Activation with MATS
71. Single Leg Lateral Hip Rotation with Core Activation with MATS
- 72.Single Leg Medial Hip Rotation with Core Activation with MATS
- 73.Single Leg Stance with Core Activation with MATS
- 74.Split Squat with MATS
- 75.Squat Stance Chop with MATS
- 76.Squat Stance Lift with MATS
- 77.Standing Chop with MATS
- 78.Standing D1 Extension Lunge with MATS
- 79.Standing D1 Flexion Reverse Lunge with MATS
- 80.Standing D2 Flexion Lunge with MATS
81. Standing Flexion/Extension with MATS
- 82.Standing Lift with MATS
- 83.Starfish Pattern 1 with MATS
- 84.Starfish Pattern 2 with MATS
- 85.Step Up with Core Activation with MATS
- 86.Supine Chop with MATS
- 87.Supine Flexion/Extension with MATS
- 88.Supine Lift with MATS
- 89.Tall Kneel Chop with MATS
- 90.Tall Kneel D1 Extension with MATS
91. Tall Kneel D1 Flexion with MATS

- 92. Tall Kneel D2 Extension with MATS
- 93. Tall Kneel D2 Flexion with MATS
- 94. Tall Kneel Flexion/Extension with MATS
- 95. Tall Kneel Lift with MATS
- 96. X-Walks with MATS

THE CLINICAL ASPECT: Activity Specific Dynamic Stabilization Training (DTS) TM

The design and implementation of a dynamic stabilization training program is critical for training and restoring the synergy and synchrony of muscle firing patterns required for dynamic stability and fine motor control. The main objective in the dynamic stabilization program is to direct the athlete / patient closer towards their performance potential as quickly and safely as possible. This is accomplished by enhancing the dynamic muscular stabilization of the joint in question and by increasing the cognitive appreciation of the respective joint in regards to both position and motion.

The coach / trainer/ Professional Caregiver must have proper understanding of the influence of the central nervous systems (CNS) in three distinct capacities. In the simplest mechanism (first level of motor control), the afferent fibers of the mechanoreceptors synapse with the spinal interneurons and produce a reflexive facilitation or inhibition of the motor neurons this mechanism is responsible for regulation motor control of the antagonistic and synergistic patterns of muscle contraction and serves to provide for reflex muscle splinting during conditions of abnormal stress about the joint.

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The second level of motor control interaction is at the level of the brain stem. At this level, afferent mechanoreceptors interact with the vestibular system for control or facilitation of posture and equilibrium. Afferent mechanoreceptor input also works in concert with muscle spindle complex by inhibiting antagonistic muscle activity under conditions of rapid lengthening and periarticular distortion, both of which accompany postural disruption. In conditions of disequilibrium where simultaneous neural input exists, a neural pattern is generated that affects the muscular stabilizers, thereby, returning equilibrium to the body's center of gravity.

At the highest level of contribution to the CNS (the third level of motor control) is the ability of the mechanoreceptors to interact and influence cognitive awareness of body position and movement. The role of the mechanoreceptors is to provide joint perception at the limits of the joint's range of motion.

The Dynamic Stabilization Training™ program is designed to restore both functional stability about the joint and enhance motor control skills by manipulating the environment in order to facilitate and appropriate response. The objective of the Dynamic Stabilization Training™ program should be to stimulate discharge at each of the three respective CNS levels.

At the spinal level, activities that encourage reflex joint stabilization should dominate. These activities are characterized by sudden alterations in joint position that require reflex muscle stabilization.

Balance activities, both with and without visual input, will enhance motor function at the brain stem level. Exercises performed on a multiaxial device improve dynamic postural balance by increasing awareness of the location of the Center of Gravity (COG) and by increasing strength in the stressed musculature. **Dynamic Stabilization Training™** helps to increase responsiveness and sensitivity of the muscle mechanoreceptors, thereby facilitating maximal efferent proprioceptive information in the CNS for processing. These activities should remain specific to the types of activities or skills that will be required of the individual upon return to the golf course and **Activities of Daily Living (ADL)**. Static balance activities should be a precursor to more dynamic skill activity. The general progression of static balance activities is to progress from multi limb to single limb, bilateral to unilateral and from eyes open to eyes closed. These activities should first be performed on a stable surface and then progress to an unstable surface such as

provided in the **Dynamic Stabilization Training™** program is the stimulation of concentric and eccentric muscle contractions to control the body's *COG* via the compression and translation of articular structures. Movement occurring within the **Dynamic Stabilization Training™** program requires dynamic stabilization in the mid-range and static control at the end range of motion. Since a change in direction is required at the ranges of motion, the interplay between visual, mechanoreceptor and equilibrium reactions continues to increase.

CONCLUSION:

Performance level is determined by:

- **Fitness level** (ie: flexibility/mobility, muscular strength, muscular endurance, etc.)
- **Motor control** (ie: static and dynamic stabilization, controlled acceleration and deceleration, and postural alignment)
- **Skill** (ie: movement patterns)

Increase any combination of or all of the above and one will increase their ability to perform any activity.

In recent years increased attention has been placed on the development of balance and proprioception training and conditioning of patients, seniors, and athletes. It is believed that injury results in somatosensory dysfunction that influences neuromuscular controls. If static and dynamic balance and neuromuscular control are not re-established following injury, then the patient is susceptible to recurrent injury. If static and dynamic balance and neuromuscular control is not a part of a training and conditioning program's performance will suffer and injury may be more likely to occur. The **Dynamic Stabilization Training™** program serves as an important aspect in the facilitation of normal joint function with reflexive muscle static and dynamic stabilization.