

## 3116 - HYPERICE Mobility - Assess, don't guess

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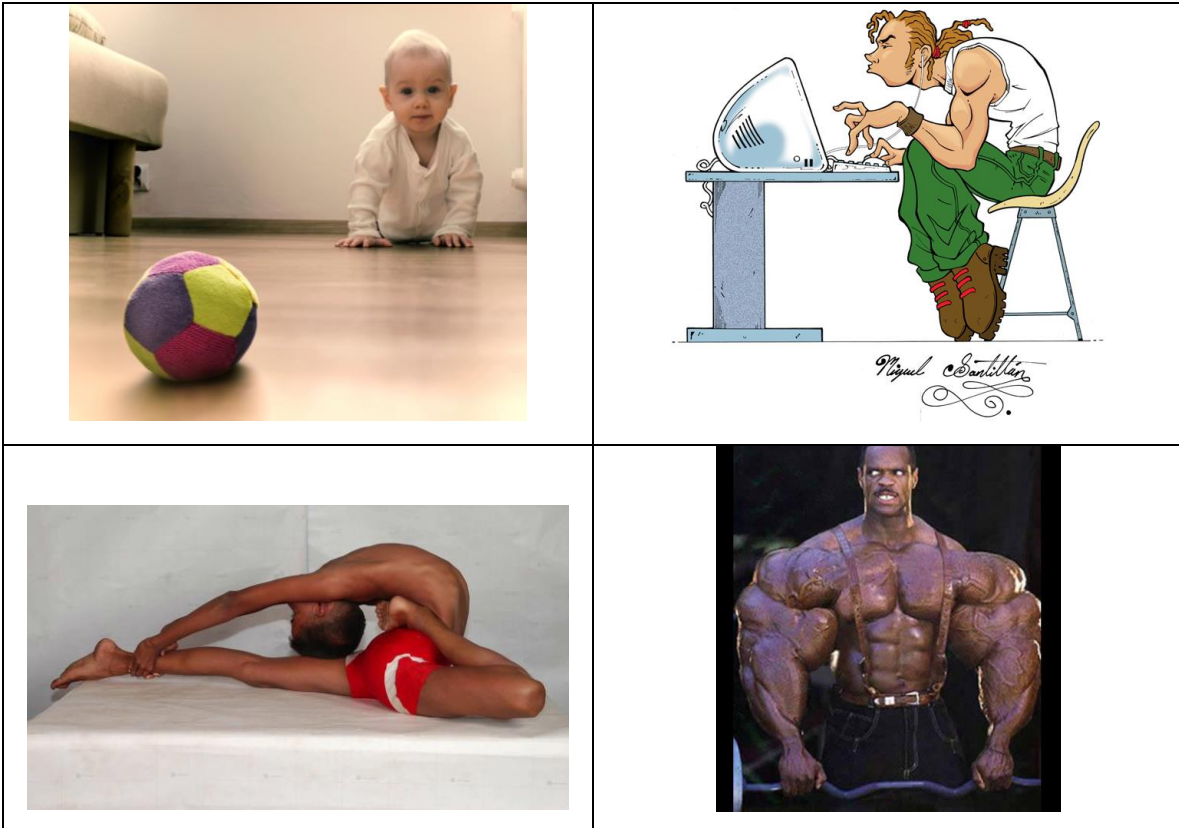
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### How much **Mobility & Stability** do we need?

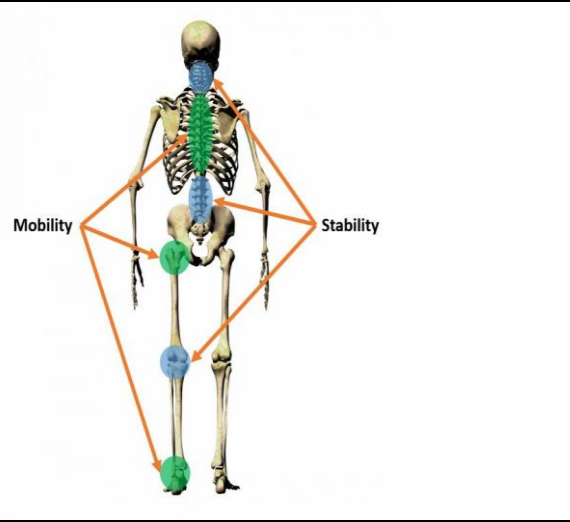
Functional mobility = the amount of motor controlled ROM required to perform in life sport & fitness?

1. Some populations tend to need mobility & some tend to need stability.
  - a. Some need a lot of both (i.e. MMA, Ballet, Figure Skating, Goaltenders).
  - b. Some need specific mobility and stability (i.e. to perform a specific task)
  - c. Some lose mobility (scar tissue or workout microtrauma or stability due to contact injury = ACL, AC joint separation).
  - d. Some specific ROM due to law of use and disuse (see Dead Zone)
  - e. If you're not assessing, your guessing.



Certain joints tend to be mobility joints (many degrees of motion & directions), some tend to be stability joints (limited ROM). Movement is best achieved when there is stability above and below mobility.

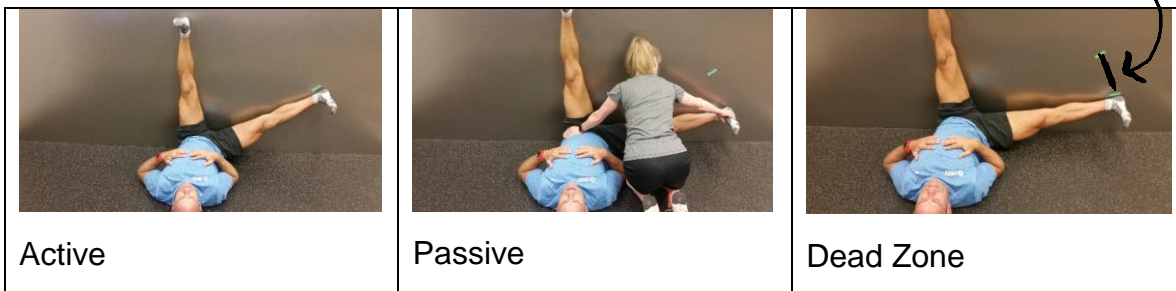
Lumbar Spine (S)  
Hip (M)  
Knee (S)



**Benefits of Muscle Stimulation & Vibration:** vibration therapy causes muscles to repeatedly eccentrically and concentrically contract resulting in nervous system activation, possible injury prevention & performance enhancement. Deactivated, unused nervous systems lose and restrict movement. The 1<sup>st</sup> step in reactivating the nervous system is active range of motion (ROM).

- Improved mobility & active ROM: to understand how vibration improves ROM, we need to understand the difference between active & passive ROM. **Active range of motion** is when a joint is moved through its **range** with the person moving the joint him or herself. **Passive range of motion** is when something or someone helps or creates the movement. More importantly, it's essential we assess ROM & identify neurological "dead zones". A Dead Zone = the difference between active & passive ROM. i.e. if I lift my arms overhead, this is active ROM. If a trainer can pull them further, then passive ROM is greater than active. When this active passive difference exist, it's referred to as the neurological dead zone and is best illustrated via this equation.

○  $Passive\ ROM - Active\ ROM = Dead\ Zone = Stability$



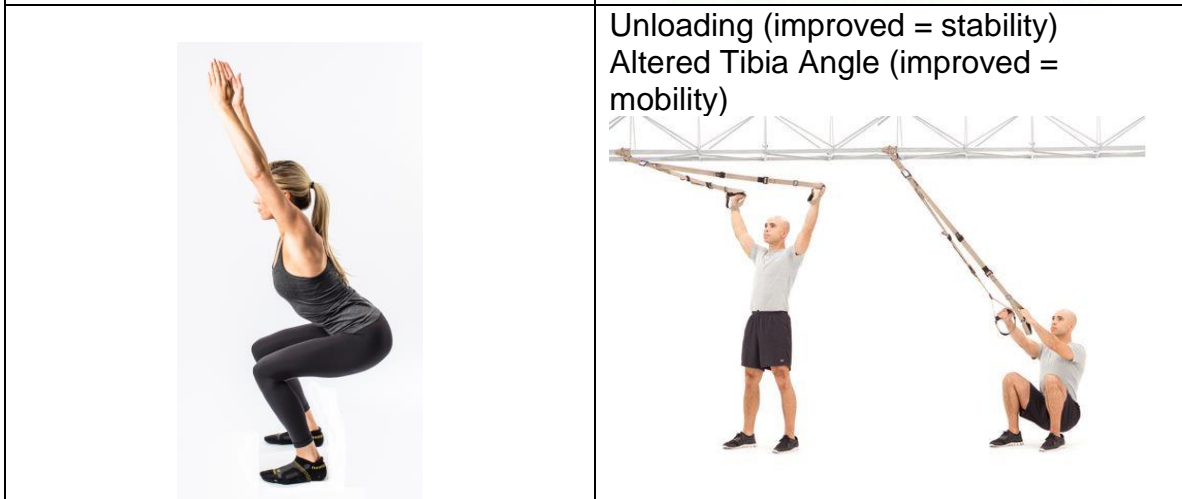
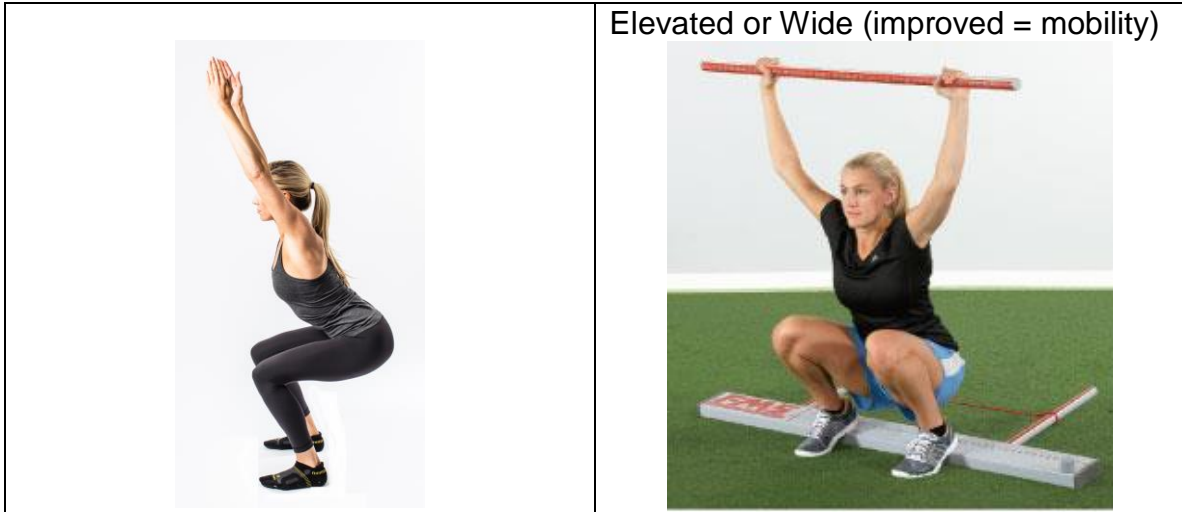
2. Improved proprioception, muscle co-contraction & joint stability: one the major reasons for increased ROM with vibration, is increased joint stability. This is most commonly seen amongst the mobility joints. Below is a great illustration of the joints and therefore motions that are most likely to improve via this mechanism. But how do we know that this is the mechanism we need to work on???? This is the cool part: if you have identified a dead zone, then stability training is more important than flexibility training 😊. In the links below, I have provided an example of active vs passive ROM for each of the mobility joints (shoulder, thorax, hip, ankle) illustrated below:

Most people need mobility, but not everyone. And, more imp, where do they need mobility, where do they need stability? It is essential to determine whether or not the movement pattern dysfunction is due to a tissue restriction or from a motor control (stabilization) issue.

Many people have plenty or range of motion but when they are challenged by gravity, the central nervous system tenses up muscles due to a lack of proper coordination by the core muscles. This person may just need to work on some stability and motor control. Mobility is not ALWAYS the answer. This is why we assess.

### Overhead Squat

- Free Standing Vs Assisted



Mobility = Inhibit Overactive

1. MSV Calves + Dorsiflexion
2. MSV TFL + Reach & Rotate

Stability Movements

1. Band Loaded RNT Shifts
2. Band Loaded Rotation

Notes: Notes: Corrective Movements

MSV Calves

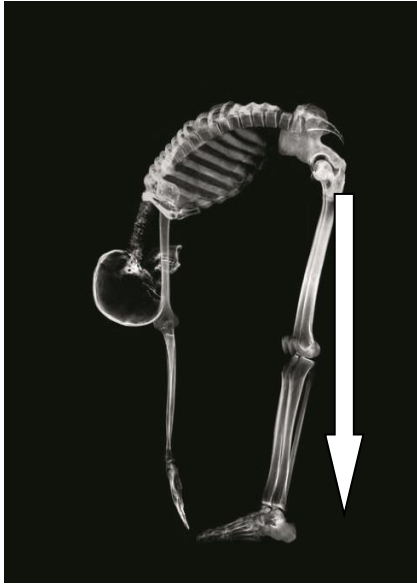
Bretzel

Rear Ft Banded Squat



### Toe Touch

- Free Standing VS Seated or Wall
  - No difference = mobilize (see mobility)
  - Difference = stabilize (stability)



Mobility = Inhibit & increase **blood flow**  
1. MSV Plantar Fascia  
2. MSV TLF (Lumbar Fascia)

Stability  
1. Core Neutral: Band Resisted Pullover March  
2. Level the Pelvis: Bird Dog

Notes: Corrective Movements  
Band Assisted Toe Touches:

Variation #1-from floor

Variation #2 - toes elevated



### SLR Assessment

- Passive Vs Active SLR (is there a Dead Zone / difference)
  - No difference = mobilize (see toe touch)
  - Difference = stabilize (dead bug + rec fem origin & insertion+ below)

	<p>Active: Pre MSV</p> 
<p>MSV Origin &amp; Insertion Activation</p> 	<p>Active: Post MSV</p> 

Notes: Corrective Movements

Prisoner L Sit SLR

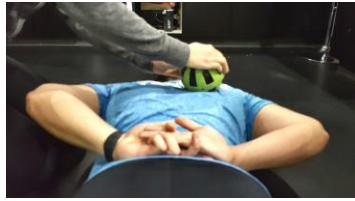


Band Resisted Pullover March



### Shoulder Retraction Assessment

- Active Vs Passive (is there a Dead Zone / difference)
  - No Difference = mobilize (MSV Pecs & Lats (Ant Humerus))
  - Difference = stabilize (MSV Low Trap & Rhomboid (MSV))
  - Difference = stabilize (Side Plank + Back Hollow)



Active: Pre MSV



Active: Post MSV



Notes: Corrective Movements

Bretzel



eROM Shoulder Mobility

