Balance, Posture and Movement

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Balance
Posture
Movement

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It’s all **Motor Control**

**Motor Control:**

*Necessary input, Sufficiently processed, with an acceptable output*
It’s all **Motor Control**

1. Necessary Input – *stimulus and sensation*
2. Sufficient Processing – *perception and planning*
3. Acceptable Output – *action (reflex – reaction)*
1. Necessary Input

Sensation is *required*

What are obvious factors that can impair sensation and/or distort input?

*Numbness/nerve conduction issues* – *medical problem*

*Pain* – *medical problem*

*Stiffness* – *mobility problem*
1. Necessary Input

Sufficient mobility is a requirement for the necessary input for Motor Control . . .

*Stiffness lowers input*

That’s why the FMS has a mobility bias
2. Sufficient Processing

How do you test for sufficient processing?

Testing dysfunctional processing ability is a low percentage play . . . without a medical history that tells you otherwise (disabled).
2. Sufficient Processing

How do you test for sufficient processing?

This is where compensation lives – whether it is necessary or no longer necessary.
2. Sufficient Processing

How do you test for sufficient processing?

Manage **compensation** by finding the developmental level where it is not necessary.
2. Sufficient Processing

Simple to complex motor control requirements within the FMS help you find that developmental level.
3. Acceptable Output

Minimum movement pattern function without pain.

**Movement Literacy:** *The ability to read and write basic movement patterns that allow interaction with the environment and adaptation to environmental demands.*
3. Acceptable Output

If you agree on the three basic criteria for Motor Control, *which is the easiest to check?*

- [ ] Input
- [ ] Processing
- [x] Output - *Movement Literacy*
Output (Movement)

Input (Mobility)

Processing (Motor Control)

Good?

YES

NO

YES

NO

Move On!
Dysfunctional Movement

To determine if we should investigate a Motor Control problem, we must look at **Input** and **Processing**

*It’s either:*

- A **mobility problem** . . . *or*
- A **motor control problem**
3. Acceptable Output

Don’t think total score!

**Functional movement** *(FMS 2s and 3s only)*

- basic Motor Control – move to fitness and performance testing

**Dysfunctional movement** *(FMS 1)*

- correction – focus on mobility and stability issues within ‘1’ pattern

**Movement health problem** *(FMS 0)*

- assess for diagnosis in the ‘0’ pattern

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Dysfunctional Movement

1/1 Leg Raise

1/1 Shoulder Mobility

2s on everything else

Think Mobility!
Refine the Mobility Problem

If mobility is determined to be good through the first FMS correctives or ROM measurements . . .

Consider it a processing problem . . .

In the industry, we call this a stability problem

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Dysfunctional Movement

3/3 Leg Raise

3/3 Shoulder Mobility

1s and 2s on everything else

Think Motor Control!
Refine the Stability (Motor Control) Problems

*Common causes of compensation and poor processing:*

1. **Sedentary / Deconditioned state**, but otherwise normal
2. **Previous injury / Instability / Structural deformity**
3. **Predisposition to Hypermobility**

*For each of these, knowledge of history is important*
Refine the Stability (Motor Control) Problems

1. Sedentary / Deconditioned state, but otherwise normal
   *Should respond quickly to corrective programming.*

2. Previous injury / Instability / Structural deformity
   *Specific (one joint). May not respond quickly.*

3. Predisposition to Hypermobility
   *May not respond quickly.*
Refine the Stability (Motor Control) Problems

2. Previous injury / Instability / Structural deformity

Refer to healthcare provider
Refine the Stability (Motor Control) Problems

3. Predisposition to Hypermobility

*You can test using the Beighton Criteria and Brighton Criteria*

+ Joint pain
+ Frequent dislocations
  *(among other criteria)*
Beighton Test

One point if you can place your palms on the ground while standing with your legs straight
Beighton Test

One point for each elbow that bends backwards
Beighton Test

One point for each knee that bends backwards
Beighton Test

**One point** for each thumb that touches the forearm when bent backwards
Beighton Test

**One point** for each little finger that bends backwards 90 degrees or beyond

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Beighton Test

What’s your score?

score of four or more (either now or in the past) and/or joint pain for longer than three months in four or more joints?

*You may be hypermobile.* . . .
Hypermobility

If you are in this category, you demonstrate good basic function on the FMS, however your hypermobility may complicate exercise progress with load and impact.

The Y Balance Test will tell you if your extra mobility has created a Motor Control problem.
Thoroughly-researched, user-friendly Motor Control test
Demonstrates functional symmetry
Quarters the body and looks at core and extremity function under bodyweight loads
YBT Lower Quarter (YBT-LQ)

Maintain single-limb stance while reaching as far as possible with the contralateral leg. Measurement is body-relative.
YBT Upper Quarter (YBT-UQ)

From push-up position, reach in the medial, inferolateral and superolateral directions. Measurement is body-relative.

- Medial
- Inferolateral
- Superolateral
1. Sedentary / Deconditioned state, but otherwise normal
   *Should respond quickly to corrective programming.*

2. Previous injury / Dislocation / Structural deformity
   *Specific (one joint). May not respond quickly.*

3. Predisposition to Hypermobility
   *May not respond quickly.*
With the FMS, we’ve been looking at **Movement Health:**

- Having sufficient structure and function to not require medical treatment.
- *Potential Function*

Symmetrical 2s and 3s represent **Movement Function:**

- The ability to survive and develop in a given environment
- *Demonstrated Function*

The YBT demonstrates **Motor Control** and **Functional Symmetry**

- *We feel it is the linchpin between* functional movement *and fundamental performance*
From this foundation of

Movement Health

Movement Function

Movement Symmetry

We can look at **Fundamental Capacity:**

- Irreducible physical qualities that are not sport/activity-specific and are possessed at a young age.
- By mapping these qualities, issues can be addressed prior to optimizing specific skill development.
Functional Movement expressed in four fundamental capacities:

- Climb
- Carry
- Run
- Jump
Functional Movement expressed in four fundamental capacities
Using these principles, the **Fundamental Capacity Screen** will consider four irreducible movement capacities:

- **Movement Control** (Motor Control)
- **Postural Control** (Integrity)
- **Explosive Control** (Power)
- **Impact Control** (Efficiency)

*Are these capacities part of our DNA?*
Movement Control

• The ability to manage postures and patterns vital to successful adaptation to the environment,

• In the developmental model, we look at the infant’s ability to **crawl and climb**.

• These forms of advancement are based on **single-limb competency**.
Movement Control

Motor Control Screen

• Determines motor control capacity of bodyweight with minimal/no use of stored, kinetic energy
• Based on research behind Y Balance Test (LQ and UQ)

![Motor Control Screen Image]
Postural Control

• The ability to manage postures and patterns with force to support loads over distances required by the environment,
• Developing toddlers have a strong desire to carry things that they value,
• Lifts can be looked at as the beginning and end of the carry pattern,
• In survival situations, there is more carrying than lifting,
• We must be able to maintain integrity under load before we can move under load. (brake analogy)
Postural Control

**Carry Screen**

- Used as a biomarker for heavy carry work capacity
- Determine if the individual can maintain alignment with integrity under load to allow maximum adaptability.
Explosive Control

• A fundamental expression of human motor control and work expressed within time constraints,

• First expressed when a toddler confronts the constraints of gravity = constant feedback,

• Jumping is a natural exploration of this power.
Explosive Control

Jump Screen

• Broad jump (with and w/o arms) as a biomarker for power capacity
• Determine if the individual minimum level of power with bodyweight to allow maximum adaptability.
Impact Control

• This is Energy Storing or Recycled Energy,

• Power recycled for efficiency,

• In running, hopping and skipping, toddlers naturally learn to store some of the energy expressed through their power,

• They intuitively learn to recycle a portion of that energy.
Impact Control

Hop Screen

• Single Hop and Triple Hop as biomarkers for energy-storing capacity
• Determine if the individual is able to use stored kinetic energy and the CNS to create a maximal return on energy, enabling maximum adaptability.
Movement Control
Postural Control
Explosive Control
Impact Control
FUNDAMENTAL CAPACITY SCREEN

MOVEMENT CONTROL
1. Motor Control Screen

POSTURAL CONTROL
2. Carry Screen

IMPACT CONTROL
5. Single-Leg Hop
6. Triple Hop

EXPLOSIVE CONTROL
3. Broad Jump w/ UE
4. Broad Jump w/o UE

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Functional Movement screened in four fundamental capacities:

- climb
- carry
- run
- jump
Functional Movement screened in four fundamental capacities
Movement Compass

• When screens have been performed, results can be plotted using the movement qualities as the four points,

• It becomes easy to see a deficiency in a particular movement quality and focus programming accordingly

• Is there a sufficient base for the desired skill?
Movement Compass

• Using data from individuals we can plot the movement qualities for specific groups, sports and occupations,

• Does your plot match the minimum required resources for the group you wish to be in?

• Meeting minimums is more important than single superlatives.
Movement Compass – Skill Training Implications

• Fundamental Movement Capacities are raw physical resources that an individual draws from,

• Athletic or performance skill demonstrates an individual’s resourcefulness with those resources.

• Demonstrates if sport-specific training is advantageous over general training
TAKE THE NEXT STEP
JOIN US FOR A LIVE COURSE, OR TAKE A COURSE ONLINE!

Use your smartphone to scan the QR code to access the live content and learn more about FMS!

Enter this code at checkout to receive $50 off one course of your choosing!

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