Do you assess your athletes’ risk of injury?

Do you have a system to check whether all elements necessary for movement are present before training?
Improving a 30 inch VJ by 10% is a 3 inch increase, 20% is 6 inches.

Improving a 40 yd dash time of 5.0 to 4.5 is a 10% improvement.

We can quantify injury risk.
LEARNING OBJECTIVES

✦ Understand the importance of injury potential and fundamental movement

✦ Understanding principles of the Functional Movement Screen (FMS)

✦ Understand principles of the FMS Solutions

✦ Know where to inject FMS corrective solutions into your program design

✦ Improve the ability to implement FMS corrective solutions into your training system
01

UNDERSTANDING INJURY

+ PREDICTION
+ PREVENTION

MANAGING LIMITING FACTORS

EXOS

Adapted, Cook, 2001
MANAGING LIMITING FACTORS

+ Acute
  - Contact & non-contact
  - Mechanism of injury

+ Chronic (overuse)
  - Insidious onset
  - No mechanism of injury
  - Repetitive microtrauma

MOVEMENT QUALITY

DON'T PLACE PERFORMANCE ON DYSFUNCTION

+ Reinforces compensatory patterns
+ Push compensations further
+ Increase micro-trauma
+ Leads to more injuries!
Does high performance equal high durability?

You have to fix the flat before you race
What happens to a tire low on air?

CHECK FOR LEARNING

- Write 3-4 sentences about what movement screening can do for your clients.
- Identify injury risk and energy leaks
WHAT IS THE FUNCTIONAL MOVEMENT SCREEN?
UNDERSTANDING THE SCREEN

INJURY RISK SCREENING

- Functional Movement Screen (FMS)™ looks at fundamental movement patterns to identify compensations and inefficient movement.

- The screen is scored out of 21, Each movement scored 0-3.
  - Lower scores = Higher risk for injury
  - Higher scores = Lower risk for injury

- Research has shown improvements in FMS score to be correlated to a significantly reduced injury risk.
Allow us to identify “Red Flags” or movement patterns that put your athlete at risk.

Allows us to quickly rank the quality of fundamental movement patterns.
WHAT IS THE FUNCTIONAL MOVEMENT SCREEN?

The FMS is a simple, standardized screen that allows anyone to rate & rank the quality of individual's movement patterns in a systematic approach.

Injury Prediction  ✔️
Performance Deficits

(Cook, 2003, Cook et al., 2010 and Kiesel et al., 2007)
CHECK FOR LEARNING

- What is the significance of higher or lower scores on the FMS?
- What are the THREE main stances we use to engage the ground?

THE FMS

- What it is - What it isn’t
- Understanding the Difference
- Key Considerations
UNDERSTANDING THE DIFFERENCE

- **Assessment**
  - To judge someone’s ability
  - Performed by a Sports Medicine team

- **Screen**
  - A filter
  - To catch major problem to be tested and assessed
  - Check for risks - meet a minimum criteria to train

The FMS is simply a screen designed to catch fundamental movement pattern compensations.

It is **not** an assessment tool to determine the root cause of the compensations.
KEY CONSIDERATIONS

“Hardware”

“Software”

THE FMS CANNOT SEPARATE THE TWO SYSTEMS, MUSCULOSKELETAL AND NEUROLOGICAL, ALL WE CAN TELL IS IF THEY CAN PERFORM THE PATTERN OR NOT

KEY CONSIDERATIONS: WHAT IS LIMITED?
KEY CONSIDERATIONS

- Complete the entire FMS™ before making decisions or trying to interpret the weak link on a person.

- The screener may find that 2-3 movements uncover a weakness, but without looking at all 7 movements, a more important weakness may be overlooked.

- Once you have finished the entire screening process it is time to filter out the individual’s functional movement problems and make recommendations on improving them. Or refer them to someone else who can provide specialized care.
CHECK FOR LEARNING

- Is the FMS able to determine if the deficit is mobility or stability?
- When do you determine what solutions to provide the athlete?

FMS SCORING AND HIERARCHY

- SOP
- Corrective Solutions
### KEY CONSIDERATIONS

The FMS truly provides specificity to your training.

<table>
<thead>
<tr>
<th>Screen</th>
<th>Re-screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritize</td>
<td>Re-prioritize</td>
</tr>
<tr>
<td>Prescribe</td>
<td>New prescription</td>
</tr>
</tbody>
</table>

### SCORING HIERARCHY

**Pain on any of the screens**: 0s
- Work corrective strategies & re-test in 2 weeks.

**Asymmetrical 1s**: (L1, R3) or (R1, L3)
- Work corrective strategies & re-test in 2 weeks.

**Symmetrical 1s**: (L1, R1)
- Work corrective strategies & re-test in 2 weeks.

**Asymmetrical 2s**: (L2, R3) or (R2, L3)
- Work corrective strategies & re-test in 2 weeks.

**Symmetrical 2s**: (L2, R2)
- Work corrective strategies & re-test in 2 weeks.

**Symmetrical 3s**: All 3's
- Continue maintenance program.
MOVEMENT HIERARCHY

01 ACTIVE STRAIGHT LEG RAISE
02 SHOULDER MOBILITY
03 ROTARY STABILITY
04 TRUNK STABILITY PUSH UP
05 IN-LINE LUNGE
06 HURDLE STEP
07 DEEP SQUAT

TARGETING THE PRIORITIES

FMS SOLUTIONS TARGET EACH “WEAK LINK” WITH DIFFERENT STRATEGIES...

- Soft Tissue
  - Tension and adhesion

- Mobility
  - Restore symmetry
  - Increase range of motion

- Stability
  - Motor Control
  - Proper sequencing patterns
WHERE TO INTERJECT

- Pillar Preparation
  - Focus on top 1-2 priorities

- Strength
  - Focus on top priorities as they relate to each strength movement during active rest periods

- Regeneration
  - Focus on top 2-3 priorities

- Stand Alone Session
  - Focus on top 3 priorities

CASE STUDY

CORRECTIVE SOLUTIONS
CORRECTIVE PRIORITIES

- Soft Tissue
  - Tension and adhesion

- Mobility
  - Restore symmetry
  - Increase range of motion

- Stability
  - Motor Control
  - Proper sequencing patterns

SCORING ANALYSIS

- A **ZERO** must be evaluated and treated first

- Mobility first - Active Straight Leg Raise and Shoulder Mobility

- Primitive patterns next - Rotary Stability and TSPU

- Asymmetries must take priority

- Finally, functional re-patterning
### FMS SCORING SHEET

<table>
<thead>
<tr>
<th></th>
<th>RAW SCORE (R/L)</th>
<th>FINAL SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEEP SQUAT</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>HURDLE STEP</td>
<td>2/3</td>
<td>2</td>
</tr>
<tr>
<td>IN-LINE LUNGE</td>
<td>2/2</td>
<td>2</td>
</tr>
<tr>
<td>SHOULDER MOBILITY</td>
<td>3/2</td>
<td>2</td>
</tr>
<tr>
<td>ACTIVE STRAIGHT LEG RAISE</td>
<td>1/2</td>
<td>1</td>
</tr>
<tr>
<td>TRUNK STABILITY PUSH UP</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ROTARY STABILITY</td>
<td>2/2</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>14</strong></td>
<td></td>
</tr>
</tbody>
</table>

### SOFT TISSUE

**HIP SOFT TISSUE MOVEMENTS**

![Soft Tissue Movement 1](image1)
![Soft Tissue Movement 2](image2)
MOBILITY

HIP MOBILITY MOVEMENTS

STABILITY

SINGLE LEG LOWERING
STABILITY

GLUTE BRIDGE - SINGLE LEG (BOTTOM UP KB)

► Lift and lower straight leg keeping knee straight and toes up.

► Before lifting straight leg, the bent leg should slightly lift off floor.

► 2 sets of 8 reps each side

STABILITY

BOTTOMS UP KB GLUTE ACTIVATION - HALF-KNEELING

► Rotate backside foot away from midline. Keep low back flat and core tight.

► Push hips forward with glute.

► Hold 2 seconds. 2 sets of 8 reps each side.
CHECK FOR LEARNING

- When organizing corrective movements, what order do you place stability, mobility, and soft tissue in your plan?

- Develop a corrective plan for an athlete with a 2/3 Hurdle Step who cannot keep his down leg straight, and flexes his low back.
Movement screening can help predict injury and identify energy leaks that may limit performance.

The FMS is composed of 7 movements. It can identify movement dysfunction, but it cannot determine the cause of the dysfunction. The FMS can act as a filter to help identify focus points and specificity and categorize athletes.
Each movement is scored 0-3. Total score of 21
- Scores of 0 or 1 are sent to sports medicine
- Lower scores are associated with increased risk of non contact injury

Apply Corrective solutions based on scoring and movement hierarchy.
- Asymmetrical followed by symmetrical.
- 1’s, followed by 2’s, followed by 3’s.

Based on Scoring and Movement Hierarchy

Sequence of correctives:
- Soft Tissue
- Mobility
- Activation and Motor Control
APPENDIX


