MiHealth University Study
What is the FMS?

- **Gray Cook** and **Lee Burton** created the FMS as a tool to improve objectivity and collaboration between the professions of physical therapy, strength and conditioning and athletic training.

- The Functional Movement Screen was originally developed to gather objective data for statistical analysis of human movement patterns with respect to functional performance and injury prevention.

- Their individual experiences, as well as collaborative clinical and research experiences (with respect to functional movement), have allowed us to refine and improve a philosophy set forth in 1995.
Goals for Exercise Prescription and Strength

- Injury Prevention: Determine Individual Risk
- Durability: Movement Efficiency (non athletes)
- Performance Enhancement (athletes)
What are considered Risk Factors?

- Flexibility
- Strength
- Power
- Anatomic and Alignment
- Balance
- *Previous Injury*
Injury prevention First!

- Identify who is at Risk
- Determine Asymmetries
- Proper Progression:
  Conditioning and Post-Injury/Return to Play

“An ounce of prehab is worth more than a pound of rehab.” – D. Wathen
Start with functional Movement Screening!

- Demonstrate *Movement* Limitations and Asymmetries
- Create a Filter for Movement Dysfunction
- Focus on Most Limited Area
- Determine Mobility and Stability Problem
Mobility and Stability: A Balance

**Mobility** = Ability of neuromuscular system to allow for efficient movement of a joint or series of joints through a full, non-restricted pain free range of motion

**Stability** = Muscular control exerted on a joint to redirect force and control movement in the presence of normal muscular flexibility and joint mobility
Injury Risk Factors

Previous Injury (24)

Asymmetries (8)

Balance/Motor Control (7)

BMI (5)
Mobility vs Stability

- consider squatting
Quality vs Quantity

What is the difference in movement quality and quantity?

Is this movement acceptable for an active individual?
Key Points

• Inefficient movements cause compensations which move a joint in an unnatural manner
• The body will always sacrifice quality for quantity
• Compensatory movements lead to micro-trauma
LETS GET STARTED: CHECK MOVEMENTS

A Baseline for Movement

1. Squatting
2. Stepping
3. Lunging
4. Reaching
5. Leg raising
6. Push-up
7. Rotary Stability
FMS ™ .... Deep Squat III

- Upper torso is parallel with tibia
- Femur below horizontal
- Knees aligned over feet
- Dowel aligned over feet
Hurdle Step III

- Hips, knees, and ankles remain aligned in the sagittal plane
- Minimal to no lumbar spine movement
- Dowel and hurdle remain parallel
FMS ™.... In-Line Lunge III

• Minimal to no torso movement

• Feet remain aligned in sagittal plane

• Knee touches 2x6 behind heel of front foot
FMS™... Shoulder Mobility III

- Fist placement is within one hand length apart
FMS™ .. Rotary Stability III

- Performs 1 unilateral repetition while keeping torso parallel to board and keeping elbow and knee in line with the board.
Spine Flexion
Lumbar Flexion
936 Candidates
14.9% of candidates with FMS score 14 or less did not complete course due to injury
7.1% of candidates with a FMS score greater than 14 did not complete OCS course due to injury

Conclusion: Candidates with FMS score of 14 or more are twice as likely to complete course
27% of recruits with FMS score of 14 or greater were injured during the academy

56% of recruits with a score of 13 or less were injured during the academy

56 recruits
14 did not complete the academy

42% of recruits that had a score of 13 or less (6 out of 14) did not complete the academy

42 recruits did complete the academy

10% of recruits that had a score of 14 or greater (4 out of 42) did not complete the academy
433 fire fighters were taken through the FMS. An intervention to improve flexibility, strength and FMS scores through a training program was evaluated. Intervention reduced time loss due to injuries by 62% and the number of injuries by 42% over a 12-month period compared to historical group.

Cost Per FMS™ Group After Largest and Smallest Claims are Thrown Out

- $545,369
- $132,422

14 and Below | 15 and Above

FMS
Functional Movement Systems®
Multi-Location MiHealth Study

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