Dynamic Chiropractic

CHIROPRACTIC (GENERAL)

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The Functional Movement Screen: A Road Map for Corrective Exercise

Dear Editor:

I am one of two chiropractors in the country certified by Dr. Lee Burton and Gray Cook to teach the functional movement screen (FMS) course. I really enjoy teaching the course because it gets doctors of chiropractic, medical doctors, physical therapists, athletic trainers, personal trainers, yoga instructors and massage therapists together in the same room, looking at patients using a common language and discussing exercise therapy strategies. I like that the Gray Cook / Lee Burton method of functional movement assessments is consistent and even allows us to purchase the FMS assessment kit. Having a kit to perform the tests raises the effectiveness of the assessments.

In light of my colleague's (Brian Grieves, DC, MPH) doubt about FMS ["Evidence-Based Spinal Rehab? Critical Examination of Biomechanical and Postural Approaches," July 15, 2012 issue], I wish to present another viewpoint. I'm glad the FMS came up in debate, because research is also very debated in the areas of stretching vs. doing a warm-up to reduce injuries.

Once I learned how to perform the FMS, I found it is easily administered and scored. It also allows me to observe different movement patterns before I actually load a client up, and if I see a particular movement that is unusually dysfunctional, I will use some additional assessments such as the single-leg squat or other low-load assessments to try and get a better idea of underlying causes.

The FMS has positive research; in fact, much more positive than negative. It is true that the FMS is not designed as an evaluation for spinal rehab; however, it is clearly a useful tool when discharging and creating workout programs. The FMS is not intended to be used in individuals who are in pain.

The majority of the evidence in the scientific, peer-reviewed literature supports the multifactorial approach to treatment of patients with chronic low back pain. However, the task-dependent and inconsistent response of motor programs to the acute and chronic presence of LBP likely will be most beneficial in using a systematic approach, as opposed to a programmatic approach, as we aim to improve the function of patients with LBP. This includes movement-related strategies in addition to whatever psychosocial intervention may also be beneficial in optimizing patient care.

I do not rely on the FMS solely as a risk predictor, nor do I suggest that if a client scores lower than a 14, they are at higher risk for an injury; but I do suggest that they could improve their movement. Like Dr. Burton says, "It makes an asymmetry or lack of neuromuscular control easy to identify in the patterns tested." If I have a patient score particularly low on a certain maneuver, such as in-line lunge, and they could improve that movement to a higher score, would I feel more comfortable loading them up for workouts? Yes! Would I feel that they had improved their symmetry, neuromuscular control and kinesthetic awareness? Yes! Now, feeling that they had ideal movement, neuromuscular control, symmetry and awareness, would I presume they are less likely to be injured? Yes!

That doesn't mean they wouldn't get injured, because on the field there are too many variables to ever accurately predict injury. In my rehab practice setting, if a client scores high (15 or above) on the FMS, I feel they would be safer and less likely to become injured once I allow them back into a gym or sports environment. Common sense would tell me that between the clumsy / uncoordinated athlete and the agile / coordinated athlete, the clumsy athlete is at a higher risk for injury.

Years of clinical experience allow me to believe in the use of movement assessments. I think that FMS is a tool that can be used as part of one's professional "toolbox." I do not think FMS is the only method that should be used in a chiropractic practice, but it is a great complement to other standard tests.

There have been research articles (many conducted by Cook, Plisky and other colleagues associated with them) on the effectiveness and reliability of the FMS in predicting injury in NFL football players (Kiesel, et al.) and firefighters (Contreras). I think the FMS has value as an assessment tool that can give a practitioner useful information on deficiencies in muscular balance, and one's level of core strength and stability.

In this day and age, it is noteworthy that in top-level (elite) sports like track and field, football, basketball, soccer, baseball, etc., when conducting a sports performance clinic /testing involving these athletes, various methods of assessing their medical history are used, video cameras capture motion to record their performance, sports psychology testing is used, and the FMS is being used. Many professional teams plan to use the FMS assessment not only as a test to predict injury, but also to identify dysfunctional movement and asymmetries, and develop a corrective exercise program for individual athletes. FMS results can be evaluated in combination with what is seen in the biomechanical analysis of performance, and in time we will see any correlations between the two.

I do not think we should diminish the use of the FMS as being a valuable tool for helping direct a workout program. Remember the real purpose of the FMS: to identify the most dysfunctional movement pattern through asymmetry, pain, and/or if they just can't do it. From that score, work toward improving it. Consistently identified as risk factors for injuries are previous injury, lack of neuromuscular control and asymmetry. The FMS will identify these things.

The FMS provides extremely important guidance that I have used to design many different individualized treatment programs. This information is useful in pinpointing the types of static and dynamic assessments that may be beneficial.

In closing, I think the FMS assessments, core endurance tests such as the plank or side plank, and even static posture assessments are beneficial for learning about the patient's condition. We all agree that more research still needs to be conducted in different demographic groups, and with narrowed variables (specific injuries) to see the reliability of FMS. But in my office, the battery of tests in the FMS can be quite revealing and provide a road map for corrective exercise.

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The FMS: One of Several Powerful Tools to Help Your Patients

Dear Editor:

In the July 15, 2012 edition of *Dynamic Chiropractic*, Dr. Brian Grieves wrote an article critical of the functional movement screen (FMS), mentioning research by Okada indicating the FMS is not as

effective as purported. Dr. Grieves also stated he was exposed to similar "functional movement" tests a decade ago in his rehab diplomate program, but was vague as to what relevance, if any, there is to the FMS.

Dr. Grieves focuses on the shortcomings of the FMS, but fails to clearly define the FMS and its purpose. One of its primary functions is to discover pain during movement. In the course of discovering if pain is present, the FMS is also used to discover limitations in mobility, stability and symmetry that can also alter movement patterns in the absence of pain.

Pain needs to be treated; then a corrective exercise strategy is implemented in an attempt to correct faulty motor patterns. Anyone in rehab or sports medicine knows that pain alters movement patterns and that altered movement patterns can lead to injury, even after pain is gone. Since previous injury, excess asymmetries and balance problems have all been shown as risk factors for injury, the FMS is an excellent tool to discover those risk factors.

Grieves mentions the Okada study, articles in the *ACA News* by a chiropractor and an advertisement from a local physical therapist that were favorable to the FMS; then makes a sweeping statement that somehow the FMS is invalid and that its use can hurt someone – without even mentioning studies that point to the effectiveness of the FMS. He does reference other studies regarding the FMS, as well as evidence-based research.

He also states that labeling someone as a "high risk for injury" could induce fear-based behavior, which is strongly associated with lower back pain. Limiting movement is also associated with lower back pain. That is an evidence-based and accurate statement. However, nowhere in the FMS scoring system is there a classification for "high risk of injury." How he characterizes the FMS as being invalid and having the potential to harm, rather than help, is a stretch of the imagination. The point of the FMS is to provide a strategy of corrective exercise to assist individuals to move well and often, not to limit movement.

Is the FMS the Holy Grail, be-all, end-all, wiz-bang ultimate tool that answers all of the questions regarding risk for injury and treatment through corrective exercise? Hardly. But it one of several powerful tools that adds to a body of knowledge regarding how our bodies function. It provides a direction to start exploring this mystery of human motion and how it relates to pain, disability, prevention and performance.

Are there shortcomings to the FMS? Of course there are. Researchers at the University of Evansville and Duke University are studying the effectiveness and limitations of the FMS.

The FMS has gained tremendous popularity in sports, both amateur and professional. It is used in many Division I college football programs, the NFL, Major League Baseball, the NHL, the NBA, Navy and Marine Special Forces, and the Orange County (California) Fire Department, just to name a few. I use the system daily in my practice, and it is one of the most powerful tools I have to get patients, especially those with lower back pain, moving and healing quickly. There has not been one example in my practice of a patient getting "hurt" from using the exercises in the FMS.

I invite Dr. Grieves to attend an FMS seminar and meet Gray Cook, MPT, and Lee Burton, PhD, to discuss the current research and reasoning behind this particular model. In this way, he can obtain a more detailed and objective appreciation of the entire functional movement system. In addition, I recommend he contact Rob Butler, PhD, at Duke University; Phil Plisky, DPT, PhD, and Kyle Kiesel, DPT, PhD, both at the University of Evansville; and Greg Rose, DC, of Titleist Performance Institute, to discuss evidence-based practice and how the FMS is moving forward with its efficacy and research. I also encourage anyone to look at the FunctionalMovement.com Web site to see for

themselves the research and reasoning behind this system, and then make an informed, unbiased independent conclusion as to its efficacy.

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