Exposing Common Myths in FCE Validity of Effort

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What are FCEs?

• FUNCTIONAL CAPACITY EVALUATION
  ➢ IS A DETAILED EXAMINATION THAT OBJECTIVELY MEASURES THE EVALUER’S CURRENT LEVEL OF FUNCTION.

  ➢ MEASUREMENTS CAN BE USED:
    i. TO MAKE RETURN TO WORK DECISIONS
    ii. DISABILITY DETERMINATIONS
    iii. MAY ASSIST WITH REHABILITATION GOALS
Typically PTs and OTs have performed these types of evaluations

• IDEALLY WE WOULD LIKE AN INSTRUMENT THAT CAN RELIABLY MEASURE THE FUNCTIONAL PHYSICAL ABILITY OF A PERSON TO PERFORM WORK RELATED TASKS

• AN FCE INSTRUMENT SHOULD BE VALID AND SHOULD MEASURE WHAT IT INTENDS
NOT SO SIMPLE!

• FCEs have been a staple service in the field of industrial rehabilitation since the field's inception more than 30 years ago.

• A major aspect of an FCE concerns **validity of effort**
  • Is subject performing up to his/her true capacity?
  • Is subject faking or exaggerating injury?
  • Results are only useful if subject gives valid effort.
***Determination of validity of effort is of paramount importance***
Standard Testing Methods Do Not Work

• Unfortunately….FCEs have not changed much during this time **DESPITE** at least 25 published research articles disproving the most common FCE methodologies in determining validity of effort

• **At least 30%** of time the standard methods **FAIL** to detect feigned weakness
3 Popular Myths use in FCEs

• Despite their lack of OBJECTIVE support these 3 testing methods comprise the majority of data collected during FCEs ...that proclaim subjects have given a valid effort

1. Standard hand strength assessments can objectively assess Validity of Effort
2. Dynamic (real life) lifting capacities can be estimated adequately by isometric and isokinetic testing and such testing can correctly classify Validity of Effort
3. “Visual Estimation of Effort” during lifting assessment is an accurate method of classifying relative levels of exertion (“light”, “moderate” “heavy”) and is capable of objectively classifying Validity of Effort
Why are we using methods that have been disproved!!!!!

• It ALWAYS how we have done it
• We are not up to date on current literature
• Perhaps we paid a lot of money for a particular methodology and report formation
• It has worked in court before
FCE myths – myth 1

• We can accurately assess **validity of effort** during hand strength testing by using:

  1. Coefficient of Variation (COV)
  2. Rapid Exchange Grip (REG)
  3. Bell Curve Analysis
Dynamometer

Setting 2 (Normal grip)

Setting 1 (Narrow)

Setting 5 (Wide grip)
Hand strength assessments

COV

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<th>Grip 1</th>
<th>Grip 2</th>
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Hand strength assessments
REG
Hand strength assessments

Bell Curve
FCE Myths – myth 2

- We can simply look at someone and determine how hard they are working and if they are cooperating with the test
  
  1. Visual Estimation of Effort and Exertion
Visual Estimation of Effort

• Perhaps the most damaging myth. It states that it is possible to visually estimate the level of exertion and to assess cooperation simply by making a series of observations. Operational Definitions are used to describe what “light,” “medium” and “heavy” lifts presumably look like.

• This is the most widely used method of assessing Validity of Effort
VEE – Operational Definitions

• LIGHT LIFTING
  • Safe
  • No accessory muscle recruitment; prime movers only
  • Natural stance
  • Upright posture
  • Easy movement patterns
VEE – Operational Definitions

• MODERATE LIFTING
  • Safe
  • Recruitment of accessory Muscles — neck flexors, upper traps, deltoids
  • Stable Base
  • Beginning of counter balance in extension
  • Smooth movements, increased time of lift test
VEE – Operational Definitions

• HEAVY LIFTING
  • Safe
  • Pronounced recruitment of neck flexors, traps, deltoids and rhomboids
  • Wider, very solid base
  • Uses momentum in controlled manner, increased time of lift test
  • Marked, increase counter balancing
In a 2011 study published on the accuracy of VEE:

- This study demonstrated that trained professionals (physical therapists) are no better than other medical personnel, or even the lay person in identifying invalid effort by visual estimation.

  ***slightly better than chance!****

In a 2005 study the following results were obtained:

- “Maximal” performance was correctly rated in 46-53% of healthy individuals and 5%-7% of patients with non specific chronic LBP (Reneman et al. 2005).
FCE Myths – myth 3

• Isometric and Isokinetic Testing Methods can accurately classify validity of effort
  • Despite being used to classify validity of effort for over 30 years there is NOT ONE published study that verifies its accuracy

• In 2010, there was a controlled study that demonstrated that it does NOT accurately classify validity

• Isokinetic Testing does not predict function
Options to Consider

• X-RTS HAND STRENGTH ASSESSMENT
• X-RTS LEVER ARM TESTING

• These are distraction based tests
• Distraction based testing first described by Gordon Waddell in his landmark article on non-physical low back pain
X-RTS Hand Strength Assessment

• Simultaneous testing of both hands
• Distraction based test
• Makes cheating virtually impossible
  • 99% sensitive in identifying feigned weakness
  • 98% specific in identifying good effort
  • 99.5% accurate

*odds of a cooperative person failing 3 of 5 criteria is 1 in 1,000,000*
Tools of the X-RTS HSA
Interesting Fact

• When a person fails the Hand Strength Assessment (HAS) validity criteria – roughly **90% of the time they will fail** to be cooperative with X-RTS lifting assessment

• On the other hand, passing The Hand Strength Assessment (HAS) predicts a **consistent effort** during the X-RTS lifting assessment **90% of the time!**
• Distraction based test
• 3 Baseline measures are compared with corresponding lifts on the lever arm
  • Odds of estimating 3 workloads on the lever arm to the extent that deception would be undetected is about 1%

*odds of feigning weakness and passing BOTH protocols is .001*
Summary

• When things are done “as always” a simple literature review reveals that most conventional FCEs are based on the subjective self limitation of the test subject, subjective impressions of the tester on visual estimation, and/or methods of testing based on little or no science.

• Stated differently, the FCEs often do not yield accurate, objective data, and their methodologies are not evidence–based!
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