



New Methods of Assessing Sincerity of Effort in our FCE's

Michelle Cunningham, PTA – PWC Director
Gwen Eshleman, PT, CDE II

- Leader in Indiana for Functional Capacity Evaluations.
- >10,000 FCE's performed over the past 25 years.
- New research and evidence based practice.

- How can the BEST get even BETTER ?!
- ADDING more...
 - Distraction based testing
 - Legally defensible
 - Highly researched
 - Accurately identifies insincere effort

- X-RTS: Cross-Reference Testing System
 - anatomy
 - physiology
 - logic
 - Statistics
- Use of analysis of variation within and between repeated measures.

- Maximum voluntary efforts should be highly reproducible...BUT
- Highly reproducible efforts \neq maximum efforts.
- Problematic cases
- Correctly identify

X-RTS Employs the Concept of *Distraction-Based Testing* as Defined by Waddell

- **Non-emotional**
- **Non-surprising**
- **Non-hurtful**

The Goals in Using Distraction-Based Testing

- Tease information from those unwilling to fully cooperate
- Ensure cooperation = maximal effort
- Ensure integrity of our recommendations
- Maximize accuracy of classifying effort

**Is the client giving a sincere,
maximal effort during
Functional Capacity Testing?**

- The Protocol
- Who do we test?



Grip Strength



Two-Point Pinch



Three-Point Pinch



Lateral Pinch

7 Validity Criteria

- Five or more COV's $\geq 15\%$
- Average COV's $\geq 9.75\%$
- \geq Five simultaneous bilateral data sets deviate from corresponding unilateral baselines by $\geq 15\%$
- Averages forces during simultaneous bilateral activity differing from unilateral sets by $\geq 16\%$
- COV for either lateral pinch grip $\geq 13\%$
- Average of selected bilateral COV's $\geq 10\%$
- 2 or more bilateral COV's $\geq 20\%$

The scale for classification of effort for the X-RTS Hand Strength Assessment is:

- Fail 0 = valid effort
- Fail 1 = gray zone or equivocal effort
- Fail 2 or more = invalid effort

The Most Accurate Protocol Yet Developed

- 99.5% accurate
- More accurate than current method

Source: "Simultaneous Bilateral Testing: Validation of a New Protocol to Detect Insincere Effort During Grip and Pinch Strength Testing," Schapmire et al, *Journal of Hand Therapy*, July-September 2002, Vol. 15, No. 3, pg. 242-250

How the Study was Conducted

- Multiple unilateral and simultaneous bilateral trials (Jamar and standard pinch gauges)
- *Post hoc* analysis of data to determine cutoff points which clearly and statistically distinguish good from poor effort
- 100 subjects tested twice (once sincere, once feigning weakness)



PICK ME, PICK ME!

- Sensitivity (proper identification of those feigning weakness). 1/100 was able to feign weakness and passed the test.
- Specificity (proper identification of those giving a sincere effort). 100% were properly classified .
- 199/200 were properly classified using this system (99.5% accuracy).

Calculating the Odds

- 1 in 10,000
- 1 in a million
- 1 in 10 billion
- Non-compliant persons typically fail 4-6 criteria

A companion piece to the X-RTS hand strength assessment

X-RTS Lever Arm

- Simple mechanical device
- Baseline lifts
- Mechanical variables
(hand and foot positions)

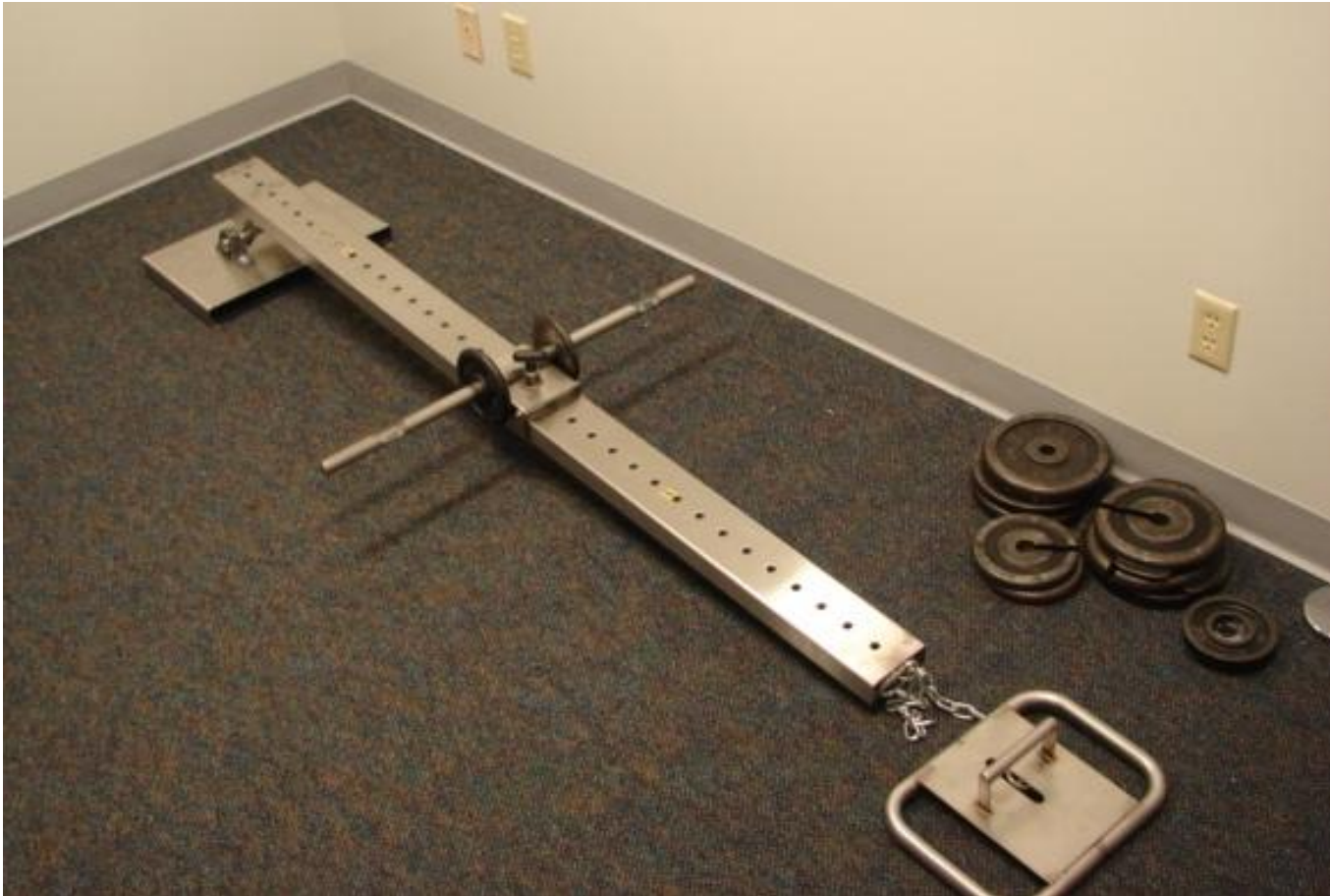
The Difference Between Baseline and Lever Arm Lifts

Visual Appearance

Crate with 5 steel bars



5 lbs. on Lever Arm



20 lbs. on Lever Arm



50 lbs. on Lever Arm



5 lbs. on Lever Arm



50 lbs. on Lever Arm



Is it Possible to Guess Workloads on the X-RTS Lever Arm?

- On average, subjects in this study (including physical therapists) had an average error of 80% when comparing their estimations to actual workloads.
- Seventy-five percent (75%) of the estimations were in error by more than 25%

The Odds in Controlling the Outcome of a Multiple Trial Test

**1.5% chance of estimating three
workloads with
no more than 25% error**

10 lbs. on Lever Arm



- Client willing to take 10 more pounds
- Total weight now equals 32.04 pounds which is 60% above what client was willing to perform on the base line lift.

Do you think the client was giving a sincere effort?

If you're looking for...

- Case closure
- Highly-trained professionals
- Determine ability to safely RTW
- Permanent restrictions
- Sincerity and consistency of effort
- Heavily researched testing that's defensible in court

...Look no further



IS YOUR ANSWER!



Thank You!

Thank you for your continued support and referrals.

**Thank you all for helping
APT become the leader in
Indiana for evaluating
and treating the
Worker's Compensation
client.**

*This is
our
thank you
dance!*

