

June 27, 2017

Dr. [REDACTED]  
[REDACTED]  
[REDACTED]

Charlotte, NC 28078

RE: [REDACTED]/XRTS FCE Report

Dear Dr. [REDACTED]:

The above-referenced client was referred to our facility for a functional capacity evaluation which was conducted on June 27, 2014. The results of the evaluation are contained in the attached report. The XRTS FCE testing system consists of multiple components which rely on distraction-based testing methods during repeated observations to assist in the classification of effort.

**Result:**

The overall classification of effort is **Invalid** due to the client, [REDACTED], **performing inconsistently** during a repeated measures protocol.

Maximum weight achieved to waist height = B 23.4 lbs.; Rt 19.3 lbs.; Lt 19.57 lbs.

**Reasoning for Invalid Impression:**

- Extreme overt pain behaviors, including grimacing and groaning, were noted during this test.
- The gait deviation was inconsistent throughout the evaluation.
- The client failed 7/7 validity criteria during the XRTS Hand Strength Assessment.
- There is an absence of correlation between lifts of unmarked steel bars and the corresponding lifts on the XRTS Lever Arm. Overall Percent Change = 28.0%
- Waddell testing is positive in 1/5 categories.

If you have any questions regarding this report, please contact me. Thank you for your referral of this client for evaluation.

Sincerely,

Sam McKelvey, PT

**XRTS Functional Capacity Evaluation**  
**Restoration Physiotherapy, Inc.**  
**3623 Latrobe Dr., Suite 126**  
**Charlotte, NC 28211**  
**Phone:704 654 9838, Fax:980 939 6440**

**Name:**  
**Age:** 60 **Gender:** Female  
**Date of Birth:** January 26, 1954  
**Date of Surgery:** N/A  
**Guarantor:** [REDACTED]  
**Date of Injury:** September 11, 2015

**Date of Service:** June 27, 2017

**Height:** 5'6 **Weight:** 190

**Case Manager:** [REDACTED]

**Claim Number:** [REDACTED]

**Diagnosis:** low back pain

**Referring Physician:** [REDACTED]

**SECTION 1: TEST SYNOPSIS**

Area Evaluated	Results	Found In
<b>Overall Classification</b>	Invalid for Consistency of Effort	Sections 2, 3, 5, 6, 8, 9, 10
<b>Overt Pain Behaviors</b>	Present	Sections 2, 3, 5, 6, 8, 9, 10
<b>Result of Pain Questionnaires</b>	Low for subjective pain reports and behaviors	Section 6
<b>Heaviest Lifting Required on the Job (lbs.)</b>	50	Section 7
<b>Heaviest Lifting During the FCE (lbs.)</b>	20.95	Section 8
<b>Primary Recommendations</b>	See section four of this report	Section 4

**SECTION 2: SUMMARY AND OVERVIEW OF FINDINGS**

The client, [REDACTED], failed to give a maximum voluntary effort during this functional capacity evaluation.

Pain questionnaires are high for subjective pain reports and behaviors in 2/7 pain questionnaires. There was no cogwheeling or similar behavior during manual strength testing or the lifting assessment. Frequent and extreme overt pain behaviors were noted during this evaluation. Pain behaviors noted included grimacing, groaning and rubbing various parts of the body including back. The client's gait deficit was not consistent. Sham testing of the lower extremities (supine position, non-painful straight leg raise followed by abduction of the leg, external rotation of the hip and plantar flexion of the ankle) was negative for over-reporting of symptoms.

The client failed 7/7 validity criteria for the XRTS Hand Strength Assessment. The odds of a compliant subject producing the same result as the client are  $.01^6 \times .04$  (less than 1 in 1,000,000). There is a lack of correlation between Baseline lifts of unmarked weights and the corresponding lifts performed on the XRTS Lever Arm. Recommendations can be made for medical and case management decisions on the basis of the findings of this evaluation.

There is no indication of instability in the low back. In the standing posture, the ilial crest heights are level. ASIS and PSIS heights are level. There is equal excursion of the right and left PSIS during lumbar flexion. Leg lengths are equal when the client is in the supine position and corrects for posture. There is no torquing of the spine. There is no abnormal listing of the spine when the client is standing. There were no complaints of radicular pain during the interview and no complaints of radicular pain were offered during this test. Dural stretch testing (supine position, non-painful straight leg raise followed by adduction of the leg past midline, internal rotation of the hip and dorsiflexion of the ankle) is negative bilaterally. The Slump Test (seated posture, maximum straight leg raise followed by maximum lumbar and cervical flexion) was positive. The results of the supine dural stretch testing and the Slump Test do not correlate. Manual strength testing for the lumbar myotomes reveals the strength deficits noted in Section 9 of this report.

There is no palpable and audible crepitus in the neck. There is no crepitus in either shoulder. No painful arc reported. Capillary refill is normal in both hands. No trophic changes are noted in the finger pads, skin, nails, or hair on the upper extremities. Color is the same in each of the upper extremities and hands. Fine motor control in the hands and fingers is normal. There is no apparent sensory loss on either side.

Weight lifted represents what client was willing to lift during this evaluation. Due to lack of repeated measures, maximal ability remains unknown. Note that client failed 7/7 validity criteria during Hand Strength Testing which is an 'uninjured' or area not related to her current complaint.

### **SECTION 3: LEGITIMACY OF EFFORT**

██████████ failed the following validity criteria:

1. Extreme overt pain behaviors, including grimacing and groaning, were noted during this test.
2. The gait deviation was inconsistent throughout the evaluation.
3. The client failed 7/7 validity criteria during the XRTS Hand Strength Assessment.
4. There is an absence of correlation between lifts of unmarked steel bars and the corresponding lifts on the XRTS Lever Arm. Overall Percent Change = 28.0%
5. Waddell testing is positive in 1/5 categories.

### **SECTION 4: RECOMMENDATIONS**

1. Full duty release unless medically contraindicated.
2. Medical correlation is required.

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## **SECTION 5: BARRIERS TO CASE RESOLUTION AND CASE MANAGEMENT**

1. Lengthy time in client role.
2. Possible employer-employee conflict and/or client no longer employed.
3. Tendency to somatize pain complaints as seen in responses to Waddell Testing and/or on answers provided on symptom magnification questionnaires.
4. Client's apparent aversion to physical activity, as seen in the results of the material handling assessment.

## **SECTION 6: SUBJECTIVE REPORTS**

Pain questionnaires intended to identify possible symptom magnification produced the following results:

1. 0 - 10+ Pain Rating Scale, low for subjective reports of pain and behaviors, with a score of 5.
2. Visual Analog Scale, low for subjective reports of pain and behaviors, with a score of 4.7 centimeters.
3. Modified Somatic Perceptions, high for subjective reports of pain and behaviors, with a score of 14.
4. Quantified Pain Drawing, low for subjective reports of pain and behaviors, with a score of 7.
5. Inappropriate Symptoms Questionnaire, low for subjective reports of pain and behaviors, with a score of 2/5.
6. Waddell Disability Questionnaire, high for subjective reports of pain and behaviors, with a score of 6/9.
7. Oswestry Low Back Inventory, low for subjective reports of pain and behaviors, with a score of 40%.

The client provided the following estimates of functional capacities:

- Walking: 15min
- Standing: 15min
- Lifting: 10 pounds
- Sitting: 2 hours
- Hand Strength: not limited
- Overhead Work: not limited

Independent with self care. Shopping for self. The client retires by 10 PM. and usually sleeps well.

## **SECTION 7: CLIENT'S JOB INFORMATION**

**Insert job description here-**

## SECTION 8: PHYSICAL TESTING RESULTS

### 1. XRTS Hand Strength Assessment:

The XRTS Hand Strength Assessment protocol consists of a total of 66 randomized unilateral and simultaneous bilateral trials. The client failed three or more of the validity criteria. As outlined in the User's Guide, this result indicates the strong likelihood that the client was not complying with the test, and the test result is therefore almost certainly invalid.

Descriptions of failed criteria:

- 5 or more COV's  $\geq 15\%$
- Mean of COV's  $\geq 9.75\%$
- 5 or more changes in Grip from Uni- to Bilateral  $\geq 15\%$
- Average percentage change  $>16\%$  when comparing average unilateral forces to average bilateral forces.
- Mean of Selected Bilateral COV's  $\geq 10\%$
- 2 or more Bilateral COV's  $\geq 20\%$
- Either Bilateral Lateral Pinch  $\geq 13\%$

Summary results of unilateral strength testing:

The client produced the following average forces during unilateral testing. Although these results are probably not based on a valid effort, the values below are offered for the record.

Position	Right Mean	Left Mean
<b>Position 2 Grip</b>	22.0 lbs.	20.3 lbs.
<b>2-Point Pinch</b>	5.0 lbs.	4.0 lbs.
<b>3-Point Pinch</b>	4.0 lbs.	5.0 lbs.
<b>Lateral Pinch</b>	6.0 lbs.	5.2 lbs.

**2. XRTS Material Handling Assessment:** The client was tested for the ability to perform lifting tasks. Unmarked steel weights were used in the "Baseline Dynamic Box Lifting". Corresponding weights and incremental increases in weights were replicated utilizing the XRTS Lever Arm with the following results:

Activity	Baseline Lifts (Unmarked Steel Bars)	XRTS Lever Arm Lifts	Percent Change
<b>Bilateral lift from 20 " to Waist</b>	20.95 lbs.	23.40 lbs.	11.7 % Change
<b>Bilateral lift from 15 " to Waist</b>	17.26 lbs.	23.40 lbs.	35.6 % Change
<b>Bilateral lift from 10 " to Waist</b>	17.26 lbs.	23.40 lbs.	35.6 % Change
<b>Right Unilateral lift from 10 " to Waist</b>	17.26 lbs.	19.30 lbs.	11.8 % Change
<b>Left Unilateral lift from 10 " to Waist</b>	13.57 lbs.	19.57 lbs.	44.2 % Change

Since the biomechanical positioning is identical during the "Baseline" dynamic lifts and the Lever Arm lifts, a high degree of reproducibility between repeated measures should be present when a maximum safe voluntary effort is given throughout the lifting evaluation. The client failed the validity criteria, based on the following:

1. Average variability between repeated measures on all the lifts was  $\geq 25\%$ .
2. At least one set of comparative lifts has a variability  $>40\%$ .
3. At least half of all comparative lifts have variability  $>25\%$ .
4. Two or more sets of comparative lifts have variability  $>30\%$ .

### 3. Tolerance Testing:

Tolerance Testing was not performed secondary to inconsistent effort demonstrated during Sincerity of Effort Testing.

### 4. Standing Assessment:

#### Lumbar

Lordosis: Normal

#### Thoracic

Rounded Shoulders: Normal

#### Cervical

Lordosis: Normal

#### Scoliosis

Thoracic: None

### Weight Bearing

Weight Bearing: Equal

**5. Squatting Assessment:** The client was able to achieve and arise from a deep squat without mechanical support and with no demonstrated difficulty. This correlated with observations regarding maximum knee flexion, made during the lifting assessment.

6. **Gait Assessment:** As previously indicated, the antalgic gait pattern was not consistent during this assessment. Stride length is equal on both sides.

7. **Sitting Assessment:** Sits with occasional change of position during sitting assessment.

## **SECTION 9: LIMITING FACTORS / REPORTS AND BEHAVIORS**

1. **Limiting Factors for Material Handling Activities:** Lifting activities were reportedly limited by back pain. Given the lack of reproducibility between repeated measures, the subjective reports do not appear to be credible.

## **SECTION 10: MUSCULO-SKELETAL EXAM AND MISCELLANEOUS TESTING**

1. **Manual Strength Testing:** Manual testing produced the following results:

Activity	Right	Cogwheeling Noted	Left	Cogwheeling Noted
<b>Shoulder Flexion</b>	4	No	4	No
<b>Shoulder Abduction</b>	4	No	4	No
<b>Internal Rotation</b>	4	No	4	No
<b>External Rotation</b>	4	No	4	No
<b>Elbow Flexion</b>	5	No	5	No
<b>Elbow Extension</b>	4	No	4	No
<b>Hip Flexion</b>	4	No	4	No
<b>Knee Flexion</b>	4	No	3	No
<b>Plantar Flexion</b>	4	No	4	No
<b>Dorsiflexion</b>	4	No	4	No

Please note that the measurements above are only semi-quantitative and that they represent the strengths found in the testing of isolated joints, as opposed to strengths demonstrated during functional activity. Manual test results do not necessarily correlate with functional abilities.

2. **Range of Motion Testing:**

*Active cervical ranges of motion appear below:*

Movement	Right (if applicable)	Left (if applicable)
<b>Flexion</b>	80 degrees	NA
<b>Extension</b>	45 degrees	NA
<b>Rotation</b>	45 degrees	45 degrees
<b>Lateral Flexion</b>	45 degrees	45 degrees

*Active shoulder ranges of motion appear below:*

Movement	Right	Left
<b>Flexion</b>	180 degrees	180 degrees
<b>Abduction</b>	180 degrees	180 degrees
<b>Internal Rotation</b>	90 degrees	90 degrees
<b>External Rotation</b>	90 degrees	90 degrees

*Active elbows ranges of motion appear below:*

Movement	Right	Left
<b>Flexion</b>	120 degrees	120 degrees
<b>Extension</b>	0 degrees	0 degrees

*Active forearm ranges of motion appear below:*

Movement	Right	Left
<b>Pronation</b>	90 degrees	90 degrees
<b>Supination</b>	90 degrees	90 degrees

*Active lumbar ranges of motion appear below:*

Movement	Right (if applicable)	Left (if applicable)
<b>Flexion</b>	80 degrees	NA
<b>Extension</b>	25 degrees	NA
<b>Lateral Flexion</b>	20 degrees	10 degrees

*Straight leg raises appear below:*

Movement	ROM Right	ROM Left
<b>Supine</b>	90 degrees	90 degrees
<b>Seated</b>	90 degrees	90 degrees

complains of back pain in sitting but not in lying with same maneuver



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**Please note that active ranges of motion are wholly dependent upon maximum voluntary effort on behalf of the client.** Active range of motion results do not necessarily correlate with functional abilities.

**3. Clinical and Miscellaneous Tests:**

- Capillary refill is normal in each hand. By palpation, there are no striking differences in the temperatures of the hands. Coloration of the hands is normal and the same on each side. No trophic changes are noted in the skin, nails or hair on the upper extremities. No atrophy is noted.
- No crepitus is noted in the shoulders.
- There is no painful arc during abduction of the shoulders.
- By visual inspection and palpation, there does not appear to be substantially increased tone or spasms in the low back.

**4. Non-organic Signs:** The client was positive in the following Waddell categories of non-physical low back pain:

- Excessive differences between seated and supine straight leg raises.

Once again, thank you for referring [REDACTED] for evaluation. If I can be of further assistance, please contact me at your convenience.

Submitted by:  
Sam McKelvey, PT

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### Supportive References

Feeler L, St James J. D., Schapmire D. W. (2010). Isometric strength assessment, Part I: static testing does not accurately predict dynamic lifting capacity. *Work*. 37(3):301-308.

Schapmire D. W. and St James J.D. (January 2011) Functional Capacity Evaluation, Part I: Cutting the Gordian Knot of Secondary Gain, Expert Witness Culture and Validity of Effort Testing. *Journal of International Association of Industrial Accident Boards and Commissions*, 47(2), 93-112.

Schapmire D, St James JD, Townsend R, Stewart T, Delheimer S, Focht D. Simultaneous Bilateral Testing: Validation of a New Protocol to Detect Insincere Effort During Grip and Pinch Strength Testing. *Journal of Hand Therapy* 2002 Jul-Sep;15(3):242-50.

Schapmire D. W., St James J. D., Feeler L., Kleinkort J. (2010). Simultaneous bilateral hand strength testing in a client population, Part I: diagnostic, observational and subjective complaint correlates to consistency of effort. *Work*. 37(3):309-320.

Schapmire D., St. James J. D., Townsend R., Feeler L. Accuracy of Visual Estimation of Effort During a Lifting Task. *Work*. 40(4), 445-457.

St James J. D., Schapmire D. W., Townsend R., Feeler L., Kleinkort J. (2010). Simultaneous bilateral hand strength testing in a client, Part II: relationship to a distraction-based lifting evaluation. *Work*. 37(4):395-403.

St James J. D. and Schapmire D. (June 2011). ). Functional capacity evaluation, Part 2: exposing the most common myths in validity of effort testing. *Journal of International Association of Industrial Accident Boards and Commissions*. 48(1), 65-89.

Townsend R., Schapmire D. W., St James J. D., Feeler L. Isometric strength assessment, Part II: Static Testing Does Not Accurately Classify Validity of Effort. (2010). *Work*. 37(4):387-39.