



Work Evaluation Center

P.O. Box 667744
Charlotte, NC 28266
704-596-6663

**FUNCTIONAL
CAPACITY
EVALUATION**

June 13, 2011

Dr. John Bonebreaker
333 Orthopedic Way
Surgery, VA 23111

RE: John Doe (998877665)

Answer the referral question...

PURPOSE OF ASSESSMENT

Patient was referred for a Functional Capacity Evaluation to determine his ability to return to his position as a Carpenter with Acme Construction. Patient sustained a right knee injury in November 2010 and subsequent arthroscopic meniscectomy in February 2011. He was evaluated on 06/13/11 from 9:00 a.m. to 1:00 p.m.

RELIABILITY AND CONSISTENCY OF EFFORTS

The results of this evaluation suggest that Mr. Stevens gave a reliable effort, with 47 of 57 consistency measures within expected limits. 3/6 heart rates did not rise as expected with static tests. 1/6 static tests had a coefficient of variation above 15%. 1/3 static tests demonstrated an inappropriate horizontal strength change. Data suggests that the Patient was self-limited with activities below waist height. This is consistent with reported pain complaints. 3/12 grip measures and 1/6-pinch measures had coefficients of variation above 15%. All of the inconsistencies were noted to be on the right. The Patient does not have any medical condition consistent with right-sided weakness. He self reports pain with gripping because of weight shift to the right lower extremity. The Patient also demonstrated a positive rapid exchange grip on the right. This suggests that the Patient was self limited with right-handed grip tasks. Overall data suggests that although the Patient's demonstrated efforts were consistent they were also sub maximal. The Patient did report pain as a primary limiting factor. Inconsistencies were noted when Patient was both aware and unaware of observation. Mildly antalgic gait on the right was absent when the Patient was not directly aware of observation. In addition when Patient was ascending stairs he led with his right leg and descended with his left lower extremity first. This is inconsistent with expected findings. Weakness with right upper extremity function is inconsistent with demonstrated abilities and suggests evidence of symptom magnification behavior.

How consistent were they?

FUNCTIONAL ABILITIES

Patient's functional abilities were compared to a job description provided by his employer. Patient's demonstrated abilities meet specified job demands in the following categories: Stoop, Crouch, Reach Immediate (L), Reach Immediate (R), Reach Overhead (L), Reach with Weight, Handling, Bi-Manual Handling, Feeling, Eye-Hand-Foot, and Tool Use.

Final summary of functional abilities...

Patient demonstrates the ability to lift in the medium physical demand level for low and mid lifts and the light physical demand level for high and full lifts. He demonstrated poor body mechanics with low level lifting only performing a partial squat and lifting with his lower back. His mechanics improve from knuckle level and above. He was able to sustain sitting for 45 minutes and standing for 30 minutes. He did demonstrate a mildly antalgic gait on the right but this was not consistent through out the evaluation. There was no obvious change in swelling of his right knee after the evaluation.

Final summary of functional restrictions

RESTRICTIONS AND MODIFICATIONS

Patient did not demonstrate ability to meet the following job demand categories: High Lift, Mid Lift, Low Lift, Full Lift, Walk, Carry - 10 Lb, Carry - 20 Lb, Carry - 50 Lb, Push Cart - 40 Lb, Pull Cart - 40 Lb, Balance, Crawl, Kneel, Climb Stairs, Reach Overhead (R), Standing. Patient had the greatest difficulty with full crouch posture and working below knuckle height. He was successful with a 1/2 kneel modification.

Recommendations

RECOMMENDATIONS

Patient does not demonstrate the ability to meet all the job demands of his position as a "Rough Carpenter" with Acme Construction. He does demonstrate the ability to return to a modified position for an 8-hour day. If the above listed restrictions are observed and related accommodations are developed, he could return to his job. Another option is to return to the "Finishing Carpenter" job. A finishing carpenter uses many of the same skills as a rough carpenter but demands are in the medium rather than heavy physical demand category. Patient does demonstrate additional rehabilitation potential and could conceivably increase his functional abilities to his original job duties. He would benefit from additional conditioning to increase aerobic endurance and lifting tolerance and develop self-symptom management strategies. Ideally Patient would begin a work conditioning program and transition to modified duty for a 4-hour day

Sincerely,

Terry Tester, PT

Functional Abilities Summary

Patient’s demonstrated abilities in this evaluation (FCE) are summarized below. A value of **n/a** indicates the activity was not included in the evaluation. If job demands were provided with this evaluation, functional abilities are compared to the corresponding job demand level. FCE performance below job demand is shown as a **Yes** in the deficit column, while mixed performance (both above and below the job demand level) is shown as **?** indicating a possible deficit.

Activities Rated by Strength Level						
Activity	FCE Performance (PDC Category)	Equivalent Strength Level			Job Demand (PDC Category)	Deficit
		Occasional 0 to 2.6 hours/day	Frequent 2.7 to 5.3 hours/day	Constant 5.4 to 8 hours/day		
Low Lift (floor to knuckle)	Medium	21 - 50 lb	11 - 25 lb	1 - 10 lb	Heavy	Yes
Mid Lift (knuckle to shoulder)	Medium	21 - 50 lb	11 - 25 lb	1 - 10 lb	Heavy	Yes
High Lift (shoulder and above)	Light	11 - 20 lb	1 - 10 lb	negligible	Medium	Yes
Carry	Medium	21 - 50 lb	11 - 25 lb	1 - 10 lb	Heavy	Yes
Push (static)	Light	11 - 20 lb	1 - 10 lb	negligible	Heavy	Yes
Pull (static)	Light	11 - 20 lb	1 - 10 lb	negligible	Heavy	Yes
Overall Strength Category	Light	11 - 20 lb	1 - 10 lb	negligible	Heavy	Yes
Activities Rated by Frequency and Duration						
Activity	FCE Performance			Job Demand	Deficit	
Walk	Occasional			Frequent	Yes	
Climb Stairs	Occasional			Frequent	Yes	
Balance	Occasional			Frequent	Yes	
Stoop	Constant			Frequent	No	
Kneel	Declined			Occasional	Yes	
Crouch	Frequent			Frequent	No	
Crawl	Declined			Occasional	Yes	
Reach (immediate)	Left: Frequent		Right: Frequent	Frequent	No	
Reach (overhead)	Left: Frequent		Right: Occasional	Frequent	Yes on R	
Handling	Unilateral: Constant		Bilateral: Frequent	Frequent	No	
Fingering	Unilateral: Constant		Bilateral: Constant	Not Required	No	
Feeling	Frequent			Occasional	No	
Eye-hand-foot	Frequent			Occasional	No	
Sitting	Constant			Not Required	No	
Standing	Frequent			Constant	Yes	
Push Cart	Declined			Constant	Yes	
Pull Cart	Declined			Constant	Yes	
Other Activities						
Grip Strength (position 2)	Left: 98.5 lb		Right: 33.5 lb		No	
Cardiovascular Fitness	Below average					



Work Evaluation Center

P.O. Box 667744
Charlotte, NC 28266
704-596-6663

**FUNCTIONAL
CAPACITY
EVALUATION**

PATIENT INFORMATION:

Report Date: **06/13/11**

Patient: **John Doe** ID#: **998877665** DOB: **02/23/82** Age: **29**
 Address: **123 Main Street** Sex: **M** Dom. Hand: **R**
Any town, VA 23111 Height: **68 in** Weight: **143 lb**
 Phone (H): **757-555-1234** Phone (W): **757-555-4321**
 Initial Visit: **006/13/11** Occupation: **Carpenter**
 ... Referred by: **VerNova** Employer: **Acme Construction**
 ... Resting Pulse Rate: **84** Insurance Co: **The Principle Group**
 ... Blood Pressure (sitting): **104/64** Physician: **Dr. John Bonebreaker**
 Tested By: **Terry Tester, PT** Attorney: **n/a**



Injury: Diagnosis	Side	Injury Date	ICD-9 Code
Right medial meniscal tear	R	11/01/00	n/a

JOB INFORMATION:

Company: **Acme Construction** Representative: **n/a**
 Address: **n/a** **n/a, n/a n/a**
 Phone: **n/a** FAX: **n/a**
 Job Title: **Carpenter** Job Subtitle: **n/a**

Employment History:

Jun 2010 to Present: Acme Construction - Rough Carpenter

Education:

1996 to 2010: Any town High School

HISTORY:

Mechanism and History of Injury:

Patient reports that on November 1, 2010 he was working a site. He was walking across uneven terrain and over some construction debris. It was damp after a recent rain. He slipped when something he was standing on slipped out from under his feet. He fell and twisted his knee. He was taken to the ER by ambulance. He was placed in a knee splint and spent a week at home with his knee immobilizer. He then started therapy but continued to have difficulties with popping and catching. In February 2011 he was scheduled for arthroscopic surgery to repair a medial meniscus tear. He had therapy for 6 weeks after his surgery. He is better but reports he is still unable to do everything he needs to for his job.

Medications:

Nov 1, 2010 to present: Naprosyn

Nov 1, 2010 to present: Flexeril

Document relevant information...

Intake Interview:

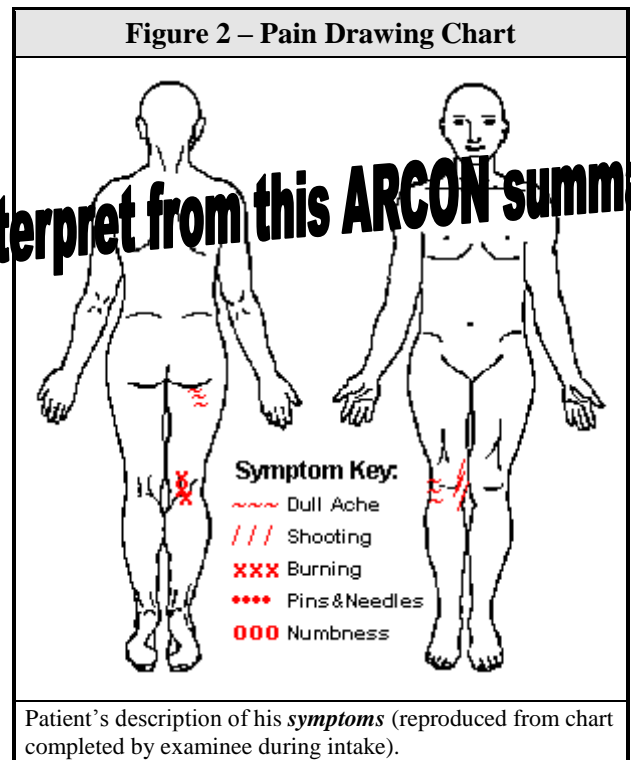
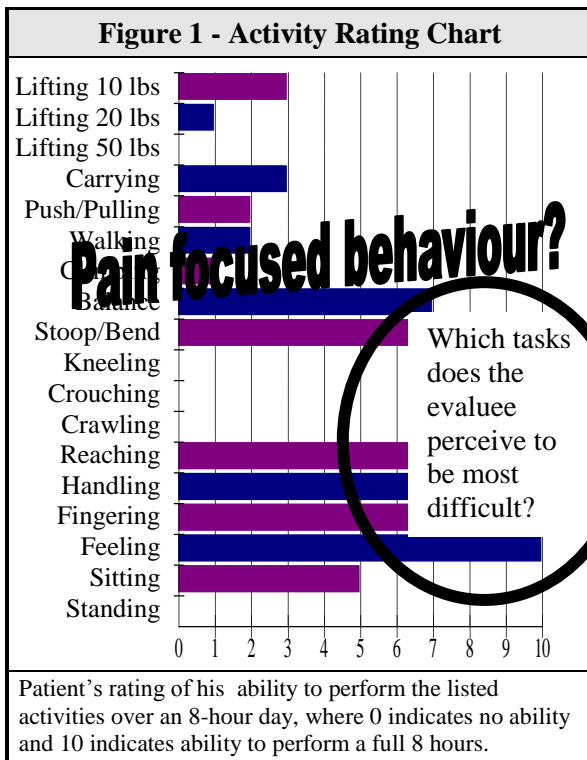
Patient drove himself to the evaluation. He was on time for his appointment. He reports he took some Ibuprofen this morning prior to coming to this evaluation. He reviewed the informed consent and after verbalizing understanding signed the document.

SUMMARY:

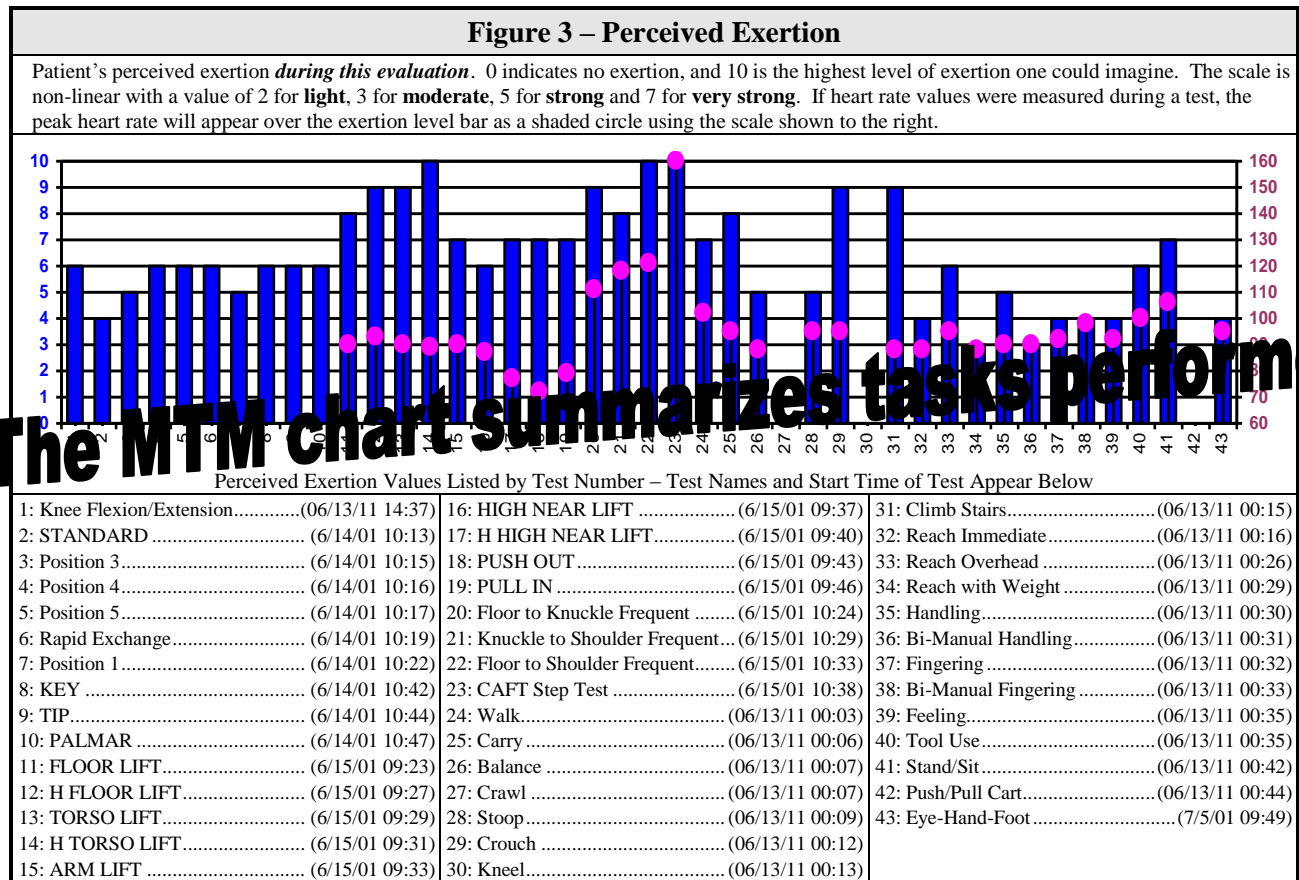
Mr. Stevens demonstrated a reliable effort in this evaluation, with 47 of 57 consistency measures recorded as reliable *except those* as noted in Table 1, below.

Table 1 – Reliability and Consistency of Effort					
Test	Date	Result	Expected	Measure	Reliable
PULL IN	6/15/01	15.7%	< 15%	CV	No
PUSH OUT	6/15/01	+8 bpm	+8.7 bpm	HR	No
TORSO LIFT	6/15/01	+7 bpm	+10.2 bpm	HR	No
H TORSO LIFT	6/15/01	22.8 LB	> 46.6 LB	IHSC	No
FLOOR LIFT	6/15/01	+9 bpm	+10.2 bpm	HR	No
Position 3 - Right	6/14/01	16.8%	< 15%	CV	No
STANDARD - Right	6/14/01	18.8%	< 15%	CV	No
Rapid Exchange - Right	6/14/01	105.2	< 33.5	REG	No
Position 1 - Right	6/14/01	22.3%	< 15%	CV	No
PALMAR - Right	6/14/01	18.7%	< 15%	CV	No

Patient’s perceptions regarding his ability to function are illustrated in the Activity Rating and Pain Drawing Charts presented below.



Pain focused behaviour? Interpret from this ARCON summary...



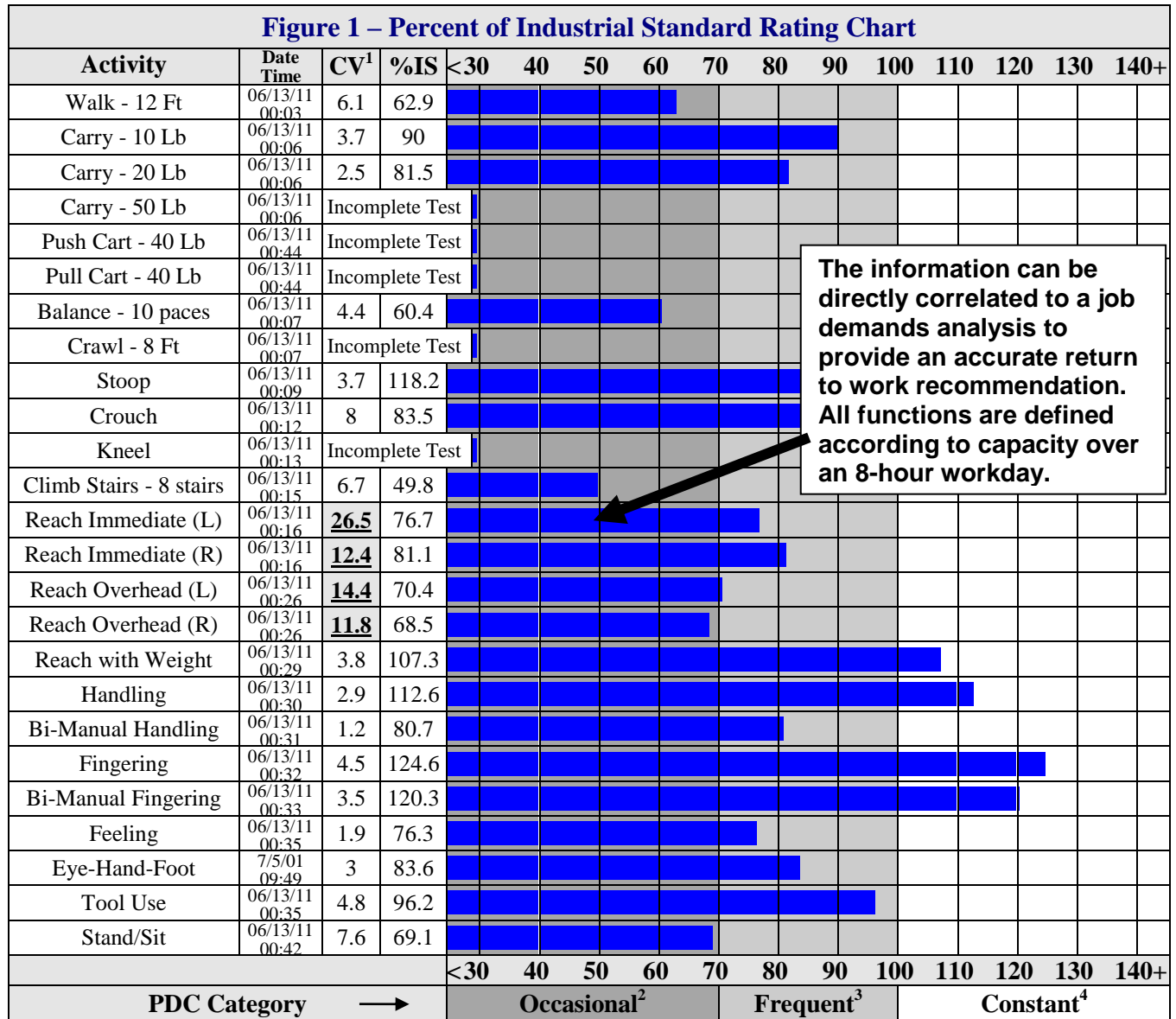
Physical Capacity Summary:

Patient’s physical capacity, as related to lifting strength, cardiovascular condition and range of movement is summarized below. Cardiovascular condition is rated on the five-level scale of Excellent, Above Average, Average, Below Average and Poor. Range of movement is considered within normal limits except as reported below.

Lifting Strength		Cardiovascular Condition	
Dictionary of Occupational Titles, Physical Demand Level		Evaluated using: CAFT	
Overall Strength Category	Light	Rating: Below average	
Range of Movement			
Joint/Movement	Measured	Norm	Deficit
Knee Flexion R (06/13/11)	95	150	yes

ARCON MTM Functional Abilities Summary

Methods-Time Measurement (MTM) data provides a quantifiable description of the functions required of a worker in the performance of certain physical job demands. An evaluatee’s demonstrated ability in the assessment is compared to the MTM Industrial Standard (IS), which is the time an average worker with average training could perform the listed activity, assuming the activity is performed over an average eight hour day. Percent of Industrial Standard (%IS) is the evaluatee’s demonstrated ability as a percent of the Industrial Standard, where 100% and up indicates performance at or above the Standard, while below 100% indicates performance below the Standard.



The MTM chart summarizes tasks performed!

¹ **Coefficient of Variance.** If value is underlined, CV calculated for multiple test sets. For CV > 10%, value is shaded to call attention to results that may indicate a problem in consistency or ability to perform this task.
² **Occasional** - allows 31-70% Rest Allowance Standard (RAS) from the IS, or activity performed 0 - 2.6 hours/day
³ **Frequent** - allows up to 30% RAS from the IS, or activity performed 2.7 - 5.33 hours/day
⁴ **Constant** - allows no RAS, or activity performed 5.33 - 8 hours/day

Physical Examination:**06/13/11****Knee Palpation**

Abnormal bony palpation: Patient is tender over medial aspect of his right knee. He jumps with even mild palpation. Less tender over lateral joint line and patella tendon. Positive pain with patella compression.

Knee ROM

ABNORMAL RANGE OF MOTION Including Active Tests: Flexion R knee 95°, Extension - 15°, Internal Rotation 10°, External Rotation 10°. Left knee Flexion 140 degrees and extension 0 degrees. Passive range of motion on right not tolerated in flexion. Muscle guarding is limiting factor. Passive range to 0 degrees extension.

Knee Neurological

NORMAL NEUROLOGICAL EXAMINATION: Including Muscle Testing - Extension, Flexion, Rotation - Sensation Testing, and Reflex Testing - Patellar Reflex.

Knee Testing

POSITIVE SPECIAL TESTS: Including McMurray Test on R, Apley's Compression and Distraction Tests, Patella Femoral Grinding Test. Knee is grossly stable to medial lateral anterior and posterior ligamentous stretching. Girth Measurements: R at lateral joint line 15 inches, 5 inches above LJJ 17 3/4 inches and Left at LJJ 14 1/8 and 5 inches above LJJ 18 1/2 inches. Mild joint effusion and 1/2 atrophy noted.

ARCON ST - Static Strength Report:

The patient was evaluated using the ARCON ST static strength testing system. This system is designed to quantify an individual's ability to lift, push, or pull in various postures and to compare strength to norms adopted by the U. S. Dept. of Health and Human Services, National Institute for Occupational Safety and Health (NIOSH).

<i>Individual Test Results</i>		Strength Data		Job Related Strength and Lifting Recommendations [‡]		
TASK NAME	DATE	Avg Force	CV [†] (%)	Desired Strength	% of Desired	Occasional Lift (Table ST1)
FLOOR LIFT (1)	06/13/11	44.1 lb	3.8	n/a	n/a	22 lb (Medium)
H FLOOR LIFT	06/13/11	21.6 lb	n/a	n/a	n/a	11 lb (Light)
TORSO LIFT (2)	06/13/11	35 lb	7.0	n/a	n/a	18 lb (Light)
H TORSO LIFT	06/13/11	22.8 lb	n/a	n/a	n/a	11 lb (Light)
ARM LIFT (3)	06/13/11	37.3 lb	7.2	n/a	n/a	19 lb (Light)
HIGH NEAR LIFT (4)	06/13/11	49.9 lb	4.4	n/a	n/a	25 lb (Medium)
H HIGH NEAR LIFT	06/13/11	20.9 lb	n/a	n/a	n/a	10 lb (Sedentary)
PUSH OUT (5)	06/13/11	28.3 lb	9.7	n/a	n/a	14 lb (Light)
PULL IN (6)	06/13/11	23 lb	15.7	n/a	n/a	12 lb (Light)

(“n/a” indicates results that are not available or applicable for the listed task)

The patient's heart rate was monitored during one or more of the ST tests in order to determine if the patient was performing at a maximal effort. Population studies[§] indicate that an appropriate elevation in heart rate should follow a maximal whole-body exertion. The table below shows average pre and post exertion heart rates, the actual change, and the *expected* (population average) and *minimum acceptable* (one standard deviation below average) increase. If the patient demonstrated *at least* the minimum increase, a valid effort is reported.

<i>Heart Rate Results</i>		Measured Heart Rates			Comparison to Norms		
TASK NAME	DATE	Pre-exertion	Post-exertion	Change	Expected Increase	Minimum Acceptable Increase	Valid?
FLOOR LIFT	06/13/11	81	90	9	21.4	10.2	No
H FLOOR LIFT	06/13/11	73	93	20	21.4	10.2	Yes
TORSO LIFT	06/13/11	83	90	7	21.4	10.2	No
H TORSO LIFT	06/13/11	90	89	-1	21.4	10.2	No
ARM LIFT	06/13/11	77	90	13	19.7	8.1	Yes
HIGH NEAR LIFT	06/13/11	75	87	12	19.7	9.0	Yes
H HIGH NEAR LIFT	06/13/11	74	77	3	19.7	9.0	No
PUSH OUT	06/13/11	64	72	8	20.4	8.7	No

[‡] Donald B. Chaffin, Ph.D.; Gary D. Herrin, Ph.D.; W. Monroe Keyserling, M.S.; "Pre-Employment Strength Testing, An Updated Position", Journal of Occupational Medicine, Vol 20. No.6, June, 1978.

[†] Based on the NIOSH guideline for validity, test results that exhibit a coefficient of variation (CV) greater than or equal to 15% cannot be considered as valid, consistent and reproducible.

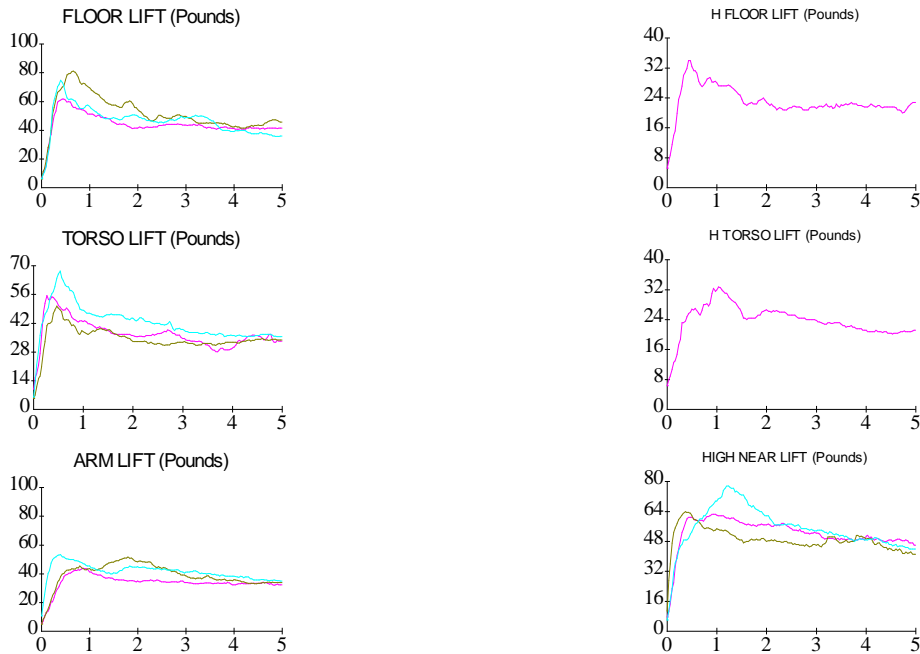
[§] "Assessing Reliability of Performance in the Functional Capacity Assessment", Journal of Disability, Volume 3, Numbers 1-4, July, 1993.

<i>Heart Rate Results</i>		Measured Heart Rates			Comparison to Norms		
TASK NAME	DATE	Pre-exertion	Post-exertion	Change	Expected Increase	Minimum Acceptable Increase	Valid?
PULL IN	06/13/11	68	79	11	19.3	7.6	Yes

As an additional means of determining if the patient gave a full and consistent effort, certain tests were repeated with the patient being asked to move either 10 inches closer to or 10 inches farther away from the lifting handles. Population studies[¥] indicate that such a change should produce a 33% or greater *increase* in strength when moving closer, and a 33% or greater *decrease* in strength when moving farther away. When the expected change of at least 33% is *not* observed, an *Inappropriate Horizontal Strength Change (IHSC)* is reported by assigning a *FAIL* status to indicate inconsistent performance.

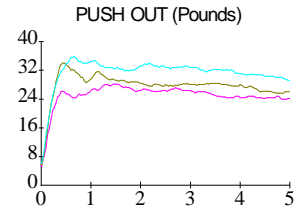
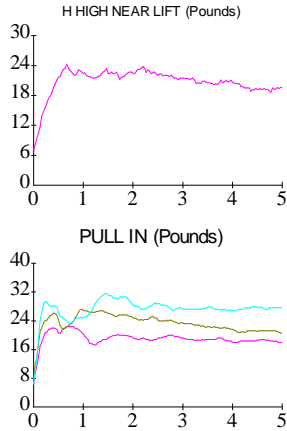
<i>I H S C Results</i>		Repeated Test		Strength Change %		
Task Name and Distance	Avg Force	Distance	Avg Force	Expected	Actual	Status
FLOOR LIFT: H = 10 in	44.1 lb	H = 20 in	21.6 lb	< -33 %	-51 %	PASS
TORSO LIFT: H = 15 in	35 lb	H = 5 in	22.8 lb	> 33 %	-34 %	FAIL
HIGH NEAR LIFT: H = 10 in	49.9 lb	H = 20 in	20.9 lb	< -33 %	-58 %	PASS

ST Test Graphs (in order of Test Results)



[¥] "Horizontal Strength Changes: An Ergonomic Measure for Determining Validity of Effort in Impairment Evaluations", *Journal of Disability*, Volume 3, Numbers 1-4, July, 1993.

ST Test Graphs (in order of Test Results)



<i>COMMENTS (referenced by number from test result table)</i>	Comment Picture
(1) "That really hurts my knee." Patient demonstrates only partial squat and forward flexes at waist.	
(2) "Feels like I am up on my tippy toes on my right side. Feels like I am leaning forward and losing my balance."	
(3) "All this pressure on my arms makes my knee hurt."	
(4) This isn't too bad	
(5) "That hurts my knee." Right foot forward	
(6) "About the same." Left foot forward.	

Table ST1 - Physical Demand Characteristics Of Work (Dictionary of Occupational Titles - Volume II, Fourth Edition, Revised 1991)			
Physical Demand Level	OCCASIONAL 0-33% of the workday	FREQUENT 34-66% of the workday	CONSTANT 67-100% of the workday
Sedentary	1 - 10 lbs.	Negligible	Negligible
Light	11 - 20 lbs.	1 - 10 lbs.	Negligible
Medium	21 - 50 lbs.	11 - 25 lbs.	1 - 10 lbs.
Heavy	51 - 100 lbs.	26 - 50 lbs.	11 - 20 lbs.
Very Heavy	Over 100 lbs.	Over 50 lbs.	Over 20 lbs.

ARCON LC - Dynamic Lifting Capacity Report:

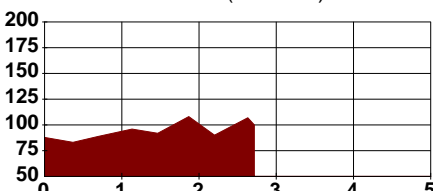
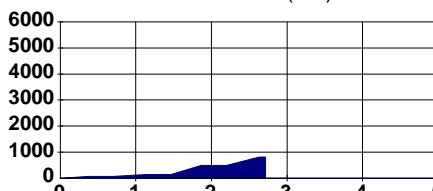
The patient was evaluated using the ARCON LC *Dynamic Lifting Capacity* system. This system is designed to quantify an individual’s dynamic lifting capacity, and to compare the results to recognized population norms. The ARCON LC is based on the PILE (Progressive Isoinertial Lifting Evaluation) Protocol[†] developed at the University of Texas Southwestern Medical Center at Dallas. This protocol has been adapted and enhanced for automated test sequencing and data collection to provide safe, efficient and accurate administration of the test. In addition, results are correlated to the appropriate U.S. Department of Labor’s *Physical Demand Characteristic Level* (PDC - see **Table LC3**) for application to the competitive labor market.

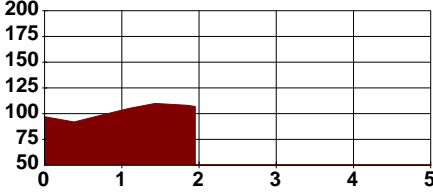
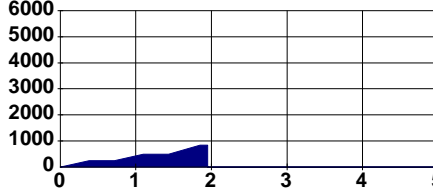
The test consists of repeatedly lifting and lowering a weighted box to a shelf set at a standard height, during a fixed testing interval (normally four lifts in 20 seconds). The patient’s heart rate is measured continuously during the test, and the box is weighed and lifts are counted using a scale located on the lifting shelf. Box weight starts at a low level and is progressively increased until one of the endpoints described in **Table LC2** are achieved.


The patient is also asked to rate his or her perception of the weight at each level or cycle on a scale of 1 to 9 (see **Table LCI**). A rating of 8 or 9 is interpreted as “excessive discomfort”, and terminates the test (psychophysical endpoint). The patient’s maximum safe lifting weight (shown in bold face in the “weight” column of the results table below) is the weight lifted in the last **completed** cycle with a **perceived** weight level of 8 or less. The patient’s PDC Level is obtained by comparing the safe lifting weight to the maximum weight for that level as shown in Table LC3. The safe lifting weight must be at least 90% of the maximum weight for that level (80% if the **perceived** weight is 6 or less and the heart rate for that cycle does not exceed the **target** heart rate).

<i>Floor to Knuckle Frequent (1)</i>			<i>0 in. to 30 in. lift</i>			<i>4 lifts/cycle</i>		<i>06/15/01</i>	
Heart Rate: Start = 99 ; 85% target = 171 ; 85% limit = 171						Weight Limit = 79 lb			
Frequent PDC Level = Medium (11 - 25 lb)						Endpoint = Psychophysical			
Cycle #	Weight	Perceived	Reps	HR Lifting	HR % Max	Total Work	Post Cycle HR		
1	9	5	3	84	42	135	96		
2	19	7	2	89	44	325	91		
3	26	8	2	97	48	585	109		
Test Graphs (Heart Rate and Work) vs. Elapsed Time		Heart Rate (beats/min)				Cumulative Work (lb-ft)			

[†] *Progressive Isoinertial Lifting Evaluation, I. A Standardized Protocol and Normative Database*; Mayer, Barnes, Kishino, Nichols, Gatchel, Mayer and Mooney; Spine, Vol 13, No. 9, Sept. 1988.
Progressive Isoinertial Lifting Evaluation, II. A Comparison with Isokinetic Lifting in a Disabled Chronic Low-Back Pain Industrial Population; Mayer, Barnes, Kishino, Nichols, Gatchel, Mayer and Mooney; Spine, Vol 13, No. 9, Sept. 1988.

<i>Knuckle to Shoulder Frequent</i>				<i>30 in. to 54 in. lift</i>		<i>4 lifts/cycle</i>	<i>06/13/11</i>	
Heart Rate: Start = 88 ; 85% target = 171 ; 85% limit = 171						Weight Limit = 79 lb		
Frequent PDC Level = <i>Medium (11 - 25 lb)</i>						Endpoint = <i>Psychophysical</i>		
Cycle #	Weight	Perceived	Reps	HR Lifting	HR % Max	Total Work	Post Cycle HR	
1	9	3	2	83	41	72	89	
2	19	4	1	96	48	148	92	
3	29	6	3	108	54	496	90	
4	39	8	2	107	53	808	100	
Test Graphs (Heart Rate and Work) vs. Elapsed Time		Heart Rate (beats/min)				Cumulative Work (lb-ft)		
								

<i>Floor to Shoulder Frequent (2)</i>				<i>0 in. to 54 in. lift</i>		<i>4 lifts/cycle</i>	<i>06/13/11</i>	
Heart Rate: Start = 97 ; 85% target = 171 ; 85% limit = 171						Weight Limit = 79 lb		
Frequent PDC Level = <i>Light (1 - 10 lb)</i>						Endpoint = <i>Psychophysical</i>		
Cycle #	Weight	Perceived	Reps	HR Lifting	HR % Max	Total Work	Post Cycle HR	
1	9	6	3	92	46	243	98	
2	14	6	2	105	52	495	110	
3	19	8	2	108	54	837	107	
Test Graphs (Heart Rate and Work) vs. Elapsed Time		Heart Rate (beats/min)				Cumulative Work (lb-ft)		
								

<i>COMMENTS (referenced by number from test result table)</i>	Comment Picture
(1) "I can really feel this in my knee." Patient forwarded flexed with minimal knee flexion to retrieve box from the floor.	


<i>COMMENTS (referenced by number from test result table)</i>	Comment Picture
(2) "This is the hardest yet. I can't do any more."	 <p>Sample Illustration</p>

Table LC1 Rating of Perceived Load	
VALUE	DEFINITION
1	Like Nothing
2	Very Light
3	Light
4	Light-Medium
5	Medium
6	Medium-Heavy
7	Heavy
8	Very Heavy
9	Too Heavy

Table LC2 - Test Endpoint Conditions	
CONDITION	DESCRIPTION
Psychophysical	Voluntary test termination by the patient based on complaints of fatigue, excessive discomfort, or inability to complete the required number of movements during the testing interval (cycle).
Physiological	Achievement of an age-determined target heart rate (based on a percent of patient's maximal heart rate - normally 85%, or in excess of 75% continuously for one minute).
Safety	Achievement of a predetermined anthropometric safe lifting limit based on the patient's adjusted body weight; or intervention by the ARCON operator based upon an evaluation of the patient's signs & symptoms.

Table LC3 - Physical Demand Characteristics Of Work			
(Dictionary of Occupational Titles - Volume II, Fourth Edition, Revised 1991)			
Physical Demand Level	OCCASIONAL 0-33% of the workday	FREQUENT 34-66% of the workday	CONSTANT 67-100% of the workday
Sedentary	1 - 10 lbs.	Negligible	Negligible
Light	11 - 20 lbs.	1 - 10 lbs.	Negligible
Medium	21 - 50 lbs.	11 - 25 lbs.	1 - 10 lbs.
Heavy	51 - 100 lbs.	26 - 50 lbs.	11 - 20 lbs.
Very Heavy	Over 100 lbs.	Over 50 lbs.	Over 20 lbs.

ARCON HD - Grip Strength Report:

The patient was evaluated using the ARCON HD grip strength testing system. This system is designed to quantify an individual's grip strength in one or more standard grip positions, and to compare such strength to recognized population norms (note: normative data is shown as "n/a" for grip positions with no published norms).

<i>Individual Test Results</i>		STRENGTH DATA		NORMATIVE DATA [‡]		
TASK NAME	DATE	Avg Force	CV [†] (%)	Population Norm	Standard Deviation	Comp. to Norm
Position 1 - Left	06/13/11	82.5 lb	7.3	n/a	n/a	n/a
Position 1 - Right	06/13/11	38 lb	22.3	n/a	n/a	n/a
STANDARD - Left	06/13/11	98.5 lb	3.0	104.5 lb	+/- 21.8	normal
STANDARD - Right	06/13/11	33.5 lb	18.8	121.0 lb	+/- 20.6	low
Position 3 - Left	06/13/11	84.5 lb	7.7	n/a	n/a	n/a
Position 3 - Right	06/13/11	46.3 lb	16.8	n/a	n/a	n/a
Position 4 - Left	06/13/11	65.8 lb	3.0	n/a	n/a	n/a
Position 4 - Right	06/13/11	27.8 lb	12.0	n/a	n/a	n/a
Position 5 - Left	06/13/11	48.3 lb	6.6	n/a	n/a	n/a
Position 5 - Right	06/13/11	25.9 lb	6.4	n/a	n/a	n/a
Rapid Exchange - Left	06/13/11	91.5 lb	5.8	104.5 lb	+/- 21.8	normal
Rapid Exchange - Right	06/13/11	105.2 lb	5.2	121.0 lb	+/- 20.6	normal

("n/a" indicates results that are not available or applicable for the listed task)

The following table compares the patient's grip strength on opposite body sides, and reports a percent difference in strength for the *weaker hand* compared to the stronger hand. In cases of reported injury, an *expected strength* is calculated based on the measured strength of the uninjured side (note: *right* hand dominant subjects are assumed to be 10% stronger on the right side, while *left* hand dominant subjects are assumed have equal strength on both sides[‡]). When demonstrated strength is *less* than expected strength, the percent of *strength deficit* is reported.

<i>Left Hand vs. Right Hand</i>		STRENGTH DATA (* indicates Dominant Hand)			INJURED SIDE COMPARISON		
TASK NAME	DATE	LEFT	RIGHT	Weaker Hand	Injured Side	Expected Strength	Strength Deficit
Position 1	06/13/11	82.5	* 38	-54 %	Right	90.7	-58 %
STANDARD	06/13/11	98.5	* 33.5	-66 %	Right	108.3	-69 %
Position 3	06/13/11	84.5	* 46.3	-45 %	Right	92.9	-50 %
Position 4	06/13/11	65.8	* 27.8	-58 %	Right	72.3	-62 %
Position 5	06/13/11	48.3	* 25.9	-46 %	Right	53.1	-51 %
Rapid Exchange	06/13/11	91.5	* 105.2	-13 %	Right	100.6	n/a

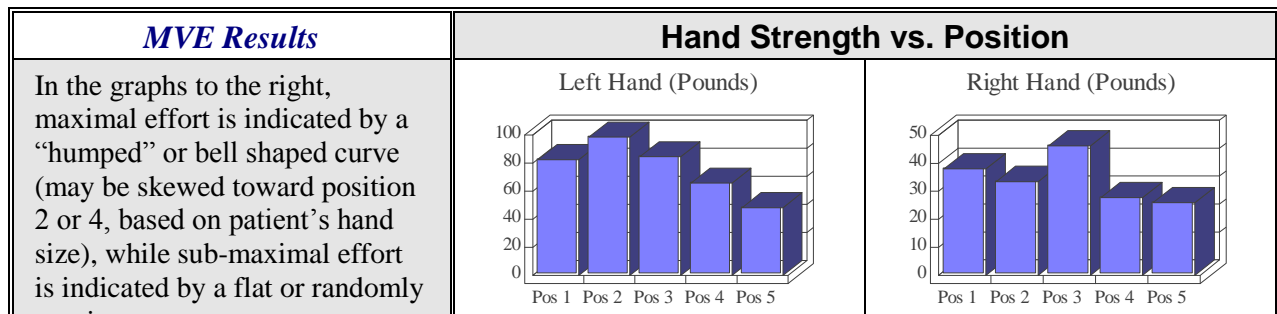
[‡] Virgil Mathiowetz, MS, OTR, Nancy Kashman, OTR, Gloria Volland, OTR, Karen Weber, OTR, Mary Dowe, OTS, Sandra Rogers, OTS, "Grip and Pinch Strength: Normative Data for Adults", Occupational Therapy Program, University of Wisconsin-Milwaukee, Milwaukee, WI, Arch Phys Med Rehabil 66:69-72, February, 1985.

[†] Based on common guidelines for consistency of effort, test results that exhibit a coefficient of variation (CV) greater than or equal to 15% are likely to indicate an unreliable or inconsistent performance.

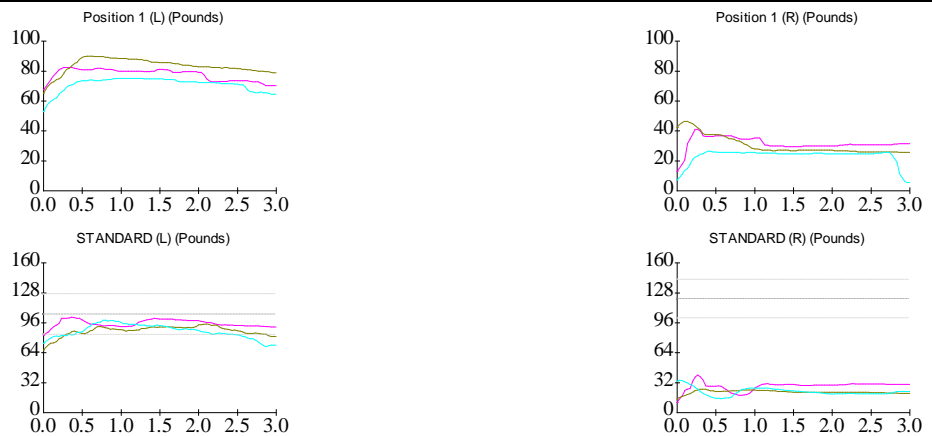
The patient was asked to perform a Rapid Exchange Grip Test (REG test) as a means to assess the reliability of effort in the standard grip test. Research[§] has shown that REG strength *exceeding* standard grip strength (positive REG score, denoted below as + REG) is a probable indication of submaximal or unreliable effort in the standard test.

<i>Rapid Exchange Results</i>	STANDARD TEST		RAPID EXCHANGE TEST			
TASK NAME	DATE	Avg Force	DATE	Avg Force	% Chg	+ REG
Rapid Exchange - Left	06/13/11	98.5 lb	06/13/11	91.5 lb	-6.7 %	no
Rapid Exchange - Right	06/13/11	33.5 lb	06/13/11	105.2 lb	214.5 %	yes

The Maximum Voluntary Effort (MVE) protocol was used to determine if the patient exerted a maximal effort during the grip test. This protocol consisted of successive grip tests over the full range of five positions of the hand dynamometer. Research[£] has shown that both normal and injured hand strength should be greater in positions 2, 3 and 4, and less in positions 1 and 5. The table below shows the patient’s MVE results.



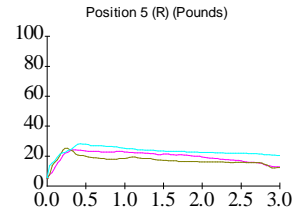
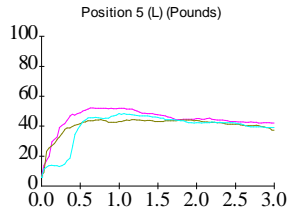
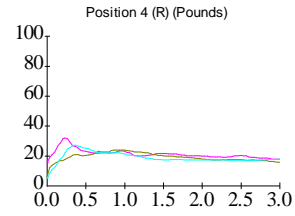
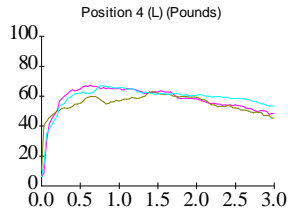
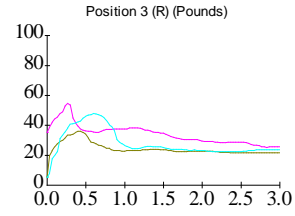
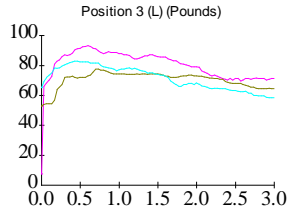
HD Test Graphs (in order of Test Results)



[§] Hildreth, D. H. & Lister, G. D. (1989). Detection of submaximal effort by use of the rapid exchange grip. *Journal of Hand Surgery*, 14A: 742-745.

[£] Harold M. Stokes, M.D., “The Seriously Uninjured Hand - Weakness of Grip”, *Journal of Occupational Medicine*, Vol. 25, No. 9, Sept. 1983.

HD Test Graphs (in order of Test Results)



ARCON PG - Pinch Strength Report:

The patient was evaluated using the ARCON PG pinch strength testing system. This system is designed to quantify an individual's pinch strength in the standard *Key*, *Tip* and *Palmar* positions, and to compare such strength to recognized population norms.

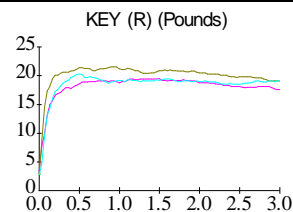
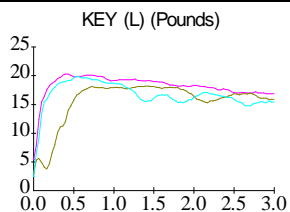
<i>Individual Test Results</i>		STRENGTH DATA		NORMATIVE DATA [‡]		
TASK NAME	DATE	Avg Force	CV [†] (%)	Population Norm	Standard Deviation	Comp. to Norm
KEY - Left	06/13/11	19.5 lb	4.7	24.8 lb	+/- 3.4	low
KEY - Right	06/13/11	20.4 lb	4.0	26.0 lb	+/- 3.5	low
TIP - Left	06/13/11	14.5 lb	12.3	17.0 lb	+/- 2.3	low
TIP - Right	06/13/11	11.9 lb	3.8	18.0 lb	+/- 3.0	low
PALMAR - Left	06/13/11	23.9 lb	10.6	25.7 lb	+/- 5.8	normal
PALMAR - Right	06/13/11	9.7 lb	18.7	26.6 lb	+/- 5.5	low

("n/a" indicates results that are not available or applicable for the listed task)

The following table compares the patient's pinch strength on opposite body sides, and reports a percent difference in strength for the *weaker hand* compared to the stronger hand. In cases of reported injury, an *expected strength* is calculated based on the measured strength of the uninjured side (note: **right** hand dominant subjects are assumed to be 10% stronger on the right side, while **left** hand dominant subjects are assumed have equal strength on both sides[‡]). When demonstrated strength is *less* than expected strength, the percent of *strength deficit* is reported.

<i>Left Hand vs. Right Hand</i>		STRENGTH DATA (* indicates Dominant Hand)			INJURED SIDE COMPARISON		
TASK NAME	DATE	LEFT	RIGHT	Weaker Hand	Injured Side	Expected Strength	Strength Deficit
KEY	06/13/11	19.5	* 20.4	-4 %	Right	21.4	-5 %
TIP	06/13/11	14.5	* 11.9	-18 %	Right	15.9	-25 %
PALMAR	06/13/11	23.9	* 9.7	-59 %	Right	26.2	-63 %

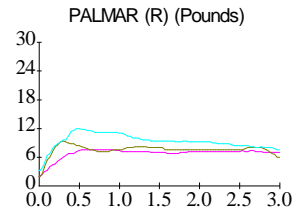
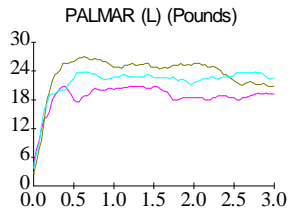
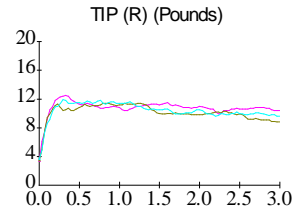
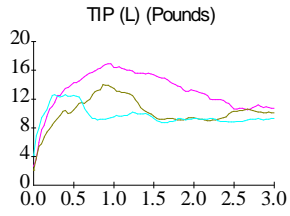
PG Test Graphs (in order of Test Results)



[‡] Virgil Mathiowetz, MS, OTR, Nancy Kashman, OTR, Gloria Volland, OTR, Karen Weber, OTR, Mary Dowe, OTS, Sandra Rogers, OTS, "Grip and Pinch Strength: Normative Data for Adults", Occupational Therapy Program, University of Wisconsin-Milwaukee, Milwaukee, WI, Arch Phys Med Rehabil 66:69-72, February, 1985.

[†] Based on common guidelines for consistency of effort, test results that exhibit a coefficient of variation (CV) greater than or equal to 15% are likely to indicate an unreliable or inconsistent performance.

PG Test Graphs (in order of Test Results)



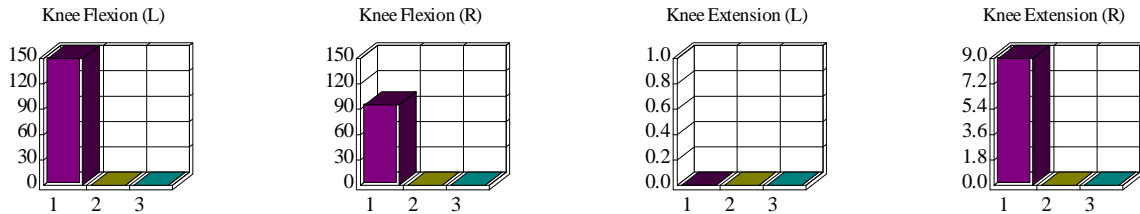
ARCON EG - Extremity ROM Goniometer Report:

The patient was evaluated using the ARCON EG computerized electronic goniometer. This device is designed to quantify an individual’s range of motion (ROM) on one or more of the extremities, and to compare these ROM values to recognized population norms.

<i>Individual Test Results</i>		Range of Motion		NORMATIVE DATA [‡]		
Joint/Axis Tested	DATE	LEFT	RIGHT	NORM	LEFT %Norm	RIGHT %Norm
Knee Flexion	06/13/11	150 deg	95 deg	150 deg	100 %	63 %
Knee Extension	06/13/11	0 deg	9 deg	0 deg	n/a %	n/a %

(“n/a” indicates results that are not available or applicable for the listed task)

EG Test Graphs (in order of Test Results)



[‡] From “Guides to the Evaluation of Permanent Impairment”, Third Edition (Revised), American Medical Association, 1990.

Canadian Aerobic Fitness Test Results:

The patient was evaluated using the *Canadian Aerobic Fitness Test (CAFT)*. This test is designed to measure an individual’s cardiovascular fitness level through the use of a simple, submaximal stepping procedure. The test is performed by having the patient step for up to three consecutive three-minute sessions on double 20.3 cm steps. The stepping rate increases for each session, and is determined by the patient’s age and gender. The patient’s heart rate is monitored during the test for safety (test is terminated if heart rate exceeds 85-90% of age-adjusted maximal heart rate). At the end of each session the patient stops exercising for ten seconds while their heart rate is measured. If the patient’s heart rate is below a predetermined ceiling following each of the first two sessions, an additional session is performed at an increased step rate. The heart rate measured at the end of the *last* session is used to determine the patient’s fitness category (one of five standard levels as shown in table C1, below) as well as a prediction of the patient’s aerobic capacity (**VO₂ Max** in ml/kg/min). Also included is the equivalent category of work (Physical Demand Characteristic or PDC) based on the energy cost of the stepping activity performed. Test results are as follows:

Results	Heart Rate Information				Aerobic Fitness Score			
	DATE	Start of Test	End 1st Session	End 2nd Session	End 3rd Session	Predicted VO ₂ Max	Classification	PDC Equivalent
	06/13/11	112	155	n/a	n/a	44.8	Below Average (30%tile)	Medium (4.8 kcal/min)

(“n/a” indicates results that are not available or applicable for the listed task)

Table C1 CAFT Step Test Fitness scores [‡] for adult males and females	Classification	Predicted VO ₂ Max (ml/kg/min) – by age and gender							
		20 – 29		30 – 39		40 – 49		50 – 59	
	M	F	M	F	M	F	M	F	
	Excellent	≥ 57	≥ 40	≥ 48	≥ 37	≥ 42	≥ 35	≥ 38	≥ 30
	Above Average	52-56	37-39	46-47	34-37	40-42	32-34	36-38	27-29
	Average	43-51	35-37	42-45	31-33	37-39	26-31	34-35	25-27
	Below average	40-42	32-34	38-41	29-31	34-37	24-25	31-33	22-25
	Poor	≤ 40	≤ 31	≤ 37	≤ 29	≤ 33	≤ 23	≤ 30	≤ 21

[‡] Based on data from the Canadian Fitness Survey, 1981.

ARCON MTM Functional Abilities Evaluation:

ARCON MTM evaluates occupational Physical Demand Characteristics (PDC) based on Methods-Time Measurement (MTM) data, the most widely developed and validated work analysis system in the world. MTM data is used to establish fair labor standards by numerous employers and unions and has been accepted in the courts and in arbitration as a valid standard of work performance. The MTM system has been used in personnel selection and disability evaluation for thirty years (Acker and Thompson, 1960; Anderson and Edstrom; Birdsong, 1972; Birdsong and Chyatte, 1970; Brickey, Drewes; 1961; Farrell, 1993; Foulke; Grant et al., 1975; Mink, 1975; McQuaid and Winkler; Poocke; Todd et al., 1979; Wilcock, 1980; Wilcock and Mink, 1982; Yokomizo, 1985).

An evaluatee's demonstrated ability in the assessment is compared to the MTM Industrial Standard (IS), the time it takes an average worker with average skill to perform a specific motion throughout an average eight hour day (Karger and Hancock, 1982; Karger and Bayha, 1987; Maynard et al., 1948; MTM Assoc, 1972, 1980).

The ARCON MTM Report presents data from the evaluation in tabular form, as shown and defined below:

Trial	Body Side	Wgt/Pos.	Dist/Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed

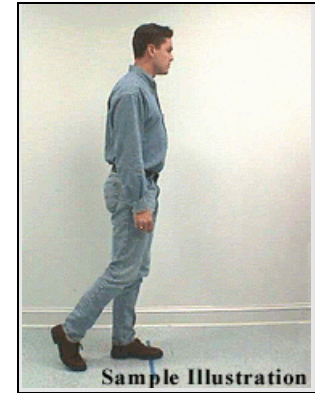
Trial	Count of repetitions of the identical task, repeated for consistency and endurance measurement. A series of Trials comprise a Set . MTM tests may consist of several sets of data.
Body Side	Indicating if the activity was performed with the right, left or both body members, if applicable. Dominant side, if applicable, is indicated by "Dom."
Wgt/Pos.	The weight of the object being handled in the activity, or the body position used for this activity (varies by activity).
Dist/Plane	Distance over which the activity was performed (for return trips, the distance is one way through the round trip), or the plane in which the activity was performed (varies by activity).
Reps	Repetitions that the activity was performed through the distance noted. Definition of Reps is presented in each table footnote.
Time (sec)	The evaluatee's time to perform a single trial of the activity.
% IS	The evaluatee's time compared to the Industrial Standard (IS) time, and reported as a percentage of the IS. An evaluatee can score at, above or below 100% IS, representing an ability that meets, exceeds or falls below the Industrial Standard for that activity.
CV (%)	Coefficient of variance (CV) is a statistical representation of consistency of evaluatee trial times. A minimum of three trials must be collected to calculate a CV. The empirically derived CV for MTM data is 8%. Many factors can affect test scores, including physical impairment, environmental conditions and motivation. CV's over 8% should not automatically be interpreted as indication of lack of evaluatee reliability. Reliability must be determined by a suitably qualified evaluator. This data is computed at the end of a set, hence the CV is presented in the Avg table row for sets with three or more trials. When multiple sets are performed, the CV reported in the MTM Summary Table is calculated from all trials and thus does NOT represent the consistency within sets. The reader should refer to the MTM details for valid consistency data.
PE:HR	The Borg Perceived Exertion (PE) Scale is a self-report scale of degree of exertion the evaluatee perceived during the activity. Heart Rate (HR), if present, is the evaluatee's measured heart rate. Perceived exertion "integrates various information, including the many signals elicited from the peripheral muscles and joints, from the central cardiovascular and respiratory functions, and from the central nervous system" (Borg, 1982). This data is optionally collected at the end of a set, hence PE and HR are shown in the Avg row.
Time Set Completed	The time (recorded by the computer) when the last trial of the set of activity was completed.
<i>The following items appear within or below the table of results</i>	
Avg: S1	The averages per set (ie. S1 represents Set 1). Evaluatee time is averaged across all trials, the average time forms the basis for a comparison to the Industrial Standard to calculate the average percent IS.
Comments (listed below results table)	Evaluator notation of inappropriate body mechanics and/or presence of symptom complaints or behaviors is indicated by a ☒. Comments in reference to the completed set of activity follow if noted by the evaluator. Pictures associated with the activity are presented to the right of the comments box if the evaluator included a picture for the activity.

Walk: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	None	None	12 Ft	3	40	64.0			
2	None	None	12 Ft	3	44	58.2			
3	None	None	12 Ft	3	38	67.4			
Avg: S1	None	None	12 Ft	3	40.7	> 62.9 <	6.1	7 : 102	00:01

(Reps indicates Return Trips for this activity)

Comments for Walk, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 Gait is antalgic on the right with decreased stance phase on the right. Patient observed walking at faster pace when walking to the rest room later in the evaluation with no antalgia noted.

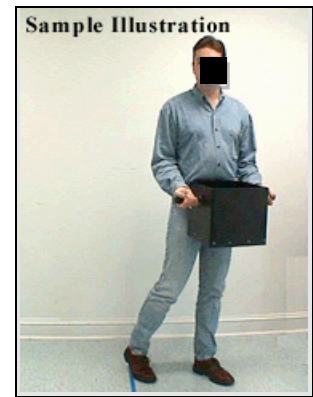


Carry: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Both	10 Lb	12 Ft	1	10.6	94.0			
2	Both	10 Lb	12 Ft	1	11.0	90.5			
3	Both	10 Lb	12 Ft	1	11.6	85.9			
Avg: S1	Both	10 Lb	12 Ft	1	11.1	> 90.0 <	3.7	7 : 89	00:04
1	Both	20 Lb	12 Ft	1	12.6	79.8			
2	Both	20 Lb	12 Ft	1	12.5	80.4			
3	Both	20 Lb	12 Ft	1	11.9	84.5			
Avg: S2	Both	20 Lb	12 Ft	1	12.3	> 81.5 <	2.5	8 : 95	00:05
1	Both	50 Lb	12 Ft	1	Skip	Pt			
2	Both	50 Lb	12 Ft	1	Skip	Pt			
3	Both	50 Lb	12 Ft	1	Skip	Pt			
Avg: S3	Both	50 Lb	12 Ft	1	n/a	> n/a <	n/a	N/a	00:05

(Reps indicates Return Trips for this activity)

Comments for Carry, by Set (e.g. S1)	
S1:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S2:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S3:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors Patient was able to lift 50 lbs but declined to carry it reporting it was too heavy and really hurt his right knee.



Push/Pull Cart:	(tested 6/13/11)
------------------------	------------------

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Push	40 Lb	8 Ft	1	Skip	Pt			
2	Push	40 Lb	8 Ft	1	Skip	Pt			
3	Push	40 Lb	8 Ft	1	Skip	Pt			
Avg: S1	Push	40 Lb	8 Ft	1	n/a	> n/a <	n/a	n/a : n/a	00:42
1	Pull	40 Lb	8 Ft	1	Skip	Pt			
2	Pull	40 Lb	8 Ft	1	Skip	Pt			
3	Pull	40 Lb	8 Ft	1	Skip	Pt			
Avg: S2	Pull	40 Lb	8 Ft	1	n/a	> n/a <	n/a	n/a : n/a	00:42

(Reps indicates One Way Trips for this activity)

Comments for Pull Cart, by Set (e.g. S1)	
S1:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S2:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors "It hurts to push and pull. I don't think I should do that"



Balance: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	None	None	10 paces	1	10.4	58.8			
2	None	None	10 paces	1	9.5	64.4			
3	None	None	10 paces	1	10.5	58.3			
Avg: S1	None	None	10 paces	1	10.1	> 60.4 <	4.4	5 : 88	00:06

(Reps indicates One Way Trips for this activity)

Comments for Balance, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 "It hurts to stay on the line. A lot of pressure on my right knee."

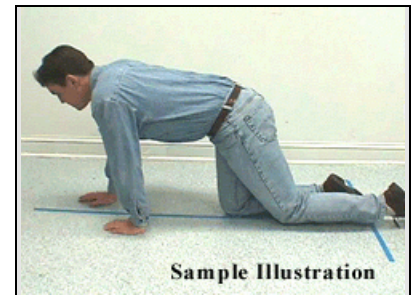


Crawl: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Both	None	8 Ft	1	Skip	Pt			
2	Both	None	8 Ft	1	Skip	Pt			
3	Both	None	8 Ft	1	Skip	Pt			
Avg: S1	Both	None	8 Ft	1	n/a	> n/a <	n/a	N/a: n/a	00:07

(Reps indicates One Way Trips for this activity)

Comments for Crawl, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 Patient reports he can't put weight on his right knee. Declined.



Stoop: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	<2 Lb	None	6	10.6	124.1			
2	Dom.	<2 Lb	None	6	11.6	113.4			
3	Dom.	<2 Lb	None	6	11.2	117.4			
Avg: S1	Dom.	<2 Lb	None	6	11.1	> 118.2 <	3.7	5 : 95	00:09

(Reps indicates Return Trips for this activity)

Comments for Stoop, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 Pain in right knee with weight bearing .

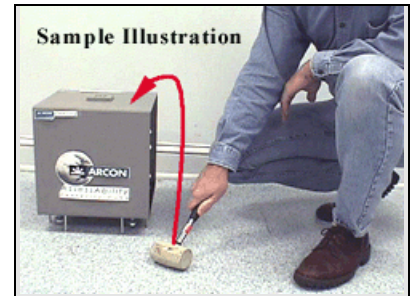


Crouch: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	<2 Lb	None	6	7.8	94.2			
2	Dom.	<2 Lb	None	6	9.3	79.0			
3	Dom.	<2 Lb	None	6	9.3	79.0			
Avg: S1	Dom.	<2 Lb	None	6	8.8	> 83.5 <	8.0	9 : 95	00:11

(Reps indicates Return Trips for this activity)

Comments for Crouch, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 reports increased pain in right knee. Only 3/4 squat position.

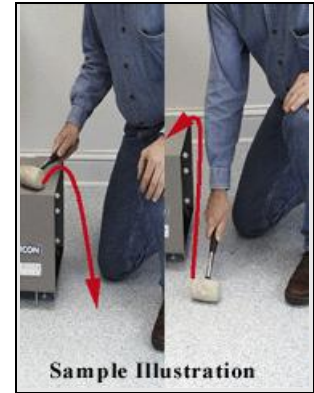


Kneel: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	<2 Lb	None	6	Skip	Pt			
2	Dom.	<2 Lb	None	6	Skip	Pt			
3	Dom.	<2 Lb	None	6	Skip	Pt			
Avg: S1	Dom.	<2 Lb	None	6	n/a	> n/a <	n/a	n/a : n/a	00:12

(Reps indicates Return Trips for this activity)

Comments for Kneel, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 "Hurts to put all weight on one knee and push up." Patient did not attempt this test even though this posture was assumed for a brief time with crouch test.



Climb Stairs: (tested 6/13/11)

Trial	Body Side	Weight	Distance	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	None	None	8 stairs	1	12	45.9			
2	None	None	8 stairs	1	11	50.1			
3	None	None	8 stairs	1	10.2	54.0			
Avg: S1	None	None	8 stairs	1	11.1	> 49.8 <	6.7	9 : 88	00:13

(Reps indicates One Way Trips for this activity)

Comments for Climb Stairs, by Set (e.g. S1)
S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 Step to gait. Used hand rail to assist on the way up. No hand rail used with descending steps. Leads with the right on the way up and left on the way down. This is inconsistent because stress to right knee is greatest with leading leg on the way up and lag leg on the way down because of eccentric action of right quadriceps

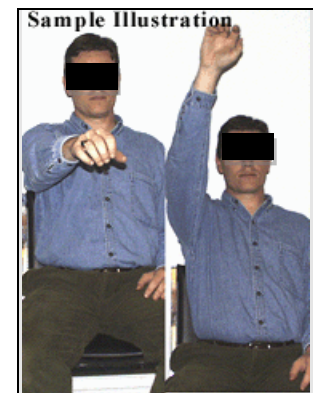


Reach Immediate: (tested 6/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Right	Sitting	Front	6	8.0	83.7			
2	Right	Sitting	Front	6	7.6	88.1			
3	Right	Sitting	Front	6	7.5	89.3			
Avg: S1	Right	Sitting	Front	6	7.7	> 87.0 <	2.8	n/a : n/a	00:16
1	Left	Sitting	Front	6	7.3	91.7			
2	Left	Sitting	Front	6	7.2	93.0			
3	Left	Sitting	Front	6	6.9	97.0			
Avg: S2	Left	Sitting	Front	6	7.1	> 93.9 <	2.4	n/a : n/a	00:17
1	Right	Sitting	Side	6	8.9	75.2			
2	Right	Sitting	Side	6	9.3	72.0			
3	Right	Sitting	Side	6	8.2	81.7			
Avg: S3	Right	Sitting	Side	6	8.8	> 76.1 <	5.2	n/a : n/a	00:18
1	Left	Sitting	Side	6	8	83.7			
2	Left	Sitting	Side	6	8.1	82.7			
3	Left	Sitting	Side	6	7.9	84.8			
Avg: S4	Left	Sitting	Side	6	8.0	> 83.7 <	1.0	n/a : n/a	00:19
1	Right	Sitting	Across	6	9.9	67.6			
2	Right	Sitting	Across	6	11	60.9			
3	Right	Sitting	Across	6	9.6	69.8			
Avg: S5	Right	Sitting	Across	6	10.2	> 65.9 <	5.9	n/a : n/a	00:20
1	Left	Sitting	Across	6	13	51.5			
2	Left	Sitting	Across	6	12.8	52.3			
3	Left	Sitting	Across	6	12.4	54.0			
Avg: S6	Left	Sitting	Across	6	12.7	> 52.6 <	2.0	4 : 88	00:20

(Reps indicates Return Trips for this activity)

Comments for Reach Immediate, by Set (e.g. S1)	
S1:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S2:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S3:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S4:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S5:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S6:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors Pain with reaching with right upper extremity with immediate plane and and overhead. Pain with reaching with left because of pull in right knee.

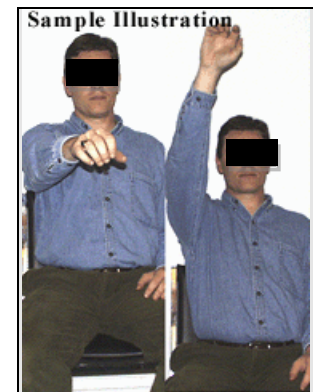


Reach Overhead: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Right	Sitting	Front	6	8.6	77.9			
2	Right	Sitting	Front	6	10.9	61.4			
3	Right	Sitting	Front	6	9.7	69.0			
Avg: S1	Right	Sitting	Front	6	9.7	> 68.8 <	9.7	n/a : n/a	00:23
1	Left	Sitting	Front	6	8.7	77.0			
2	Left	Sitting	Front	6	7.9	84.8			
3	Left	Sitting	Front	6	8.4	79.7			
Avg: S2	Left	Sitting	Front	6	8.3	> 80.4 <	4.0	n/a : n/a	00:23
1	Right	Sitting	Side	6	12.3	54.4			
2	Right	Sitting	Side	6	11.9	56.3			
3	Right	Sitting	Side	6	11.3	59.3			
Avg: S3	Right	Sitting	Side	6	11.8	> 56.6 <	3.5	n/a : n/a	00:24
1	Left	Sitting	Side	6	11.4	58.7			
2	Left	Sitting	Side	6	11	60.9			
3	Left	Sitting	Side	6	10.8	62.0			
Avg: S4	Left	Sitting	Side	6	11.1	> 60.5 <	2.3	6 : 95	00:25

(Reps indicates Return Trips for this activity)

Comments for Reach Overhead, by Set (e.g. S1)	
S1:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S2:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S3:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors
S4:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors Pain with reaching on the right. Inconsistent with immediate reach across because pain was worse on right with all trials.



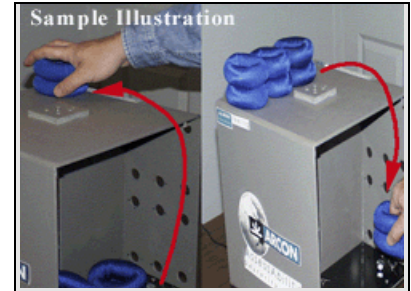
Reach with Weight: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	Standing	Immediate	8	13	103.7			
2	Dom.	Standing	Immediate	8	12.8	105.3			
3	Dom.	Standing	Immediate	8	11.9	113.3			
Avg: S1	Dom.	Standing	Immediate	8	12.6	> 107.3 <	3.8	3 : 88	00:29

(Reps indicates Weight Moves for this activity)

Comments for Reach with Weight, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



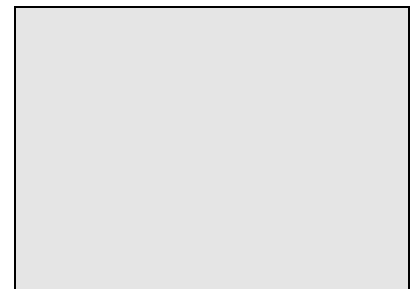
Handling: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	Standing	Immediate	12	15	109.3			
2	Dom.	Standing	Immediate	12	14.7	111.6			
3	Dom.	Standing	Immediate	12	14	117.1			
Avg: S1	Dom.	Standing	Immediate	12	14.6	> 112.6 <	2.9	5 : 90	00:30

(Reps indicates Peg Turns for this activity)

Comments for Handling, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



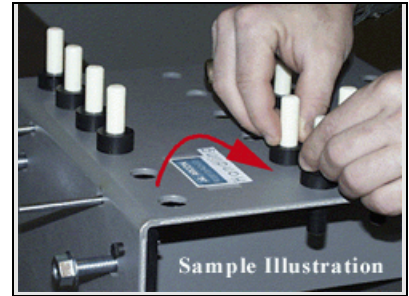
Bi-Manual Handling: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Both	Standing	Immediate	6	13	81.9			
2	Both	Standing	Immediate	6	13.4	79.5			
3	Both	Standing	Immediate	6	13.2	80.7			
Avg: S1	Both	Standing	Immediate	6	13.2	> 80.7 <	1.2	3 : 90	00:31

(Reps indicates Pegs/Hand for this activity)

Comments for Bi-Manual Handling, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors
 It doesn't hurt to use my hands it is killing me to stand here



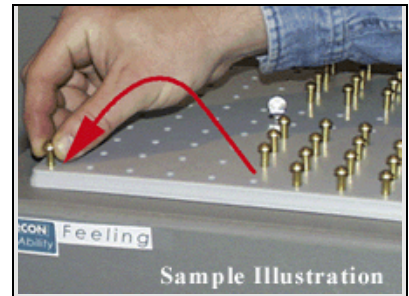
Fingering: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	Standing	Immediate	10	12	132.5			
2	Dom.	Standing	Immediate	10	13.4	118.7			
3	Dom.	Standing	Immediate	10	12.9	123.3			
Avg: S1	Dom.	Standing	Immediate	10	12.8	> 124.6 <	4.5	4 : 92	00:32

(Reps indicates Rivet Moves for this activity)

Comments for Fingering, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



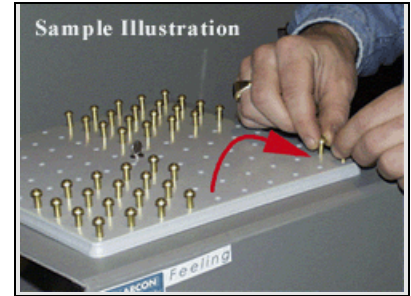
Bi-Manual Fingering: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Both	Standing	Immediate	5	17	125.9			
2	Both	Standing	Immediate	5	18.5	115.7			
3	Both	Standing	Immediate	5	17.9	119.6			
Avg: S1	Both	Standing	Immediate	5	17.8	> 120.3 <	3.5	4 : 95	00:33

(Reps indicates Rivets/Hand for this activity)

Comments for Bi-Manual Fingering, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



Feeling: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Both	Standing	Immediate	6	14	77.0			
2	Both	Standing	Immediate	6	14.5	74.4			
3	Both	Standing	Immediate	6	13.9	77.6			
Avg: S1	Both	Standing	Immediate	6	14.1	> 76.3 <	1.9	4 : 92	00:34

(Reps indicates Shape IDs for this activity)

Comments for Feeling, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



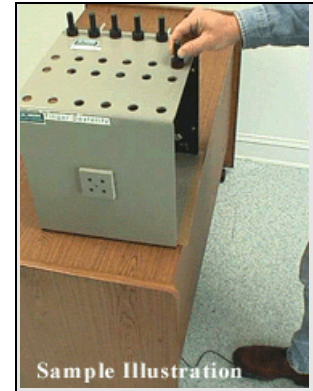
Eye-Hand-Foot: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	Standing	Immediate	6	20	81.0			
2	Dom.	Standing	Immediate	6	19.5	83.1			
3	Dom.	Standing	Immediate	6	18.6	87.1			
Avg: S1	Dom.	Standing	Immediate	6	19.4	> 83.6 <	3.0	4 : 95	09:49

(Reps indicates Peg Movements for this activity)

Comments for Eye-Hand-Foot, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



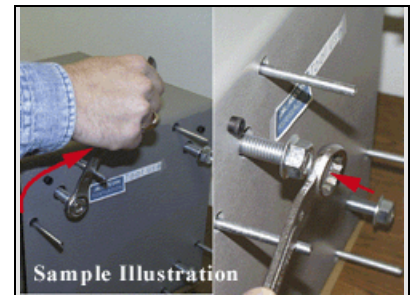
Tool Use: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	Dom.	Standing	Immediate	6	13	102.8			
2	Dom.	Standing	Immediate	6	14.6	91.6			
3	Dom.	Standing	Immediate	6	14.1	94.8			
Avg: S1	Dom.	Standing	Immediate	6	13.9	> 96.2 <	4.8	6 : 100	00:35

(Reps indicates Tool Movements for this activity)

Comments for Tool Use, by Set (e.g. S1)

S1: Inappropriate Body Mechanics Symptom Complaints or Behaviors



Stand/Sit: (tested 06/13/11)

Trial	Body Side	Position	Plane	Reps	Time (sec)	% IS	CV (%)	PE:HR	Time Set Completed
1	None	Stand-Sit	None	1	3.9	72.1			
2	None	Stand-Sit	None	1	4.5	62.5			
3	None	Stand-Sit	None	1	3.8	74.0			
Avg: S1	None	Stand-Sit	None	1	4.1	> 69.1 <	7.6	7 : 106	00:42

(Reps indicates Return Trips for this activity)

Comments for Stand/Sit, by Set (e.g. S1)	
S1:	<input type="checkbox"/> Inappropriate Body Mechanics <input type="checkbox"/> Symptom Complaints or Behaviors "my knee is killing me now"

