Meraki RCM

From	Priyanka	To	AmTrust North America
Telephone		Clearinghouse	Jopari
Fax	----------	Payer ID	16535
Email	Admin@gmail.com		

Original Bill

Medical Treatment

Patient Name	Chris Milana	Billing Provider	WorkMed California, APC
Claim Number	32145689-1	DOS	09-14-2021
Patient Control No		Charge Amount	224.78
		Rendering Provider	Robinson Langille

Payment Compliance Dates

e-Bill Transmission

TRISTAR RISK MANAGEMENT
SUBMITTED ELECTRONICALLY VIA JOPARI
(PAYER ID: 41556)

HEALTH INSURANCE CLAIM FORM

APPROVED BY NATIONAL UNIFORM CLAIM COMMITTEE (NUCC) 02/12

PICA

CMS1500 PAGE 1 OF 1 PICA

1. MEDICARE ☐ (Medicare#)	MEDICAID ☐ (Medicaid#)	TRICARE ☐ (ID#/DoD#)	CHAMPVA ☐ (Member ID#)	GROUP HEALTH PLAN ☐ (ID#)	FECA BLACKLUNG ☐ (ID#)	OTHER ☒ (ID#)

1.a INSURED'S I.D. NUMBER (For Program in item 1): 000-00-0000

2. PATIENT'S NAME(Last Name, First Name, Middle Initial): MILANA, CHRIS

3. PATIENT'S BIRTH DATE MM DD YY — SEX M ☒ F ☐

4. INSURED'S NAME(Last Name, First Name, Middle Initial): MERAKI RCM SOLUTIONS, LLC

5. PATIENT'S ADDRESS (NO.,Street): 8020 DE PALMA, ST. #208

6. PATIENT RELATIONSHIP TO INSURED Self ☒ Spouse ☐ Child ☐ Other ☐

7. INSURED'S ADDRESS (NO.,Street): 1055 W. 7TH ST, 33RD FLOOR

CITY: LAKEWOOD — STATE:

ZIPCODE: — TELEPHONE(Include Area Code):

8. RESERVED FOR NUCC USE

CITY: LOS ANGELES — STATE: CALIFORNIA

ZIPCODE: 90017 — TELEPHONE(Include Area Code):

9. OTHER INSURED'S NAME(Last Name, First Name, Middle Initial):

a. OTHER INSURED'S POLICY OR GROUP NUMBER

b. RESERVED FOR NUCC USE

c. RESERVED FOR NUCC USE

d. INSURANCE PLAN NAME OR PROGRAM NAME

10. IS PATIENT'S CONDITION RELATED TO:

a. EMPLOYMENT?(Current or Previous) ☒ YES ☐ NO

b. AUTO ACCIDENT? ☐ YES ☐ NO PLACE (State)

c. OTHER ACCIDENT? ☐ YES ☐ NO

10d. CLAIM CODES (Designated by NUCC)

11. INSURED'S POLICY GROUP OR FECA NUMBER: Value

a. INSURED'S DATE OF BIRTH MM DD YY — SEX M ☐ F ☐

b. OTHER CLAIM ID (Designated by NUCC): 32145689-1 Value

c. INSURANCE PLAN NAME OR PROGRAM NAME: Value

d. IS THERE ANOTHER HEALTH BENIFIT PLAN? ☒ Yes ☐ No **If yes,** complete items 9,9a, and 9d.

PATIENT AND INSURED INFORMATION

READ BACK OF FORM BEFORE COMPLETEING & SIGNING THIS FORM

12. PATIENT'S OR AUTHORIZED PERSON'S SIGNATURE I authorize the release of any medical or other information necessary to process this claim. I also request payment of government benifits either to myself or to government benifits either to myself or to the party who accepts assignment below.

SIGNED SIGNATURE ON FILE DATE 10/10/2023

13. INSURED'S OR AUTHORIZED PERSON'S SIGNATURE I authorize payment of medical benifits to the undersigned physician or supplier for service described below.

SIGNED

14.DATE OF CURRENT ILLNESS, INJURY,or PREGNANCY (LMP) MM Value DD Value YY Value QUAL.

15. OTHER DATE QUAL. MM DD YY

16. DATES PATIENT UNABLE TO WORK IN CURRENT OCCUPATION MM DD YY FROM — MM DD YY TO

17. NAME OF REFERRING PROVIDER OR OTHER SOURCE

17.a

17.b NPI

18. HOSPITALIZATION DATES RELATED TO CURRENT SERVICES MM DD YY FROM — MM DD YY TO

19.ADDITIONAL CLAIM INFORMATION (Designated by NUCC)

20. OUTSIDE LAB? ☐ Yes ☐ No $CHARGES

22. RESUBMISSION CODE ORIGINAL REF. NO.

21. DIAGNOSIS OR NATURE OF ILLNESS OR INJURY Relate A-L to service line below(24E) ICD Ind. Value Value

A.	Value	B.	Value	C.	Value	D.	Value
E.	Value	F.	Value	G.	Value	H.	Value
I.	Value	J.	Value	K.	Value	L.	Value

23. PRIOR AUTHORIZATION NUMBER

PHYSICIAN OR SUPPLIER INFORMATION

	24.A. DATE(S) OF SERVICE From MM	DD	YY	To MM	DD	YY	B. PLACE OF SERVICE	C. AMG	D. PROCEDURES, SERVICES, OR SUPPLIES (Explain Unusual Circumstances) CPT/HCPCS	MODIFIER	E. DIAGNOSIS POINTER	F. $ CHARGES	G. DAYS OR UNITS	H. EPSDT Family Plan	I. ID QUAL.	J. RENDERING PROVIDER ID.#
1							11	value	00	00 00 00 00		00 00	00	00	ZZ	
															NPI	1215628623
2																
3	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623
4	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623
5	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623
6	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623
	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623
	00	00	00	00	00	00	value	value	00	00 00 00 00		00 00	00	00	NPI	1215628623

25. FEDERAL TAX I.D NUMBER SSN ☐ EIN ☐: 330184132

26. PATIENT'S ACCOUNT NO.: 477DB9122800-1

27. ACCEPT ASSIGNMENT? (For govt. claims, see back) ☐ YES ☐ NO

28. TOTAL CHARGE: $ 0.00 .00

29. AMOUNT PAID: $ 0 .00

30. Rsvd for NUCC Use: - 0 .00

31. SIGNATURE OF PHYSICIAN OR SUPPLIER INCLUDING DEGRESS OR CREDENTIALS (I certify that the statements on the reverse apply to this bill and are made a part thereof.)

Robinson Langille

SIGNATURE ON FILE SIGNED — 10/10/2023 DATE

32. SERVICE FACILITY LOCATION INFORMATION

Fresno-New
2440 W Shaw Ave #106
2440 W Shaw Ave #106
Fresno California

a. NPI 1487029278 b.

33. BILLING PROVIDER INFO & PH #( )

WorkMed California, APC
PO BOX 3327
Seal Beach California 90740

a. NPI 1487029278 b.

NUCC Instruction Manual available at: www.nucc.org

PLEASE PRINT OR TYPE

APPROVED OMB-0938-1197 form 1500 (02-12)

WORKMED CALIFORNIA, APC
OCCUPATIONAL HEALTHCARE

October 16, 2023

RE: ANDRADE GRANADOS, GRICELDA
Date of Birth: 9/16/1966 (Age: 57)
Reason for Test: Return to work capabilities

To Whom It May Concern:

This cover letter provides a brief summary of relevant data regarding Gricelda Andrade Granados's physical abilities that were ascertained from the Functional Capacity Evaluation performed on 10/16/2023.

OVERALL PHYSICAL DEMAND LEVEL:
Ms. Andrade Granados's occupation as a Fruit Picker requires her to work in the **MEDIUM physical demand level**. Based on this Functional Capacity Evaluation, Ms. Andrade Granados **does not** meet the strength requirements of this physical demand level.

Light Work: Ms. Andrade Granados is only capable of assuming a position in a **LIGHT physical demand level**. Ms. Andrade Granados is capable of exerting up to a maximum of 20 pounds of force occasionally throughout the workday with frequent lifting or carrying objects weighing 10 pounds. However, in order for Ms. Andrade Granados to successfully work in a light physical demand level, job factor restriction(s) must be met (see Table Summary page).

RELIABILITY AND CONSISTENCY OF EFFORT:
It is my professional opinion that Ms. Andrade Granados gave a consistent performance and effort during her functional capacity evaluation. The results of this evaluation are a valid representation of her current functional abilities. She is very guarded and moves very slowly due to her pain and fatigues quickly. The Five Point/Bell Shape Curve Grip Test and Pain Disability Index were used to further determine consistency/validity of Ms. Andrade Granados' test results/efforts (see Table Summary page).

Comments:
I can state within a reasonable degree of professional certainty, that the functional limitations mentioned in this report are directly related to the date of injury.
I feel that this Functional Capacity Evaluation is an accurate representation of his or her current functional abilities.

During this FCE I witness the patient struggle to lift the minimal weight restrictions of 20lbs and I believe her weight limit should be less, at 15lbs to be safe.

Sincerely,

Marc Lizzarazo, FCE
Physical Medicine

Kevin Calhoun, MD.
Supervising Physician

FUNCTIONAL CAPACITY EVALUATION TABLE SUMMARY

Last Name: Andrade Granados	**First Name:** Gricelda	**Date of Test:** 10/16/2023
SSN: N/A	**Date of Birth:** 9/16/1966 (Age: 57)	**Sex:** Female
Height: 5' 6" (168 cm)	**Weight:** 190 lbs. (86.2 kg)	**Evaluator:** Marc Lizzarazo, FCE

FULL TIME WORK TOLERANCE

Sustainable Competitive Work Hours (per day) without significant fatigue: 8 hours

ACTIVITY TOLERANCES	Consecutively (at one time)	Cumulatively (per day) Individual Tolerances	Cumulatively (per day) Combined Tolerances
SITTING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated
STANDING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated
WALKING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated

Individual cumulative tolerances indicate the maximum time the individual can tolerate one activity without accounting for the other activities.
Combined cumulative tolerances are safe times the individual can tolerate alternating between sit, stand, and walk activities throughout the workday.

OVERALL STRENGTH RATING		Limits of Weights Lifted/Carried	Occasional up to 33% of workday up to 12 times per hour	Frequent 34-66% of workday 13-62 times per hour	Constant 67-100% of workday > 63 times per hour
Sedentary	1.5 to 2.1 METS	Up to 10 lbs			
Light	2.2 to 3.5 METS	11-20 lbs	20 lbs (max)	10 lbs (max)	Negligible
Medium	3.6 to 6.3 METS	21-50 lbs			
Heavy	6.4 to 7.5 METS	51-100 lbs			
Very Heavy	> 7.5 METS	> 100 lbs			

JOB FACTOR RESTRICTIONS OR ACCOMMODATIONS REQUIRED FOR MEDIUM WORK

* Rare standing balance activities on narrow, slippery, or erratically moving surfaces.
* No walking balance activities on narrow, slippery, or erratically moving surfaces.
* No stair climbing activities.
* Rare ladder climbing activities.
* No stooping activities.
* No kneeling on either knee.
* No kneeling on both knees simultaneously.
* No crouching activities.
* Occasional reaching activities with the left arm.
* Occasional activities consisting of firm power gripping, holding, or turning objects with the right and left hands.
* Rare gross manipulation (arm-hand movements) with the right hand for seizing, holding, or turning objects.
* No gross manipulation (arm-hand movements) with the left hand for seizing, holding, or turning objects.
* No lifting greater than 20 pounds occasionally from the floor to waist level.
* No lifting greater than 20 pounds occasionally from the waist to shoulder level.
* No lifting greater than 20 pounds occasionally above the shoulder.
* No carrying with both arms more than 20 pounds occasionally at waist level.
* No carrying (single arm) more than 10 pounds occasionally with the right and left arm.
* No lifting greater than 10 pounds occasionally from the floor to waist level with the right arm.
* No lifting greater than 10 pounds occasionally from the waist to shoulder level with the right arm.

PSYCHOSOCIAL SCREENING AND/OR PAIN ASSESSMEMENT QUESTIONNAIRES

* Beck Depression Inventory: 21% Depressed
* Lower Extremity Function Scale: 36% Perceived Disability
* Short-Form McGill Pain Questionnaire: 60% Pain Rating
* Pain Disability Index: 54% Perceived Disability
* Oswestry (Low Back) Disability Index: 46% Perceived Disability
* 36-Item Short Form Survey: 49% Perceived Physical Disability
* 36-Item Short Form Survey: 60% Perceived Mental Disability

CONSISTENCY OF EFFORT

It is my professional opinion that Ms. Andrade Granados gave a consistent performance and effort during this functional capacity evaluation. The results of this evaluation are a valid representation of her current functional abilities. She is very guarded and moves very slowly due to her pain and fatigues quickly.

* Five Point/Bell Shape Curve Grip Test: right = maximal effort; left = maximal effort
* Pain Disability Index: Organic (appropriate) behavior

JOB DEMAND MATCH COMPARISON

Last Name: Andrade Granados	**First Name:** Gricelda	**Date of Test:** 10/16/2023
SSN: N/A	**Date of Birth:** 9/16/1966 (Age: 57)	**Sex:** Female

Job Title: Fruit Picker / Job Code: 403.687-018

Job Description: Harvests fruits and nuts, such as cherries, strawberries, grapes, oranges, and pecans, according to method appropriate for type of fruit, by hand or using tools, such as shears, rubber mallet, pronged scoop, or hooked pole: Carries and positions work aids, such as ladders, canvas drop cloths, and buckets. Selects fruit to be harvested, according to size, shape, and color. Grasps, twists, and pulls fruit, snips stems, and shakes trees and vines to separate crop from plant and places fruit into bags, buckets, or trays, exercising care to avoid plant and fruit damage. Empties filled containers into collection boxes and bins. May stand on ladders or elevated platforms, stoop over plants, or crawl along rows to reach fruit. May measure fruit, using gauges. May pour fruit through screens when removing foreign matter, such as twigs and grasses. May position hand held vibrating device against branches of bushes to shake ripe fruit from branches. May dump fruit from containers onto conveyors or load containers onto trucks or wagons. May remove ladders, debris, boxes, and discarded fruit from fields and bogs to clean growing areas. May collect fallen nuts into piles, using rake. May carry and position irrigation pipes. May be identified with tasks being performed, such as rhubarb trimming, cranberry screening, and walnut knocking.

JOB ACTIVITIES		JOB REQUIREMENTS	INDIVIDUAL'S TEST RESULTS	JOB MATCH
STRENGTH LEVEL		Medium (21-50 lbs)	Light (20 lbs)	NO
CLIMBING STAIRS		Frequent	Never	NO
CLIMBING LADDERS		Frequent	Rare	NO
BALANCING – Static (Stationary)		Frequent	Rare	NO
BALANCING – Dynamic (Moving)		Frequent	Never	NO
STOOPING		Frequent	Never	NO
KNEEL ON 1 KNEE		Occasional	Never	NO
KNEEL ON BOTH KNEES		Occasional	Never	NO
CROUCHING/SQUATTING		Occasional	Never	NO
REACHING – RIGHT ARM		Frequent	Frequent	YES
REACHING – LEFT ARM		Frequent	Occasional	NO
FOOT CONTROL - RIGHT		Not Present	Non applicable	Non applicable
FOOT CONTROL - LEFT		Not Present	Non applicable	Non applicable
HANDLING				
Simple Grasping, Turning	Right	Frequent	Constant	YES
	Left	Frequent	Constant	YES
Firm Power Grasp	Right	Frequent	Occasional	NO
	Left	Frequent	Occasional	NO
Gross Motor Dexterity	Right	Frequent	Rare	NO
	Left	Frequent	Never	NO
FINGERING				
Simple Picking, Pinching	Right	Occasional	Constant	YES
	Left	Occasional	Constant	YES
Precision-Pinch Grasp	Right	Occasional	Occasional	YES
	Left	Occasional	Occasional	YES
Fine Motor Dexterity	Right	Occasional	Frequent	YES
	Left	Occasional	Occasional	YES
SITTING		Occasional	Frequent	YES
STANDING		Frequent	Frequent	YES
WALKING		Frequent	Frequent	YES

Not Present	RARE	OCCASIONAL	FREQUENT	CONSTANT
Activity or condition does not exist.	Activity or condition exists: 1-5% of the time or < 25 minutes per day or 1-2 repetitions per hour or 1-16 repetitions per day	Activity or condition exists: Up to 1/3rd (6-33%) of the time or 25 min to 2 ½ hours per day or 3-12 repetitions per hour or 17-100 repetitions per day	Activity or condition exists: > 1/3rd - 2/3rd (34-66%) of the time or > 2 ½ to 5 ¼ hours per day or 13-62 repetitions per hour or 101-500 repetitions per day	Activity or condition exists: > 2/3rd (67-100%) of the time or > 5 ¼ to 8 hours per day or 63+ repetitions per hour or 500+ repetitions per day

PHYSICAL DEMAND CAPABILITIES TABLE

Last Name: Andrade Granados	**First Name:** Gricelda	**Date of Test:** 10/16/2023
SSN: N/A	**Date of Birth:** 9/16/1966 (Age: 57)	**Sex:** Female

MATERIAL HANDLING	OCCASIONAL	FREQUENT	CONSTANT
OVERALL STRENGTH: Combined Lift/Carry	20 lbs	10 lbs	Negligible
FLOOR TO WAIST LIFT	20 lbs	10 lbs	Negligible
WAIST TO SHOULDER LIFT	20 lbs	10 lbs	Negligible
SHOULDER TO OVERHEAD LIFT	20 lbs	10 lbs	Negligible
FRONT ARM CARRY – BOTH HANDS	20 lbs	10 lbs	Negligible
SINGLE ARM CARRY – RIGHT HAND	10 lbs	Negligible	Negligible
SINGLE ARM CARRY – LEFT HAND	10 lbs	Negligible	Negligible
SINGLE ARM FLOOR TO WAIST LIFT - RIGHT	10 lbs	Negligible	Negligible
SINGLE ARM WAIST TO SHOULDER LIFT - RIGHT	10 lbs	Negligible	Negligible
PUSHING	100 lbs	50 lbs	20 lbs
PULLING	80 lbs	40 lbs	16 lbs

JOB ACTIVITIES		AVOID	RARE	OCCASIONAL	FREQUENT	CONSTANT
CLIMBING STAIRS		•				
CLIMBING LADDERS			•			
BALANCING – Static (Stationary)			•			
BALANCING – Dynamic (Moving)		•				
STOOPING		•				
KNEEL ON 1 KNEE		•				
KNEEL ON BOTH KNEES		•				
CROUCHING/SQUATTING		•				
REACHING – RIGHT ARM					•	
REACHING – LEFT ARM				•		
HANDLING						
Simple Grasping, Turning	Right					•
	Left					•
Firm Power Grasp	Right			•		
	Left			•		
Gross Motor Dexterity	Right		•			
	Left	•				
FINGERING						
Simple Picking, Pinching	Right					•
	Left					•
Precision-Pinch Grasp	Right			•		
	Left			•		
Fine Motor Dexterity	Right				•	
	Left			•		
SITTING					•	
STANDING					•	
WALKING					•	

AVOID	RARE	OCCASIONAL	FREQUENT	CONSTANT
Avoid Activity or condition	Activity or condition exists: 1-5% of the time or < 25 minutes per day or 1-2 repetitions per hour or 1-16 repetitions per day	Activity or condition exists: Up to 1/3rd (6-33%) of the time or 25 min to 2 ½ hours per day or 3-12 repetitions per hour or 17-100 repetitions per day	Activity or condition exists: > 1/3rd - 2/3rd (34-66%) of the time or > 2 ½ to 5 ¼ hours per day or 13-62 repetitions per hour or 101-500 repetitions per day	Activity or condition exists: > 2/3rd (67-100%) of the time or > 5 ¼ to 8 hours per day or 63+ repetitions per hour or 500+ repetitions per day

WORKMED CALIFORNIA, APC
OCCUPATIONAL HEALTHCARE

FUNCTIONAL CAPACITY EVALUATION (FCE)

October 16, 2023

RE: ANDRADE GRANADOS, GRICELDA
Date of Birth: 9/16/1966 (Age: 57)
Sex: Female
Body Measurements: 190 lbs. (86.2 kg), 5' 6" (168 cm)
Date of Injury: 2/22/2019
Reason for Test: Return to work capabilities
Test Date: 10/16/2023 (**Start:** 8:30 am - **End:** 1:35 pm; **Time:** 5 hrs, 5 mins)

DIAGNOSIS
Low back pain, unspecified (M54.50)
Pain in left shoulder (M25.512)
Bulging lumbar disc (M51.36)
Trigger point of left shoulder region (M25.512)
Post laminectomy syndrome (M96.1)
H/O shoulder surgery (Z98.890).

HISTORY OF CURRENT CONDITION
HX: While working on her 1st day of work, she was on top of a ladder. As she began to climb down the ladder about the 4th or 6th step she lost her footing and fell backwards onto her back.

To date patient has completed 9 sessions of Acupuncture for the Left Shoulder and L/s

Work Limitations: Modified duties: No lifting more than 20 lbs. No work above shoulder level.

CHIEF COMPLAINTS
Low Back Pain The patient reports her pain is a 5 on a scale from 0 to 10. Pain radiating to left leg . The alleviating factors are medication and creams. The exacerbating factors are bending. Prolong standing and walking

Shoulder Pain - LT The patient reports her pain is a 5 on a scale from 0 to 10. Pain radiating to neck and upper back . With cramps The alleviating factors are medication and creams. The exacerbating factors are overhead reaching, lifting and prolonged driving.

PAST MEDICAL HISTORY
Medical History: High Blood Pressure, Diabetes.
Surgical History: Left Shoulder Arthroscopy with Orthopedic Dr. Simonian
Right L5-S1 Hemilaminectomy and discectomy with Neurosurgeon Dr. Najafi.

Allergies: No known drug allergies.
Current Medications: Mobic 15 mg oral tablet
Lisinopril 10mg

SYSTEMS REVIEW/EXAMINATION
Integumentary System: Texture (not impaired); temperature (not impaired).
Neuromuscular System: Gait, locomotion (impaired - decreased cadence/Bradykinetic; protective stance. Limping on right leg.); motor control (impaired - Left arm; Right leg=poor;).
Musculoskeletal System: Gross strength (impaired - Lumbar 3/5 and Left shoulder=3/5; Cold weather also aggravates her shoulder pain.).
Communication & Cognition: Emotional/behavioral responses (not impaired); orientation to person, place, and time (not impaired); communication (not impaired).

Physical Examination Table(s) are at end of report.

INTRODUCTION
The above referenced individual participated in a Functional Capacity Evaluation (FCE) that is based on the Dictionary of Occupational Titles-Return to Work (DOT-RTW) Battery. The DOT-RTW Battery is an expanded variant of the Dictionary of Occupational Titles Residual Functional Capacity (DOT-RFC) Battery.[1,2] The Battery was created to measure the medical impairment of a person, express it in terms of functional limitations, and ultimately calculate the person's actual work capacity.[1] The Dictionary of Occupational Titles (DOT) defines numerous job-related tasks and categorizes occupations into one of five progressively increasing strength classifications (sedentary, light, medium, heavy and very heavy).[3,4]

The DOT-RTW Battery adds standardized tests in over 30 different job-related tasks (such as climbing, balancing, stooping, crouching, crawling, walking, kneeling, etc.) that an individual may be required to perform for any given occupation. The Battery measures an individual's functional capacity in each of these physical demand tasks based on peer reviewed norms of healthy subjects. The number of standardized tests can vary significantly depending on the DOT physical demands of the occupation. The individual's test scores and ranking within the healthy population is then utilized to obtain a more accurate return to work determination. These additional tests are critical in determining an individual's actual functional abilities and work capacity. The Battery was found to demonstrate: Excellent Face and Construct Validity, Good Test/Re-Test Reliability, Good Intra-Rater Reliability, Predictive Validity, and Strong Content Validity.[2,5,6]

FUNCTIONAL CAPACITY TEST RESULTS
Ms. Andrade Granados performed this Functional Capacity Evaluation in order to help determine her overall functional capacities. Below is a detailed description of the actual performance levels achieved for each job factor task completed.

PSYCHOSOCIAL &/OR PAIN ASSESSMENT QUESTIONNAIRES

Beck Depression Inventory (SHORT FORM)

Description: The Beck Depression Inventory is one of the most frequently used questionnaires to help screen and quantify people who suffer from depression. The "short form" version was created in 1972 and was geared toward screening medical patients for depression. The short form is comprised of 13 items that assist the clinician in detecting signs of depression. Each question is scored on a 0 to 3 point scale and overall scores range from 0 to 100% with higher scores indicating higher levels of depression.

Test Results: Ms. Andrade Granados has a depression score of **21%** on the Beck Depression Inventory (Short Form) questionnaire.

Lower Extremity Function Scale (LEFS)

Description: The Lower Extremity Function Scale (LEFS) is a self-reported outcome tool created to assess lower extremity function. The LEFS is easy to administer, is applicable to a wide variety of lower extremity conditions and helps the clinician to establish disability levels, set functional goals, track progress and measure patient outcomes. The conceptual framework of the LEFS is based on the World Health Organization's model of disability and handicap and it was developed using a systematic process of item selection and scaling. The scale consists of 20 activities with each activity having four possible choices ranging from 0 (extreme difficulty or unable to perform activity) to 4 (no difficulty). Overall patient scores range from 0 percent (no functional deficits or limitations) to 100 percent (complete functional deficits or limitations). Test and re-test reliability was demonstrated to be excellent. Construct validity was established by comparing the Lower Extremity Function Scale with the SF-36 Health Survey. The LEFS demonstrates a higher correlation between the "prognostic rating of change" than does the SF-36 physical function score and was also superior to the SF-36 in terms of "clinical efficiency and sensitivity to change" for documenting the physical capacity of patients with lower extremity dysfunction.

Test Results: Ms. Andrade Granados scored a **36%** disability rating on the LEFS indicating that her lower extremity pain is limiting/restricting her functioning in activities of daily living (ADL).

Short-Form McGill Pain Questionnaire (SF-MPQ)

Description: The Short-Form McGill Pain Questionnaire (SF-MPQ) is a modified version of the McGill Pain Questionnaire. The Short-Form McGill Pain Questionnaire provides data on the sensory, affective and overall intensity of pain. The Short-Form McGill Pain Questionnaire also includes the Present Pain Intensity (PPI) index used in the standard McGill Pain Questionnaire and a visual analogue scale (VAS). The questionnaire consists of 15 different descriptors (1 sensory; 4 affective) that are rated on an intensity scale with 0 = none, 1 = mild, 2 = moderate, and 3 = severe. The total pain score is a combination of all 15 pain descriptors; the sensory pain score is a combination of the first 11 pain descriptors; and the affective pain score is a combination of the last 4 pain descriptors. All scores range from 0% (no pain) to 100% (extreme pain). Lower scores represent less pain. The visual analog scale (visual line graph) and the present pain intensity (numerical scale) are not calculated or graphed. The SF-MPQ is a useful option when the standard MPQ would be considered to take too long to complete and the measurement of the qualitative component of pain in addition to the intensity of pain (as measured with the PPI and VAS) are desired. Correlations to the MPQ were shown to be consistently high and the sensitivity sufficient to demonstrate differences due to treatment.

Test Results: Ms. Andrade Granados scored a **64%** on the sensory pain level scale, **50%** on the affective pain level scale and a **60%** on the total pain level indicating that pain is limiting/restricting her functioning in activities of daily living (ADL).

Pain Disability Index (PDI)

Description: The Pain Disability Index (PDI) is a 7-item self reporting outcome questionnaire that evaluates the magnitude of perceived pain-related disability that is independent from region of pain or pain-related diagnosis. The PDI measures family/home responsibilities, recreation, social activity, occupation, sexual behavior, self-care and life support activity.[1] In general, The PDI is a simple, easily understood, and rapid instrument for measuring the impact that pain has on the ability of a person to participate in essential life activities. **Validity & Reliability:** The PDI is valid and reliable, with good internal consistency.[1-8] Construct validity demonstrated significant difference in PDI scores between symptomatic and asymptomatic individuals. The results indicated a successful cultural adaptation and reliable psychometric properties.[3] The PDI showed responsiveness to detect clinically relevant changes in pain-related disability at discharge of vocational rehabilitation.[4] The study[1] revealed modest test-retest reliability for the instrument. It also showed the PDI to be associated with the levels of pain behavior exhibited by these patients. The findings of both studies generally support the reliability and validity of the PDI as a brief measure of pain-related disability.[1] **Scoring:** The sum of the seven items equals the total score of the PDI. Scores of each item are assigned based on an 11-point scale ranging from 0 (no disability) to 10 (total disability). Scores range from 0 to 70. The higher the score, the greater the person's disability due to pain.

Test Results: Ms. Andrade Granados scored a 38 out of 70. Her perceived pain related disability is **54%**.

Modified Oswestry Disability Index (Version 2.0)

Description: The Modified Oswestry Disability Index (ODI) is a self-reported questionnaire that helps quantify the degree of disability of individuals suffering from low back pain. The Modified Oswestry Disability Index consists of ten questions (dealing with pain intensity, personal care, lifting, walking, standing, sleeping, sex life, social life and travel) that assess pain and limitations in activities of daily living. Each question has 6 possible choices and is scored on a 0 to 5 point ordinal scale. Individual question scores range from a "0" (no disability) to a "5" (complete disability). Overall scores range from 0% (no disability) to 100% (complete disability). The Modified Oswestry Disability Index can be used for treatment planning, monitoring progress, and the determination of one's disability as it related to his or her daily functional activities. The modified ODI has a strong test retest reliability and the individual items have a strong internal consistency. The ODI has also been shown to demonstrate strong concurrent validity. Finally, the Modified ODI (Version 2.0) is the most recommended version of the Oswestry Disability Questionnaires.

Test Results: Ms. Andrade Granados scored a **46%** disability rating on the Modified Oswestry Disability Index indicating that her back pain is limiting/restricting her functioning in activities of daily living (ADL). *Interpretation of test results is as follows: Minimal Disability (1-20%), Moderate Disability (21-40%), Severe Disability (41-60%), Crippled (61 to 80%), and Complete Disability (81-100%).*

36-Item Short Form Survey (SF-36)

Description: The RAND 36-Item Health Survey (Version 1.0) is the most widely used generic health survey for the general population in measuring health-related quality of life (HRQL). The SF-36 has been used to describe the health status of people suffering from a wide range of general health, post-surgical, and musculoskeletal complaints. The 36 items or questions in the SF-36 are simple to understand and relevant to most people's lives. The SF-36 is a self administered questionnaire that ranges from 0 to 100, with higher scores indicating better health status. The SF-36 consists of 36 questions broken down into eight health sub-scales used to measure three different aspects of health (functional status, well being and overall evaluation of health). The sub-scales are as follows: Physical Functioning, Role limitations due physical health, Bodily Pain, General Health, Vitality, Social

Functioning, Role limitations due to emotional health, and Mental Health. The sub-scale scores combine into two summary scores: physical and mental component summary scores. The 36 items or questions are identical to the Medical Outcomes Study (MOS) SF-36 described in Ware and Sherbourne.[1,2,3] Its use has been documented in over 1000 publications.[4,5] The SF-36 has been shown to have high internal consistency, reliability, and validity across both general populations and specific patient groups such as those with low back and neck pain.[4,5,6,7] The SF-36 has also been shown to have similar responsiveness to questionnaires such as the Neck disability index, Functional Rating Index[8,9,10] and the Oswestry Disability Index.[11] It provides a comprehensive measure of clinical outcome and takes into account both physical and psychological aspects of health.
Test Results: Ms. Andrade Granados scored 51 out of 100 on the physical summary scale (49% physical disability rating) and 40 out of 100 on the mental summary scale (60% mental disability rating). Scores range from 0 to 100, with higher scores indicating better health status.

RESTING VITAL SIGNS (PRE)		MAXIMUM VITAL SIGNS		FINAL VITAL SIGNS (POST)	
Blood Pressure	Heart Rate	Blood Pressure	Heart Rate	Blood Pressure	Heart Rate
168/92 mmHg	65 bpm	180/94 mmHg	68 bpm	162/110 mmHg	61 bpm

SITTING, STANDING AND WALKING TOLERANCES

Sitting Tolerance Test
Objective: To assess sitting tolerances.
Materials: Stopwatch or timer, standardized chair.
Description: The subject was instructed to sit continuously in a standard sized chair for as long as possible/tolerable (maximum of 30 minutes without knowledge of time elapsed). The subject is required to meet the demand minimal functional capacity of 30 minutes.
Test Results: Ms. Andrade Granados was **able** to **sit 30** minutes consecutively but had difficulty completing the task.
Comments: Subject had minor pain and difficulty while performing the task at the 30 minute mark. She is able to sit for 30 minutes at a time however any time after 30 minutes begins to cause pain and discomfort.

Standing Tolerance Test
Objective: To assess standing tolerances.
Materials: Stopwatch or timer.
Description: The subject was instructed to stand continuously for as long as possible/tolerable (maximum of 30 minutes without knowledge of time elapsed). The subject is required to meet the demand minimal functional capacity of 30 minutes.
Test Results: Ms. Andrade Granados was **able** to **stand 30** minutes consecutively but had difficulty completing the task.
Comments: Subject had pain, difficulty and restrictions while performing the task. Pain radiating from low back to right side back of leg/thigh.

Walking Tolerance Test
Objective: To assess walking tolerances.
Materials: Stopwatch or timer, treadmill or walking path.
Description: The subject was evaluated by having her walk for as long as possible/tolerable without stopping (maximum of 30 minutes without knowledge of time elapsed) at a speed of no less than 2.0

mph (3.2 kph). The subject's blood pressure and heart rate were taken prior to the examination. The subject is required to meet the demand minimal functional capacity of 30 minutes.
Test Results: Ms. Andrade Granados was **able** to **walk 30** minutes consecutively but had difficulty completing the task.
Comments: Subject had pain, difficulty and restrictions while performing the task. BORG SCALE: Subject's rating of weight (RPE) = 13/20 (somewhat hard) after 20 minutes experiencing pain in her left shoulder from holding on to the rails of the treadmill, with minimal pain in her low back and right leg.

STRENGTH CAPACITIES

Combined Lift/Carry Test (manual materials-handling)
Objective: Determine the overall strength capacity for lifting and carrying. The protocol is a progressive isoinertial test used to determine the maximum acceptable weight for lifting and carrying on a safe and dependable basis up to 12 times per hour (i.e., occasional lifting).
Materials: Industrial Crate or Empty Box, free weights, an adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's overall strength capacity was evaluated by having her lift a box from "floor to waist", carry the box with both arms at waist level for 14 feet (4 meters), lift the box from "waist to shoulder", and return the box to the floor. This entire cycle is one repetition. First, the subject performs this task using an empty box/crate. After each repetition, 1 to 5 pounds or kilograms were gradually added to the box until the subject reached her safe one rep maximum which was determined by the appropriate endpoint (external, biomechanical, physiological, or psychophysical). Once the "safe one rep maximum" was determined, the next goal was to determine what weight the subject can safely do for 10 to 12 repetitions. This was accomplished by decreasing the one rep maximum weight by 10 to 20% and have the subject complete the task for an additional 10 to 12 repetitions.
Test Results: Ms. Andrade Granados was **able** to lift and carry up to **20** pounds. Therefore, she is capable of exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or a negligible amount of force constantly to move objects. She may be able to lift greater weight but not in a safe and dependable manner.
Comments: END POINT: Subject self terminated test and declined to go any further due to excessive pain complaints or discomfort (psychophysical). However, a documented safe weight was established (sub-maximal effort). 25lb box was too heavy and caused too much pain for her to carry it further than 6 feet. she experienced a lot of pain picking up the 25lb box. Her safe weight is the same as her work restrictions, no lifting more than 20lbs, which should be even less, more like 15lbs to be safe.

Physical Demand Level	Occasional 0-33% of the workday up to 12 times per hour	Frequent 34-66% of the workday 13-62 times per hour	Constant 67-100% of the workday > 63 times per hour
Sedentary	Up to 10 lbs	Negligible	Negligible
Light	11 to 20 lbs	5 to 10 lbs	Negligible
Medium	21 to 50 lbs	11 to 25 lbs	4 to 10 lbs
Heavy	51 to 100 lbs	26 to 50 lbs	10 to 20 lbs
Very Heavy	> 100 lbs	> 50 lbs	> 20 lbs

NOTE: Lifting and carrying requirements are from Appendix A of the 4th edition of the Dictionary of Occupational Titles (DOT). Maximal accepted weight achieved corresponds directly to the "occasional column" on the chart above.

Pushing Test
Objective: To assess pushing abilities.
Materials: Push/Pull Sled or locking wheel cart, free weights.
Description: The subject's pushing capacity was evaluated by having her push a weighted cart for 25 feet (7.6 meters). First the subject performs the task using an empty cart, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the cart until the subject reaches her maximum pushing capacityor the demand minimal functional capacity of 100 pounds.
Test Results: Ms. Andrade Granados was **able** to push **100** pounds and thus did meet the demand minimal functional capacity of 100 pounds.
Comments: She struggled a little when pushing 100lbs due to pain in her left shoulder however she pushed through and completed the task. She states her neck hurts from pushing the heavier weights.

Pulling Test
Objective: To assess pulling abilities.
Materials: Push/Pull Sled or locking wheel cart, free weights.
Description: The subject's pulling capacity was evaluated by having her pull a weighted cart for 25 feet (7.6 meters). First the subject performs the task using an empty cart, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the cart until the subject reaches her maximum pulling capacity or the demand minimal functional capacity of 80 pounds.
Test Results: Ms. Andrade Granados was **able** to pull **80** pounds and thus did meet the demand minimal functional capacity of 80 pounds.
Comments: She was able to complete with minimal pain in her left shoulder.

Lifting Test (2 Hand Floor to Waist Lift)
Objective: To assess floor to shoulder height lifting abilities.
Materials: Industrial box or milk crate, free weights, adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's lower lifting strength capacity was evaluated by having her lift a box from "floor to waist level" and return the box to the floor. First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum lifting capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to lift **20** pounds from **floor to waist** level. Ms. Andrade Granados may be **able** to lift greater weight but not in a safe and dependable manner.
Comments: END POINT: Unsafe/Overload body mechanics; so the adjusted recommended safe max weight was established (biomechanical). She struggled significantly through these tasks and I believe her weight restriction should be less than 20lbs, recommend no lifting more than 15lbs.

Lifting Test (2 Hand Waist To Shoulder Lift)
Objective: To assess waist to shoulder height lifting abilities.
Materials: Industrial box or milk crate, free weights, adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's upper lifting strength capacity was evaluated by having her lift a box from the "waist to shoulder level" and return the box to her waist level. First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum lifting capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to lift **20** pounds from **waist to shoulder** level. Ms. Andrade Granados may be **able** to lift greater weight but not in a safe and dependable manner.
Comments: She struggled significantly through these tasks and I believe her weight restriction should be less than 20lbs, recommend no lifting more than 15lbs.

Lifting Test (2 Hand Overhead Lift)
Objective: To assess overhead lifting abilities.
Materials: Industrial box or milk crate, free weights, adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's overhead lifting strength capacity was evaluated by having her lift a box from the "shoulder level to overhead" and return the box to her shoulder level. First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum lifting capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to lift **20** pounds from **shoulder level to overhead** level. Ms. Andrade Granados may be **able** to lift greater weight but not in a safe and dependable manner.
Comments: She struggled significantly through these tasks and I believe her weight restriction should be less than 20lbs, recommend no lifting more than 15lbs.

Carrying Test (2 Hand Carry: Both Arms)
Objective: To assess carrying abilities with both arms.
Materials: Industrial box or milk crate, free weights.
Description: The subject's carrying capacity with both arms was evaluated by having her carry a box at waist level for 14 feet (4 meters). First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum carrying capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to carry **20** pounds with **both arms**. Ms. Andrade Granados may be **able** to carry greater weight but not in a safe and dependable manner.
Comments: She struggled significantly through these tasks and I believe her weight restriction should be less than 20lbs.

Carrying Test (1 Hand Carry: Right Arm)
Objective: To assess right arm (single arm) carrying abilities.
Materials: Industrial box or container with handle or strap, free weights.
Description: The subject's carrying capacity with the right arm was evaluated by having her carry a box at waist level for 14 feet (4 meters). First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum carrying capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to carry **10** pounds with the **right arm**. Ms. Andrade Granados may be **able** to carry greater weight but not in a safe and dependable manner.

Carrying Test (1 Hand Carry: Left Arm)
Objective: To assess left arm (single arm) carrying abilities.
Materials: Industrial box or container with handle or strap, free weights.
Description: The subject's carrying capacity with the left arm was evaluated by having her carry a box at waist level for 14 feet (4 meters). First the subject performs this task using an empty box, and if accomplished, increments of 1 to 5 pounds or kilograms are added to the box until the subject reaches her maximum carrying capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to carry **10** pounds with the **left arm**. Ms. Andrade Granados may be **able** to carry greater weight but not in a safe and dependable manner.
Comments: She experienced pain when carrying with her left hand. She struggled significantly through these tasks and I believe her weight restriction should be less than 10lbs, recommend 8lbs for her left arm.

Lifting Test (1 Hand Floor to Waist Lift)
Objective: To assess floor-to-shoulder height lifting abilities with a single arm/hand.
Materials: Hand bucket or tool bag, free weights, adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's one arm lower lifting strength capacity was evaluated by having her lift a bucket/tool bag with the right hand from the floor to waist level and return it back to the floor. First the subject performs this task without any added weight, and if accomplished, increments of 1 to 5 pounds or kilograms are added until the subject reaches her maximum lifting capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to lift **10** pounds from floor to waist level with the **right arm**. Ms. Andrade Granados may be **able** to lift greater weight but not in a safe and dependable manner.
Comments: END POINT: Subject Reached a Safe Max Weight (biomechanical) with her right hand, however she struggled significantly with her left hand due to left shoulder pain.

Lifting Test (1 Hand Waist to Shoulder Lift)
Objective: To assess waist-to-shoulder height lifting abilities with single arm/hand.
Materials: Hand bucket or tool bag, free weights, adjustable shelf that can hold over 100 lbs (45 kgs).
Description: The subject's one arm upper lifting strength capacity was evaluated by having her lift a bucket/tool bag with the right hand from the waist to shoulder level and return it back to waist level. First the subject performs this task without any added weight, and if accomplished, increments of 1 to 5 pounds or kilograms are added until the subject reaches her maximum lifting capacity or external weight limit.
Test Results: Ms. Andrade Granados was **able** to lift **10** pounds from waist to shoulder level with the **right arm**. Ms. Andrade Granados may be **able** to lift greater weight but not in a safe and dependable manner.
Comments: END POINT: Subject Reached a Safe Max Weight (biomechanical) with her right hand, however she struggled significantly with her left hand due to left shoulder pain and could not complete the left handed lift to shoulder task. She struggled significantly through these tasks and I believe her weight restriction should be less than 10lbs, recommend 8lbs for her left arm.

BALANCE ACTIVITIES

Standing Balance Test
Objective: To assess standing balance abilities.
Materials: Stopwatch or timer, 8 foot (2.5 meters) long, 2"x4" (5 x 10 cm) piece of wood or similar type balance board.
Description: The subject's standing balance was assessed by having her stand on a narrow beam (in tandem) for approximately 30 seconds. The subject is required to meet the demand minimal functional capacity of 30 seconds.
Test Results: Ms. Andrade Granados was **able** to stand on a narrow beam for 30 seconds without difficulty.

Walking Balance Test
Objective: To assess walking balance abilities.
Materials: Stopwatch or timer, 8 foot (2.5 meters) long, 2"x4" (5 x 10 cm) piece of wood or similar type balance board.
Description: The subject's walking balance was assessed by having her walk on a narrow beam (in tandem) for approximately 6 feet (1.8 meters). The subject is required to meet this demand minimal functional capacity of 6 feet (1.8 meters).

Test Results: Ms. Andrade Granados was **able** to walk on a narrow beam for 6 feet (1.8 meters) without difficulty.

Functional Reach (Standardized Test)
Objective: Assessment of standing dynamic stability.
Materials: A yard stick or tape measure, a flat floor with good traction.
Description: The Functional Reach Test (FRT) is a clinical outcome measure and assessment tool used for evaluating dynamic balance in one simple task.[1] A yard stick or tape measure is attached to a wall at about shoulder height. The individual is positioned in front of the measuring device so that upon flexing the shoulder to 90 degrees, an initial reading on the measuring device can be taken. While in the standing position, the distance between initial reading and the length of the outstretched arm in a maximal forward reach, (while maintaining a fixed base of support) is measured and recorded. A number of factors exert a major influence on this evaluation: research revealed that the movement strategy and a reduced spinal flexibility, both affect the reach distance.[2] **Protocol:** The patient is instructed to reach as far forward as they can keeping their balance and their feet on the floor, without touching the wall or the ruler as they reach. Subjects are given two practice trials, and then their performance on an additional three trials is recorded and averaged. Criteria to stop the test: The patient's feet lifted up from the floor or they fell forward. NOTE: Most individuals fall forward with this test. The examiner should guard from the front as that is the direction that they will reach forward. **Interpretation**[1]: Scores less than 6 or 7 inches (15 to 18 cm) indicate limited functional balance. Most healthy individuals with adequate functional balance can reach 10 inches or more. A score of less than 6 inches (15 cm) indicates a significantly increased risk for falls (4x greater than normal). A score between 6-10 inches (15-25 cm) indicates a moderate risk for falls (2x greater than normal). A score of 10 inches (25 cm) or greater indicates a low risk of falls. **Validity & Reliability:** The Functional Reach Test has good predictive and concurrent validity and correlates with walking speed, tandem walk, and single leg stance[3-7]. Inter-rater, intra-rater, and test-retest reliability are excellent[1,3,6,7] for older adults and adults aged 20 – 87 years[1].
Test Results: Ms. Andrade Granados was **able** to reach forward 11 inches. This puts her in a Well Below Average category and places her in the 7th percentile when it comes to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 11/20 (light) at 11 inches.

Balance Test	Score	Percentile Rank	Functional Category	Fall Risk
Functional Reach Test	11 in	7th	Well Below Average	Low

Single Leg Balance (Standardized Test)
Objective: Assessment of standing static postural and balance control.
Materials: Stopwatch or timer, a flat floor with good traction.
Description: The Single-Leg Stance Test (SLS), is widely used for assessment, diagnosis and monitoring of balance in both research and clinical settings.[1] The test is simple, easy to administer, and low cost. The test can be performed with eyes open and/or eyes closed. **Protocol:** The Individual stands barefoot on the limb of his or her choice, with the other limb raised so that the raised foot is near but not touching the ankle of the stance limb. Prior to raising the limb, the subject is instructed to cross his or her arms over the chest. A stopwatch is used to measure the amount of time the individual is able to stand on one limb. Time starts when the individual raises the foot off the floor, and time ends when the individual either: (1) uses his or her arms (i.e. uncrossed arms), (2) uses the raised foot (moves it toward or away from the standing limb or touches the floor), (3) moves the weight-bearing foot to maintain his or her balance (i.e., rotates foot on the ground), (4) a maximum of 120 seconds elapses, or (5) opens eyes if the "eyes closed" test is chosen. The procedure is repeated 3 times and the average of the 3 trials is recorded. If both tests are performed (eyes open and eyes closed), the individual should

alternate between the two tests. At least 5 minutes of rest is allowed between each trial set to avoid fatigue. Also, the difference in test times is not gender specific but is related to age.[1] Normative values have been established for adults with eyes open and closed.[1,2] **Validity & Reliability**: The timed single leg stance has high reliability along with Test/Re-test reliability, and Interrater and intrarater reliability[3-8]. Timed Single-Leg Stance Test also achieved optimal levels of reliability with acceptable measurement error for clinical outcome measures.[9] It has good to excellent validity[10-12] and construct validity.[13]

Test Results: Ms. Andrade Granados was **able** to stand on her dominant leg with her eyes open for 5 seconds.

Comments: BORG SCALE: Subject's rating of weight (RPE) = 13/20 (somewhat hard).

Single Leg Stance Test	Score	Percentile Rank	Functional Category
Eyes Open	5 Seconds	<1st	Poor

Tandem Gait/Walk (Standardized Test)

Objective: Assessment of dynamic balance during locomotion.

Materials: Tape 3 meters (9.8 feet) long, and 38 millimeters wide (standard sports tape); Stopwatch or timer.

Description: Tandem Gait (TG) can be used as a clinical test to assess dynamic balance during locomotion.[1,2] The Tandem Gait test is used to measure dynamic balance, speed and coordination for healthy populations as well as post-concussion.[1,2,3] The TG requires minimal space, cost, and time,[4] and is therefore considered a more appropriate and clinically feasible evaluation compared to the use of expensive motion analysis systems.[5] In addition, normative data in healthy adults[6,7] and college athletes[5] found no gender effect associated with time to complete tandem gait. **Protocol:**[6,7] Participants are instructed to stand with their feet together behind a starting line (preferably with footwear removed); then, walk in a forward direction as quickly and as accurately as possible along a 3 meter line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3 meter line, they are instructed to turn 180 degrees and return to the starting point using the same gait. A practice trial along with three additional trials are performed and the best time is used as the final score. Individuals are informed that they fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object. In this case, the time is not recorded and the trial repeated. **Reliability and Validity**: Tandem gait represents a reliable, dynamic, and postural-control test.[4,8] Normative reference values for tandem gait have been reported in athletes as well as healthy adults.[5,7,9] Intra-rater reliability is good, Inter-rater reliability is excellent, and test-retest reliability is high.[1,2,10] Internal consistency was good to satisfactory, and concurrent validity was good when compared to other measures of balance and mobility,[11] as well as a healthy population between the ages of 20 and 75 years.[12]

Test Results: Ms. Andrade Granados was **able** to complete the task in 10 seconds. This puts her in an Above Average category and places her in the 77th percentile when it comes to normative data.

Balance Test	Score	Percentile Rank	Functional Category
Tandem Walk Test	10 Seconds	77th	Above Average

Modified Romberg (Standardized Test)

Objective: Assessment of static balance on uneven surfaces.

Materials: Medium density foam pad and stopwatch.

Description: The Modified Romberg Test (MRT) is a simple and inexpensive test of the vestibular spinal response that can be administered on a compliant / noncompliant surface to clinically identify whether the individual has elevated fall risk / vestibular dysfunction.[1] It is part of a larger battery known as the Clinical Test of Sensory Interaction and Balance (CTSIB). The MRT is used as a screening tool for

measuring the postural sway or stability among individuals with vestibular dysfunction.[3] **Protocol:** The patient removes shoes and is instructed to stand with feet together and arm/hands at their waist for as long as possible with their eyes closed. The patient then stands on the foam pad in the position described and closes their eyes. The examiner starts the stopwatch at the time the eyes close. When the participant opens their eyes, moves their arms or feet to stabilize, they begin to fall, or 30 seconds have passed, the examiner stops the stopwatch and records the result in seconds. **Interpretation:** In general, the time to failure on the MRT decreases linearly with age. A time to failure 20 seconds or less has a significant concomitant greater than three-fold increase in the odds of falling.[1] A failure time of 20 seconds has also been found to distinguish between subjects with and without vestibular dysfunction.[2] **Validity and Reliability:** The MRT provides therapists with insight into which sense a patient depends upon to maintain stability for face validity.[4] Correlations between the MRT/CTSIB and the gold-standard Sensory Organization Test (SOT) have been found – in adults with vestibular disorders, r-values ranged from 0.41 to 0.89 and were significantly correlated.[5] The MRT / CTSIB demonstrated construct validity by identifying participants with vestibular disorders when compared against those in an age-matched control group And Is an adequate measure to identify individuals who have balance disturbances caused by BPPV.[7]

Test Results: Ms. Andrade Granados was **able** to maintain balance on the foam pad with eyes closed for 90 seconds. This puts her in a Well Above Average category compared to normative data.

Comments BORG SCALE: Subject's rating of weight (RPE) = 6/20 (no exertion at all).

Balance Test	Score	Percentile Rank	Functional Category	Fall Risk
Modified Romberg	90 Seconds	83rd	Well Above Average	Low

The Four Square Step (Standardized Test)

Objective: Assessment of dynamic stability and the ability to step over low objects forward, sideways, and backward.[1]

Materials: Stopwatch and four single point sticks (SPS). SPS can be canes or similar piping.

Description: The Four Square Step Test (FSST) measures dynamic balance, mobility, speed and agility in adults. It was developed in 2002 to measure the rapid stepping that is often required when changing direction and avoiding obstacles while walking.[1] Even though the FSST is generally recommended for older adults, normative data has been established for all ages.[2-6] The FSST has been widely used in musculoskeletal and neurological populations.[5,7-9] The FSST is quick to administer, easy to score, requires little space and has little cost. The FSST is unique In that it challenges motor planning, sequencing, and recall, While simultaneously providing clinicians With the opportunity to measure and observe a person's clearance of low obstacles at speed. **Protocol:**[1] Set-up: Four squares are formed with 4 canes (or similar PVC piping) by resting them flat on the floor. The individual is instructed to stand in square one facing square number two, and step over four canes (clockwise followed by counter clockwise). The individual is instructed to step as fast as possible into each square in a specific sequence: forwards, backwards, and sideways to the right and left. The individual is not allowed to touch the canes, and both feet need to be planted in the square before moving to the next square. The evaluator measures the time (in seconds) taken to complete the sequence. After one practice trial, two trials are performed and recorded. The fastest time (in seconds) is taken as the score. Timing of the measure begins when the individual's right foot contacts the floor in the square. A trial is repeated if the subject fails to complete the sequence successfully, loses balance, or makes contact with a SPS during the sequence. The test is scored as the amount of time (in seconds) for the subject to complete one full sequence clockwise and counter clockwise. **Interpretation:** Faster times indicate better performance. A failure to complete the FSST has been identified as a risk factor for falling.8 A cutoff score of greater than 12 seconds on the FSST was associated with a sensitivity of 80% and specificity of 92% for the identification of subjects with 1 or more risk factors for falls.[7] **Validity and Reliability:** The

FSST has high to excellent intra/inter-rater reliability[1,5,10] and retest reliability[1,5,8,10]in samples of healthy and impaired older adults, vestibular disorders and stroke. Concurrent and Construct validity is supported and the FFST has demonstrated good correlations with other balance and mobility tests.[1,5,8,10]

Test Results: Ms. Andrade Granados was **able** to complete the 4 square step test in 8 seconds and has a low risk of falls. This puts her in an Average category and places her in the 47th percentile when compared to normative data.

Balance Test	Score	Percentile Rank	Functional Category	Fall Risk
4 Square Step Test	8 Seconds	47th	Average	Low

Timed Up and Go (Standardized Test)

Objective: Assessment of functional mobility and dynamic balance

Materials: Arm chair with about 46-cm [18in] seat height and 65-cm [25.6 in] arm height; 3-meter walkway [118 inches, approximately 10 feet]; stopwatch or wrist watch with a second hand.

Description: The TUG measures static and dynamic aspects of balance (rising, walking, turning, sitting). The goal of this test is to determine how many seconds the individual takes to perform the task of rising from a standard chair, walking 3 meters, turning around, returning to and sitting back on the chair.[1,2] Individuals tested are instructed to perform at their usual speed and not enter into dialogues. They should have their usual footwear and if necessary a cane. Benefits of the TUG is that its quick to conduct, requires minimal equipment, and provides useful outcomes related to reduced falls risk. Chair type (standard armchair, armless chair and easy chair) does not affect speeds[3] . The use of an assistive device increased the TUG times.[4] A cane increased the time the least, followed by a rolling walker and then a pick up walker.[5] They were longest with dress shoes and shortest with walking shoes.[6] **Protocol:** The timed "Up And Go" test measures, in seconds, the time taken by an individual to stand up from a standard armchair, walk a distance of 3 meter, turn, walk back to the chair, and sit down. No physical assistance is given. They start with their back against the chair, their arms resting on the armrests. They are instructed that, on the word "go" they are to get up and walk at your normal pace to a line on the floor 3 meters away, turn, return to the chair and sit down again. The subject walks through the test once before being timed in order to become familiar with the test. Either a stopwatch or a wristwatch with a second hand can be used to time the trial. **Interpretation:** A cut off score of ≥ 12 sec is the screening threshold value for increased fall risk.[7-9] Timed Up and Go (TUG) Normative Reference Values for Ages 20 to 59 Years[10,11] and older[11-15]have been established. **Validity & Reliability:** Inter-rater reliability is high.[1,14,16-19] Intra-rater reliability and test-retest reliability was also very high.[1,14,16-19] Sensitivity for predicting falls was 0.80 and specificity was 0.93.[4]The TUG has moderate to high criterion validity, and construct validity.[1,4,14,16,20] The TUG is capable of discriminating people at risk of falling from healthy elderly subjects and young control subjects.[21]

Test Results: Ms. Andrade Granados was **able** to complete the timed get up and go test in 20 seconds and has a high risk of falls. This puts her in a Poor category and places her in the <0.1st percentile when compared to normative data.

Comments: She is very guarded and moves slowly getting up and sitting down.

Balance Test	Score	Percentile Rank	Functional Category	Fall Risk
Timed Up & Go Test	20 Seconds	<0.1st	Poor	High

FUNCTIONAL ACTIVITIES

Stair Climbing Test

Objective: Gross assessment of stair climbing abilities.

Materials: Flight of stairs or step stool.

Description: The subject's stair climbing capacity was evaluated by having her ascend and descend one flight of stairs without using a railing. The subject is required to meet the demand minimal functional capacity requirement of climbing up and down one flight of stairs.
Test Results: Ms. Andrade Granados was **able** to ascend and descend one flight of stairs without difficulty.

Stair Climbing Test (Standardized Test)
Objective: To assess stair climbing abilities.
Materials: Flight of stairs
Description: The timed stairs test was conducted on a set of 11 nonslip stairs with handrails. The time taken to walk up the stairs, turn around, and walk back down as quickly as possible was recorded. The individual was initially asked to stand about 30 cm from the bottom step of a flight of stairs. The individual was then instructed to "quickly but safely" go up the stairs, turn around on the top step (landing) and come all the way down until both feet land on the bottom step (landing). The individual was allowed to choose any method of traversing the stairs. This included using a step-to or foot over foot pattern, running up the stairs, skipping steps, or any other variation. The individual was also instructed to face in the direction of the movement (face up and down stairs, not to the side). The participant was allowed to use handrails if available on the stairs. The subject was given the cues "ready" and "go." The task was repeated three times. The participant was instructed to move as quickly as possible. The total score was the time in seconds from the "go" cue until the second foot returned to the bottom landing. Shorter times indicate better functional ability. The measurement of performance is the fastest time recorded of the three trials. Test results were compared against normative data of healthy individuals.
Test Results: Ms. Andrade Granados took 75 seconds to complete the task. This is a Poor test result and places her in the <0.1st percentile when compared to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 13/20 (somewhat hard).

Test	Score	Percentile Rank	Functional Category
Stair Climb Test	75 seconds	<0.1st	Poor

Climbing Ladder Test
Objective: Assess the ladder climbing abilities and tolerances
Materials: 8-10 foot (2.5 to 3 meter) ladder.
Description: The subject's ladder climbing capacity was evaluated by having her ascend and descend an 8-10 foot (2.5 to 3 meter) ladder (one repetition). The subject was instructed to climb up 6 ladder steps before descending. Starting and ending positions were standing on the floor in front of the ladder. During the test, the individual performed the maximum number of repetitions possible (up and down six ladder steps), until the point of voluntary fatigue. The subject must completely remove themselves from the ladder before starting another repetition. A verbal command was given at the beginning of the test, and during performance of the test, but no form of encouragement was given throughout the test. The examiner records the number of repetitions completed during the test.
Termination Criteria: 1) Subject is unable to maintain balance up and down the ladder; 2) Subject is no longer safe or able to perform; 3) Subject terminates the test; 4) Subject refuses to attempt the test
Test Results: Ms. Andrade Granados was **able** to ascend and descend a ladder 1 time.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 17/20 (very hard) Declined to go any further than 3rd step due to trauma of injury, fear of falling.

Stooping Test
Objective: Gross assessment of stair stooping abilities.

Materials: Goniometer or inclinometer.
Description: The subject's stooping ability was assessed by having her bend forward at the waist. A standard goniometer was used to measure the subject's maximum trunk flexion. The subject is required to meet the demand minimal functional capacity of stooping greater than 75 degrees.
Test Results: Ms. Andrade Granados was **able** to stoop greater than 75 degrees without difficulty.

Stooping - Dynamic (Repetitive) Forward Bending Test (Standardized Test)
Objective: A measure repetitive tolerance of forward bending and stooping.
Materials: Stopwatch, Two Inclinometers, Masking tape or similar marker.
Description: Repeated trunk Flexion test.[1,2] Velocity and acceleration of motion are reduced in individuals with low back pain over ones who are pain free.[2-4] during three warm-up trunk flexion movements preceded the actual test. A piece of tape was used to mark the target distance that the subjects were required to reach as they performed the timed repeated flexion test. After three warm up trunk flexion movements, the range of lumbar flexion was measured in the standard manner, using two inclinometers, one placed on the T12 and the other on the S1 spinous processes. For the actual test, subjects were required to flex to the limit of their range and return to the upright position as quickly as tolerated. For this test, the described activity was repeated 10 times and the total procedure was timed with a stopwatch. Test results were compared against normative data of healthy individuals.[1,2]
Test Results: Ms. Andrade Granados was able to forward bend for 10 times in 160 seconds. This test score is Poor and places her in the <0.1st percentile when compared to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 15/20 (hard/heavy). She experienced low back pain and required her to move slowly during the task.

Dynamic Test	Score	Percentile Rank	Functional Category
Forward Bend	160 seconds	<0.1st	Poor

Stooping - Static (Stationary) Forward Bending Test (Standardized Test)
Objective: Measure postural tolerance of forward bending and stooping.
Materials: Table that is 74 cm (29 inches) in height, freestanding nut/bolt board placed on table, 5 kg (11 pound) weighted vest, and timer.
Description: The individual was instructed to stand with a flexed trunk (between 30° and 60°), and then manipulate nuts and bolts. The upper thoracic spine was loaded with a weight of 5.0 kg or 11 lbs, placed centrally between the shoulder blades at the T3 level. The individual was instructed to perform the task as long as possible. The time the position was held is measured in seconds. Test results were compared against normative data of healthy individuals in the Medium strength category.
Test Results: Ms. Andrade Granados was able to forward bend for 60 seconds while manipulating nuts and bolts. This test score is Poor and places her in the <1st percentile when compared to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 12/20 (light to somewhat hard). She experienced too much cervical spine pain and left shoulder pain.

Static Test	Score	Percentile Rank	Functional Category
Forward Bend	60 seconds	<1st	Poor

Kneeling (One Knee) Test
Objective: Kneeling abilities on one knee.
Materials: Stopwatch or timer, Floor (Hard Surface).
Description: The subject's kneeling ability was evaluated by having her kneel on one knee for 30 seconds without holding on to any object. The subject can pick which knee to kneel (left or right). The

subject is required to meet the demand minimal functional capacity of kneeling on one knee for 30 seconds.
Test Results: Ms. Andrade Granados was **able** to kneel on one knee without support for 30 seconds without difficulty.

Kneeling (Both Knees) Test
Objective: Kneeling abilities on both knees.
Materials: Stopwatch or timer, Floor (Hard Surface).
Description: The subject's bilateral kneeling ability was evaluated by having her kneel on both knees for 30 seconds without holding on to any object. The subject is required to meet the demand minimal functional capacity of kneeling on both knees for 30 seconds.
Test Results: Ms. Andrade Granados was **able** to kneel on both knees without support for 30 seconds without difficulty.

The Kneeling Tolerance Test (Standardized Test)
Objective: To assess kneeling tolerance on different surfaces.
Materials: 24-30 inch wide Single Step Stainless Steel Foot Stool, Hard Surface Pad (section of Sunmate Hard Density Pad, Tile, or hardwood), Firm Surface Pad (section of SunMate Firm Density Pad, Thick Piece of Rug, or Rubber), and Soft Surface Pad (section of SunMate Extra Soft to Soft Density Pad, pillow).
Description: The specific surface type was placed onto the Single Step Stool. The individual was then instructed to kneel on the Foot Stool with both knees - simultaneously. Once on the foot stool, the individual was given a period of 10 seconds to become accustomed to the position and evenly distribute the weight on both knees. The individual was asked to rate their level of discomfort using a visual analogue scale (0–10, with 0 being no pain or discomfort and 10 being intolerable pain or an inability to kneel). The test was initially performed with the knee at 90°, starting with the soft surface and then progressing to firm and hard surfaces. The process was then repeated at 110° of knee flexion. The individual was tested for a maximum of 10 seconds on each type of surface material. If the individual was unable to tolerate the surface for 10 seconds he or she is assigned a score of 10 for that surface, indicating severe pain or discomfort. A "kneeling tolerance" score was produced by adding the scores for the three surfaces (soft, firm, hard) for each position (90° and 110° of knee flexion) separately to give a total score. A score of 100 represents an ability to kneel with no discomfort, while a score of 0 represents an inability to kneel at all. The final results were expressed as kneeling tolerance at (90°) and kneeling tolerance at (110°). Test results were compared against normative data of healthy individuals without any knee pain or discomfort.
Test Results: Ms. Andrade Granados scored an 80% at 90 degrees and 50% at 110 degrees. Overall, Ms. Andrade Granados's kneeling tolerance is at 65% which is considered Poor (<0.1st percentile). Overall scores range from 0 to 100% with higher scores indicating better performance.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 14/20 (somewhat hard to hard).

Crouching Test
Objective: Gross assessment of crouching abilities.
Materials: Stopwatch or timer, Goniometer or inclinometer.
Description: The subject's crouching ability was evaluated by having her crouch down for one minute. Crouching consists of the subject bending her trunk greater than 75 degrees and bending both knees. The subject is required to meet the demand minimal functional capacity of crouching for one minute.
Test Results: Ms. Andrade Granados was **unable** to crouch down for one minute.

Comments: BORG SCALE: Subject's rating of weight (RPE) = 14/20 (somewhat hard to hard). Patient could only crouch for 17 seconds due to pain in low back.

Crouching: Repetitive (Dynamic) Forward Bending Test (Standardized Test)
Objective: Capacity of repetitive bending, crouching and reaching.
Materials: 20 marbles and 2 bowls with a 14-cm diameter positioned at floor and crown height.
Description: The individual was instructed to stand with knees flexed between 0° and 30° and then move 20 marbles vertically from the floor to crown height (Top of Head) as fast as possible. The task was repeated three times. The participant was instructed to move the marbles as quickly as possible. The time needed to move 20 marbles was scored in seconds. The measurement of performance is the best score (quickest time) of the three trials completed. Test results were compared against normative data of healthy individuals in the Medium strength category.
Test Results: Ms. Andrade Granados was able to repetitively forward bend and move 20 marbles in 118 seconds. This score is Poor and places her in the <0.1st percentile when compared to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 13/20 (somewhat hard).

Dynamic Test	Score	Percentile Rank	Functional Category
Forward Bend	118 seconds	<0.1st	Poor

Repetitive Squat Test (Standardized Test)
Objective: Capacity of bending down repetitively.
Materials: Stopwatch, Metronome.
Description: The individual was instructed to stand upright with feet 15 centimeters apart and squat down until the thighs are parallel or horizontal to the floor (approx 90 degrees of knee flexion) and return to the upright position. The squatting sequence was repeated until fatigue. A metronome set at 30 beats/min provided the speed of movement for the squatting movement. The number of squats performed by the individual was recorded. A maximum number of 50 repetitions was allowed.
Test Results: Ms. Andrade Granados was able to repetitively squat 4 times. This score is Well Below Average and places her in the 8th percentile when compared to normative data.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 15/20 (hard/heavy).

Squat Test	Score	Percentile Rank	Functional Category
No. of Squats	4 repetitions	8th	Well Below Average

Reaching (Right Arm) Test
Objective: Gross assessment of right arm reaching abilities.
Description: The subject's reaching abilities were assessed by having her reach as far as possible in all directions (forwards, backwards, across the body, and away from the body) several times with the right arm while standing. The subject is required to meet the demand minimum functional capacity of reaching in all directions at least three with the right arm, while standing.
Test Results: Ms. Andrade Granados was **able** to complete the task with the **right arm** without difficulty.

Reaching (Left Arm) Test
Objective: Gross assessment of left arm reaching abilities.
Description: The subject's reaching abilities were assessed by having her reach as far as possible in all directions (forwards, backwards, across the body, and away from the body) several times with the left arm while standing. The subject is required to meet the demand minimum functional capacity of reaching in all directions at least three with the left arm, while standing.
Test Results: Ms. Andrade Granados was **able** to complete the task with the **left arm** but had difficulty with the task.

Comments: BORG SCALE: Subject's rating of weight (RPE) = 13/20 (somewhat hard). Left arm reaching forward and side were completed however backwards reach was painful and could not reach completion.

Reaching: Repetitive Side Reaching Test (Standardized Test)
Objective: Determine the capacity of fast repetitive "side to side" movements of the upper extremities.
Materials: 30 marbles and 2 bowls with a 14-cm (5.5 inches) diameter positioned at table height of 29 inches (74 cm).
Description: The individual was seated at the table with two bowls placed at a wingspan distance apart. She then moved the marbles horizontally (at table height) from right to left with right arm as fast as possible and then repeated this with the left arm (from left to right). Each task was repeated three times. The participant was instructed to move the marbles as quickly as possible. Time needed to move 30 marbles was scored in seconds. The measurement of performance is the best score (quickest time) of the three trials completed. Test results were compared against normative data of healthy individuals in the Medium strength category.
Test Results: Ms. Andrade Granados was able to transfer 30 marbles in 71 seconds with the right arm - an Above Average test result that places her in the 66th percentile when compared to normative data. Ms. Andrade Granados was able to transfer 30 marbles in 83 seconds with the left arm - a Below Average test result that places her in the 25th percentile when compared to normative data.
Comments: experienced pain her left shoulder.

Side Reach Test	Score	Percentile Rank	Functional Category
Right Arm	71 seconds	66th	Above Average
Left Arm	83 seconds	25th	Below Average

HAND DEXTERITY (Handling and Fingering Abilities)

Seizing, Holding, Grasping and Turning Abilities (Handling)
Objective: Gross assessment of Seizing, Holding, Grasping and Turning Abilities.
Materials: Examples may include turning a door knob, faucets, rotating file drawer handle. Other examples may include seizing, holding or grasping a small ball, bottle or can.
Description: The subject's gross seizing, holding, grasping, and turning abilities were evaluated by observing the subject seize, hold, grasp and turn several small objects with the right and left hands. The subject is required to meet this demand minimal functional capacity of performing this task without difficulty.
Test Results: Ms. Andrade Granados was **able** to successfully seize, hold, grasp and turn several small objects with the **right hand** without difficulty. Ms. Andrade Granados was **able** to successfully seize, hold, grasp and turn several small objects with the **left hand** without difficulty.

Grip Strength Test (Standardized Test)
Objective: Assessment of power grasp.
Materials: JAMAR grip strength dynamometer.
Description: The subject's grasping abilities were measured with a standardized JAMAR grip strength dynamometer set at grip level number two. The best score of three trials was used. Test results were compared against normative values (males: right = 104.3 lbs or 47.3 kg, left = 93.1 lbs or 42.2 kg) (females: right = 62.8 lbs or 28.5 kg, left = 53.9 lbs or 24.4 kg).
Test Results: **Right Grip** = 25 pounds (11.3 kg) which is a **60% deficit** when compared to normative values. **Left Grip** = 18 pounds (8.2 kg) which is a **67% deficit** when compared to normative values.

Power Grasp	Score	Percentile Rank	Functional Category
Right Grip	25 lbs (11.3 kg)	1st	Well Below Average
Left Grip	18 lbs (8.2 kg)	1st	Well Below Average

Box & Block Test (Standardized Test)
Objective: Assessment of gross motor skills.
Materials: Stopwatch or timer, 150 wooden square cubes (2.5 cm or 1 inch in size), box and block device.
Description: The Box and Block test is a measure of gross motor and manual dexterity that requires repeatedly moving 1 inch cubes from one side of the box to another in 60 seconds. The test has shown to have high inter-rater and test-retest reliability and has established validity of use with various diagnoses. This test is quick and easy to administer. Approximately 5 minutes are required for set up, explanation of the instructions to the patient and administration of the test. Means, standard deviations, standard error, and low and high scores are reported for males and females. This data will enable clinicians to objectively compare a subject's score to a normal population parameter.
Test Results: Ms. Andrade Granados was **able** to transfer 48 cubes in one minute with the **right arm**, and was **able** to transfer 43 cubes in one minute with the **left arm**.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 11/20 (light).

Box & Block Test	Score	Percentile Rank	Functional Category
Right Arm	48 cubes	<1st	Poor
Left Arm	43 cubes	<0.1st	Poor

Picking up Small Objects (Fingering)
Objective: Gross assessment of fine motor abilities.
Materials: Small hex or square screw nut.
Description: The subject’s gross fine motor skills were evaluated by observing the subject pick up a small nut with all fingers using the right and left hands. The subject is required to meet the demand minimal functional capacity of picking up a small nut with all fingers using the right and left hands without difficulty.
Test Results: Ms. Andrade Granados was **able** to successfully pick up a nut with all fingers using the **right hand** without difficulty. Ms. Andrade Granados was **able** to successfully pick up a nut with all fingers using the **left hand** without difficulty.

Tip Pinch Strength Test
Objective: Assessment of precision grip pinch strength.
Materials: Pinch Dynamometer.
Description: The subject’s tip pinch strength was evaluated with a standardized pinch dynamometer (tip of the index finger and thumb pressing down on the dynamometer). The best score of three trials was used. Test results were compared against normative values (males: right = 17 lbs or 7.7 kg, left = 16.4 lbs or 7.4 kg) (females: right = 11.3 lbs or 5.1 kg, left = 10.8 lbs or 4.9 kg).
Test Results: **Right Tip** Pinch = 8 pounds (3.6 kg) which is a **29% deficit** when compared to normative values. **Left Tip** Pinch = 6 pounds (2.7 kg) which is a **44% deficit** when compared to normative values.

Pinch Strength	Score	Percentile Rank	Functional Category
Right Tip Pinch	8 pounds (3.6 kg)	10th	Well Below Average
Left Tip Pinch	6 pounds (2.7 kg)	2nd	Well Below Average

Key Pinch Strength Test
Objective: Assessment of precision grip pinch strength.

Materials: Pinch Dynamometer.
Description: The subject's key pinch strength was evaluated with a standardized pinch dynamometer (lateral side of the index finger and palmar aspect of the thumb pressing down on the dynamometer). The best score of three trials was used. Test results were compared against normative values (males: right = 24.5 lbs or 11.1 kg, left = 23.6 lbs or 10.7 kg) (females: right = 16.2 lbs or 7.3 kg, left = 15.3 lbs or 6.9 kg).
Test Results: **Right Key** Pinch = 10 pounds (4.5 kg) which is a **38% deficit** when compared to normative values. **Left Key** Pinch = 12 pounds (5.4 kg) which is a **22% deficit** when compared to normative values.

Pinch Strength	Score	Percentile Rank	Functional Category
Right Key Pinch	10 pounds (4.5 kg)	2nd	Well Below Average
Left Key Pinch	12 pounds (5.4 kg)	14th	Well Below Average

Palmar Pinch Strength Test
Objective: Assessment of precision grip pinch strength.
Materials: Pinch Dynamometer.
Description: The subject's Palmar (3 chuck) pinch strength was evaluated with a standardized pinch dynamometer (tip of the index and 3rd fingers and tip of the thumb pressing down on the dynamometer). The best score of three trials was used. Test results were compared against normative values (males: right = 23.4 lbs or 10.6 kg, left = 23 lbs or 10.4 kg) (females: right = 16.3 lbs or 7.4 kg, left = 15.7 lbs or 7.1 kg).
Test Results: **Right Palmar** Pinch = 7 pounds (3.2 kg) which is a **57% deficit** when compared to normative values. **Left Palmar** Pinch = 7 pounds (3.2 kg) which is a **55% deficit** when compared to normative values.

Pinch Strength	Score	Percentile Rank	Functional Category
Right Palmar Pinch	7 pounds (3.2 kg)	1st	Well Below Average
Left Palmar Pinch	7 pounds (3.2 kg)	1st	Well Below Average

Moberg Pick-Up Test (Standardized Test)
Objective: Assessment of fine motor skills.
Materials: Stopwatch or timer, nickel, quarter, wing nut, screw, key, nail, washer, paper clip, safety pin, large sized hexagon nut, medium sized hexagon nut, square nut.
Description: The Moberg Pick up Test is a timed measure of both manual and fine motor dexterity. The subject is shown 12 small objects on the table and asked to place them in a box. The test is timed, quick and inexpensive. Test involves the picking up, holding, manipulation and identification of small objects. Performing test involves: ability to perceive constant touch (to locate); precision grip (to pick up); cutaneous feedback (to grip). The 12 Standard objects of same temperature are as follows: nickel, quarter, wing nut, screw, key, nail, washer, paper clip, safety pin, large sized hexagon nut, medium sized hexagon nut, square nut. This test is completed with eyes open (sighted) but it can be administered blindfolded. The test shows discriminate validity and satisfactory reliability.
Test Results: Ms. Andrade Granados took 13.3 seconds to complete the task with her **right hand**, and took 14 seconds to complete the task with her **left hand**.
Comments: BORG SCALE: Subject's rating of weight (RPE) = 11/20 (light).

Pick-up Test	Score	Percentile Rank	Functional Category
Right Hand	13.3 seconds	34th	Below Average
Left Hand	14 seconds	27th	Below Average

FULL TIME WORK TOLERANCE

Determination of Full-time Work Tolerance

Explanation Basic *Work Physiology Principles* are important factors for predicting an individual's ability to tolerate full time work. The use of heart rate has been widely accepted as an accurate and simple industrial physiological measurement that is easy to administer and interpret. Heart rate has a linear relationship with energy expenditure and can be measured without interfering with the work task being performed. Heart rate is also considered the best index for measuring physical work because it is reasonably similar for all persons during the performance of work. With any given person a linear relationship exists between oxygen consumption (energy expenditure) and heart rate. The *Efficiency of Physiological Work* is defined as the percentage of energy that is transformed into useful sustainable work. *Full-time work tolerance* is achieved when steady work efficiency and the work physiological response (heart rate) have parallel linear responses. The *Limit of Continuous Work* is defined as the sustainable work level that has a linear physiological response and can be maintained without excessive fatigue. If the burden placed on a worker is too high in relation to their capacity for sustained physical work they will become fatigued and the closer the task is to a worker's maximum capacity the shorter the length of time they will be able to work productively and safely. According to Jiang, Kudak and NIOSH, data recommends intensities for an 8 hour shift do not exceed 33% of a worker's capacity. In other words, a person working an eight hour work day should be able to maintain a maximum work load of 33% (or less) of their VO2 max (aerobic capacity) without fatigue. To estimate a worker's maximum heart rate in relation to the percentage of aerobic capacity, the following formula can be applied. This formula can be accurately applied to work prediction for the process of providing a definitive analysis of calculating full time work.

Formula: (AHRJ-RHR)/(PHRM-RHR) = ≤33% Max VO2 Required (Work Requirement) where AHRJ = Actual heart rate on job (X); RHR = Resting heart rate (65); PHRM = Predicted heart rate maximum (220-age) = 163; **Calculate AHRJ = X.

Sustainable Work Load: For this subject's age and resting HR, an AHRJ of 110 bpm or below is required for her to be able to participate in 8 hours of continuous work without significant fatigue. Ms. Andrade Granados's AHRJ was 96 bpm. As a result, based upon this calculation, the subject is capable of sustainable work loads for a required 8 hour day without fatigue. The subject's estimated work load duration without fatigue is 8 hours.

Test Results: Based on Ms. Andrade Granados's work physiology, she is capable of working 8 hours (approximately 480 minutes) per day without significant fatigue.

CONSISTENCY OF EFFORT

Overall Examiner Observation

It is my professional opinion that Ms. Andrade Granados gave a consistent performance and effort during this functional capacity evaluation. The results of this evaluation are a valid representation of her current functional abilities. She is very guarded and moves very slowly due to her pain and fatigues quickly.

The Five Point/Bell Shape Curve Grip Test and Pain Disability Index were used to further determine the consistency/validity of Ms. Andrade Granados's test results/efforts.

1. **Five Point/Bell Shape Curve (BSC) Grip Test**

   Explanation: Grip strength measurements can be used to assess a subject's chronic disability, a subject's present impairments and response to treatment over time, a subject's work capacity post hand injury, and to aide in the determination of "consistency of effort". The Five Point/Bell Shape Curve Grip test is used to assess a subject's consistency of performance or maximal effort.

   Conclusions: The shape of the curve is important with the flatter the curve being more likely a submaximal effort is given. In general, the peak grip strengths should occur at grip positions 2 and 3. If the five different grip scores graph as a bell shape curve it may be considered that a consistent/maximal effort was given. If the five different grip scores do not graph as a bell shape curve it may be considered that a inconsistent/submaximal effort was given.

   Test Results: Right hand test scores are 20, 30, 32, 25, and 15 pounds. Left hand test scores are 21, 22, 21, 15, and 7 pounds. Ms. Andrade Granados demonstrated a bell shape curve on the right hand suggesting maximal effort. Ms. Andrade Granados demonstrated a bell shape curve on the left hand suggesting maximal effort.

2. **Pain Disability Index**

   Description: The Pain Disability Index (PDI) is a 7-item self reporting outcome questionnaire that evaluates the magnitude of perceived pain-related disability that is independent from region of pain or pain-related diagnosis. The PDI measures family/home responsibilities, recreation, social activity, occupation, sexual behavior, self-care and life support activity.[1] In general, The PDI is a simple, easily understood, and rapid instrument for measuring the impact that pain has on the ability of a person to participate in essential life activities. Reliability & Validity: The PDI is valid and reliable, with good internal consistency.[1-8] Construct validity demonstrated significant difference in PDI scores between symptomatic and asymptomatic individuals. The results indicated a successful cultural adaptation and reliable psychometric properties.[3] The PDI showed responsiveness to detect clinically relevant changes in pain-related disability at discharge of vocational rehabilitation.[4] The study[1] revealed modest test-retest reliability for the instrument. It also showed the PDI to be associated with the levels of pain behavior exhibited by these patients. The findings of both studies generally support the reliability and validity of the PDI as a brief measure of pain-related disability.[1] Scoring: The sum of the seven items equals the total score of the PDI. Scores of each item are assigned based on an 11-point scale ranging from 0 (no disability) to 10 (total disability). Scores range from 0 to 70. The higher the score, the greater the person's disability due to pain.

   Interpretation:[9] PDI score of 62 or greater: Non-organic (inappropriate) pain behaviors likely involved in patient's presentation (though diagnosis should not be made on the basis of questionnaire findings alone) and a comprehensive psychological evaluation is recommended. PDI score between 55-61: Somatization and/or non-organic (inappropriate) pain behaviors may be present but cannot be reliably differentiated at lower score ranges. Psychological factors may interfere with physical interventions and a comprehensive psychological evaluation should be considered. PDI score of less than 55: Psychosocial complication likely minimal. Psychological consultation not indicated.

   Test Results: Ms. Andrade Granados scored a 38 out of 70. Test scores below 55 suggest no signs of somatization and/or non-organic (inappropriate) pain behaviors. Psychosocial complication minimal and psychological consultation not indicated.

FUNCTIONAL CAPACITY EVALUATION REPORT SUMMARY

RE: ANDRADE GRANADOS, GRICELDA
Date of Birth: 9/16/1966 (Age: 57)
Sex: Female
Body Measurements: 190 lbs. (86.2 kg), 5' 6" (168 cm)
Date of Injury: 2/22/2019

Physical Demand Level

Ms. Andrade Granados's occupation as a Fruit Picker requires her to work in the **MEDIUM physical demand level**. Based on this Functional Capacity Evaluation, Ms. Andrade Granados **does not** meet the strength requirements of this physical demand level.

Ms. Andrade Granados is only **capable** of assuming a position in a **LIGHT physical demand level**. Ms. Andrade Granados is capable of exerting up to a maximum of 20 pounds of force occasionally throughout the workday with frequent lifting or carrying objects weighing 10 pounds.

Ms. Andrade Granados may be capable of lifting and/or carrying greater weight than recommended in this report (should the necessity arise at work or home). However, Ms. Andrade Granados may not be safe performing the tasks repetitively over a period of time, and thus may put herself at increased risk of injury or further trauma.

Physical Demand Level		Limits of Weights Lifted/Carried	Occasional up to 33% of workday up to 12 times per hour	Frequent 34-66% of workday 13-62 times per hour	Constant 67-100% of workday > 63 times per hour
Sedentary	1.5 to 2.1 METS	Up to 10 lbs			
Light	2.2 to 3.5 METS	11 to 20 lbs	20 lbs (max)	10 lbs (max)	Negligible
Medium	3.6 to 6.3 METS	21 to 50 lbs			
Heavy	6.4 to 7.5 METS	51 to 100 lbs			
Very Heavy	> 7.5 METS	> 100 lbs			

Note: The overall strength rating is determined from the combined lift/carry task result. Strength categories are based on the Dictionary of Occupational Titles.

Job Factor Restrictions

In order for Ms. Andrade Granados to successfully work in a **medium** physical demand level, the following job factor restrictions must be followed:

- Rare (non-repetitive) **standing balance** activities on narrow, slippery, or erratically moving surfaces (1-5% of the time).
- No **walking balance** activities on narrow, slippery, or erratically moving surfaces.
- No **stair climbing** activities.
- Rare (non-repetitive) **ladder climbing** activities (1-5% of the time or 1-2 repetitions per hour).
- No **stooping** activities.
- No **kneeling on either knee**.
- No **kneeling on both knees** simultaneously.

- No **crouching** activities.
- Occasional (non-repetitive) **reaching** activities with the left arm (6-33% of the time or 3-12 repetitions per hour)
- Occasional (non-repetitive) activities consisting of **firm power gripping**, holding, or turning objects with the **right and left hands** (6-33% of the time or 3-12 repetitions per hour).
- Rare (non-repetitive) **gross manipulation** (arm-hand movements) with the **right hand** for seizing, holding, or turning objects (1-5% of the time or 1-2 repetitions per hour).
- No **gross manipulation** (arm-hand movements) with the **left hand** for seizing, holding, or turning objects.

Ancillary Job Factor Restriction(s):

- No lifting greater than 20 pounds occasionally from the floor to waist level.
- No lifting greater than 20 pounds occasionally from the waist to shoulder level.
- No lifting greater than 20 pounds occasionally above the shoulder.
- No carrying with **both arms** more than 20 pounds occasionally at waist level.
- No carrying (single arm) more than 10 pounds occasionally with the **right and left arm**.
- No lifting greater than 10 pounds occasionally from the floor to waist level with the **right arm**.
- No lifting greater than 10 pounds occasionally from the waist to shoulder level with the **right arm**.

ACTIVITY TOLERANCES	Consecutively (at one time)	Cumulatively (per day) Individual Tolerances	Cumulatively (per day) Combined Tolerances
SITTING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated
STANDING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated
WALKING	30 minutes or as tolerated	Up to: 5¼ hours (Frequent)	2 hours and 40 minutes or as tolerated

Individual cumulative tolerances indicate the maximum time the individual can tolerate one activity without accounting for the other activities. **Combined cumulative tolerances** are safe times the individual can tolerate alternating between sit, stand, and walk activities throughout the workday.

Pain/Outcome Questionnaires

Beck Depression Inventory: 21% Depressed
Lower Extremity Function Scale: 36% Perceived Disability
Short-Form McGill Pain Questionnaire: 60% Pain Rating
Pain Disability Index: 54% Perceived Disability
Oswestry (Low Back) Disability Index: 46% Perceived Disability
36-Item Short Form Survey: 49% Perceived Physical Disability
36-Item Short Form Survey: 60% Perceived Mental Disability

If you should have any questions regarding this functional capacity evaluation, or if I can be of any further assistance, please feel free to contact me at your convenience.

Sincerely,

Marc Lizzarazo, FCE
Physical Medicine

Kevin Calhoun, MD.
Supervising Physician

References (FCE Introduction)

1. Fishbain DA, et al. Measuring residual functional capacity in chronic low back pain patients based on the Dictionary of Occupational Titles, *SPINE* 1994;19(8)872-880.
2. Fishbain DA, et al. Validity of the Dictionary of Occupational Titles-Residual Functional Capacity Battery. *Clin J Pain* 1999;15(2):102-110.
3. U.S. Department of Labor, Employment and Training Administration. Dictionary of Occupational Titles, 4th edition: Supplement. Washington, DC: U.S. Government Printing Office, 1986.
4. Yeomans SG, Liebenson C. Functional capacity evaluation and chiropractic case management. *Top Clin Chiro* 1996;3(3):15-25.
5. Innes E, Straker L. Validity of work related assessments. *WORK* 1999;13(2):125-152.
6. Innes E, Straker L. Reliability of work related assessments. *WORK* 1999;13(2):107-124.

References - Outcomes (Beck)

1. Beck AT, Beck RW. Screening depressed patients in family practice: a rapid technique. *Postgraduate Medicine* 1972; 52:81-85.
2. Knight RG. Some general population norms for the short form beck depression inventory. *Journal Clinical Psychology* 1984;40(3):751-753.

Reference - Outcomes (LEFS)

1. Binkley JM, Stratford PW, Lott SA, Riddle DL. The lower extremity functional scale (LEFS): scale development, measurement properties, and clinical application. *Phys Ther.* 1999;79(4):371-382.

Reference - Outcomes (SF-MPQ)

1. Melzack R. The Short-Form McGill Pain Questionnaire. *Pain* 1987;30:191-197.

References - Outcomes (PDI)

1. Tait RC, Chibnall JT, Krause SJ. The pain disability index: Psychometric properties. Pain 1990;40(2): 171-182. doi: 10.1016/0304-3959(90)90068-O.
2. Tait RC, Pollard CA, Margolis RB, Duckro PN, Krause SJ. The Pain Disability Index: psychometric and validity data. Arch Phys Med Rehabil. 1987;68(7):438-41. PMID: 3606368.
3. Giordano PC, Alexandre NM, Rodrigues RC, Coluci MZ. The Pain Disability Questionnaire: a reliability and validity study. Rev Lat Am Enfermagem. 2012 Jan-Feb;20(1):76-83. English, Portuguese, Spanish. doi: 10.1590/s0104-11692012000100011. PMID: 22481724.
4. Beemster T, Van Bennekom C, Van Velzen J, et al. The interpretation of change score of the pain disability index after vocational rehabilitation is baseline dependent. Health Qual Life Outcomes 16, 182 (2018). https://doi.org/10.1186/s12955-018-1000-1
5. Widerström-Noga EG, Cruz-Almeida Y, Martinez-Arizala A, Turk DC. Internal consistency, stability, and validity of the spinal cord injury version of the multidimensional pain inventory. Arch Phys Med Rehabil 2006;87:516-23.
6. Pollard CA. Preliminary validity study of the pain disability index. Perceptual and Motor Skills. 1984; 59: 974.
7. Soer R, Koke AJA, Vroomen CAJ, Stegeman P, et al. Extensive Validation of the Pain Disability Index in 3 Groups of Patients With Musculoskeletal Pain. SPINE 2013;38(9):E562-E568. DOI: 10.1097/BRS.0b013e31828af21f.
8. Chibnall JT, Tait RC. The Pain Disability Index: Factor Structure and Normative Data. Arch Phys Med Rehabil. 1994;75:1082-1086.
9. Bianchini KJ, Aguerrevere LE, Guise BJ, Ord JS, Etherton JL, Meyers JE, Soignier RD, Greve KW, Curtis KL, Bui J. Accuracy of the Modified Somatic Perception Questionnaire and Pain Disability Index in the detection of malingered pain-related disability in chronic pain. Clin Neuropsychol. 2014;28(8):1376-94. doi: 10.1080/13854046.2014.986199. Epub 2014 Dec 17. PMID: 25517267.

References - Outcomes (Oswestry)

1. Fairbanks JCT, Pynsent PB. The Oswestry Disability Index. *SPINE* 2000;25(22):2940-2593.
2. Fairbanks JCT, Cooper JD, Davis JB, O'Brien JP. The Oswestry disability questionnaire. *Physiotherapy*. 1980;66:271-273.

References - Outcomes (SF-36)

1. Ware JE, Sherbourne C.D. "The MOS 36-Item Short-Form Health Survey (SF-36): i.Conceptual Framework And Item Selection, ". Medical Care, 1992;30:473-483.
2. Hays, R.D., & Shapiro, M.F. "An Overview Of Generic Health-Related Quality Of Life Measures For HIV Research," Quality of Life Research. 1992;1:91-97.
3. Steward, A.L., Sherbourne, C., Hayes, R.D., et al. "Summary And Discussion Of MOS Measures," in A.L. Stewart & J.E. Ware (eds.), Measuring Functioning and Well-Being: The Medical Outcome Study Approach (pp. 345-371). Durham, NC: Duke University Press, 1992.
4. Ware JE. SF-36 health survey update. Spine 2000:25(24);3130-3139.
5. Ware JE, Kosinski M, Keller SK. SF-36 Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: The Health Institute, 1994.
6. McHorney CA et al. The MOS 36-item Short-Form Health Survey (SF-36): III. Tests of data quality, scaling assumptions, and reliability across diverse patient groups. Med Care 32: 40–66. Med Care. 1994;32(1):40-66.
7. McCallum J. The SF-36 in an Australian sample: validating a new, generic health status measure. Aust J Public Health, 1995; 19:160–166.
8. Juette DU, Jette AM. Physical therapy and health outcomes in patients with spinal impairments. Phys Ther. 1996;76(9):930-945.
9. Riddle DL, Stratford PW. Use of generic versus region-specific functional measures on patients with cervical spine disorders. Phys Ther, 1998;78(9):951-963.
10. Stewart M et al. Responsiveness of Pain and Disability Measures for Chronic Whiplash. Spine 2007;32(5):580–585.
11. Walsh TL, et al. Is a Condition-Specific Instrument for Patients with Low Back Pain/Leg Symptoms Really Necessary?: The Responsiveness of the Oswestry Disability Index, MODEMS, and the SF-36. Spine 2003;28(6):607–615.

References (Stair Climbing Test)

1. McKay MJ, et al. Reference values for developing responsive functional outcome measures across the lifespan. Neurology® 2017;88: 1–8.

References (Stooping - Dynamic (Repetitive) Forward Bending Test)

1. Novy DM, Simmonds MJ, Olson SL, Lee CE, Jones SC. Physical performance: differences in men and women with and without low back pain. Arch Phys Med Rehabil. 1999 Feb;80(2):195-8. doi: 10.1016/s0003-9993(99)90121-1. PMID: 10025497.
2. Simmonds MJ, Olson SL, Jones S, Hussein T, Lee CE, Novy D, Radwan H. Psychometric characteristics and clinical usefulness of physical performance tests in patients with low back pain. Spine (Phila Pa 1976). 1998 Nov 15;23(22):2412-21. doi: 10.1097/00007632-199811150-00011. PMID: 9836355.
3. Marras WS, Wongsam PE. Flexibility and velocity of the normal and impaired lumbar spine. Arch Phys Med Rehabil. 1986 Apr;67(4):213-7. PMID: 2938557.
4. Marras WS, Parnianpour M, Ferguson SA, Kim JY, Crowell RR, Bose S, Simon SR. The classification of anatomic- and symptom-based low back disorders using motion measure models. Spine (Phila Pa 1976). 1995 Dec 1;20(23):2531-46. doi: 10.1097/00007632-199512000-00013. PMID: 8610248.

References (Stooping - Static (Stationary) Forward Bending Test)

1. Soer R, et al. Normative Values for a Functional Capacity Evaluation. Arch Phys Med Rehabil. 2009;90:1785-1794.

References (The Kneeling Tolerance Test)

1. Calvert ND, et al. The kneeling test is a valid method of assessing kneeling tolerance. Knee Surgery, Sports Traumatology, Arthroscopy. 2019;27:3705–3712.

References (Crouching: Repetitive (Dynamic) Forward Bending Test)

1. Soer R, et al. Normative Values for a Functional Capacity Evaluation. Arch Phys Med Rehabil. 2009;90:1785-1794.

References (Repetitive Squat Test)

1. LeFebvre R, et al. Low Back & Leg Endurance Tests. Western States Chiropractic College, 1999.

References (Reaching: Repetitive Side Reaching Test)

1. Soer R, et al. Normative Values for a Functional Capacity Evaluation. Arch Phys Med Rehabil. 2009;90:1785-1794.

Reference (Combined Lift/Carry Test)

1. Jiang BC, Smith JL, Ayoub MM. Psychophysical modelling for combined manual materials-handling activities. *Ergomonics* 1986;29(10): 1173-1190.

Reference (Grip/Pinch Test)

1. Mathiowetz V, Kashman N, Volland G, et. al. Grip and pinch strength: normative data for adults. *Arch Phys Med Rehabil* 1985; 66:69-74.

References (Box/Block Test)

1. Mathiowetz V, Kashman N, Volland G, et. al. Adult norms for the box and block test of manual dexterity. *Am J of Occup Ther.* 1985; 39(6):386-391
2. Svensson E, Hager-Ross C. Hand function in Charcot-Marie Tooth: test-retest reliability of some measurements. *Clin Rehabil.* 2006; 20:896-908.
3. Platz T, Pinkowski C, van Wijck F, et al. Reliability and validity of arm function assessment with standardized guidelines for the Fugl-Meyer Test, Action Research Arm Test and Box and Block Test: a multicentre study. *Clin Rehabil.* 2005; 19:404-411.
4. Desrosiers J, Bravo G, Hebert R, et al. Validation of the Box and Block Test as a measure of dexterity in elderly people: reliability, validity, and norms study. *Arc Phys Med Rehabil.* 1994; 75:751-755.

References (Pick-Up Test)

1. Moberg E. Objective methods for determining the functional value of sensibility in the hand. *J BONE JOINT SURG. (Br.)* 1958;40B:454-76.
2. American Society of Hand Therapists. Clinical Assessment Recommendations. 2nd edition Chigaco, Il: ASHT, 1992.
3. Bear-Lehman J., Abreu B. Evaluating the hand: issues in reliability and validity. *Physical Therapy* 1989;69:1025-33.
4. Dellon A. The sensational contributions of Erik Moberg. *Journal of Hand Surgery* 1990;15B:14-24.
5. Jerosch-Herold C. A survey on the use of sensibility tests by hand therapists in the UK. *Journal of Hand Therapy (Br.)* 2002;7(2):55-63.
6. Amirjani N., Ashworth N., Gordon T, et al. Normative values and the effects of age, gender and handedness on the Moberg pick-up test. *Muscle & Nerve* 2007;35:788-792.
7. Ng CL, Ho DD, Chow SP. The Moberg pickup test: results of testing with a standard protocol. *J HAND THER* 1999;12:309-312.

References (Full Time Work Tolerance)

1. Becker TJ, Morrill JM, Stamper EE. Applications of work physiology Science to Capacity Test Prediction of Full time Work - Eight Hour Work day. Journal of the International Association of Rehabilitation Professionals, 2008, The Rehabilitation Professional; 15(4):45-56.
2. Becker TJ. Functional capacity evaluations: the work physiology component for predicting full time work. Directions in Rehabilitation Counseling, 2007;18(16):177-186.
3. Jiang B. Psychophysical capacity modeling of individual and combined manual materials handling. Lubbock, Tex: Texas Tech University; 1984.
4. Eastman Kodak Company, Ergonomic design for people at work. New York: Van Nostrand Reinhold; 1986.
5. Astrand P, Rohdahl K, Dahl H, et al. Textbook of Work Physiology. Champaign Ill: Human Kinetics; 2003.
6. National Institute of Occupational Safety & Health (NIOSH). Work Practices Guide for Manual Lifting. Cincinnati, Oh: National technical Information Services; 1981.

References - Consistency of Effort (BSC)

1. Stokes HM. The seriously uninjured hand: weakness of grip. *J Occup Med.* 1983;25-683-684.
2. Stokes HM, Landrieu KW, Domangue B, Kunen S. Identification of low-effort patients through dynamometry. *J Hand Surg [Am].* 1995;20:1047-1056.
3. Niebuhr BR, Marion R. Detecting sincerity of effort when measuring grip strength. *Am J Phys Med Rehabil.* 1987;66:16-24.
4. Niebuhr BR, Marion R. Voluntary control of submaximal grip strength. *Am J Phys Med Rehabil.* 1990;69:96-101.

References - Consistency of Effort (PDI)

1. Tait RC, Chibnall JT, Krause SJ. The pain disability index: Psychometric properties. Pain 1990;40(2): 171-182. doi: 10.1016/0304-3959(90)90068-O.
2. Tait RC, Pollard CA, Margolis RB, Duckro PN, Krause SJ. The Pain Disability Index: psychometric and validity data. Arch Phys Med Rehabil. 1987;68(7):438-41. PMID: 3606368.
3. Giordano PC, Alexandre NM, Rodrigues RC, Coluci MZ. The Pain Disability Questionnaire: a reliability and validity study. Rev Lat Am Enfermagem. 2012 Jan-Feb;20(1):76-83. English, Portuguese, Spanish. doi: 10.1590/s0104-11692012000100011. PMID: 22481724.
4. Beemster T, Van Bennekom C, Van Velzen J, et al. The interpretation of change score of the pain disability index after vocational rehabilitation is baseline dependent. Health Qual Life Outcomes 16, 182 (2018). https://doi.org/10.1186/s12955-018-1000-1
5. Widerström-Noga EG, Cruz-Almeida Y, Martinez-Arizala A, Turk DC. Internal consistency, stability, and validity of the spinal cord injury version of the multidimensional pain inventory. Arch Phys Med Rehabil 2006;87:516-23.
6. Pollard CA. Preliminary validity study of the pain disability index. Perceptual and Motor Skills. 1984; 59: 974.
7. Soer R, Koke AJA, Vroomen CAJ, Stegeman P, et al. Extensive Validation of the Pain Disability Index in 3 Groups of Patients With Musculoskeletal Pain. SPINE 2013;38(9):E562-E568. DOI: 10.1097/BRS.0b013e31828af21f
8. Chibnall JT, Tait RC. The Pain Disability Index: Factor Structure and Normative Data. Arch Phys Med Rehabil. 1994;75:1082-1086.
9. Bianchini KJ, Aguerrevere LE, Guise BJ, Ord JS, Etherton JL, Meyers JE, Soignier RD, Greve KW, Curtis KL, Bui J. Accuracy of the Modified Somatic Perception Questionnaire and Pain Disability Index in the detection of malingered pain-related disability in chronic pain. Clin Neuropsychol. 2014;28(8):1376-94. doi: 10.1080/13854046.2014.986199. Epub 2014 Dec 17. PMID: 25517267.

References (Functional Reach (Standardized Test))

1. Duncan PW, Weiner DK, Chandler J, Studenski S. Functional reach: a new clinical measure of balance. J Gerontol. 1990;45(6):M192-197.
2. Schenkman M, Morey M, Kuchibhatla M. Spinal flexibility and balance control among community-dwelling adults with and without Parkinson's. J Gerontol A Biol Sci Med Sci. 2000;55(8):M441-445.
3. Weiner DK, Duncan PW, et al. Functional reach: a marker of physical frailty. J Am Geriatr Soc. 1992; 40(3):203-7.
4. Eagle JD, Salama S, Whitman D, Evans LA, Ho E, Olde J. Comparison of three instruments in predicting accidental falls in selected inpatients in a general teaching hospital. Journal of Gerontology Nursing. 1999; 25(7): 40-45.
5. Duncan PW, Studenski S, Chandler J, Prescott B. Functional reach: predictive validity in a sample of elderly male veterans. Gerontol. 1992;47(3):M93-98.
6. Bernie S, Bruner K, et al. Measurements of Balance: Comparison of the Timed "Up And Go" Test and Functional Reach Test with the Berg Balance Scale. Journal of Physical Therapy Science. 2003;5(2):93-97.
7. Thomas JI, Lane JV. A pilot study to explore the predictive validity of 4 measures of falls risk in frail elderly patients. Arch Phys Med Rehabil. 2005;86(8):1636-40.
8. Rockwood K, Awalt E, et al. Feasibility And measurement properties of the Functional Reach And the Timed Up And Go tests in the Canadian Study of Health And Aging. J Gerontol A Biol Sci Med Sci 2000;55(2): M70-3.

References (Single Leg Balance (Standardized Test))

1. Springer B, Marin R, Cyhan T, et al. Normative Values for the Unipedal Stance Test with Eyes Open and Closed. Journal of Geriatric Physical Therapy. 2007;30(1):8-15.
2. Kjær et al. Normative values for musculoskeletal and neuromotor fitness in apparently healthy Norwegian adults and the association with obesity: a cross-sectional study. BMC Sports Science, Medicine and Rehabilitation. 2016;8:37.
3. Freeman MA. Co-ordination exercises in the treatment of functional instability of the foot. Physiotherapy. 1965;51:393–395.
4. Hatton AL, Rome K, Dixon J, Martin DJ, McKeon PO. Footwear interventions: a review of their sensorimotor and mechanical effects on balance performance and gait in older adults. J Am Podiatr Med Assoc. 2013;103:516–533. doi: 10.7547/1030516.
5. Kelly NA, Ford MP, Standaert DG, Watts RL, Bickel CS, Moellering DR, Tuggle SC, Williams JY, Lieb L, Windham ST, Bamman MM. Novel, hich-intensity exercise prescription improves muscle mass, mitochondrial function, and physical capacity in individuals with parkinson's disease. J Appl Physiol (1985) 2014;116(5):582–592. doi: 10.1152/japplphysiol.01277.2013.
6. Chomiak T, Pereira FV, Hu B. The single-leg-stance test in Parkinson's disease. J Clin Med Res. 2015; 7(3): 182-185. hUp://www.jocmr.org/index.php/JOCMR/ar=cle/view/ 1878/1003.
7. Franchignoni F, Tesio L, Martino MT, Ricupero C. Reliability of four simple, quantitative tests of balance and mobility in healthy elderly females. Aging (Milano). 1998 Feb;10(1):26-31. doi: 10.1007/BF03339630. PMID: 9589748.
8. Kavanagh JJ, Menz HB. Accelerometry: a technique for quantifying movement patterns during walking. Gait Posture. 2008;28:1–15. doi: 10.1016/j.gaitpost.2007.10.010.
9. Choi YM, Dobson F, Martin J, et al. Interrater and intrarater reliability of common clinical standing balance tests for people with hip osteoarthritis. Phys Ther. 2014;94:696–704.
10. Cuesta-Vargas AI, Galán-Mercant A, Williams JM. The use of inertial sensors system for human motion analysis. Phys Ther Rev PTR. 2010;15:462–473
11. Jacobs JV, Horak FB, Tran VK, NuU JG. Mul=ple balance tests improve the assessment of postural stability in subjects with Parkinson's disease. J Neurol Neurosurg Psychiatry. 2006; 77(3): 322-326.
12. Adkin AL, Frank JS, Jog MS. Fear of falling and postural control in Parkinson's disease. Mov Disord. 2003; 18(5): 496-502.
13. Mann GC, Whitney SL, Redfern MS, Borello-France DF, Furman JM. Functional reach and single leg stance in patients with peripheral vestibular disorders. J Vestib Res. 1996 Sep-Oct;6(5):343-53. PMID: 9004971.

References (Tandem Gait/Walk (Standardized Test))

1. Giorgetti MM, Harris BA, Jette A. Reliability of clinical balance outcome measures in the elderly. Physiother Res Int 1998;3(4):274–83.
2. Kammerlind AS, Larsson PB, Ledin T, Skargren E. Reliability of clinical balance tests and subjective ratings in dizziness and disequilibrium. Adv Physiother 2005;7(3):96–107.
3. SCAT3. Br J Sports Med. 2013;47:259.
4. Howell DR, et al. Tandem Gait Test-Retest Reliability Among Healthy Child and Adolescent Athletes. J Athl Train (2019) 54 (12): 1254–1259.
5. Oldham et al. Normative Tandem Gait in Collegiate Student-Athletes: Implications for Clinical Concussion Assessment.Sport Health. 2017;9(4):305-311.
6. Schneiders, A.G., Sullivan, S.J., Gray, A., Hammond-Tooke, G. & McCrory, P. Normative values for 16-37 year old subjects for three clinical measures of motor performance used in the assessment of sports concussions. Journal of Science and Medicine in Sport. 2010; 13(2): 196 – 201.
7. Schneiders, A.G., Sullivan, S.J., Kvarnstrom. J.K., Olsson, M., Yden. T.& Marshall, S.W. The effect of footwear and sports-surface on dynamic neurological screening in sport-related concussion. Journal of Science and Medicine in Sport. 2010; 13(4): 382 – 386.
8. Soichiro Koyama, et al. Intra- and inter-rater reliability and validity of the tandem gait test for the assessment of dynamic gait balance. December 2017. European Journal of Physiotherapy 20(3):1-6
9. Samaneh Eemanipure, Parvaneh Shafinia, Ahmad Ghotbi-Varzaneh, Seyed Esmaeel Hashemi-Shaykh Shabani. Normative Values of Balance Tests in Neurological Assessment of Sports Related Concussions. Iranian Rehabilitation Journal, Vol. 10, No. 13, 2011.
10. Koyama S, et al. Intra- and inter-rater reliability and validity of the tandem gait test for the assessment of dynamic gait balance. European Journal of Physiotherapy. 2017;20(3):135-140.
11. Weber et al. Concurrent validity and reliability of the Community Balance and Mobility scale in young-older adults. BMC Geriatrics. 2018. 18:156.
12. Robertson et al. Concurrent validation of the tandem walk test as a measure of dynamic walking balance in a healthy population. Physical Therapy and Rehabilitation 2017.

References (Modified Romberg (Standardized Test))

1. Agrawal Y, Carey JP, Della Santina CC, Schubert MC, Minor LB. Disorders of balance and vestibular function in US adults: data from the National Health and Nutrition Examination Survey, 2001–2004. Arch Intern Med. 2009; 169(10):938–944. [PubMed: 19468085]
2. Cohen H, Blatchly CA, Gombash LL. A study of the clinical test of sensory interaction and balance. Phys Ther. 1993; 73(6):346–351. discussion 351–4. [PubMed: 8497509]
3. Heitmann DK, Gossman MR, Shaddeau SA, Jackson JR. Balance performance and step width in noninstitutionalized, elderly, female fallers and nonfallers. Phys Ther 1989;69:923□31.
4. Shumway-Cook A, Horak F. Assessing the influence of sensory interaction on balance: from the field. Phys Ther. 1986;66:1548-1550.
5. El-Kashlan H, Shepard N, Asher A, et al. Evaluation of clinical measures of equilibrium. Laryngoscope. 1998;108(3):311-319.
6. Cohen H, Blatchly C, Gombash L. A study of the clinical test for sensory interaction and balance. Phys Ther. 1993;73:346-351.
7. Mulavara A, Cohen H, Peters B, et al. New analyses of the sensory organization test compared to the clinical test of sensory integration and balance in patients with benign paroxysmal positional vertigo. Laryngoscope. 2013;123(9):2276-2280

References (The Four Square Step (Standardized Test))

1. Dite W, Temple VA. A clinical test of stepping and change of direction to identify multiple falling older adults. Arch Phys Med Rehabil. 2002 Nov;83(11):1566-71.
2. Brustio PR, Magistro D, Zecca M, Rabaglietti E, Liubicich ME. Age-related decrements in dual-task performance: Comparison of different mobility and cognitive tasks. A cross sectional study. PLoS ONE 2017;12(7): e0181698.
3. Hoffman, Renee and Bucholz, Hannah. Standard and Cognitive Four Square Step Test (FSST). 2019. Physical Therapy Scholarly. Projects. 679. https://commons.und.edu/pt-grad/679.
4. F Torlak, M Moffat. PP17 Four square step test normative data for healthy young adults. British Journal of Sports Medicine. 2014;48(3):10.1136/bjsports-2014-094245.33
5. Wilken JM, et al. Physical Performance Assessment in Military Service Members. J Am Acad Orthop Surg 2012; 20(suppl 1):S42-S47.
6. Lythgo N., Hunter J., Benson A., Gordon B. (2018) Validity of the Four Square Step Test to Assess Dynamic Balance, Step Velocity and Displacement. In: Vo Van T., Nguyen Le T., Nguyen Duc T. (eds) 6th International Conference on the Development of Biomedical Engineering in Vietnam (BME6). BME 2017. IFMBE Proceedings, vol 63. Springer, Singapore.
7. Whitney SL, Marchetti GF, Morris LO, Sparto PJ. The reliability and validity of the Four Square Step Test for people with balance deficits secondary to a vestibular disorder. Arch Phys Med Rehabil. 2007 Jan;88(1):99-104.
8. Blennerhassett JM, Jayalath VM. The Four Square Step Test is a feasible and valid clinical test of dynamic standing balance for use in ambulant people poststroke. Arch Phys Med Rehabil. 2008 Nov;89(11):2156-61
9. Nilsagård Y, Lundholm C, Denison E, Gunnarsson LG. Predicting accidental falls in people with multiple sclerosis -- a longitudinal study. Clin Rehabil. 2009 Mar;23(3):259-69
10. Moore M, Barker K. The validity and reliability of the four square step test in different adult populations: a systematic review. Systematic Reviews 2017;6:187.

References (Timed Up and Go (Standardized Test))

1. Podsiadlo D, Richardson S. The timed "up & go": a test of basic functional mobility for frail elderly persons. J Am Geriatr Soc 1991;39:142–8.
2. Mathias S, Nayak USL, Isaacs B. Balance in elderly patients: the "get-up And go" test. Arch Phys Med Rehabil 1986;67:387–9.
3. Eekhoff JAH, DeBock GH, Schaapveld K, Springer MP. Short report: functional mobility assessment at home. Timed up and go test using three different chairs. Can Fam Physician 2001;47:1205–7.
4. Shumway-Cook A, Brauer S, Woollacott M. Predicting the probability for falls in community dwelling older adults using the timed up and go test. Phys Ther 2000;80:896–903.
5. Medley A, Thompson M. The effect of assistive devices on the performance of community dwelling elderly on the timed up and go test. Issues Aging 1997;20:3–7.
6. Arnadottir SA, Mercer VS. Effects of footwear on measurements of balance and gait in women between the ages of 65 and 93 years. Phys Ther 2000;80:17–27.
7. CDC govt. TUG Available from:https://www.cdc.gov/steadi/pdf/TUG_Test-print.pdf (last accessed 16.10.2020)
8. Lusardi MM, Fritz S, Middleton A, et al. Determining Risk of Falls in Community Dwelling Older Adults: A Systematic Review and Meta-analysis Using Posttest Probability. J Geriatr Phys Ther. 2017;40(1):1-36.
9. Schrank TP. HHS Public Access. Vol 39.; 2016. doi:10.1007/128.
10. Kear BM, Guck TP, McGaha AL. Timed Up and Go (TUG) Test: Normative Reference Values for Ages 20 to 59 Years and Relationships With Physical and Mental Health Risk Factors. Journal of Primary Care & Community Health 2017;8(1):9–13.
11. Brustio PR, Magistro D, Zecca M, Rabaglietti E, Liubicich ME. Age-related decrements in dual-task performance: Comparison of different mobility and cognitive tasks. A cross sectional study. PLoS ONE 2017;12(7)
12. Bohannon RW. Reference values for the timed up and go test: a descriptive meta-analysis. J Geriatr Phys Ther. 2006;29(2):64-8.

13. Ibrahim A, Singh DKA, Shahar S. Timed Up and Go' test: Age, gender and cognitive impairment stratified normative values of older adults. 2017;PLoS ONE 12(10): e0185641.
14. Steffen T, Hacker T, Mollinger L. Age- and gender-related test performance in community-dwelling elderly people: six-minute walk test, berg balance scale, timed up go test, and gait speeds. Phys Ther. 2002;82(2):128-137.
15. Thaweewannakij T, Wilaichit S, Chuchot R, et al. Reference values of physical performance in Thai elderly people who are functioning well and dwelling in the community. Phys Ther. 2013;93:1312–1320.
16. Norén AM, Bogren U, Bolin J, Stenström C. Balance assessment in patients with peripheral arthritis: Applicability and reliability of some clinical assessments. Physiother Res Int 2001;6:193–204.
17. Morris S, Morris ME, Iansek R. Reliability of measurements obtained with the Timed "Up & Go" test in people with Parkinson disease. Physical therapy. 2001 Feb 1;81(2):810-8.
18. Ries J, Echternach J, Nof L, Blodgett M. Test-retest reliability and minimal detectable change scores for the timed "up go" test, the six-minute walk test, and gait speed in people with alzheimer disease. Phys Ther. 2009;89(6):569-579.
19. Haas B, Clarke E, Elver L, Gowman E, Mortimer E, Byrd E. The reliability and validity of the L-test in people with Parkinson's disease. Physiotherapy. 2017 Dec 5.
20. Gunter KB, White KN, Hayes WC, Snow CM. Functional mobility discriminates nonfallers from one-time and frequent fallers. J Gerontol A Biol Sci Med Sci 2000;55:M672–6.
21. Wall JC, Bell C, Campbell S, Davis J. The timed getup-and-go test revisited: measurement of the component tasks. J Rehabil Res Dev 2000;37:109-13.

PHYSICAL EXAMINATION TABLES

CERVICAL SPINE	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Flexion (45°)	45°	N/A	N/A	0%	N/A
Extension (45°)	45°	N/A	N/A	0%	N/A
Right Lateral Flexion (45°)	45°	N/A	N/A	0%	N/A
Left Lateral Flexion (45°)	45°	N/A	N/A	0%	N/A
Right Rotation (60°)	60°	N/A	N/A	0%	N/A
Left Rotation (60°)	60°	N/A	N/A	0%	N/A

THORACO-LUMBAR SPINE	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Flexion (80°)	80°	N/A	N/A	0%	N/A
Extension (25°)	10°	N/A	N/A	60%	N/A
Right Lateral Flexion (35°)	20°	N/A	N/A	43%	N/A
Left Lateral Flexion (35°)	20°	N/A	N/A	43%	N/A
Right Rotation (45°)	40°	N/A	N/A	11%	N/A
Left Rotation (45°)	45°	N/A	N/A	0%	N/A

RIGHT SHOULDER	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Shoulder Flexion (180°)	170°	N/A	N/A	6%	N/A
Shoulder Extension (50°)	10°	N/A	N/A	80%	N/A
Shoulder Abduction (180°)	180°	N/A	N/A	0%	N/A
Shoulder Adduction (50°)	50°	N/A	N/A	0%	N/A

LEFT SHOULDER	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Shoulder Flexion (180°)	160°	N/A	N/A	11%	N/A
Shoulder Extension (50°)	10°	N/A	N/A	80%	N/A
Shoulder Abduction (180°)	90°	N/A	N/A	50%	N/A
Shoulder Adduction (50°)	40°	N/A	N/A	20%	N/A

RIGHT ELBOW	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Elbow Flexion (150°)	150°	N/A	N/A	0%	N/A
Elbow Extension (0°)	0°	N/A	N/A	0%	N/A
Supination (80°)	80°	N/A	N/A	0%	N/A
Pronation (80°)	80°	N/A	N/A	0%	N/A

LEFT ELBOW	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Elbow Flexion (150°)	150°	N/A	N/A	0%	N/A
Elbow Extension (0°)	0°	N/A	N/A	0%	N/A
Supination (80°)	80°	N/A	N/A	0%	N/A
Pronation (80°)	80°	N/A	N/A	0%	N/A

RIGHT WRIST	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Wrist Flexion (80°)	80°	N/A	N/A	0%	N/A
Wrist Extension (70°)	70°	N/A	N/A	0%	N/A
Wrist Radial Deviation (20°)	20°	N/A	N/A	0%	N/A
Wrist Ulnar Deviation (30°)	20°	N/A	N/A	33%	N/A

LEFT WRIST	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Wrist Flexion (80°)	80°	N/A	N/A	0%	N/A
Wrist Extension (70°)	70°	N/A	N/A	0%	N/A
Wrist Radial Deviation (20°)	20°	N/A	N/A	0%	N/A
Wrist Ulnar Deviation (30°)	20°	N/A	N/A	33%	N/A

RIGHT HIP	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Hip Flexion (120°)	115°	N/A	N/A	4%	N/A
Hip Extension (30°)	25°	N/A	N/A	17%	N/A

Hip Abduction (45°)	40°	N/A	N/A	11%	N/A
Hip Adduction (30°)	25°	N/A	N/A	17%	N/A
Hip Int. Rotation (45°)	35°	N/A	N/A	22%	N/A
Hip Ext. Rotation (45°)	35°	N/A	N/A	22%	N/A

LEFT HIP	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Hip Flexion (120°)	100°	N/A	N/A	17%	N/A
Hip Extension (30°)	25°	N/A	N/A	17%	N/A
Hip Abduction (45°)	45°	N/A	N/A	0%	N/A
Hip Adduction (30°)	30°	N/A	N/A	0%	N/A
Hip Int. Rotation (45°)	45°	N/A	N/A	0%	N/A
Hip Ext. Rotation (45°)	45°	N/A	N/A	0%	N/A

RIGHT KNEE	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Knee Flexion (135°)	135°	N/A	N/A	0%	N/A
Knee Extension (0°)	0°	N/A	N/A	0%	N/A

LEFT KNEE	AROM	PROM	MMT	% Deficit (AROM)	% Deficit (MMT)
Knee Flexion (135°)	120°	N/A	N/A	11%	N/A
Knee Extension (0°)	0°	N/A	N/A	0%	N/A

Extremity AROM/MMT Comments
All lower ROM was very painful in her low back.

Beck Inventory Short Form

Name: Andrade Granados, Gricelda **Date: 10/16/2023**

Instructions: This is a questionnaire. Mark the number beside the statement in each group that best describes the way you have been feeling in the past week, including today.

Be sure to read all the statements in each group before making your choice.

1. [x] 0 - I do not feel sad.
[ ] 1 - I feel sad.
[ ] 2 - I am sad all the time and I can't snap out of it.
[ ] 3 - I am so sad or unhappy that I can't stand it.

2. [ ] 0 - I am not particularly discouraged about the future.
[ ] 1 - I feel discouraged about the future.
[ ] 2 - I feel I have nothing to look forward to.
[x] 3 - I feel that the future is hopeless and that things cannot improve.

3. [x] 0 - I do not feel like a failure.
[ ] 1 - I feel I have failed more that the average person.
[ ] 2 - As I look back on my life, all I can see is a lot of failure.
[ ] 3 - I feel that I am a complete failure as a person.

4. [ ] 0 - I get as much satisfaction out of things as I used to
[x] 1 - I don't enjoy things the way I used to.
[ ] 2 - I don't get real satisfaction out of anything anymore.
[ ] 3 - I am dissatisfied or bored with everything.

5. [x] 0 - I don't feel particularly guilty.
[ ] 1 - I feel guilty a good part of the time.
[ ] 2 - I feel quite guilty most of the time.
[ ] 3 - I feel guilty all of the time.

6. [x] 0 - I don't feel disappointed in myself.
[ ] 1 - I am disappointed in myself.
[ ] 2 - I am disgusted with myself.
[ ] 3 - I hate myself.

7. [x] 0 - I don't have any thoughts of killing myself.
[ ] 1 - I have thoughts of killing myself, but I would not carry them out.
[ ] 2 - I would like to kill myself.
[ ] 3 - I would kill myself if I had the chance.

8. [x] 0 - I have not lost interest in other people.
[ ] 1 - I am less interested in other people than I used to be.
[ ] 2 - I have lost most of my interest in other people.
[ ] 3 - I have lost all of my interest in other people.

9. [x] 0 - I make decisions about as well as I ever could.
[ ] 1 - I put off making decisions more than I used to.
[ ] 2 - I have greater difficulty in making decisions than before.
[ ] 3 - I can't make any decisions at all anymore.

10. [x] 0 - I don't feel that I look any worse than I used to.
[ ] 1 - I am worried that I am looking old or unattractive.
[ ] 2 - I feel that there are permanent changes in my appearance that make me look unattractive.
[ ] 3 - I believe that I look ugly.

11. [ ] 0 - I can work about as well as before.
[ ] 1 - It takes an extra effort to get started at doing something.
[x] 2 - I have to push myself very hard to do anything.
[ ] 3 - I can't do any work at all.

12. [ ] 0 - I don't get more tired than usual.
[ ] 1 - I get tired more easily than I used to.
[x] 2 - I get tired from doing almost anything.
[ ] 3 - I am too tired to do anything.

13. [x] 0 - My appetite is no worse than usual.
[ ] 1 - My appetite is not as good as it used to be.
[ ] 2 - My appetite is much worse now.
[ ] 3 - I have no appetite at all anymore.

Patient's (Raw) Score: 8 out of 39 **Patient's Perceived Depression: 21% Depressed**

References:

- Beck AT, Beck RW. Screening depressed patients in family practice: a rapid technique. *Postgraduate Medicine* 1972;52:81-85.
- Knight RG. Some general population norms for the short form beck depression inventory. *Journal Clinical Psychology* 1984;40(3):751-753.

Lower Extremity Functional Scale

Name: Andrade Granados, Gricelda **Date: 10/16/2023**

We are interested in knowing whether you are having any difficulty at all with the activities listed below because of your lower limb problem for which you are currently seeking attention. Please provide an answer for each question.

Today, do you or would you have any difficulty at all with: (Circle one letter on each line)

ACTIVITIES	Extreme Difficulty or Unable to Perform Activity	Quite a Bit of Difficulty	Moderate Difficulty	A Little Bit of Difficulty	No Difficulty
1. Any of your usual work, housework, or school activities.	0	1	2	(3)	4
2. Your usual hobbies, recreational or sporting activities.	0	1	2	(3)	4
3. Getting into or out of the bath.	0	1	2	(3)	4
4. Walking between rooms.	0	1	2	(3)	4
5. Putting on your shoes or socks.	0	1	2	(3)	4
6. Squatting.	0	1	2	(3)	4
7. Lifting an object, like a bag of groceries from the floor.	0	1	2	(3)	4
8. Performing light activities around your home.	0	1	2	(3)	4
9. Performing heavy activities around your home.	0	(1)	2	3	4
10. Getting into or out of a car.	0	1	(2)	3	4
11. Walking 2 blocks.	0	1	2	(3)	4
12. Walking a mile.	0	1	2	(3)	4
13. Going up or down 10 stairs (about 1 flight of stairs).	0	1	2	(3)	4
14. Standing for 1 hour.	0	1	2	(3)	4
15. Sitting for 1 hour.	0	1	2	(3)	4
16. Running on even ground.	0	1	2	(3)	4
17. Running on uneven ground.	0	1	2	(3)	4
18. Making sharp turns while running fast.	0	(1)	2	3	4
19. Hopping.	0	(1)	2	3	4
20. Rolling over in bed.	0	(1)	2	3	4

Patient's (Raw) Score: 51 out of 80 **Patient's Perceived Disability: 36%**

Reference:

- Binkley JM, Stratford PW, Lott SA, Riddle DL. The lower extremity functional scale (LEFS): scale development, measurement properties, and clinical application. *Phys Ther*. 1999;79(4):371-382.

McGill Pain Questionnaire

Name: Andrade Granados, Gricelda Date: 10/16/2023

Sensory Pain Levels	None	Mild	Moderate	Severe
1. Throbbing.	0	1	(2)	3
2. Shooting.	0	1	(2)	3
3. Stabbing.	0	1	(2)	3
4. Sharp.	0	1	(2)	3
5. Cramping.	0	1	(2)	3
6. Gnawing.	0	1	(2)	3
7. Hot-Burning.	0	1	(2)	3
8. Aching.	0	1	(2)	3
9. Heavy.	0	1	(2)	3
10. Tender.	0	(1)	2	3
11. Splitting.	0	1	(2)	3
Affective Pain Levels	**None**	**Mild**	**Moderate**	**Severe**
12. Tiring-exhausting.	0	1	(2)	3
13. Sickening.	0	(1)	2	3
14. Fearful.	0	(1)	2	3
15. Punishing-Cruel.	0	1	(2)	3

Visual Analog Scale (VAS):

No Pain _____ Worst Possible Pain

Present Pain Intensity (PPI):

0 No Pain
1 Mild
2 Discomforting
(3) Distressing
4 Horrible
5 Excruciating

Sensory Pain Levels: Raw Score = 21 out of 33, Sensory Pain Score = 64%

Affective Pain Levels: Raw Score = 6 out of 12, Affective Pain Score = 50%

Overall Pain Levels: Raw Score = 27 out of 45, Total Pain Score = 60%

Reference:

- Melzack R. The Short-Form McGill Pain Questionnaire. *Pain* 1987;30:191-197.

Pain Disability Index

Name: Andrade Granados, Gricelda **Date: 10/16/2023**

Instructions: In order to determine the effectiveness of your treatment, we need to know how much pain is interfering in your normal activities. For each of the seven areas listed below, please circle the number on the scale that describes the level of disability you have experienced DURING THE PAST WEEK. A score of "0" means no disability, and a score of "10" indicates that all of the activities in that category have been completely disrupted or prevented by your pain during the past week.

		No Disability										Total Disability
1.	***Family/Home Responsibilities:*** This category refers to activities related to the home or family. It includes chores or duties performed around the house (e.g. yard work) and errands or favors for other family members (e.g. driving the children to school).	0	1	2	3	4	(5)	6	7	8	9	10
2.	***Recreation:*** This disability includes hobbies, sports, and other similar leisure time activities.	0	1	2	3	4	(5)	6	7	8	9	10
3.	***Social Activity:*** This category refers to activities, which involve participation with friends and acquaintances other than family members. It includes parties, theater, concerts, dining out, and other social functions.	0	1	2	3	4	(5)	6	7	8	9	10
4.	***Occupation:*** This category refers to activities that are part of or directly related to one's job. This includes nonpaying jobs as well, such as that of a housewife or volunteer.	0	1	2	3	4	(5)	6	7	8	9	10
5.	***Sexual Behavior:*** This category refers to the frequency and quality of one's sex life.	0	1	2	3	4	5	6	7	(8)	9	10
6.	***Self Care:*** This category includes activities, which involve personal maintenance and independent daily living (e.g. taking a shower, driving, getting dressed, etc.)	0	1	2	3	4	(5)	6	7	8	9	10
7.	***Life-Support Activities:*** This category refers to basic life supporting behaviors such as eating, sleeping and breathing.	0	1	2	3	4	(5)	6	7	8	9	10

Patient Scored a 38 out of 70

Patient's Perceived Pain Related Disability: 54%

References:

1. Tait RC, Chibnall JT, Krause SJ. The pain disability index: Psychometric properties. Pain 1990;40(2): 171-182. doi: 10.1016/0304-3959(90)90068-O.
2. Tait RC, Pollard CA, Margolis RB, Duckro PN, Krause SJ. The Pain Disability Index: psychometric and validity data. Arch Phys Med Rehabil. 1987;68(7):438-41. PMID: 3606368.
3. Giordano PC, Alexandre NM, Rodrigues RC, Coluci MZ. The Pain Disability Questionnaire: a reliability and validity study. Rev Lat Am Enfermagem. 2012 Jan-Feb;20(1):76-83. English, Portuguese, Spanish. doi: 10.1590/s0104-11692012000100011. PMID: 22481724.
4. Beemster T, Van Bennekom C, Van Velzen J, et al. The interpretation of change score of the pain disability index after vocational rehabilitation is baseline dependent. Health Qual Life Outcomes 16, 182 (2018). https://doi.org/10.1186/s12955-018-1000-1.
5. Widerström-Noga EG, Cruz-Almeida Y, Martinez-Arizala A, Turk DC. Internal consistency, stability, and validity of the spinal cord injury version of the multidimensional pain inventory. Arch Phys Med Rehabil 2006;87:516-23.
6. Pollard CA. Preliminary validity study of the pain disability index. Perceptual and Motor Skills. 1984; 59: 974.
7. Soer R, Koke AJA, Vroomen CAJ, Stegeman P, et al. Extensive Validation of the Pain Disability Index in 3 Groups of Patients With Musculoskeletal Pain. SPINE 2013;38(9):E562-E568. DOI: 10.1097/BRS.0b013e31828af21f.
8. Chibnall JT, Tait RC. The Pain Disability Index: Factor Structure and Normative Data. Arch Phys Med Rehabil. 1994;75:1082-1086.
9. Bianchini KJ, Aguerrevere LE, Guise BJ, Ord JS, Etherton JL, Meyers JE, Soignier RD, Greve KW, Curtis KL, Bui J. Accuracy of the Modified Somatic Perception Questionnaire and Pain Disability Index in the detection of malingered pain-related disability in chronic pain. Clin Neuropsychol. 2014;28(8):1376-94. doi: 10.1080/13854046.2014.986199. Epub 2014 Dec 17. PMID: 25517267.

Oswestry Disability Index

Name: **Andrade Granados, Gricelda** **Date:** **10/16/2023**

This questionnaire has been designed to give us information as to how your **back or leg pain** is affecting your ability to manage in everyday life. Please answer by checking **one box in each section** for the statement which best applies to you. We realize you may consider that two of the statements in any one section apply, but please just mark the box which **most clearly describes your problem**.

Section 1 - Pain Intensity
- [ ] 0 - I have no pain at the moment.
- [ ] 1 - The pain is very mild at the moment.
- [x] 2 - The pain is moderate at the moment.
- [ ] 3 - The pain is fairly severe at the moment.
- [ ] 4 - The pain is very severe at the moment.
- [ ] 5 - The pain is the worst imaginable at the moment.

Section 2 - Personal Care (Washing, Dressing, etc.)
- [ ] 0 - I can look after myself normally without causing extra pain.
- [ ] 1 - I can look after myself normally but it causes extra pain.
- [ ] 2 - It is painful to look after myself and I am slow and careful.
- [x] 3 - I need some help but manage most of my personal care.
- [ ] 4 - I need help every day in most aspects of self-care.
- [ ] 5 - I do not get dressed, wash with difficulty and stay in bed.

Section 3 - Lifting
- [ ] 0 - I can lift heavy weights without extra pain.
- [ ] 1 - I can lift heavy weights but it gives extra pain.
- [ ] 2 - Pain prevents me from lifting heavy weights off the floor but I can manage if they are conveniently positioned, e.g. on a table.
- [x] 3 - Pain prevents me from lifting heavy weights but I can manage light to medium weights if they are conveniently positioned.
- [ ] 4 - I can lift only very light weights.
- [ ] 5 - I cannot lift or carry anything at all.

Section 4 - Walking
- [ ] 0 - Pain does not prevent me walking any distance.
- [x] 1 - Pain prevents me walking more than 1 mile.
- [ ] 2 - Pain prevents me walking more than 1/2 of a mile.
- [ ] 3 - Pain prevents me walking more than 100 yards.
- [ ] 4 - I can only walk using a stick or crutches.
- [ ] 5 - I am in bed most of the time and have to crawl to the toilet.

Section 5 - Sitting
- [ ] 0 - I can sit in any chair as long as I like.
- [ ] 1 - I can sit in my favourite chair as long as I like.
- [x] 2 - Pain prevents me from sitting for more than 1 hour.
- [ ] 3 - Pain prevents me from sitting for more than 1/2 an hour.
- [ ] 4 - Pain prevents me from sitting for more than 10 minutes.
- [ ] 5 - Pain prevents me from sitting at all.

Section 6 - Standing
- [ ] 0 - I can stand as long as I want without extra pain.
- [x] 1 - I can stand as long as I want but it gives me extra pain.
- [ ] 2 - Pain prevents me from standing for more than 1 hour.
- [ ] 3 - Pain prevents me from standing for more than 1/2 an hour.
- [ ] 4 - Pain prevents me from standing for more than 10 minutes.
- [ ] 5 - Pain prevents me from standing at all.

Section 7 - Sleeping
- [ ] 0 - My sleep is never disturbed by pain.
- [x] 1 - My sleep is occasionally disturbed by pain.
- [ ] 2 - Because of pain I have less than 6 hours sleep.
- [ ] 3 - Because of pain I have less than 4 hours sleep.
- [ ] 4 - Because of pain I have less than 2 hours sleep.
- [ ] 5 - Pain prevents me from sleeping at all.

Section 8 - Sex Life (if applicable)
- [ ] 0 - My sex life is normal and causes no extra pain.
- [ ] 1 - My sex life is normal but causes some extra pain.
- [ ] 2 - My sex life is normal but is very painful.
- [ ] 3 - My sex life is severely restricted by pain.
- [x] 4 - My sex life is nearly absent because of pain.
- [ ] 5 - Pain prevents any sex life at all.

Section 9 - Social Life
- [ ] 0 - My social life is normal and causes me no extra pain.
- [ ] 1 - My social life is normal but increases the degree of pain.
- [ ] 2 - Pain has no significant effect on my social life apart from limiting my more energetic interests, e.g. sport, etc.
- [x] 3 - Pain has restricted my social life and I do not go out as often.
- [ ] 4 - Pain has restricted my social life to my home.
- [ ] 5 - I have no social life because of pain.

Section 10 -Traveling
- [ ] 0 - I can travel anywhere without pain.
- [ ] 1 - I can travel anywhere but it gives extra pain.
- [ ] 2 - Pain is bad but I manage journeys over two hours.
- [x] 3 - Pain restricts me to journeys of less than one hour.
- [ ] 4 - Pain restricts me to short necessary journeys under 30 minutes.
- [ ] 5 - Pain prevents me from traveling except to receive treatment.

Patient's (Raw) Score: 23 out of 50 **Patient's Perceived Disability: 46%**

References:

- Fairbanks JCT, Pynsent P1 - The Oswestry Disability Index. SPINE 2000;25(22):2940-2593.
- Fairbanks JCT, Cooper JD, Davis JB, O'Brien JP. The Oswestry disability questionnaire. *Physiotherapy.* 1980;66:271-273.

SF-36 HEALTH SURVEY

Name: **Andrade Granados, Gricelda** **Date:** **10/16/2023**

1. In general, would you say your health is:

	(Check One Box)
Excellent	[ ]
Very Good	[ ]
Good	[ ]
Fair	[X]
Poor	[ ]

2. **Compared to one year ago**, how would you rate your health in general **now**?

	(Check One Box)
Much better now than one year ago	[ ]
Somewhat better now than one year ago	[X]
About the same	[ ]
Somewhat worse now than one year ago	[ ]
Much worse now than one year ago	[ ]

The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much?

		(Check One Box on Each Line)		
		Yes, Limited a Lot	Yes, Limited a Little	No, Not Limited at All
3.	**Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	[X]	[ ]	[ ]
4.	**Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	[ ]	[X]	[ ]
5.	Lifting or carrying groceries	[ ]	[X]	[ ]
6.	Climbing **several** flights of stairs	[ ]	[X]	[ ]
7.	Climbing **one** flights of stairs	[ ]	[X]	[ ]
8.	Bending, kneeling, or stooping	[ ]	[X]	[ ]
9.	Walking **more than a mile**	[ ]	[X]	[ ]
10.	Walking **several blocks**	[ ]	[ ]	[X]
11.	Walking **one block**	[ ]	[ ]	[X]
12.	Bathing or dressing yourself	[ ]	[X]	[ ]

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

		(Check One Box on Each Line)	
		Yes	No
13.	Cut down the **amount of time** you spent on work or other activities	[ ]	[X]
14.	**Accomplished less** than you would like	[ ]	[X]
15.	Were limited in the **kind** of work or other activities	[X]	[ ]
16.	Had **difficulty** performing the work or other activities (for example, it took extra effort)	[X]	[ ]

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

		(Check One Box on Each Line)	
		Yes	No
17.	Cut down the **amount of time** you spent on work or other activities	[X]	[ ]
18.	**Accomplished less** than you would like	[X]	[ ]
19.	Didn't do work or other activities as **carefully** as usual	[X]	[ ]

20. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

	(Check One Box)
Not at all	[ ]
Slightly	[ ]
Moderately	[X]
Quite a bit	[ ]
Extremely	[ ]

21. How much **bodily** pain have you had during the **past 4 weeks**?

	(Check One Box)
None	[ ]
Very mild	[ ]
Mild	[ ]
Moderate	[X]
Severe	[ ]
Very severe	[ ]

22. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

	(Check One Box)
Not at all	[ ]
Slightly	[ ]
Moderately	[X]
Quite a bit	[ ]
Extremely	[ ]

These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks** . . .

		(Check One Box on Each Line)					
		All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
23.	Did you feel full of pep?	[ ]	[ ]	[ ]	[ ]	[X]	[ ]
24.	Have you been a very nervous person?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
25.	Have you felt so down in the dumps that nothing could cheer you up?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
26.	Have you felt calm and peaceful?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
27.	Did you have a lot of energy?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
28.	Have you felt downhearted and blue?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
29.	Did you feel worn out?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
30.	Have you been a happy person?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
31.	Did you feel tired?	[ ]	[ ]	[ ]	[X]	[ ]	[ ]

32. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

	(Check One Box)
All of the time	[ ]
Most of the time	[ ]
Some of the time	[ ]
A little of the time	[X]
None of the time	[ ]

How TRUE or FALSE is each of the following statements for you.

		(Check One Box on Each Line)				
		Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
33.	I seem to get sick a little easier than other people.	[ ]	[ ]	[ ]	[ ]	[X]
34.	I am as healthy as anybody I know.	[ ]	[ ]	[ ]	[ ]	[X]
35.	I expect my health to get worse.	[ ]	[ ]	[ ]	[ ]	[X]
36.	My health is excellent.	[ ]	[ ]	[ ]	[ ]	[X]

Results

Physical Functioning:	55.00	Energy/Fatigue:	45.00
Role Limitations - Physical:	50.00	Social Functioning:	62.50
Pain:	45.00	Role Limitations - Emotional:	0.00
General Health:	45.00	Mental Health:	52.00
PHYSICAL SUMMARY SCALE:	**50.71**	**MENTAL SUMMARY SCALE:**	**40.36**
Physical Disability Rating:	**49.29%**	**Mental Disability Rating:**	**59.64%**

Scores range from 0 to 100 with higher scores indicating greater health

REFERENCE TABLES

Functional Pain Scale		Functional Descriptor
10	Worst Imaginable Pain	Causes you to be completely incapacitated and barely able to talk. Requires immediate emergency hospitalization.
9 8		Pain that causes disability between levels 7 and 10. Nearing need for hospitalization
7	Severely Disabling Pain	You cannot use or move the painful area. You have difficulty talking and concentrating on anything but the pain. Needing to lie down and/or pain-related tearfulness are common at this level of pain
6		Pain that causes disability between levels 5 and 7
5	Very Disabling Pain	Causes great difficulty moving or applying any strength through the painful area. You are unable to complete the current activity
4		Pain that causes disability between levels 3 and 5
3	Functionally Disabling Pain	Pain that is starting to affect your ability to perform the current activity. (i.e., decreased movement, decreased speed, and/or the need to briefly rest and/or stretch in order to continue completing the current activity)
2.75 2 1 0.25	Non Disabling Pain	The pain is present, but not yet at a level which limits you from performing the current activity
0	No Pain	No pain or discomfort

Numerical Pain Scale		Pain Descriptor
0	No Pain	No pain at all, you feel perfectly normal.
1	Very Mild	Very light barely noticeable pain, like a mosquito bite or a poison ivy itch. Most of the time you never think about the pain.
2	Discomforting	Minor pain, like lightly pinching the fold of skin between the thumb and first finger with the other hand, using the fingernails. People can react differently to this self-test.
3	Tolerable	Very noticeable pain, like an accidental cut, a blow to the nose causing a bloody nose, or a doctor giving you an injection. The pain is not so strong that you cannot get used to it.
4	Distressing	Strong, deep pain, like a minor trauma to part of the body. So strong you notice the pain all the time and cannot completely adapt.
5	Very Distressing	Strong, deep, piercing pain. Not only do you notice the pain all the time, you are now so preoccupied with managing it that you normal lifestyle is curtailed. Temporary personality disorders are frequent.
6	Intense Pain	Strong, deep, piercing pain so strong it seems to partially dominate your senses, causing you to think somewhat unclearly. At this point you begin to have trouble holding a job or maintaining normal social relationships.
7	Very Intense Pain	Same as 6 except the pain completely dominates your senses, causing you to think unclearly about half the time. At this point you are effectively disabled and frequently cannot live alone.
8	Horrible Pain	Pain so intense you can no longer think clearly at all, and have often undergone severe personality change if the pain has been present for a long time. Suicide is frequently contemplated and sometimes tried. Comparable to childbirth.
9	Excruciating	Pain so intense you cannot tolerate it and demand pain killers or surgery, no matter what the side effects or risk. If this doesn't work, suicide is frequent since there is no more joy in life whatsoever.
10	Unimaginable Pain	Pain so intense you will go unconscious shortly. Most people have never experienced this level of pain.

BORG: 1-10 Scale	BORG: 6-20 Scale	Description
1	6	No exertion at all
	7	Extremely light
	8	
2	9	Very light
	10	
3	11	Light
	12	
5	13	Somewhat hard
	14	
7	15	Hard (heavy)
8	16	
8.5	17	Very hard
9	18	
9.5	19	Extremely hard
10	20	Maximal Exertion

REFERENCE TABLES

DICTIONARY OF OCCUPATION TITLES Physical Demand Strength Table	OCCASIONAL	FREQUENT	CONSTANT
SEDENTARY 1.5 to 2.1 METS	Up to 10 lbs. (up to 4.5 kg)	Negligible Weight	Not Applicable
LIGHT 2.2 to 3.5 METS	11 - 20 lbs. (5 - 9 kg)	5 to 10 lbs. (2.25 - 4.5 kg)	Negligible Weight
MEDIUM 3.6 to 6.3 METS	21 - 50 lbs. (10 - 22 kg)	11 to 25 lbs. (5 - 11 kg)	4 to 10 lbs. (1.8 - 4.5 kg)
HEAVY 6.4 to 7.5 METS	51 - 100 lbs. (23 - 45 kg)	26 to 50 lbs. (12 - 23 kg)	10 to 20 lbs. (4.5 - 9 kg)
VERY HEAVY >7.5 METS	> 100 lbs. (> 45 kg)	> 50 lbs. (> 23 kg)	> 20 lbs. (> 9 kg)

PHYSICAL DEMAND ACTIVITY DEFINITIONS

AVOID	Activity or condition does not exist or should be avoided.
RARE (Non-Repetitive Activity)	Activity or condition exists from 1 to 5% of the workday: less than 25 minutes per day; 1-2 repetitions per hour; or 16 or less repetitions per day. Rare is defined as non-repetitive activity
OCCASIONAL (Non-Repetitive Activity)	Activity or condition exists from 6 to 33% of the workday: up to 1/3 of the time, from 25 minutes to 2 ½ hours per day; 3-12 repetitions per hour; or 17-100 repetitions per day. Occasional is defined as non-repetitive activity.
FREQUENT (Non-Repetitive Activity)	Activity or condition exists from 34 to 66% of the workday: from 1/3 to 2/3 of the time; from 2 ½ to 5 ¼ hours per day; 13-29 repetitions per hour; or 101-239 repetitions per day. This frequent activity is defined as non-repetitive activity since its less than 30 repetitions per hour or less than 240 repetitions per day.
FREQUENT (Repetitive Activity)	Activity or condition exists from 34 to 66% of the workday: from 1/3 to 2/3 of the time; from 2 ½ to 5 ¼ hours per day; 30-62 repetitions per hour; or 240-500 repetitions per day. This frequent activity is defined as repetitive activity since its 30 or more repetitions per hour or 240 or more repetitions per day.
CONSTANT (Repetitive Activity)	Activity or condition exists from 67 to 100% of the workday: more than 2/3 of the time; more than 5 ¼ hours per day; 63 or more repetitions per hour; or more than 500 repetitions per day. Constant is defined as repetitive activity.
*Non-Repetitive Activity	Defined as activity performed less than 30 times per hour or less than 240 times per day. Use of keyboard less than 4 hours per day.

END POINT DETERMINATIONS – Safety measurements used by the clinician to determine when a task/test ends or stops

EXTERNAL	Lifting restrictions imposed by the treating medical practitioner, or other healthcare provider or occupation. Test termination by the clinician when the individual safely reaches the maximum required weight load.
PSYCHOPHYSICAL	The test is terminated by the individual based on complaints of fatigue, excessive pain, and an inability to complete the required number of movements during the testing interval (cycle). The evaluator needs to determine if the individual is trying his or her best and/or if there are other extenuating factors limiting his or her performance.
PHYSIOLOGICAL	Test termination by the clinician due to cardiovascular or metabolic changes. This end point relies on measurements of heart rate, oxygen consumption, or blood pressure. Examples: Heart rate outside of the age-determined target heart rate, &/or a blood pressure >160/100 or > (10 mm Hg drop or increase in diastolic pressure), &/or a 4% drop in O2 saturation a drop in o2 saturation <90%.
BIOMECHANICAL (SAFETY)	The test is terminated by the clinician if the individual's technique (body mechanics) deteriorates during testing (he or she demonstrates unsafe practices) -or- due to the achievement of a pre-determined anthropometric safe lifting limit based on the individual's adjusted body weight and/or based upon an evaluation of the individual's signs & symptoms.

References:

1. Revised 4th Ed of the Dictionary of Occupational Titles, Volumes I and II, U.S. Department of Labor Employment and Training Administration, 1991.
2. Selected Characteristics of Occupations Defined in the Revised Dictionary of Occupational Titles (SCO), U.S. Department of Labor Employment and Training Administration, 1993.
3. Disability Evaluation. 2nd edition. American Medical Association. 2003.
4. Guide to the Evaluation of Functional Ability: How to request, interpret and apply functional capacity evaluations. American Medical Association. 2009.