National Functional Evaluations

Measure, Document, Validate

Evidence Based Functional Evaluation Report

Report Date: 09/15/2019

Name:	**Patient Sample**	ID:	**000000**
Address:	**1 Main Dr**	DOB (Age):	01/2/95
	town, NY 11111	Age:	**24**
Evaluation Date:	**09/15/2019**	Gender:	**M**
Series Profile:	**Cervical/Lumbar Series**	Height:	**66** in
Date of Injury:	05/01/2019	Weight:	**130** lb
Body Side of Injury:	**L**	Dominant Hand	**L**
		Referred By	**Dr. Doctor**

Diagnosis

Description	ICD Code
Radiculopathy, cervical region	**M54.12**
Radiculopathy, lumbar region	**M54.16**

FUNCTIONAL ABILITIES

Tested Activities	Impairment Deficit	No Impairment Deficit	Not Performed	Comments on Tested Results
Static Lift Testing	**X**			
Muscle Testing	**X**			
Ranges of Motion	**X**			
Hand Grip Standard	**X**			
Pinch Grip	**X**			

RELIABILITY AND CONSISTENCY OF EFFORT

The results of this evaluation suggest that Mr. Sample gave a reliable effort, with 33 of 34 consistency measures within expected limits.

I Dr. Doctor have read the report, interpreted the report, made the appropriate treatment protocol updates and the results will be reviewed with the patient.

_____ _____

Dr. Doctor **Date**

National Functional Evaluation

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Functional Ability Results Quick View:

NIOSH Lift Test Results		Force Data		Job Related Strength and Lifting Recommendations‡		
Demonstrated Activity	**DATE**	**Avg Force**	**CV (%)**			**Occasional Lift (Table ST1)**
LEG LIFT	09/15/19	5.5 lb	1.0	n/a	n/a	3 lb (Sedentary)
ARM LIFT	09/15/19	7.4 lb	1.7	n/a	n/a	4 lb (Sedentary)
HIGH NEAR LIFT	09/15/19	4.1 lb	2.4	n/a	n/a	2 lb (Sedentary)

Muscle Testing Results		FORCE DATA				WEAKER SIDE COMPARISON		
Demonstrated Activity	**DATE**	**LEFT**	**CV (%)**	**RIGHT**	**CV (%)**	**Weaker Side**	**Expected Force**	**Force Deficit**
Cervical Extension	09/15/19	(bilateral	test)	2.8 lb	1.7	n/a	n/a	n/a
Elbow Extension	09/15/19	7.7 lb	0.6	9.9 lb	0.5	Left	9.9 lb	-22 %
Elbow Flexion	09/15/19	7.1 lb	1.3	9.1 lb	1.6	Left	9.1 lb	-22 %
Shoulder Abduction	09/15/19	4.6 lb	1.0	6.6 lb	0.7	Left	6.6 lb	-30 %
Finger Flexion	09/15/19	8.8 lb	0.5	11.1 lb	0.9	Left	11.1 lb	-21 %
Wrist Dorsiflexion	09/15/19	5.7 lb	3.8	7.1 lb	1.3	Left	7.1 lb	-20 %
Hip Flexion	09/15/19	16.6 lb	0.6	19.9 lb	0.5	Left	19.9 lb	-17 %
Hip Extension	09/15/19	9 lb	0.5	11.1 lb	0.9	Left	11.1 lb	-19 %
Knee Flexion	09/15/19	9.6 lb	2.7	11.7 lb	3.2	Left	11.7 lb	-18 %
Knee Extension	09/15/19	9.9 lb	0.5	12.1 lb	0.8	Left	12.1 lb	-18 %
Ankle Dorsiflexion	09/15/19	11.1 lb	0.9	14.1 lb	1.0	Left	14.1 lb	-21 %
Ankle Plantar Flexion	09/15/19	13.1 lb	0.7	15.7 lb	1.4	Left	15.7 lb	-17 %
Ankle Inversion	09/15/19	6.1 lb	1.6	8.9 lb	1.6	Left	8.9 lb	-31 %
Ankle Eversion	09/15/19	6.6 lb	0.7	8.6 lb	3.1	Left	8.6 lb	-23 %

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

Ranges of Motion Test Results		Range of Motion		NORMATIVE DATA	
Demonstrated Activity	DATE	ROM Value	Valid	Population Norm	Percent of Norm
Cervical Flexion	09/15/19	38 deg	Yes	50 deg	76 %
Cervical Extension	09/15/19	37 deg	Yes	60 deg	62 %
Cervical Lateral Flexion - Left	09/15/19	34 deg	Yes	45 deg	76 %
Cervical Lateral Flexion - Right	09/15/19	31 deg	Yes	45 deg	69 %
Cervical Rotation - Left	09/15/19	49 deg	Yes	80 deg	61 %
Cervical Rotation - Right	09/15/19	43 deg	Yes	80 deg	54 %
Lumbar Flexion	09/15/19	37 deg	Yes	60 deg	62 %
Lumbar Extension	09/15/19	18 deg	Yes	25 deg	72 %
Lumbar Lateral Flexion - Left	09/15/19	20 deg	Yes	25 deg	80 %
Lumbar Lateral Flexion - Right	09/15/19	19 deg	Yes	25 deg	76 %
Straight Leg Raise Left	09/15/19	32 deg	Yes	n/a	n/a
Straight Leg Raise Right	09/15/19	36 deg	Yes	n/a	n/a

Hand Dynamometer Test Results		FORCE DATA		NORMATIVE DATA		
Demonstrated Activity	DATE	Avg Force	CV† (%)	Population Norm	Standard Deviation	Comp. to Norm
Position 1 - Left	09/15/19	19.2 lb	2.4	n/a	n/a	n/a
Position 1 - Right	09/15/19	38.2 lb	2.6	n/a	n/a	n/a
STANDARD - Left	09/15/19	22.5 lb	1.7	62.3 lb	+/- 13.8	low
STANDARD - Right	09/15/19	51 lb	0.0	70.4 lb	+/- 13.5	norm
Position 3 - Left	09/15/19	50.2 lb	2.6	n/a	n/a	n/a
Position 3 - Right	09/15/19	19 lb	0.9	n/a	n/a	n/a
Position 4 - Left	09/15/19	47.6 lb	4.6	n/a	n/a	n/a
Position 4 - Right	09/15/19	16.5 lb	4.6	n/a	n/a	n/a
Position 5 - Left	09/15/19	15.3 lb	1.4	n/a	n/a	n/a
Position 5 - Right	09/15/19	44.3 lb	0.3	n/a	n/a	n/a

Pinch Grip Test Results		FORCE DATA		NORMATIVE DATA		
Demonstrated Activity	DATE	Avg Force	CV (%)	Population Norm	Standard Deviation	Comp. to Norm
KEY - Left	09/15/19	6.6 lb	1.4	15.8 lb	+/- 3.1	low
KEY - Right	09/15/19	5.4 lb	2.3	16.7 lb	+/- 3.1	low
PALMAR - Left	09/15/19	6.9 lb	2.0	16.6 lb	+/- 3.5	low
PALMAR - Right	09/15/19	5.3 lb	4.4	17.0 lb	+/- 3.1	low
TIP - Left	09/15/19	5.2 lb	3.1	11.1 lb	+/- 3.0	low
TIP - Right	09/15/19	4.2 lb	3.4	11.5 lb	+/- 2.7	low

Ranges of Motion Test Results		Range of Motion		NORMATIVE DATA		
Demonstrated Activity	DATE	LEFT	RIGHT	NORM	LEFT %Norm	RIGHT %Norm
Elbow Flexion	09/15/19	99 deg	99 deg	140 deg	71 %	71 %
Elbow Extension	09/15/19	1 deg	1 deg	0 deg	n/a %	n/a %
Wrist Palmar Flexion	09/15/19	42 deg	42 deg	60 deg	70 %	70 %
Wrist Dorsal Flexion	09/15/19	42 deg	43 deg	60 deg	70 %	72 %
Elbow Flexion	09/15/19	99 deg	99 deg	140 deg	71 %	71 %
Elbow Extension	09/15/19	1 deg	1 deg	0 deg	n/a %	n/a %
Ankle Dorsi Flexion	09/15/19	23 deg	23 deg	20 deg	115 %	115 %
Ankle Plantar Flexion	09/15/19	21 deg	22 deg	40 deg	53 %	55 %

5th Edition Impairment Rating Report:09/15/2019

The results of this functional evaluation show that Ms Sample's has the following Impairment Levels. The impairments are broken down by whole person and body region.

Impairment Summary	Impairment (%)		Variation
	6/15/2019	09/15/2019	
Whole Person	78	46	41%
Right Arm	42	0	100%
Right Hand	47	0	100%
Left Arm	65	53	19%
Left Shoulder	11	9	18%
Left Elbow	9	7	22%
Left Hand	48	39	19%
Left Leg	65	55	15%
Left Hip	25	21	16%
Left Knee	27	23	15%
Left Ankle	34	27	21%
Spine	14	12	14%
Cervical Region	14	10	29%
Lumbosacral Region	4	2	50%

Patient's Functional Pain Disability Questionnaire (PDQ) Table S16.2(a)

Instructions: This survey asks your views about how your pain now affects how you function in everyday activities. This information will help you and your doctor know how you feel and how well you are able to do your daily tasks at this time.
Please answer every question by putting the associated number in the box. This is to show how much your pain problem has affected you (0) having no problems at all to having the most severe problems you can imagine (10).

		(0 - 10)
1.	**Does your pain interfere with your normal work inside and outside the home?** On a scale of 0 to 10, with 0 being able to work normally and 10 being unable to work at all.	8
2.	**Does your pain interfere with personal care (such as washing, dressing, etc.)?** On scale of 0 to 10, with 0 being able to take care of oneself completely and 10 needing help with personal care.	8
3.	**Does your pain interfere with your traveling?** On a scale of 0 to 10 with 0 being able to travel anywhere and 10 being able only to travel to see doctors.	9
4.	**Does your pain affect your ability to sit or stand?** On a scale of 0 to 10, with 0 having no problems to sit or stand and 10 not being able to sit or stand at all.	9
5.	**Does your pain affect your ability to lift overhead, grasp objects, or reach for things?** On a scale of 0 to 10, with 0 having no problems and 10 not being able to do anything at all.	10
6.	**Does your pain affect your ability to lift objects off the floor, bend, stoop, or squat?** On a scale of 0 to 10, with 0 having no problems and 10 not being able to do anything.	10
7.	**Does your pain affect your ability to walk or run?** On a scale of 0 to 10, with 0 having no problems and 10 having problems walking/running.	9
8.	**Has your income declined since your pain began?** On a scale of 0 to 10, with 0 showing no decline and 10 showing lost all income.	9
9.	**Do you have pain medication every day to control your pain?** On a scale of 0 to 10, with 0 showing no medication is needed and 10 showing on pain medication throughout the day.	8
10.	**Does your pain force you to see doctors much more often than before your pain began?** On a scale of 0 to 10, with 0 being never seeing doctors and 10 being seeing doctors weekly.	8
11.	**Does your pain interfere with your ability to see the people who are important to you as much as you would like?** On a scale of 0 to 10, with 0 showing having no problems and 10 being never to see them.	8
12.	**Does your pain interfere with recreational activities and hobbies that are important to you?** On a scale of 0 to 10, with 0 being does not interfere at all and 10 being total interference.	7
13.	**Do you need the help of your family and friends to complete everyday tasks (including both work outside the home and housework) because of your pain?** On a scale of 0 to 10, with 0 being never needing help and 10 being needing help all the time.	8
14.	**Do you now feel more depressed, tense, or anxious than before your pain**	9

	began? On a scale of 0 to 10, with 0 not feeling depressed or tensed and 10 feeling severely depressed and tensed.	
15.	**Are there emotional problems caused by your pain that interfere with your family, social, and or work activities?** On a scale of 0 to 10, with 0 having no problems and 10 having severe problems.	8

5th Edition Impairment Rating Report:09/15/2019

Right

9%

7%

Left

53%

39%

Spine

10%

12%

2%

Right Leg

21%

23%

27%

Left Leg

55%

Pelvis

Whole Person Impairment Value = 46%

Impairment Summary	Impairment (%)
Location of Impairment	**(at location)**
Whole Person	46
Left Arm	53
Left Shoulder	9
Left Elbow	7
Left Hand	39
Left Leg	55
Left Hip	21
Left Knee	23
Left Ankle	27
Spine	12
Cervical Region	10
Lumbosacral Region	2

Automated 5th Edition Impairment Calculation Summary

Spine Impairment

Lumbosacral Region: 2% - (combine multiple impairments)

Abnormal Motion: 2% - (add multiple impairments)

Maximum True Lumbar Flexion measured was Invalid, yielding an impairment of 0%

Maximum True Lumbar Extension angle was Invalid, yielding an impairment of 0%

Maximum Left Lateral Flexion measured was 20, yielding an impairment of 1%

Maximum Right Lateral Flexion measured was 19, yielding an impairment of 1%

Add 0% and 0% for a result of 0%

Add 0% and 1% for a result of 1%

Add 1% and 1% for a result of 2%

Cervical Region: 10% - (combine multiple impairments)

Abnormal Motion: 10% - (add multiple impairments)

Maximum Flexion measured was 38, yielding an impairment of 2%

Maximum Extension measured was 37, yielding an impairment of 2%

Maximum Left Lateral Flexion measured was 34, yielding an impairment of 1%

Maximum Right Lateral Flexion measured was 31, yielding an impairment of 1%

Maximum Left Rotation measured was 49, yielding an impairment of 2%

Maximum Right Rotation measured was 43, yielding an impairment of 2%

Add 2% and 2% for a result of 4%

Add 4% and 1% for a result of 5%

Add 5% and 1% for a result of 6%

Add 6% and 2% for a result of 8%

Add 8% and 2% for a result of 10%

Spine: 12% - (combine multiple impairments)

Lumbosacral Region: 2%

Cervical Region: 10%

Combine 10% and 2% for a result of 12%

Left Leg Impairment

Left Ankle: 27% - (add multiple impairments)

Other Impairment: 27% - (combine multiple impairments)

Muscle Weakness During Plantar Flexion, Grade 4 - Active movement against gravity with some resistance - 17% impairment

Muscle Weakness During Dorsiflexion (Extension), Grade 4 - Active movement against gravity with some resistance - 12% impairment

Combine 17% and 12% for a result of 27%

Left Knee: 23% - (combine multiple impairments)

Other Impairment: 23% - (combine multiple impairments)

Muscle Weakness During Flexion, Grade 4 - Active movement against gravity with some resistance - 12% impairment

Muscle Weakness During Extension, Grade 4 - Active movement against gravity with some resistance - 12% impairment

Combine 12% and 12% for a result of 23%

Left Hip: 21% - (combine multiple impairments)

Other Impairment: 21% - (combine multiple impairments)

Muscle Weakness During Flexion, Grade 4 - Active movement against gravity with some resistance - 5% impairment

Muscle Weakness During Extension, Grade 4 - Active movement against gravity with some resistance - 17% impairment

Combine 5% and 17% for a result of 21%

Left Leg: 55% - (combine multiple impairments)

Left Ankle: 27%

Left Knee: 23%

Left Hip: 21%

Combine 21% and 23% for a result of 39%

Combine 39% and 27% for a result of 55%

Left Arm Impairment

Left Hand: 39% - (add multiple impairments)

Muscle Function: 39% - (combine multiple impairments)

Loss of Grip Strength - Grip Strength of 10.23 Kg for a Strength Loss Index of 56% when compared to the AMA norms for the minor hand of other Unrated workers of the same sex, for a 22% impairment

Loss of Pinch Strength - Pinch Strength of 3.02 Kg for a Strength Loss Index of 38% when compared to the AMA norms for the minor hand of other Unrated workers of the same sex, for a 22% impairment

Combine 22% and 22% for a result of 39%

Left Elbow: 7% - (combine multiple impairments)

Nerve Disorder: 7% - (combine multiple impairments)

Radial (elbow with sparing of triceps): 20% Motor Deficit (Grade 4), 7% impairment

Left Shoulder: 9% - (combine multiple impairments)

Nerve Disorder: 9% - (combine multiple impairments)

Radial (upper arm with loss of triceps): 22% Motor Deficit (Grade 4), 9% impairment

Left Arm: 53% - (combine multiple impairments)

Nerve Disorder: 15% - (combine multiple impairments)

Axillary: 30% Motor Deficit (Grade 3), 10% impairment

Musculocutaneous: 22% Motor Deficit (Grade 4), 6% impairment

Combine 10% and 6% for a result of 15%

Left Hand: 39%, which translates to a 35% impairment at this location

Left Elbow: 7%

Left Shoulder: 9%

Combine 15% and 9% for a result of 23%

Combine 23% and 7% for a result of 28%

Combine 28% and 35% for a result of 53%

Whole Person Impairment

Whole Person: 46% - (combine multiple impairments)

Spine: 12%

Left Leg: 55%, which translates to a 22% whole person impairment

Left Arm: 53%, which translates to a 32% whole person impairment

Combine 32% and 21% for a result of 46%

Impairment Detail Relating to Guides of Impairment

Abnormal Motion				Impairment	
Joint	**Movement**	**Angle**	**ROM**	**%**	**Reference**
Cervical Region	Flexion		38	2	P.418, T.15-12
	Extension		37	2	
Cervical Region	Left Lateral Flexion		34	1	P.420, T.15-13
	Right Lateral Flexion		31	1	
Cervical Region	Left Rotation		49	2	P.421, T.15-14
	Right Rotation		43	2	
Lumbosacral Region	Flexion				P.407, T.15-8
	Extension				
	Sacral Flexion Angle	0			
	Total Sacral (Hip) Motion				
	Right Straight Leg Raise	32			
	Left Straight Leg Raise	36			
Lumbosacral Region	Left Lateral Flexion		20	1	P.409, T.15-9
	Right Lateral Flexion		19	1	

Peripheral Nervous System Disorders		Impairment	
Limb/Location and Nerve Root » Diagnosis	**Deficit**	**%**	**Reference**
Left Shoulder - Major Peripheral Nerves			
– Axillary		10	P.54, T.15
» Motor Deficit: Active movement against gravity only, without resistance	30	10	
– Musculocutaneous		6	P.54, T.15
» Motor Deficit: Active movement against gravity with some resistance	22	6	
– Radial (upper arm with loss of triceps)		9	P.54, T.15
» Motor Deficit: Active movement against gravity with some resistance	22	9	
Left Elbow - Major Peripheral Nerves			
– Radial (elbow with sparing of triceps)		7	P.54, T.15
» Motor Deficit: Active movement against gravity with some resistance	20	7	

Other Non-Scheduled Impairments		Impairment	
Location	**Description of Impairment**	**%**	**Reference**
Left Hip	Muscle Weakness During Flexion Grade 4 - Active movement against gravity with some resistance	5	P.532, T.17-8
Left Hip	Muscle Weakness During Extension Grade 4 - Active movement against gravity with some resistance	17	P.532, T.17-8
Left Knee	Muscle Weakness During Flexion Grade 4 - Active movement against gravity with some resistance	12	P.532, T.17-8
Left Knee	Muscle Weakness During Extension Grade 4 - Active movement against gravity with some resistance	12	P.532, T.17-8
Left Ankle	Muscle Weakness During Plantar Flexion Grade 4 - Active movement against gravity with some resistance	17	P.532, T.17-8
Left Ankle	Muscle Weakness During Dorsiflexion (Extension) Grade 4 - Active movement against gravity with some resistance	12	P.532, T.17-8

Loss of Strength			Impairment	
Location	**Strength**	**Strength Index**	**%**	**Reference**
Left Hand Grip Strength	10.23 kg	56%	22	P.509, T.16-34
Left Hand Pinch Strength	3.02 kg	38%	22	P.509, T.16-34

Sample Illustration:
The client pulls up for a five second trial duration. A rest period of 15 seconds is given in between the three trials.

High Near Lift

Evaluates the shoulder and Lower cervical spinal muscles.

High Far Lift

Evaluates the shoulder and upper back muscles.

Arm Lift

Evaluates the elbows and upper back muscles

Leg Lift

Evaluates the knees and the upper thigh muscles

Torso Lift

Evaluates the lower back muscles

Evaluates the hip, back, and leg extensor muscles

Static Strength Summary:

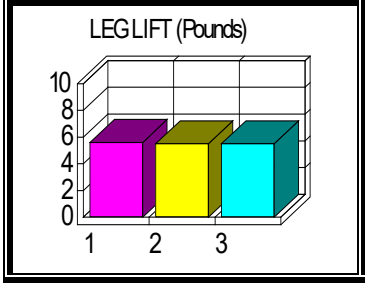
The client was tested using the muscle test evaluation device. The test results were compared to normative data when available. Strength measurements are in pounds (lbs). A Coefficient of Variation (CV) and/or difference between successive reps of 15% or less indicates validity, reproducibility, and consistency of effort.

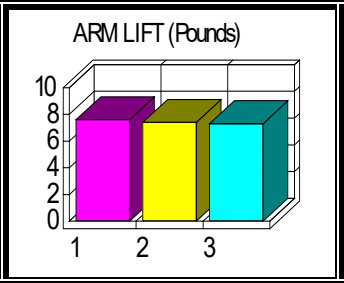
Women	Average Lift Testing Performance - Occasional Lift				
	>10% Percentile	10%-25% Percentile	26%-50% Percentile	51%-75% Percentile	76%-90% Percentile
Arm Lift	>38 LBS	39 - 48 LBS	49 - 58 LBS	59 - 69 LBS	70 - 78 LBS
High Near Lift	>34 LBS	35 - 49 LBS	50 - 64 LBS	65 - 79 LBS	80 - 93 LBS
High Far Lift	>19 LBS	20 - 24 LBS	25 - 29 LBS	30 - 35 LBS	36 - 43 LBS
Leg Lift	>32 LBS	33 - 60 LBS	61 - 88 LBS	89 - 117 LBS	118 - 141 LBS
Torso Lift	>45 LBS	46 - 55 LBS	56 - 68 LBS	69 - 83 LBS	84 - 100 LBS
Floor Lift	>70 LBS	71 - 97 LBS	98 - 123 LBS	124 - 152 LBS	153 - 176 LBS
	Sedentary	Light	Medium	Heavy	Very Heavy

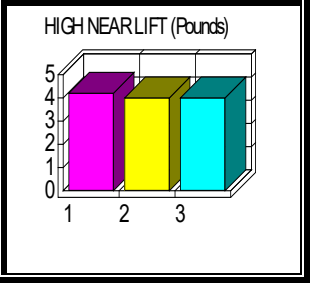
Static Strength Test Results		Strength Results		Functional Strength - Occasional Lift
Demonstrated Activity	DATE	Avg. Force (lb)	CV (%)	Occasional Lift
LEG LIFT	09/15/19	5.5 lb	1.0	3 lb (Sedentary)
ARM LIFT	09/15/19	7.4 lb	1.7	4 lb (Sedentary)
HIGH NEAR LIFT	09/15/19	4.1 lb	2.4	2 lb (Sedentary)

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

Static Lift Test Graphs





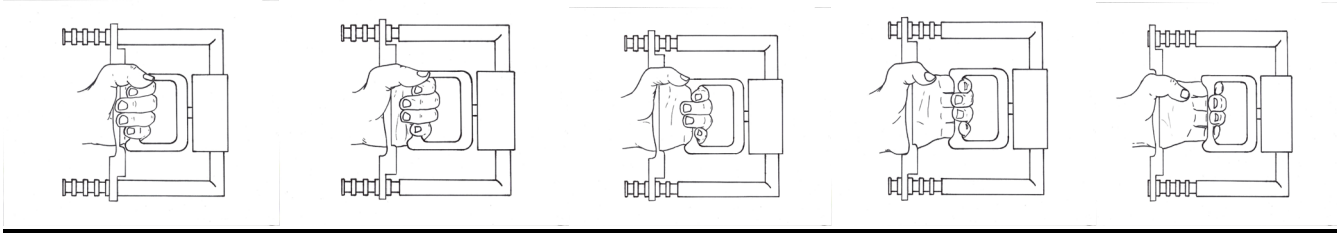


Hand Grip Strength Report:

The client was tested in our facility using the hand grip evaluation device. The test results were compared to normative data when available. It is expected that the dominant hand will display 10% greater values than the non-dominant hand with the exception of left-handed individuals where the hand strength is equal. Strength measurements are in pounds (lbs).

Sample Illustration of the variety of positions:

Position 1 **Position 2** **Position 3** **Position 4** **Position 5**



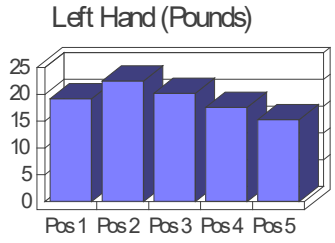
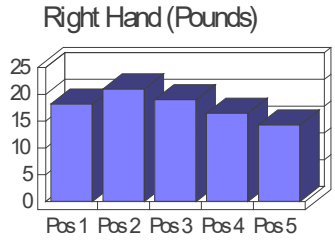
Hand Dynamometer Test Results		FORCE DATA		NORMATIVE DATA		
Demonstrated Activity	DATE	Avg Force	CV† (%)	Population Norm	Standard Deviation	Comp. to Norm
Position 1 - Left	09/15/19	19.2 lb	2.4	n/a	n/a	n/a
Position 1 - Right	09/15/19	38.2 lb	2.6	n/a	n/a	n/a
STANDARD - Left	09/15/19	22.5 lb	1.7	62.3 lb	+/- 13.8	low
STANDARD - Right	09/15/19	51 lb	0.0	70.4 lb	+/- 13.5	norm
Position 3 - Left	09/15/19	50.2 lb	2.6	n/a	n/a	n/a
Position 3 - Right	09/15/19	19 lb	0.9	n/a	n/a	n/a
Position 4 - Left	09/15/19	47.6 lb	4.6	n/a	n/a	n/a
Position 4 - Right	09/15/19	16.5 lb	4.6	n/a	n/a	n/a
Position 5 - Left	09/15/19	15.3 lb	1.4	n/a	n/a	n/a
Position 5 - Right	09/15/19	44.3 lb	0.3	n/a	n/a	n/a

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

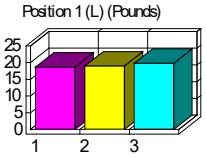
The following table compares the patient's grip strength on opposite body sides and reports a percent difference in strength for the weaker hand compared to the stronger hand. In cases of reported injury, an expected strength is calculated based on the measured strength of the uninjured side (note: **right**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

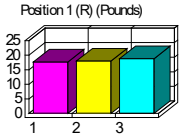
Left Hand vs. Right Hand		FORCE DATA (* Dominant Hand)			INJURED SIDE COMPARISON		
Demonstrated Activity	DATE	LEFT	RIGHT	Weaker Hand	Injured Side	Expected Strength	Strength Deficit
Position 1	09/15/19	* 19.2	18.2	-5 %	Left	18.2	n/a
STANDARD	09/15/19	* 22.5	21	-7 %	Left	21	n/a
Position 3	09/15/19	* 20.2	19	-6 %	Left	19	n/a
Position 4	09/15/19	* 17.6	16.5	-6 %	Left	16.5	n/a
Position 5	09/15/19	* 15.3	14.3	-7 %	Left	14.3	n/a

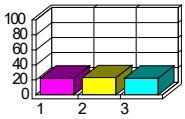
The Maximum Voluntary Effort (MVE) protocol was used to determine if the patient exerted a maximal effort during the grip test. This protocol consisted of successive grip tests over the full range of five positions of the hand dynamometer. Research[£] has shown that both normal and injured hand strength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

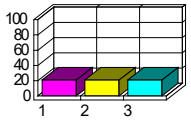
MVE Results	Hand Strength vs. Position	
In the graphs to the right, maximal effort is indicated by a "humped" or bell-shaped curve (may be skewed toward position 2 or 4, based on patient's hand size), while sub-maximal effort is indicated by a flat or randomly varying curve.		

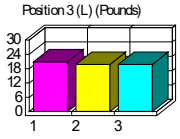
Hand Grip Results Graphs

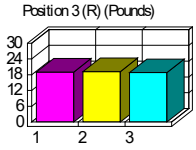


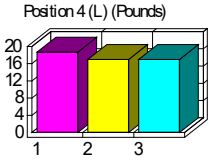


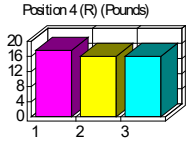


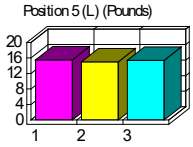


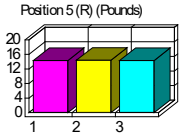










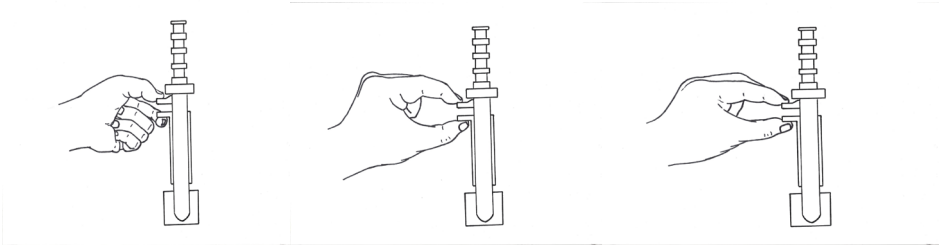


Pinch Grip Strength Report:

The client was tested in our facility using the pinch grip evaluation device. The test results were compared to normative data when available. It is expected that the dominant hand will display 10% greater values than the non-dominant hand with the exception of left-handed individuals where the hand strength is equal.

Sample Illustration:

Key **Tip** **Palmer**



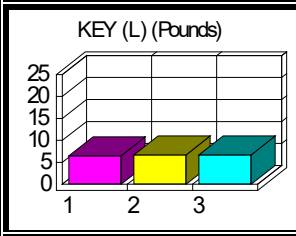
Pinch Grip Strength Test Results		FORCE DATA		NORMATIVE DATA		
Demonstrated Activity	**DATE**	**Avg Force (LBS)**	**CV (%)**	**Population Norm**	**Standard Deviation**	**Comp. to Norm**
KEY - Left	09/15/19	6.6 lb	1.4	15.8 lb	+/- 3.1	low
KEY - Right	09/15/19	5.4 lb	2.3	16.7 lb	+/- 3.1	low
PALMAR - Left	09/15/19	6.9 lb	2.0	16.6 lb	+/- 3.5	low
PALMAR - Right	09/15/19	5.3 lb	4.4	17.0 lb	+/- 3.1	low
TIP - Left	09/15/19	5.2 lb	3.1	11.1 lb	+/- 3.0	low
TIP - Right	09/15/19	4.2 lb	3.4	11.5 lb	+/- 2.7	low

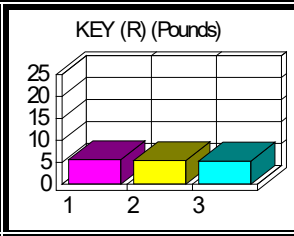
("**n/a**" indicates results that are not available or applicable for the listed task)

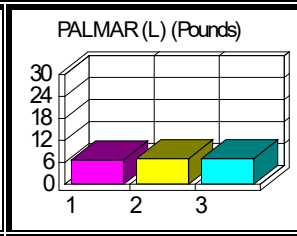
The following table compares the patient's pinch strength on opposite body sides and reports a percent difference in strength for the *weaker hand* compared to the stronger hand. In cases of reported injury, an *expected strength* is calculated based on the measured strength of the uninjured side (note: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

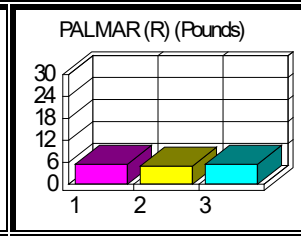
Left Hand vs. Right Hand		**FORCE DATA** (* indicates Dominant Hand)			**INJURED SIDE COMPARISON**		
Demonstrated Activity	**DATE**	**LEFT**	**RIGHT**	**Weaker Hand**	**Injured Side**	**Expected Strength**	**Strength Deficit**
KEY	09/15/19	* 6.6	5.4	-18 %	Left	5.4	n/a
PALMAR	09/15/19	* 6.9	5.3	-23 %	Left	5.3	n/a
TIP	09/15/19	* 5.2	4.2	-19 %	Left	4.2	n/a

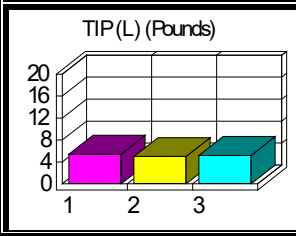
PG Test Graphs *(in order of Test Results)*

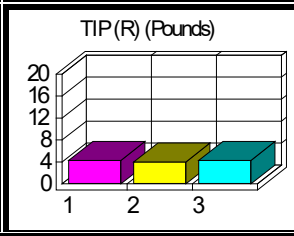












Sample Illustration:

Functional Muscle Strength Report

The patient was evaluated using the functional strength testing system. The Functional Strength Test is given for bilateral evaluation of muscular strength between an individual right and left side. The following diagram compares the patient's demonstrated strength on opposite body sides and calculates an expected strength based on the strength of the stronger side. The weaker side, if any, is indicated and the percent of strength deficit is reported. The deficit is based on a 1:1 normal ratio of right side to left side. Any deviation from this ratio will appear as a percent deficit. Dominance has been taken into consideration by using the formula (dominant-non dominant/ dominant). If comparing left to right with the normative data, if the percentage difference exceeds 12.5% it indicates an impairment or deficit.

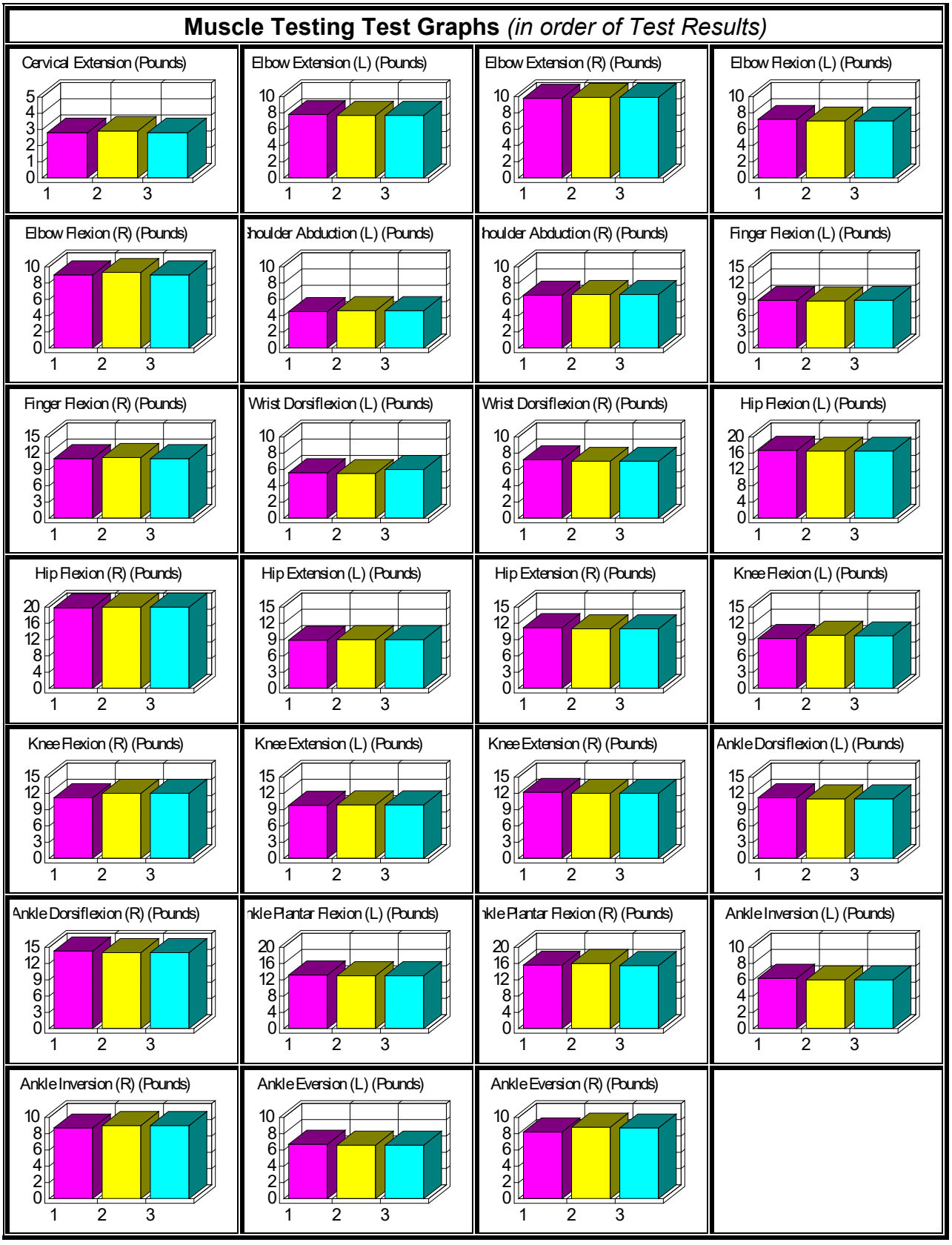
Valid?

Validity of testing is established by the presence of 3 consecutive repetitions (A maximum of six trials are performed) which fall within a coefficient of >15% of the mean. The report compares the patients test results with normative standards to compute an impairment percentage this information is used to help establish the patient's impairment rating which is expressed as a percentage of whole person impairment/improvement

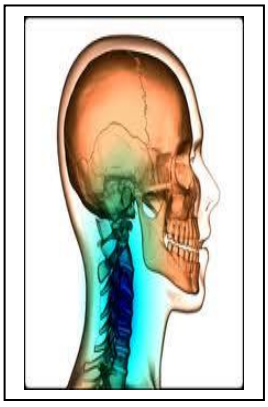
Muscle Testing Results		FORCE DATA				WEAKER SIDE COMPARISON		
Demonstrated Activity	DATE	LEFT	CV† (%)	RIGHT	CV† (%)	Weaker Side	Expected Strength	Strength Deficit
Cervical Extension	09/15/19	(bilateral	test)	2.8 lb	1.7	n/a	n/a	n/a
Elbow Extension	09/15/19	7.7 lb	0.6	9.9 lb	0.5	Left	9.9 lb	-22 %
Elbow Flexion	09/15/19	7.1 lb	1.3	9.1 lb	1.6	Left	9.1 lb	-22 %
Shoulder Abduction	09/15/19	4.6 lb	1.0	6.6 lb	0.7	Left	6.6 lb	-30 %
Finger Flexion	09/15/19	8.8 lb	0.5	11.1 lb	0.9	Left	11.1 lb	-21 %
Wrist Dorsiflexion	09/15/19	5.7 lb	3.8	7.1 lb	1.3	Left	7.1 lb	-20 %
Hip Flexion	09/15/19	16.6 lb	0.6	19.9 lb	0.5	Left	19.9 lb	-17 %
Hip Extension	09/15/19	9 lb	0.5	11.1 lb	0.9	Left	11.1 lb	-19 %
Knee Flexion	09/15/19	9.6 lb	2.7	11.7 lb	3.2	Left	11.7 lb	-18 %
Knee Extension	09/15/19	9.9 lb	0.5	12.1 lb	0.8	Left	12.1 lb	-18 %
Ankle Dorsiflexion	09/15/19	11.1 lb	0.9	14.1 lb	1.0	Left	14.1 lb	-21 %
Ankle Plantar Flexion	09/15/19	13.1 lb	0.7	15.7 lb	1.4	Left	15.7 lb	-17 %
Ankle Inversion	09/15/19	6.1 lb	1.6	8.9 lb	1.6	Left	8.9 lb	-31 %
Ankle Eversion	09/15/19	6.6 lb	0.7	8.6 lb	3.1	Left	8.6 lb	-23 %

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

Muscle Testing Test Graphs *(in order of Test Results)*



Sample Illustration



Spinal Ranges of Motion Report

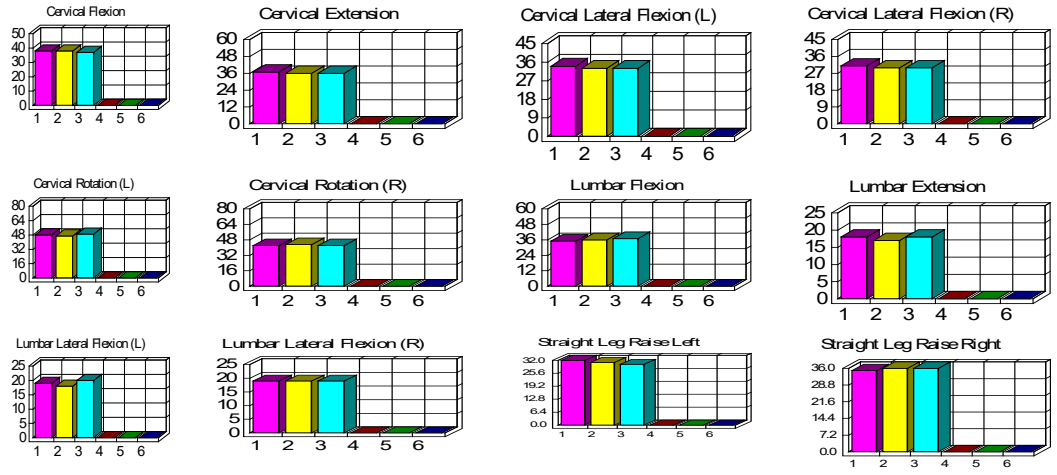
The patient was evaluated using the inclinometer system. This system is specifically designed to quantify an individual's spinal range of motion (ROM) in the cervical, thoracic and/or lumbar regions, and to compare these ROM values to establish and recognized population norms.

Valid?

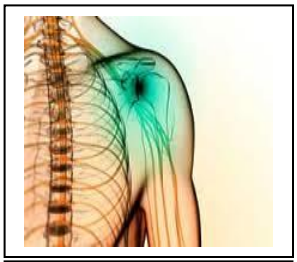
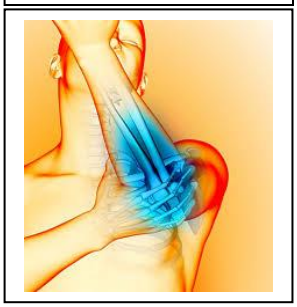
Validity of testing is established by the presence of 3 consecutive repetitions (A maximum of six trials are performed) which fall within ±5 degrees or 10% of the mean (whichever is greater). The report compares the patients test results with normative standards to compute an impairment percentage this information is used to help establish the patient's impairment rating which is expressed as a percentage of whole person impairment/improvement

Spinal Ranges of Motion Test Results		Range of Motion		NORMATIVE DATA	
Demonstrated Activity	**DATE**	**ROM**	**Valid**	**Population Norm**	**Percent of Norm**
Cervical Flexion	09/15/19	38 deg	Yes	50 deg	76 %
Cervical Extension	09/15/19	37 deg	Yes	60 deg	62 %
Cervical Lateral Flexion - Left	09/15/19	34 deg	Yes	45 deg	76 %
Cervical Lateral Flexion - Right	09/15/19	31 deg	Yes	45 deg	69 %
Cervical Rotation - Left	09/15/19	49 deg	Yes	80 deg	61 %
Cervical Rotation - Right	09/15/19	43 deg	Yes	80 deg	54 %
Lumbar Flexion	09/15/19	37 deg	Yes	60 deg	62 %
Lumbar Extension	09/15/19	18 deg	Yes	25 deg	72 %
Lumbar Lateral Flexion - Left	09/15/19	20 deg	Yes	25 deg	80 %
Lumbar Lateral Flexion - Right	09/15/19	19 deg	Yes	25 deg	76 %
Straight Leg Raise Left	09/15/19	32 deg	Yes	n/a	n/a
Straight Leg Raise Right	09/15/19	36 deg	Yes	n/a	n/a

Range of Motion Functional Graphs



Sample Illustration:

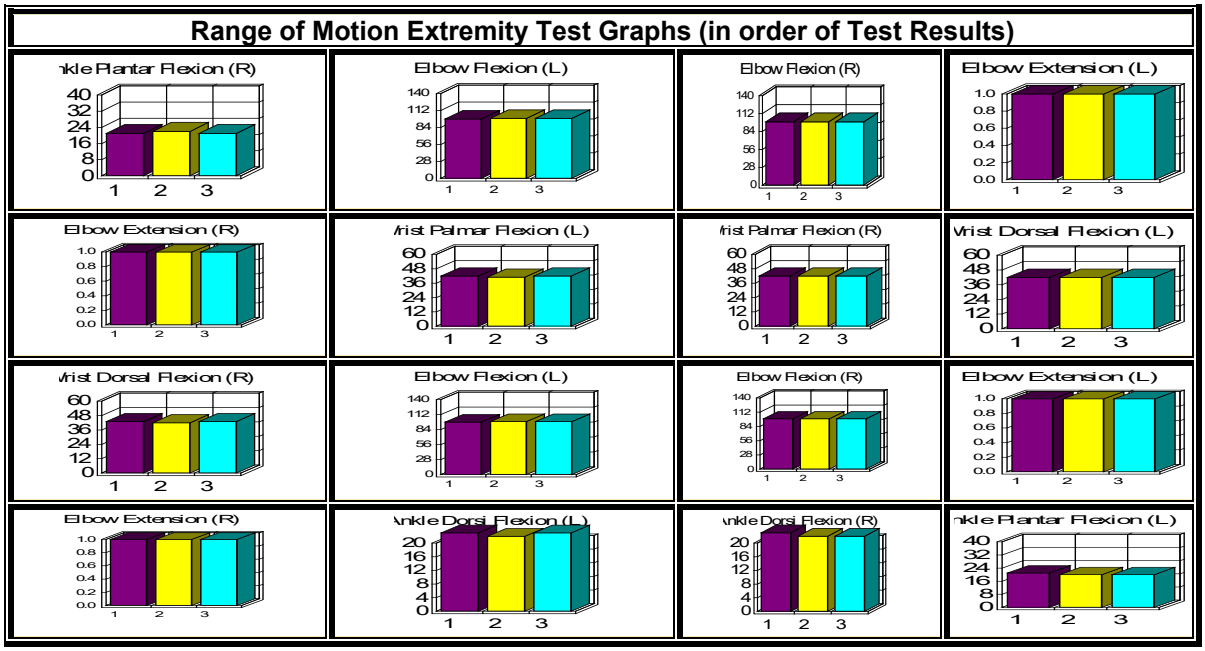


Extremity Range of Motion Report:

The patient was evaluated using the electronic goniometer. This device is designed to quantify an individual's range of motion (ROM) on one or more of the extremities, and to compare these ROM values to recognized population norms. The tests are used determine the patient's performance deficiencies, a comparison is made between their test results and the normative data established by the American Medical Association (AMA) Guide to the Evaluation of Permanent Impairment (5th Edition)

Extremity Ranges of Motion Test Results		Range of Motion		NORMATIVE DATA‡		
Motion Tested	**DATE**	**LEFT**	**RIGHT**	**NORM**	**LEFT %Norm**	**RIGHT %Norm**
Elbow Flexion	09/15/19	99 deg	99 deg	140 deg	71 %	71 %
Elbow Extension	09/15/19	1 deg	1 deg	0 deg	n/a %	n/a %
Wrist Palmar Flexion	09/15/19	42 deg	42 deg	60 deg	70 %	70 %
Wrist Dorsal Flexion	09/15/19	42 deg	43 deg	60 deg	70 %	72 %
Elbow Flexion	09/15/19	99 deg	99 deg	140 deg	71 %	71 %
Elbow Extension	09/15/19	1 deg	1 deg	0 deg	n/a %	n/a %
Ankle Dorsi Flexion	09/15/19	23 deg	23 deg	20 deg	115 %	115 %
Ankle Plantar Flexion	09/15/19	21 deg	22 deg	40 deg	53 %	55 %

If the patient repeated any test on one or more testing dates, results are shown in the table below. ROM changes (shown as "% Change" - positive indicating *increased ROM*, negative indicating *decreased ROM*) are presented as a means of evaluating either progress in rehabilitation or loss due to injury or degeneration.


Range of Motion Extremity Test Graphs (in order of Test Results)
Elbow Flexion (L)
Elbow Flexion (R)
Elbow Extension (L)
Elbow Extension (R)
Elbow Flexion (L)
Elbow Flexion (R)
Elbow Extension (L)
Elbow Extension (R)