

# **BRINGING IT ALL TOGETHER**

**Incorporating shoulder function to heal dysfunction,  
and measures that objectify the clinical picture**

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- Painful shoulders are an elderly epidemic, and weak upper extremities with problematic shoulder pathology is common amongst frail older adults. Abnormal motor patterns become a habit and increase wear and tear on the joint.
- Growing old is not in itself a prerequisite to becoming frail. Neither does a disability, such as the loss of a limb, lead to frailty in an otherwise physically robust older person.
- There is, however, a growing consensus among experts that frailty does exist as a distinct syndrome which occurs principally in a subset of older people who are the most vulnerable and who are at increased risk of hospitalization, dependency and whose life expectancy is reduced
- Lally, F., Crome, P. (2007). **Understanding frailty**. Postgrad Med J. 2007 Jan; 83(975): 16–20.



## RESEARCH INDICATES:

- Frailty is complex in its manifestations and there is as yet no generic treatment.
- Therefore, therapeutic interventions need to be INDIVIDUALIZED
- In older people, a comprehensive geriatric assessment should form the basis of the diagnostic process, concentrating treatments on those most likely to produce benefit while avoiding those treatments most likely to cause harm.



## Evaluation

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*Occupational profile*—The initial step in the evaluation process, which provides an understanding of the client's occupational history and experiences, patterns of daily living, interests, values, and needs. The client's reasons for seeking services, strengths and concerns in relation to performing occupations and daily life activities, areas of potential occupational disruption, supports and barriers, and priorities are also identified.

*Analysis of occupational performance*—The step in the evaluation process during which the client's assets and problems or potential problems are more specifically identified. Actual performance is often observed in context to identify supports for and barriers to the client's performance. Performance skills, performance patterns, context or environment, client factors, and activity demands are all considered, but only selected aspects may be specifically assessed. Targeted outcomes are identified.

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## Intervention

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*Intervention plan*—The plan that will guide actions taken and that is developed in collaboration with the client. It is based on selected theories, frames of reference, and evidence. Outcomes to be targeted are confirmed.

*Intervention implementation*—Ongoing actions taken to influence and support improved client performance and participation. Interventions are directed at identified outcomes. The client's response is monitored and documented.

*Intervention review*—Review of the intervention plan and progress toward targeted outcomes.

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## Targeting of Outcomes

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*Outcomes*—Determinants of success in reaching the desired end result of the occupational therapy process. Outcome assessment information is used to plan future actions with the client and to evaluate the service program (i.e., program evaluation).

# EVALUATION

- As discussed by Jamie and Liz, thorough assessment of the chart including: labs, imaging, medications, history, symptomology, and review of what exacerbates/relieves the problem is important in determining WHAT is wrong with your patient
- Now, let's work on that Occupational Profile to create an individualized plan of care



- **Occupational Profile:** Aspects of your patient that are pertinent to your treatment planning. Consider prior level of function with ADL tasks, but don't stop there.
  - Who is your patient?
  - Did they serve in the military; what was their rank?
  - Do they live with a child, or did their child move in with them?
  - Do they have a child that works while they keep their grandchildren?
  - Do they cook every Sunday for a family of 15?
  - Do they attend mass or church service?
  - Do they have a tub or step in shower in their home? There are so many aspects about our patients' lives that make up the person we are treating.
  - Use this information to understand routines and activities that exacerbate symptoms, as well as to establish trust and rapport so that you can maximize your therapeutic impact in your patient's life.
- References to assist in development of profile:
  - MOHO Interest Inventory (refer to packet)
  - REMEMBER: In occupational therapy, it is our goal to enable our patients to return to their desired occupational activities



# PLANNING INTERVENTIONS AND DETERMINING HOW TO REPORT OUTCOMES

- Once medical condition and occupational profile have been compiled, we must decide WHAT we are targeting to appropriately choose our treatment diagnoses
- As we move toward value based purchasing and outcomes driven reimbursement, it is of the utmost important that we are able to demonstrate a return on the payer's investment in our services
- Choose treatment diagnoses and CPT codes wisely, bill your time mindfully



# ICD-10: GET SPECIFIC ABOUT WHAT YOU ARE TREATING

- *M62.81... No specificity in location of muscle weakness*
- Continuing to utilize generic, non-specific weakness coding is increasing denial risk.
- CMS is targeting the time spent on “Therapeutic Exercise” during our treatment sessions. We need to justify the need for us spending this time with our patient by specifically identifying weak muscle groups, and how this impacts our patient’s functional performance.
- We then need to show the “skill” in our provision of services by documenting treatment modifications, vital signs, adjustments to intensity, cueing needed, etc. in order to show the skill in the exercises that were performed.
- Once an exercise program is established, and a patient performs it safely without cueing, supervision, or direct involvement by the therapist, it is no longer viewed as skilled.
- Our patients have many co-morbidities, and when our involvement is necessary for exercise prescriptions to be performed safely and effectively, our documentation should reflect it.



# ICD-10 CODING AND RELATED TESTS TO CREATE OBJECTIVE MEASURES

## ○ Weakness

- **M62.511** (muscle wasting and atrophy R shoulder) & **M62.512** (muscle wasting and atrophy L shoulder)
- **M62.521** (muscle wasting and atrophy R upper arm) & **M62.522** (muscle wasting L upper arm)
- **M62.531** (muscle wasting and atrophy R forearm) & **M62.532** (muscle wasting L forearm)
- **M62.541** (muscle wasting and atrophy R hand) & **M62.542** (muscle wasting and atrophy L hand)
- **Standardized tests/measures that objectify this deficit area:**
  - ROM/Goniometry
  - Active vs Passive motion/non-painful vs painful
  - A program such as geriatric one rep max, that creates an evidence based picture of progress and gains (discuss handout)
  - Use dynamometers if available at your facility
  - 30 Second Arm Curl Test
  - Back Scratch Test (assesses shoulder flexibility, which can be related to upper body dressing)



# DYNAMOMETERS

## NORMS FOR ADULT GRIP STRENGTH

A recent study by Dr. Virgil Mathiowetz indicates that "... individuals using the Baseline® dynamometer are justified in using the normative data that was collected with the Jamar® dynamometer ...".

For each test of grip strength, the subject was seated with shoulder adducted and neutrally rotated, elbow flexed at 90°, forearm in neutral position, and wrist between 0° and 30° dorsiflexion and between 0° and 15° ulnar deviation.

The standard test protocol used the mean of three strength tests as the resultant score. A score was taken with both the dominant (right) and non-dominant (left) hands.

The test results show a relationship between:

- hand strength vs. age
- hand strength of men vs. hand strength of women
- dominant hand strength vs. non-dominant hand strength

AVERAGE PERFORMANCE OF ALL SUBJECTS ON GRIP STRENGTH (POUNDS) - TEST RESULTS											
MEN					Age	Hand	WOMEN				
Mean	SD	SE	Low	High			Mean	SD	SE	Low	High
121.0	20.6	3.8	91	167	20-24	R	70.4	14.5	2.8	46	95
104.5	21.8	4.0	71	150			L	61.0	13.1	2.6	33
120.8	23.0	4.4	78	158	25-29	R	74.5	13.9	2.7	48	97
110.5	16.2	4.4	77	139			L	63.5	12.2	2.4	48
121.8	22.4	4.3	70	170	30-34	R	78.7	19.2	3.8	46	137
110.4	21.7	4.2	64	145			L	68.0	17.7	3.5	36
119.7	24.0	4.8	76	176	35-39	R	74.1	10.8	2.2	50	99
112.9	21.7	4.2	73	157			L	60.3	11.7	2.3	49
116.8	20.7	4.1	84	165	40-44	R	70.4	13.5	2.4	38	103
112.8	18.7	3.7	73	167			L	62.3	13.8	2.5	35
109.9	23.0	4.3	65	155	45-49	R	62.2	15.1	3.0	39	100
100.8	22.8	4.3	58	160			L	56.0	12.7	2.5	37
113.6	18.1	3.6	79	151	50-54	R	65.8	11.6	2.3	38	87
101.9	17.0	3.4	70	143			L	57.3	10.7	2.1	35
101.1	28.7	5.8	59	154	55-59	R	57.3	12.5	2.5	33	86
83.2	23.4	5.1	43	128			L	47.3	11.9	2.4	31
89.7	20.4	4.2	51	137	60-64	R	55.1	10.1	2.0	37	77
76.8	20.3	4.1	27	116			L	45.7	10.1	2.0	29
91.1	20.8	4.0	56	131	65-69	R	49.6	9.7	1.8	35	74
76.6	19.8	3.8	43	117			L	41.0	8.2	1.5	29
75.3	21.5	4.2	32	108	70-74	R	49.6	11.7	2.2	33	78
64.8	18.1	3.7	32	93			L	41.5	10.2	1.9	23
65.7	21.0	4.2	40	135	75+	R	42.6	11.0	2.2	25	65
55.0	17.0	3.4	31	119			L	37.8	8.9	1.7	24
104.3	28.3	1.6	32	176	All Subjects	R	62.8	17.0	0.96	25	137
93.1	27.6	1.6	27	160			L	53.9	15.7	0.88	23



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## 30 SECOND ARM CURL TEST

- Purpose: This test measures upper body strength and endurance.
- Equipment required: 5 pound weight (women, SFT), 8 pound weight (for men). A chair without armrests, stopwatch
- Scoring: The score is the total number of controlled arm curls performed in 30 seconds. Age related norms have been established (from Jones & Rikli, 2002).

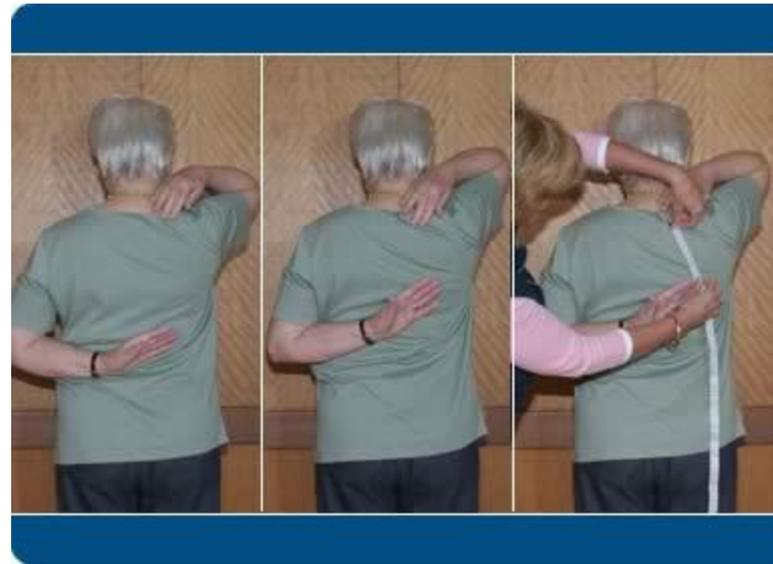


## Scoring of Arm Curl Test( Repetition in 30 sec)

Age	Men's Result			Women's Result		
	Below Average	Average	Above Average	Below Average	Average	Above Average
60-64	< 16	16 to 22	> 22	< 13	13 to 19	> 19
65-69	< 15	15 to 21	> 21	< 12	12 to 18	>18
70-74	< 14	14 to 21	> 21	< 12	12 to 17	>17
75-79	< 13	13 to 19	> 19	< 11	11 to 17	>17
80-84	< 13	13 to 19	> 19	< 10	10 to 16	>16
85-89	< 11	11 to 17	> 17	< 10	10 to 15	>15



# BACK SCRATCH TEST



- **Procedure:** This test is done in the standing position. Place one hand behind the head and back over the shoulder, and reach as far as possible down the middle of your back, your palm touching your body and the fingers directed downwards. Place the other arm behind your back, palm facing outward and fingers upward and reach up as far as possible attempting to touch or overlap the middle fingers of both hands. An assistant is required to direct the subject so that the fingers are aligned, and to measure the distance between the tips of the middle fingers. If the fingertips touch then the score is zero. If they do not touch, measure the distance between the fingertips (a negative score), if they overlap, measure by how much (a positive score). Practice two times, and then test two times. Stop the test if the subject experiences pain.

- **Scoring:** Record the best score to the nearest centimeter or 1/2 inch. The higher the score the better the result. Age related norms established (from Jones & Rikli, 2002).

<b>SCORING OF BACK SCRATCH TEST</b>						
	<b>Men's Result ( in cm )</b>			<b>Women's Result ( in cm )</b>		
<b>Age</b>	<b>Below Average</b>	<b>Average</b>	<b>Above Average</b>	<b>Below Average</b>	<b>Average</b>	<b>Above Average</b>
60-64	< -16.5	-16.5 to 0	> 0	< -8.0	-8 to 4	> 4.0
65-69	< -19.0	-19 to -2.5	> -2.5	< -9.0	-9 to 4	> 4.0
70-74	< -20.0	-20 to -2.5	> -2.5	< -10.0	-10 to 2.5	> 2.5
75-79	< -23.0	-23 to -5	> -5.0	< -12.5	-12.5 to 1	>1.0
80-84	< -24.0	-24 to -5	> -5.0	< -14.0	-14 to 0	>0,0
85-89	< -25.0	-25 to -8	> -8.0	< -18.0	-18 to -2.5	>-2.5



## ○ Coordination

- **R27.8 (Other lack of coordination): Be sure to relate coordination deficits to function and impact on performance of ADL/IADL**
- **Standardized tests/measures that objectify this deficit area:**
  - 9 Hole Peg Test (\$29.98 on Amazon)
  - Frail Elderly Functional Assessment
  - Modified Barthel Index
  - Physical Performance Test
  - Bristol Activity of Daily Living Scale
  - Lawton Instrumental Activity of Daily Living Scale
  - Functional Reach (Identifies fall risk)



# INDICATIONS OF FUNCTIONAL TESTS

- Frail Elderly Functional Assessment (Gloth, 1999):
  - Score=  $x/55$
  - Interpretation: Lower scores infer better function
- Modified Barthel Index (Mahoney & Barthel, 1965):
  - Score=  $x/100$
  - Interpretation: Higher scores reflect greater independence. A score of 60 or less is an indicator that the patient will require daily assistance with activities of daily living
- Modified Barthel Index Shah Version for stroke patients (Shah, 1992):
  - Score=  $x/100$
  - Interpretation: Higher scores reflect greater independence
    - 0-20: Total Dependence
    - 21-60: Severe Dependence
    - 61-90: Moderate Dependence
    - 91-99: Slight Dependence
    - 100: Independence



- Physical Performance Test (Lusardi, 2004):
  - Score:  $x/28$  using the 7-item format
  - Interpretation:
    - A score  $<15$  is indicative of higher fall risk (VanSwearingen et al, 1998)
  - Norms:
    - ages 60-69= 26.3,
    - ages 70-79= 24.8,
    - ages 80-89= 19.8,
    - ages 90-101= 16.2
- Bristol Activities of Daily Living Scale (Bucks et al., 1996):
  - Score=  $x/60$  (60= total dependence)
  - Interpretation: A higher score indicates **more** dependence with activities of daily living. This assessment is utilized to evaluate functional capacities of patients, including those with dementia.
  - Note: N/A means the patient HAS NEVER performed this activity (ex. Finances for a SNF resident is “unable”, not “N/A”).



- Lawton Instrumental Activity of Daily Living Scale
  - The instrument is most useful for identifying how a person is functioning at the present time and for identifying improvement or deterioration over time.
  - Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1)
  
- Functional Reach Test (Duncan et al, 1992):
  - Reach score= x inches:
  - Interpretation for fall risk: very high risk= unable to reach, high risk= reach of less than 6" (15.2 cm), moderate risk= reach of 6" to 10" (15.2 to 25.4 cm), low risk= reach greater than 10".
  - Normative data: ages 41-69 men= 14.98 inches/women= 13.81 inches, ages 70-87 men= 13.16 inches/women= 10.47 inches.
  - Test must be performed in standing, while not holding on to an assistive device; if patient can't stand, use seated functional reach



- Seated Functional Reach: Lower reach scores indicate core/postural weakness and/or coordination impairments that impact patient's participation in ADL/IADL..



### SITTING FUNCTIONAL REACH

	Young 21-39	Middle 40-59	Old 65-93
Forward Reach	44.9 cm	42.3 cm	32.9 cm
Lateral Reach	29.5 cm	26.7 cm	20.3 cm

Thompson & Medley, 2007



○ **Joint Specific Pain (M25.5\*\*)/General pain (M79.6\*\*)**

- **M25.511** (Pain in R shoulder) & **M25.512** (Pain in L shoulder)
- **M25.521** (Pain in R elbow) & **M25.522** (Pain in L elbow)
- **M25.531** (Pain in R wrist) & **M25.532** (Pain in L wrist)
- **M25.521** (Pain in R elbow) & **M25.522** (Pain in L elbow)
- **M79.601** (Pain in R arm) & **M79.602** (Pain in L arm)
- **M79.621** (Pain in R upper arm) & **M79.622** (Pain in L upper arm)
- **M79.631** (Pain in R forearm) & **M79.632** (Pain in L forearm)
- **M79.641** (Pain in R hand) & **M79.642** (Pain in L hand)
- **M79.644** (Pain in R finger(s)) & **M79.645** (Pain in L finger(s))



○ **Standardized tests/measures that objectify this pain:**

- Reporting of Painful vs Pain free motion (ex. Pain increases to 8/10 with >90 degrees shoulder flexion)
  - Goal: Pt will increase pain free shoulder flexion to 100 degrees while getting a can from the top shelf of her pantry)
- Numeric Pain Rating Scale OR Wong Baker FACES Scale
- Shoulder Pain and Disability Index
- DASH (Disability of Arm, Shoulder, Hand)
- Quick DASH



# FUNCTIONAL APPLICATION OF ROM TO ASSIST IN GOAL SETTING

- See ROM needed for ADLs handout
- ALWAYS apply function in your clinical rationale for identifying a deficit
  - Why is achieving a certain goal important to this particular patient?
  - Why is it important that the patient achieve that goal?



# INTERVENTIONS: EVERYTHING WE DO CAN BE MADE MORE FUNCTIONAL!

- Think of all of the items we use in everyday life that would be so much more fun to work with than a plain old dumbbell
  - 1 Gallon Milk/water Jug = 8 pounds
  - Sack of Potatoes = 3 or 5 pounds
  - Large Bottle of laundry detergent = 10 pounds
  - Full bottle of wine = 2 pounds (if it's too heavy, have a glass 😊)
  - Large ketchup bottle = 4 pounds
  - Bag of oranges or yellow onions = 3 pounds
  - Small bag of rice = 2 pounds
- \*Find household items of various shapes and textures, weigh/label them, and make exercise more fun and functional for your patients









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