The physical examination is the determining factor of a permanent anatomic impairment of the upper extremities.

“The physical examination **MUST** be accurate, objective, and well **DOCUMENTED**.”

Included in an impairment report the following should be considered:

1. Activities of Daily Living
2. Observations of the Examinee
3. Local and General Physical Examination
4. Appropriate Imaging Evaluation
5. Laboratory Tests
6. Photographic Record, if possible.

A prior injury may be considered during an assessment of causation and, if included in the report, should be apportioned.

Hand dominance should be considered if the examiner determines that it impacts on the Activities of Daily Living.
• Once again, the impairment rating is based on the inability to perform, at least, one of the activities of daily living.

• For the purpose of today's program, we will touch on the subject of impairment of the hand and fingers briefly.

• Again, the medical evaluation is the basis for the determination of a permanent anatomical impairment.

• Everything that you do **MUST** be documented.

**THE DIGITS**

• When evaluating the digits, it is important to remember that the hand is broken down into a number of parts:
  1. Thumb
  2. Index or Middle Finger
  3. Ring or Little Finger

• It is important that you use the correct chart when evaluating a patient and assigning an impairment.
As previously mentioned, in the musculoskeletal section of the 5th edition, you will first get a rating of the part examined. In this case the digit.

**HIERARCHY IN WHOLE PERSON CONCEPT FOR UPPER EXTREMITY AND HAND**

- Thumb
- Index
- Middle
- Ring
- Little

So, the number you get for the appropriate digit must be converted to a number represented by a larger anatomic part.
**FIGURE 2 – 1** HIERARCHY IN WHOLE PERSON CONCEPT FOR UPPER EXTREMITIES:

- **UPPER EXTREMITY**
  - 40%
  - 50%
  - 60%

- **WHOLE PERSON**
  - 60%

Introduction to the AMA’s 6th edition of the Guides
### Table 16-1 Conversion of Impairment of the Digits to Impairment of the Hand*

<table>
<thead>
<tr>
<th>% Impairment of</th>
<th>% Impairment of</th>
<th>% Impairment of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb Hand</td>
<td>Index or Middle Finger Hand</td>
<td>Ring or Little Finger Hand</td>
</tr>
<tr>
<td>0 - 1 = 0</td>
<td>0 - 2 = 0</td>
<td>0 - 4 = 0</td>
</tr>
<tr>
<td>2 - 3 = 1</td>
<td>3 - 7 = 1</td>
<td>5 - 14 = 1</td>
</tr>
<tr>
<td>4 - 6 = 2</td>
<td>6 - 12 = 2</td>
<td>15 - 24 = 2</td>
</tr>
<tr>
<td>7 - 8 = 3</td>
<td>8 - 16 = 3</td>
<td>25 - 34 = 3</td>
</tr>
<tr>
<td>9 - 11 = 4</td>
<td>11 - 22 = 4</td>
<td>35 - 44 = 4</td>
</tr>
<tr>
<td>12 - 13 = 5</td>
<td>13 - 26 = 5</td>
<td>45 - 54 = 5</td>
</tr>
<tr>
<td>14 - 16 = 6</td>
<td>16 - 32 = 6</td>
<td>55 - 64 = 6</td>
</tr>
<tr>
<td>17 - 18 = 7</td>
<td>18 - 37 = 7</td>
<td>65 - 74 = 7</td>
</tr>
<tr>
<td>19 - 21 = 8</td>
<td>19 - 38 = 8</td>
<td>75 - 84 = 8</td>
</tr>
<tr>
<td>22 - 23 = 9</td>
<td>23 - 43 = 9</td>
<td>85 - 94 = 9</td>
</tr>
<tr>
<td>24 - 26 = 10</td>
<td>26 - 48 = 10</td>
<td>95 - 100 = 10</td>
</tr>
</tbody>
</table>

### Table 16-2 Conversion of Impairment of the Hand to Impairment of the Upper Extremity*

<table>
<thead>
<tr>
<th>% Impairment of Hand Upper Extremity</th>
<th>% Impairment of Hand Upper Extremity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand 0 = 0</td>
<td>Hand 18 = 16</td>
</tr>
<tr>
<td>1 = 1</td>
<td>19 = 17</td>
</tr>
<tr>
<td>2 = 2</td>
<td>20 = 18</td>
</tr>
<tr>
<td>3 = 3</td>
<td>21 = 19</td>
</tr>
<tr>
<td>4 = 4</td>
<td>22 = 20</td>
</tr>
<tr>
<td>5 = 5</td>
<td>23 = 21</td>
</tr>
<tr>
<td>6 = 6</td>
<td>24 = 22</td>
</tr>
<tr>
<td>7 = 7</td>
<td>25 = 23</td>
</tr>
<tr>
<td>8 = 8</td>
<td>26 = 24</td>
</tr>
<tr>
<td>9 = 9</td>
<td>27 = 24</td>
</tr>
<tr>
<td>10 = 9</td>
<td>28 = 25</td>
</tr>
<tr>
<td>11 = 10</td>
<td>29 = 26</td>
</tr>
<tr>
<td>12 = 11</td>
<td>30 = 27</td>
</tr>
<tr>
<td>13 = 12</td>
<td>31 = 28</td>
</tr>
<tr>
<td>14 = 13</td>
<td>32 = 29</td>
</tr>
<tr>
<td>15 = 14</td>
<td>33 = 30</td>
</tr>
<tr>
<td>16 = 15</td>
<td>34 = 31</td>
</tr>
<tr>
<td>17 = 15</td>
<td>35 = 32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Impairment of Upper Extremity Whole Person</th>
<th>% Impairment of Upper Extremity Whole Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = 0</td>
<td>20 = 12</td>
</tr>
<tr>
<td>1 = 1</td>
<td>21 = 13</td>
</tr>
<tr>
<td>2 = 2</td>
<td>22 = 14</td>
</tr>
<tr>
<td>3 = 3</td>
<td>23 = 14</td>
</tr>
<tr>
<td>4 = 4</td>
<td>24 = 14</td>
</tr>
<tr>
<td>5 = 5</td>
<td>25 = 15</td>
</tr>
<tr>
<td>6 = 6</td>
<td>26 = 16</td>
</tr>
<tr>
<td>7 = 7</td>
<td>27 = 16</td>
</tr>
<tr>
<td>8 = 8</td>
<td>28 = 17</td>
</tr>
<tr>
<td>9 = 9</td>
<td>29 = 17</td>
</tr>
<tr>
<td>10 = 10</td>
<td>30 = 18</td>
</tr>
<tr>
<td>11 = 11</td>
<td>31 = 19</td>
</tr>
<tr>
<td>12 = 12</td>
<td>32 = 19</td>
</tr>
<tr>
<td>13 = 13</td>
<td>33 = 20</td>
</tr>
<tr>
<td>14 = 14</td>
<td>34 = 20</td>
</tr>
<tr>
<td>15 = 15</td>
<td>35 = 21</td>
</tr>
<tr>
<td>16 = 16</td>
<td>36 = 22</td>
</tr>
<tr>
<td>17 = 17</td>
<td>37 = 23</td>
</tr>
<tr>
<td>18 = 18</td>
<td>38 = 23</td>
</tr>
<tr>
<td>19 = 19</td>
<td>39 = 23</td>
</tr>
</tbody>
</table>
Using Table 16-1, you first combine the digit to the hand.

**EXAMPLE:**
- A 40% impairment of the thumb converts to a 16% impairment of the hand.
- A 16% impairment of the hand converts to a 14% impairment of the upper extremity.
- A 14% impairment of the upper extremity converts to an 8% impairment of the whole person.

**EXAMPLE:**
- A 40% impairment of the index finger converts to an 8% impairment of the hand.
- An 8% impairment of the hand converts to a 7% impairment of the upper extremity.
- A 7% impairment of the upper extremity converts to a 6% impairment of the whole person.
Introduction to the Upper Extremities

The upper extremity is divided into 4 regions (distal to proximal):

1. Digits/Hand
2. Wrist
3. Elbow
4. Shoulder
THE WRIST

“The wrist functional unit represents 60% of the upper extremity function.”

1. Flexion/Extension represents 70% of wrist function and 42% of upper extremity function.

2. Radial/Ulnar Deviation represents 30% of wrist function and 18% of upper extremity function.
Normal range of motion of the wrist is from 60 degrees **extension** to 60 degrees **flexion**.

Procedure for measurement:

Measure maximum active wrist flexion and extension angles from the neutral position.
When looking at the chart, row V represents the range of motion measured.

Row IF represents the corresponding impairment of flexion.

Row IE represents the corresponding impairment of extension.

Note: Impairment values for angles falling between those listed may be adjusted proportionally.

Add (IF) and (IE) to obtain the percent of upper extremity impairment.
Normal range of motion of the wrist is from 20 degrees radial deviation to 30 degrees ulnar deviation

Procedure for measurement:

Measure maximum active wrist radial deviation and ulnar deviation angles from the neutral position.
When looking at the chart, row V represents the range of motion measured.

Row IRD represents the corresponding impairment of radial deviation.

Row IUD represents the corresponding impairment of ulnar deviation.

Note: Impairment values for angles falling between those listed may be adjusted proportionally.

Add (IRD) and (IUD) to obtain the percent of upper extremity impairment.
THE ELBOW

“The wrist functional unit represents 70% of the upper extremity function.”

1. **Flexion/Extension** represents 60% of elbow function and 42% of upper extremity function.

2. **Pronation and Supination** represents 40% of elbow function and 28% of upper extremity function.
Normal range of motion of the elbow is from 140 degrees flexion to 0 degrees extension.

Procedure for measurement:

Measure maximum active elbow flexion and extension from the neutral position.

Figure 30. Flexion and Extension of Elbow
When looking at the chart, row V represents the range of motion measured.

Row $IF$ represents the corresponding impairment of flexion.

Row $IE$ represents the corresponding impairment of extension.

Note: Impairment values for angles falling between those listed may be adjusted proportionally.

Add ($IE$) and ($IF$) to obtain the percent of upper extremity impairment.
Normal range of motion of the elbow is from 80 degrees supination to 80 degrees pronation from the neutral position.

Procedure for measurement:

Measure maximum active elbow flexion and extension from the neutral position.
When looking at the chart, row V represents the range of motion measured.

Row IS represents the corresponding impairment of flexion.

Row IP represents the corresponding impairment of extension.

Note: Impairment values for angles falling between those listed may be adjusted proportionally.

Add (IS) and (IP) to obtain the percent of upper extremity impairment.
THE SHOULDER

“The shoulder functional unit represents 60% of the upper extremity function.” The shoulder has three units which add to the relative value.

1. Flexion/Extension represents 50% of shoulder function and 30% of upper extremity function.

2. Abduction/Adduction represents 30% of shoulder function and 18% of upper extremity function.

3. Internal/External Rotation represents 20% of shoulder function and 12% of upper extremity function.
The normal range of motion of the shoulder in flexion is 180 degrees.

The normal range of motion of the shoulder in extension is 50 degrees.

When combine together the flexion/extension unit represents 30% of the upper extremity range of motion.

Once again the pie chart is set up like the wrist and elbow.
PROBLEM

A patient has been seen in the office for 4 months. Based on a complete physical examination it has been determined that the patient has reached MMI with the following findings.

R. Shoulder Flexion: 80 degrees
R. Shoulder Extension: 20 degrees

Using the chart to the right determine the impairment to the upper extremity.
R. Shoulder Flexion: 80 degrees
R. Shoulder Extension: 20 degrees

$I_F\% = 7\% \text{ UE}
$I_E\% = 2\% \text{ UE}$

Since this is range of motion of a single joint, the numbers are added.

$7\% + 2\% = 9\% \text{ UE}$

The final upper extremity rating, in this case, is 9\% UE
The normal range of motion of the shoulder in abduction is 180 degrees.

The normal range of motion of the shoulder in extension is 50 degrees.

When combine together the abduction/adduction unit represents 18% of the upper extremity range of motion.

Once again the pie chart is set up like the wrist and elbow.
PROBLEM

A patient has been seen in the office for 4 months. Based on a complete physical examination it has been determined that the patient has reached MMI with the following findings.

R. Shoulder Abduction: 110 degrees
R. Shoulder Adduction: 20 degrees

Using the chart to the left determine the impairment to the upper extremity.
R. Shoulder Abduction: 110 degrees
R. Shoulder Adduction: 20 degrees

$I_{\text{ABD}}\% = 3\% \text{ UE}$
$I_{\text{ADD}}\% = 1\% \text{ UE}$

Since this is range of motion of a single joint, the numbers are added.

$3\% + 1\% = 4\% \text{ UE}$

The final upper extremity rating, in this case, is 4% UE
INTERNAL/EXTERNAL ROTATION

The normal range of motion of the shoulder in internal rotation is 90 degrees.

The normal range of motion of the shoulder in external rotation is 90 degrees.

When combine together the abduction/adduction unit represents 12% of the upper extremity range of motion.
PROBLEM:
A patient has been seen in the office for 4 months. Based on a complete physical examination it has been determined that the patient has reached MMI with the following findings.

R. Shoulder Internal Rotation: 10 degrees
R. Shoulder External Rotation: 50 degrees

Using the chart to the left determine the impairment to the upper extremity.
R. Shoulder Internal Rotation: 10 degrees
R. Shoulder External Rotation: 50 degrees

\[ I_{IR} \% = 5\% \text{ UE} \]
\[ I_{ER}\% = 1\% \text{ UE} \]

Since this is range of motion of a single joint, the numbers are added.

\[ 5\% + 1\% = 6\% \text{ UE} \]

The final upper extremity rating, in this case, is 6\% UE

Fig. 16-46 Upper Extremity Impairments Due to Lack of Internal and External Rotation of Shoulder. Relative value of this functional unit to upper extremity impairment is 12\%.
In discussing the shoulder, we have six distinct movements which all contribute to the functional unit of the shoulder. This patient has six distinct problems with the shoulder.

1. Right Shoulder Flexion: 80 degrees
2. Right Shoulder Extension: 20 degrees
3. Right Shoulder Abduction: 110 degrees
4. Right Shoulder Adduction: 20 degrees
5. Right Shoulder Internal Rotation: 10 degrees
6. Right Shoulder External Rotation: 50 degrees

Using the appropriate charts, determine the final upper extremity rating for this patient.

\[ 80 \times 7 + 20 \times 2 + 110 \times 3 + 20 \times 1 + 10 \times 5 + 50 \times 1 = 19\% \text{ UE} \]
Using this chart, what would the whole person rating be, IF, this was the only finding?

In this case the final whole person rating would be 11%.

Take a look at 100% UE.

Note: 100% UE cannot ever exceed 60% WP.
PERIPHERAL NERVE DISORDERS

It is extremely important to arrive at an accurate, defensible diagnosis that your documentation, testing, and procedures can support.

In the 5th edition of the “Guides”, they address “upper extremity impairments related to disorders of the spinal nerves (C5 to C8 and T1), the brachial plexus, and major peripheral nerves of the upper extremities. It also addresses the evaluation of specific conditions, including entrapment/compression neuropathy and complex regional pain syndromes (CRPS), which include CRPS I/reflex sympathetic dystrophy (RSD) and CRPS II/causalgia.”

Ratings based on peripheral nerve disorders are based on the anatomic distribution and severity of loss of function resulting from:

1. Sensory deficits or pain
2. Motor deficits and loss of power
It is important to remember that within each chapter there are a number of exceptions to each rule.

**Example:** If restricted motion cannot be attributed strictly to a peripheral nerve lesion, such as would be the case in CRPS I/RSD, the motion impairment values are evaluated separately.

Once the value is calculated it is then combined with the peripheral nerve system impairment value.

**IMPAIREDMENT EVALUATION (MOTOR AND SENSORY)**

Besides range of motion, sensory and motor deficits are also ratable.

If both are involved, then the two are rated separately and then the numbers are **combined**.
SENSORY IMPAIRMENT RATING (SIR)
SENSORY IMPAIRMENT RATING (SIR) FORMULA

1. Identify the area of involvement using the cutaneous or dermatome charts.

2. Identify the nerve(s) that innervate the area(s).

3. Determine the value of the nerve(s) that innervates the area of involvement (Spinal nerves, Brachial plexus, and major peripheral nerves).

4. Grade the severity of the sensory deficit or pain according to the grading classification. Use clinical judgment to select the appropriate percentage from the range of each grade.

5. Multiply the full value of the nerve by the degree of sensory deficit or pain.
The following example is taken from the AMA “Guides”, 5th edition.

**Final Diagnosis:** Reduced dislocation of the right shoulder to its normal anatomical position (as seen on x-ray).

**STEP ONE:** Identify the area of involvement using the cutaneous or dermatome charts.

**Location:** Some loss of muscle strength. While standing with the arm placed alongside the body and the elbow flexed, the individual could actively abduct and elevate the upper arm from 90 degrees to 180 degrees against gravity and slight resistance.

Some hypesthesia of the skin over the lower two thirds of the deltoid muscle that did not interfere with activity.
STEP TWO: Identify the nerve(s) that innervate the area(s).

Cutaneous dermatome involved: Lateral brachial cutaneous nerve (terminal sensory branch of the axillary nerve).
STEP THREE: Determine the value of the nerve(s) that innervates the area of involvement (Spinal nerves, Brachial plexus, and major peripheral nerves).

Severity of sensory deficit or pain: Grade 4. This was selected based on clinical judgment.

Since the range for this grade is between 1% and 25%, a mid grade number was chosen to be 15%.
STEP FOUR: Grade the severity of the sensory deficit or pain according to the grading classification. Use clinical judgment to select the appropriate percentage from the range of each grade.

Maximum upper extremity impairment resulting from sensory deficit of the sensory branch of the axillary nerve is 5%.
**STEP FIVE:** Multiply the full value of the nerve by the degree of sensory deficit or pain.

Multiply the maximum upper extremity impairment for sensory deficit of the axillary nerve sensory branch (5%) by the severity of the sensory deficit (15%) to obtain the impairment of the upper extremity due to sensory deficit of the axillary nerve terminal sensory branch.

\[ 5\% \times 15\% = 0.075\%, \text{ which is rounded off to } 1\% \text{ UE.} \]
### Table 16-13 Maximum Upper Extremity Impairment Due to Unilateral Sensory or Motor Deficits of Individual Spinal Nerves or to Combined 100% Deficits

<table>
<thead>
<tr>
<th>Spinal Nerve</th>
<th>Maximum % Upper Extremity Impairment Due to:</th>
<th>Sensory Deficit or Pain*</th>
<th>Motor Deficit†</th>
<th>Combined Motor/Sensory Deficits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5</td>
<td></td>
<td>5</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>C6</td>
<td></td>
<td>8</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>C7</td>
<td></td>
<td>5</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>C8</td>
<td></td>
<td>5</td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td>T1</td>
<td></td>
<td>5</td>
<td>20</td>
<td>24</td>
</tr>
</tbody>
</table>

* See Table 16-10a to grade sensory deficit or pain.
† See Table 16-11a to grade motor deficit.

Figure 16-49 Dermatomes of the Upper Limb

Figure 16-50 The Brachial Plexus

- Suprascapular
- Dorsal scapular
- Lateral pectoral
- Axillary
- Musculocutaneous
- Radial
- Median
- Ulnar
- Thoracodorsal
- Superior and Inferior subscapular
- Medial pectoral
- Medial brachial cutaneous
- Medial antebrachial cutaneous
- Long thoracic
MOTOR IMPAIRMENT RATING (MIR)
The AMA “Guides” addresses the loss of strength as a neurological deficit.

Rules and precautions must be taken in order to rate the motor aspects appropriately.

Muscle testing, including tests for strength, duration, repetition of contraction, and function helps evaluate the motor function of specific nerves.

Testing should be performed both ACTIVELY and PASSIVELY, but, only the ACTIVE movement should be considered in the impairment.
The rating of loss of function due to loss of strength is dependent on two major factors:

1. Muscle Grade
2. Innervation of the nerve that goes to the muscle

Muscle Grading is based on two principles:

1. Gravity (the ability to raise a segment of the body through its ROM against gravity).
2. Resistance (to hold its segment at the end of its ROM against resistance).
The “Guides” lists six muscle grades and assigns each a value.

**NOTE:** In the 5th edition, the rating scales now read 5 through 0 with 5 being considered normal and 0 indicating no contractibility.

<table>
<thead>
<tr>
<th>GRADE</th>
<th>% MOTOR DEFICIT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5</strong> Complete active ROM against gravity with full resistance</td>
<td>0</td>
</tr>
<tr>
<td><strong>4</strong> Complete active ROM against gravity with some resistance</td>
<td>1-25</td>
</tr>
<tr>
<td><strong>3</strong> Complete active ROM against gravity only, without resistance</td>
<td>26-50</td>
</tr>
<tr>
<td><strong>2</strong> Complete active ROM, with gravity eliminated</td>
<td>51-75</td>
</tr>
<tr>
<td><strong>1</strong> Evidence of slight contractability, no joint movement</td>
<td>76-99</td>
</tr>
<tr>
<td><strong>0</strong> No evidence of contractability</td>
<td>100</td>
</tr>
</tbody>
</table>

To be accurate, compare the affected and non-affected sides.
MOTOR IMPAIRMENT FORMULA (MIR)

1. Identify the motion involved, such as flexion, extension, etc.

2. Identify the muscle(s) performing the motion and the motor nerve(s) involved.

3. Grade the severity of the motor deficit of individual muscles according to the classification provided on the previous slide.

4. Find the maximum impairment of the upper extremity due to motor deficit for each nerve structure involved.

5. Multiply the severity of the motor deficit by the maximum impairment value to obtain the upper extremity impairment for each structure involved.
Using the same region as the SIR, an example of the MIR is as follows:

**Final Diagnosis:** Reduced dislocation of the right shoulder to its normal anatomical position (as seen on x-ray).

**STEP ONE:** Identify the motion involved, such as flexion, extension, etc.

**Motion:** While standing with the arm placed alongside the body, and the elbow flexed, the individual could actively abduct and elevate the upper arm from 90 degrees to 180 degrees against gravity and slight resistance.
**STEP TWO:** Identify the muscle(s) performing the motion and the motor nerve(s) involved.

**Muscle Performing the motion:** Deltoid  
**Motor nerve involved:** Axillary
**STEP THREE:** Grade the severity of the motor deficit of individual muscles according to the classification provided.

<table>
<thead>
<tr>
<th>GRADE</th>
<th>% MOTOR DEFICIT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0</td>
<td>Complete active ROM against gravity with full resistance</td>
</tr>
<tr>
<td>4</td>
<td>1-25</td>
<td>Complete active ROM against gravity with some resistance</td>
</tr>
<tr>
<td>3</td>
<td>26-50</td>
<td>Complete active ROM against gravity only, without resistance</td>
</tr>
<tr>
<td>2</td>
<td>51-75</td>
<td>Complete active ROM, with gravity eliminated</td>
</tr>
<tr>
<td>1</td>
<td>76-99</td>
<td>Evidence of slight contractability, no joint movement</td>
</tr>
<tr>
<td>0</td>
<td>100</td>
<td>No evidence of contractability</td>
</tr>
</tbody>
</table>

In this case, the motor deficit is 4. A severity rating of 25% was selected on clinical judgment because of the severity of the weakness.
STEP FOUR: Find the maximum impairment of the upper extremity due to motor deficit for each nerve structure involved.

<table>
<thead>
<tr>
<th>Nerve</th>
<th>Sensory Deficit or Pain</th>
<th>Motor Deficit</th>
<th>Combined Motor and Sensory Deficits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pectorals (medial and lateral)</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Axillary</td>
<td>5</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>Dorsal scapular</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Long thoracic</td>
<td>0</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Medial antebrachial cutaneous</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Medial brachial cutaneous</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Median (above midforearm)</td>
<td>39</td>
<td>44</td>
<td>66</td>
</tr>
<tr>
<td>Median (anterior interosseous branch)</td>
<td>0</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Median (below midforearm)</td>
<td>39</td>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>Radial palmar digital of thumb</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Ulnar palmar digital of thumb</td>
<td>11</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Radial palmar digital of index finger</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Ulnar palmar digital of index finger</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Radial palmar digital of middle finger</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Ulnar palmar digital of middle finger</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Radial palmar digital of ring finger</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
STEP FIVE: Multiply the severity of the motor deficit by the maximum impairment value to obtain the upper extremity impairment for each structure involved.

In this case, multiply the maximum upper extremity impairment for motor deficit of the axillary nerve (35%) by the severity of motor deficit (255) to obtain the impairment of the upper extremity due to motor deficit of the axillary nerve.

\[35\% \times 25\% = 9\%\]
We now have a patient who has a 1% UE impairment resulting from a SIR and a 9% UE impairment resulting from a MIR.

The two numbers have to be COMBINED.

1% C 9% = 10% UE
When multiple movements are affected in one joint due to loss of strength, each motion must be calculated separately and then the value for each movement combined.

**EXAMPLE:** Abduction and adduction of the right shoulder against gravity only.

1. Motion: Abduction of right shoulder
2. Muscle: Deltoid
3. Nerve: Axillary
4. Value of Nerve: 35%
5. Muscle Grade: 3
6. Summary: 50% of 35% = 17.5% or 18% UE
1. Motion: Adduction of the right shoulder
2. Muscle: Pectoralis Major
4. Value of Nerve: 5%
5. Muscle Grade: 50% or 5% = 2.5 or 3% UE

SUMMARY

18% (Adduction) C 3% (Adduction) = 20% UE (Combined Value Chart)

FINAL ANSWER

20% UE = 12 WP
SPECIAL NOTE: When you have an entire extremity involved it is, based on experience, the conservative approach to use the value of a nerve only one time. Using the same nerve on multiple occasions for different movements may involve duplication. At times, the use of the lower end of the muscle grading scale may help to reduce the rating, if necessary.

REMEMBER, give the patient what is due. HOWEVER, when rating an extremity the final impairment should not exceed the amputation rating. It would be very difficult to explain that to a judge or jury.
PAIN
This section will help to identify pain that results from an illness or injury, and is included in an SIR, and that which is an autonomous process (chronic pain).

This section of the AMA “Guides” “focuses on those situations in which the pain itself is a major cause of suffering, dysfunction, or medical intervention”.

For the purposes of evaluation, “pain is considered in this chapter is persistent, which is not to say that it is refractory to all treatment, but that is likely to be permanent and stationary.”

CONSIDER THE FOLLOWING:

1. It is difficult to provide an objective method for assessing chronic pain.
2. “In chronic pain states, there is often no demonstrable active disease or unhealed injury, and the autonomic changes that accompany acute pain, even the anesthetized individual, are typically absent.”
3. Pain, as defined by the International Association for the Study of Pain is “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”

4. Pain usually includes the following concepts:
   a. Biological
   b. Psychological
   c. Social

5. Pain is influenced by “cognitive, behavioral, environmental, and cultural factors.”

FIRST AND FOREMOST:

**PAIN IS SUBJECTIVE!**
Think about this statement from E. Scarry “To have great pain is to have certainty, to hear that another person has pain is to have doubt.”

“Chronic pain as an extension of acute nociceptive pain is not valid.”

Chronic pain is defined as “an evolving process in which injury may produce one pathogenic mechanism, which in turn produce one pathogenic mechanism, which in turn produces others, so that the cause(s) of pain change over time.”

“Pain can exist without tissue damage, and tissue damage can exist without pain.”
GENERAL THOUGHTS RELATING TO THE PRI:

1. “it was decided that impairment ratings for pain disorders would not be expressed as percentages of whole person impairment.”

2. “the value of a qualitative assessment is that any identification of a significant pain component warrants additional consideration when interpreting impairment ratings used for allocation of medical resources, work placement, or financial compensation.”

3. “impairment ratings currently include allowances for the pain that individuals typically experience when they suffer from various injuries or diseases….“
USING THE PAIN RELATED IMPAIRMENT (PRI)

“Organ and body system impairment rating does not adequately address impairment in several situations, as follows:

1. When there is excess pain in the context of verifiable medical conditions that cause pain.

   In this situation a patient has a verifiable, objective injury or illness.

   EXAMPLE: “An individual with persistent lumbar radiculopathy following a lumbar diskectomy.”

   “Such an individual will usually have objective findings, including atrophy of the affected leg, muscle weakness, and MRI evidence of epidural scarring.”

   “An individual with these findings would receive an impairment rating of 10% on the basis of the DRE spine impairment rating system…”
“Although the DRE rating is usually appropriate, some individuals with persistent lumbar radiculopathies report “excess” pain…”

“They report that their pain causes severe ADL deficits, suggesting a level of impairment greater than 10%.”

“Procedures in this chapter can be used to assess this additional impairment and to classify it as mild, moderate, moderately severe, or severe.”
2. “When there are well-established pain syndromes without significant identifiable organ dysfunction to explain the pain.”

“Individuals in this group have pain syndromes that are widely accepted by physicians based on the individuals’ clinical presentation but that are not associated with definable tissue pathology.”

In these individuals there is no measureable organ dysfunction.

“These individuals must have symptoms and signs that can plausibly be attributed to a well-designed medical condition.”
“If an examiner determines that an individual has a diagnosis that is not on the list, he or she may rate the individual’s pain-related impairment if he or she is convinced that the diagnosed condition is well recognized and that the pain-related impairment is a consequence of the condition.”

**REMEMBER:** *Be sure that you can support your opinion and provide a report that explains your decision.*
3. “When there are other associated pain syndromes.”

“Use this chapter to evaluate pain-related impairment when dealing with syndromes with the following characteristics:

a. They are associated with identifiable organ dysfunction that is ratable according to other chapters in the “Guides”.

b. They may be associated with well-established pain syndromes, but the occurrence or nonoccurrence of the pain syndromes is not predictable; so that

c. The impairment ratings provided in other chapters of the “Guides” do not capture the added burden of illness borne by individuals who have the associated pain syndromes.”

Table 18-2 Illustrative List of Associated Pain Syndromes

<table>
<thead>
<tr>
<th>Syndromes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postparaplegic pain</td>
</tr>
<tr>
<td>Syringomyelia pain</td>
</tr>
<tr>
<td>Thalamic syndrome</td>
</tr>
<tr>
<td>Brachial plexus avulsion pain</td>
</tr>
<tr>
<td>Nerve entrapment syndromes</td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td>Complex regional pain syndrome, type 2 (causalgia)</td>
</tr>
</tbody>
</table>
When should you NOT use this chapter?

1. When conditions are adequately rated in other chapters of the “Guides.”
2. When rating individuals with low credibility.
3. When there are ambiguous or controversial pain syndromes.

Since the distinction between well recognized conditions and ambiguous or controversial ones is subtle, asking the following questions can separate the two:

1. “Do the individual’s symptoms and/or physical findings match any known medical condition?”
2. “Is the individual’s presentation typical of the diagnosed condition?”
3. “Is the diagnosed condition one that is widely accepted by physicians as having a well-defined pathophysiologic basis?”
“If the answer to all three questions is yes, the examiner should consider the individual’s pain-related impairment to be ratable.”

“If the answer to any of the three questions is no, the examiner should consider the individual’s pain-related impairment to be unratable.”

According to the “Guides”, if the determination is unratable, the examiner should still use the assessment protocol to determine the severity and impact of the individual’s pain and report the results, noting that it is unratable.

NOTE:  *What this actually does is take the burden of proof away from the examiner and merely states that the pain is unratable. No comment is made as to whether or not the individual actually has pain, or to the extent of that pain. Your are merely stating that it is not ratable under current standards.*

According to the “Guides”, it is “more appropriate for the examining physician to describe the individual’s pain-related impairment as unratable than to give a rating that cannot be supported by either scientific evidence or consensus.”
An overview of the pain–related impairment.

Due to the nature of this type of rating, “it differs significantly from the conventional rating system.”

The Process

A. Evaluate the individual according to the body or organ rating system. During the examination informally assess the pain-related impairment.

B. If the pain noted in the examination of the body part or organ system encompasses the pain experienced by the individual, then the rating of that body part or organ system encompasses that pain.

C. “If the individual appears to have pain-related impairment that has increased the burden of his or her condition *slightly*, the examiner may increase the percentage found in A by up to 3%.”
D. It is important to do a pain-related impairment assessment in the presence of the following:

1. “The individual appears to have pain-related impairment that is **substantially** in excess of the impairment determined in A.”

   Or

2. “The individual has a well-recognized medical condition that is characterized by pain in the absence of measurable dysfunction of an organ or body part.”
3. “The individual has a syndrome with the following characteristics:
   a. it is associated with identifiable organ dysfunction that is ratable according to other chapters in the “Guides”;
   b. It may be associated with a well-established pain syndrome, but the occurrence or nonoccurrence of the pain syndrome is not predictable; so that
   c. the impairment ratings provided in step A do not capture the added burden of illness borne by the individual because of his or her associated pain syndrome.
E. If the examiner performs a formal pain-related impairment rating, he or she may increase the percentage found in step A by up to 3%, and he or she should classify the individual’s pain-related impairment into one of four categories:

- Mild
- Moderate
- Moderately Severe, or
- Severe.

In addition, the examiner should determine whether the pain-related impairment is *ratable* or *unratable*.

**REMEMBER:** *This process is generally subjective and the examiner MUST support their conclusions.*
Practical Steps in rating pain-related impairment:

1. Use of a questionnaire:

This is part of a more extensive Questionnaire that may be found in the “Guides”.

The scoring of the answers helps identify whether the problem is Mild through Severe.
2. Assess whether the individual is at MMI.

3. Determine the severity of the pain.
   a. Visual Analog Scale
   b. Standardized Tests
   c. Numeric or box rating scale
   d. Discuss exacerbating or mitigating factors
   e. McGill Pain Questionnaire

4. Determine activity restrictions.
   a. Pain Disability Questionnaire (PDQ)
   b. Oswestry
   c. Roland-Morris

5. Determine the presence of emotional distress.
   a. Beck Depression Inventory
   b. Zung Depression Index
   c. Hamilton Self-Rating Scale for Depression
6. Determine if pain behaviors are present.
   a. A pain behavior is a manner in which an individual communicates
      information about their pain.
   b. It is important to be able to differential between someone who
      exaggerates and someone who is stoic.
      1. The examiner should start the evaluation as they
         enter the room observing the way the
         individual sits, answers questions, etc.

NOTE: So that this process may be as objective as possible (understanding that pain is subjective) the “Guides” has provided an assessment tool.
Table 18-5  Assessment of Pain Behavior

<table>
<thead>
<tr>
<th>Observable Pain Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note the presence of any of the following behaviors during the interview and examination:</td>
</tr>
<tr>
<td>1. Facial grimacing</td>
</tr>
<tr>
<td>2. Holding or supporting affected body part or area</td>
</tr>
<tr>
<td>3. Limping or distorted gait</td>
</tr>
<tr>
<td>4. Frequent shifting of posture or position</td>
</tr>
<tr>
<td>5. Extremely slow movements</td>
</tr>
<tr>
<td>6. Sitting with a rigid posture</td>
</tr>
<tr>
<td>7. Moving in a guarded or protective fashion</td>
</tr>
<tr>
<td>8. Moaning</td>
</tr>
<tr>
<td>9. Using a cane, cervical collar, or other device</td>
</tr>
<tr>
<td>10. Stooping while walking</td>
</tr>
<tr>
<td>11. Other: ____________</td>
</tr>
</tbody>
</table>

Based on the behaviors above and knowledge of the individual's diagnosis and organ dysfunction, rate the pain behaviors by giving them a score between +10 and −10. You may give any score between +10 and −10.

<table>
<thead>
<tr>
<th>−10</th>
<th>0</th>
<th>+10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain behaviors are exaggerated, nonphysiologic</td>
<td>Pain behaviors are mixed or ambiguous</td>
<td>Pain behaviors are appropriate and tend to confirm other clinical findings</td>
</tr>
</tbody>
</table>

Global pain behavior score = ____________
7. Credibility of the individual.

Here is the question that you need to ask yourself before assigning a Pain-Related Impairment.

“Do the limitations that an individual describes and demonstrates accurately reflect the burden of illness he or she bears during everyday activity?”

NOTE: There are many factors that come into play when using this method of impairment rating. The rating itself will usually come under scrutiny as this is the most subjective form of evaluation.
NOTE:

There are many factors that come into play when using this method of impairment rating.

The rating itself will usually come under scrutiny as this is the most subjective form of evaluation.

There are additional considerations to be concerned about, such as:
1. Psychogenic Pain
2. Malingering
3. Psychosomatic Pain
4. Etc.

It is my suggestion that an examiner should use this method of impairment rating ONLY when absolutely necessary, and is defensible.
It's QUESTION TIME!!