

Non-Musculoskeletal Conditions MMI/IR (*Non-MSK MMI/IR*)

Material Disclaimer

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Non-MSK MMI/IR Cases Discussed

AMA Guides 4th Edition

- Chapter 4 Nervous System
 - traumatic brain injury
- Chapter 8 Visual System
- Chapter 10 Digestive System
 - hernia
- Chapter 13 Skin
 - burn combined with Chapter 3 (Range of Motion)
- Chapter 14 Mental and Behavioral Disorders
 - post traumatic stress disorder



Non-MSK Conditions MMI/IR

- Many of these conditions have ranges for rating
- Consider effects on ADL
- Explain in report rationale for selecting appropriate class in a table and IR percentage within a class



Activities of Daily Living

Glossary, Page 317

Table. Activities of Daily Living, with Examples.

Activity	Example
Self-care, personal hygiene	Bathing, grooming, dressing, eating, eliminating
Communication	Hearing, speaking, reading, writing, using keyboard
Physical activity	<i>Intrinsic:</i> Standing, sitting, reclining, walking, stooping, squatting, kneeling, reaching, bending, twisting, leaning <i>Functional:</i> Carrying, lifting, pushing, pulling, climbing, exercising
Sensory function	Hearing, seeing, tactile feeling, tasting, smelling
Hand functions	Grasping, holding, pinching, percussive movements, sensory discrimination
Travel	Riding, driving, traveling by airplane, train, or car
Sexual function	Participating in desired sexual activity
Sleep	Having a restful sleep pattern
Social and recreational activities	Participating in individual or group activities, sports, hobbies



Additional Testing and Referrals

REFER FOR SPECIALTY EVALUATION IF NEEDED!

The designated doctor shall perform additional testing when necessary to resolve the issue in question. The designated doctor shall also refer an injured employee to other health care providers when the referral is necessary to resolve the issue in question and the designated doctor is not qualified to fully resolve the issue in question. Any additional testing or referral required for the evaluation is not subject to preauthorization requirements nor shall those services be denied retrospectively based on medical necessity, extent of injury, or compensability...

28 TAC § 127.10 (c)



Case 1

Traumatic Brain Injury

History of Injury

- Injured employee fell from scaffolding, sustaining traumatic brain injury
- Developed seizures with unpredictable recurrences, requiring maintenance medication
- Able to return to work and perform most ADLs (driving, cooking)
- Neuropsych evaluation showed mild cognitive deficit
- Mild difficulty understanding and finding words, naming objects, following oral and written instructions

Case 1

Traumatic Brain Injury

Question for DD:

On MMI date, what
is whole person IR?



Case 1 - Traumatic Brain Injury

4.1 Central Nervous System - Cerebrum or Forebrain
(AMA Guides, Page 140)

9 Categories of Impairment

- **Pick most severe of first five categories**
 1. Disturbances of consciousness and awareness
 2. Aphasia or communication disturbances
 3. Mental status and integrative functioning abnormalities
 4. Emotional/behavioral disturbances
 5. Special types of preoccupation or obsession





Case 1

Traumatic Brain Injury





Case 1

Traumatic Brain Injury



Case 1 - Traumatic Brain Injury

4.1 Central Nervous System

Cerebrum or Forebrain

(AMA Guides, page 140)

9 Categories of Impairment

- **Combine most severe of first five categories with any of last four categories**
 6. Major motor or sensory abnormalities
 7. Movement disorders
 8. Episodic neurologic disorders
 9. Sleep and arousal disorders





Case 1

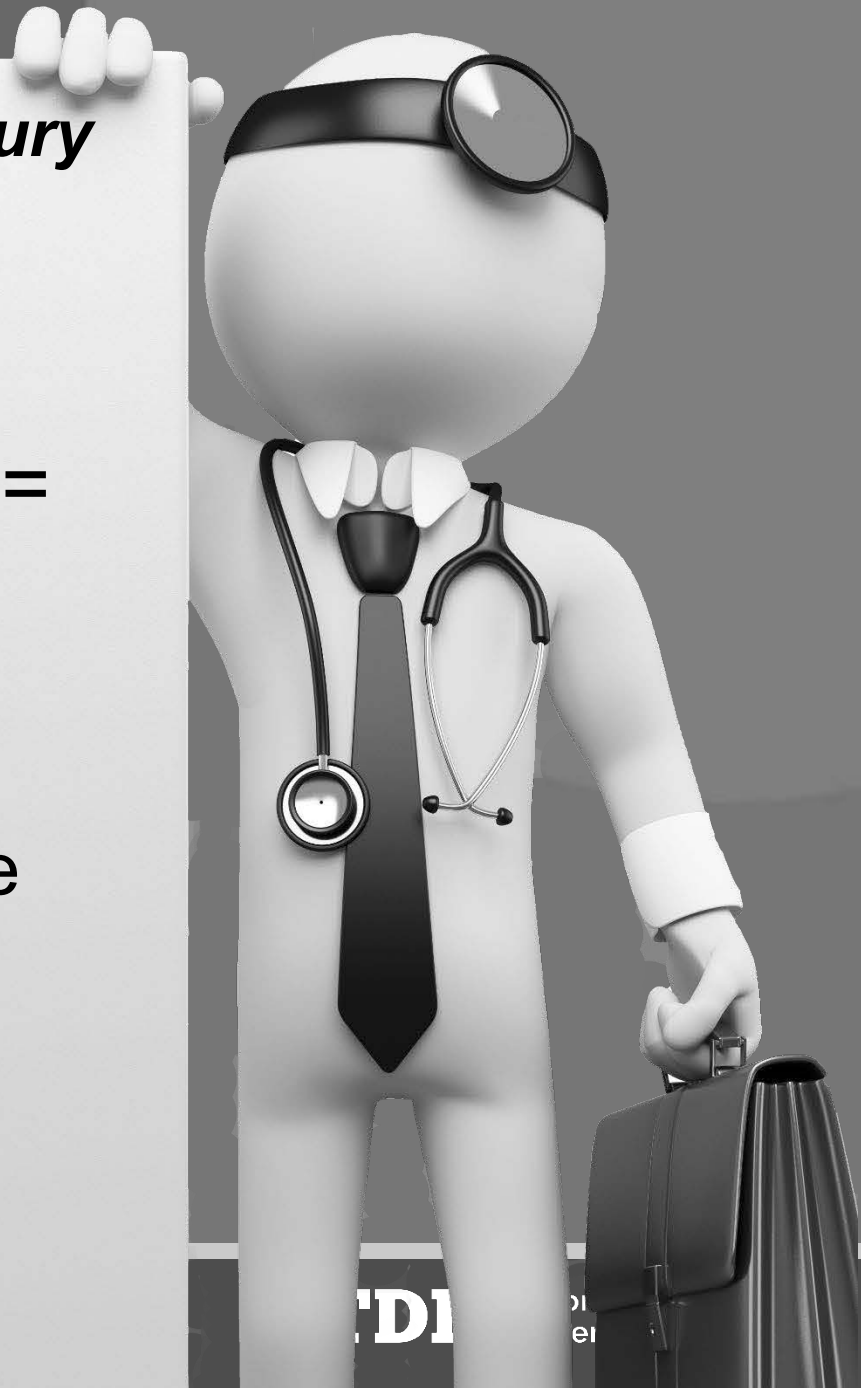
Traumatic Brain Injury




Case 1 - Traumatic Brain Injury

- 1% - 14% (Table 2)
- cw 0% -14% (Table 5) =
- **1% WP - 26% WP**
 - Select the single IR percentage within range that best fits clinical condition of IE

Explain how and why





Assessing Impairment

Section 4.1a – 4.1c


For Chapter 4, consider whether neuro-psychological assessment is appropriate



Psychological vs. Neuropsychological Testing

General Psychological

- Type testing for Chapter 14, Mental and Behavioral Disorders
- Personality testing
 - assess mood, emotions, coping, somatization, behavioral and interpersonal functioning, substance abuse, exaggeration/minimization, malingering (MMPI-2 or MMPI-2-RF, PAI)
- Specific cognitive functions
 - concentration, memory, attention, effort
 - “concentration, persistence and pace” (Chapter 14)
- Consider referring when appropriate



Psychological vs. Neuropsychological Testing

Neuropsychological

Assesses effects of known or suspected brain injury through comprehensive, systematic testing of a wide spectrum of cognitive functions

- General Intellectual Level
- Attention and Information Processing
- Learning and Memory
- Reasoning, Analysis, Organization, Planning, Self-Correction (“Executive Functions”)
- Visual-Spatial Abilities
- Language Functioning
- Sensory-Motor Functioning (Effects of Brain Injury, Not Physical Injury)
- Behavioral Functioning (Inhibition, Awareness, Self-Regulation)

Questions about Case 1?





Case 2

Visual System

History of Injury

- IE struck in left eye and orbit with piece of wood
- Native lens intact bilaterally
- At MMI best corrected visual acuity
 - Right eye distant 20/25, near 14/21
 - Left eye distant 20/200, near 14/70



Case 2

Visual System

History of Injury

- Monocular visual field assessment via Goldman perimeter
- Peripheral vision left eye 480° (20° loss)
- No loss of visual field in right eye
- Normal ocular motility
- No diplopia

Case 2

Visual System

Question for DD:
On MMI date, what
is whole person IR?



Case 2 - Visual System

Monocular method of visual field assessment (*pages 217-218*)

Left Eye

- Loss of central vision
 - Distance 20/200, near 14/70 =
83% left eye (*Table 3, page 212*)
- Loss of visual field
 - 480° of peripheral vision (20° lost) =
4% left eye (*Table 5, page 214*)
- Combine loss of central vision and visual field
 - 83% left eye cw 4% left eye =
84% left eye



Table 3. Loss (in %) of Central Vision* in a Single Eye.

Snellen rating for distance in feet	Approximate Snellen rating for near in inches														
	<div><div>14</div><div>14</div></div>	<div><div>14</div><div>18</div></div>	<div><div>14</div><div>21</div></div>	<div><div>14</div><div>24</div></div>	<div><div>14</div><div>28</div></div>	<div><div>14</div><div>35</div></div>	<div><div>14</div><div>40</div></div>	<div><div>14</div><div>45</div></div>	<div><div>14</div><div>60</div></div>	<div><div>14</div><div>70</div></div>	<div><div>14</div><div>80</div></div>	<div><div>14</div><div>88</div></div>	<div><div>14</div><div>112</div></div>	<div><div>14</div><div>140</div></div>	
<div><div>20</div><div>15</div></div>	0 50	0 50	3 52	4 52	5 53	25 63	27 64	30 65	40 70	43 72	44 72	45 73	48 74	49 75	
<div><div>20</div><div>20</div></div>	0 50	0 50	3 52	4 52	5 53	25 63	27 64	30 65	40 70	43 72	44 72	46 73	48 74	49 75	
<div><div>20</div><div>25</div></div>	3 52	3 52	5 53	6 53	8 54	28 64	30 65	33 67	43 72	45 73	46 73	48 74	50 75	52 76	
<div><div>20</div><div>30</div></div>	5 53	5 53	8 54	9 54	10 55	30 65	32 66	35 68	45 73	48 74	49 74	50 75	53 76	54 77	
<div><div>20</div><div>40</div></div>	8 54	8 54	10 55	11 56	13 57	33 67	35 68	38 69	48 74	50 75	51 76	53 77	55 78	57 79	
<div><div>20</div><div>50</div></div>	13 57	13 57	15 58	16 58	18 59	38 69	40 70	43 72	53 77	55 78	56 78	58 79	60 80	62 81	
<div><div>20</div><div>60</div></div>	16 58	16 58	18 59	20 60	22 61	41 70	44 72	46 73	56 78	59 79	60 80	61 81	64 82	65 83	
<div><div>20</div><div>70</div></div>	18 59	18 59	21 61	22 61	23 62	43 72	46 73	48 74	58 79	61 81	62 81	63 82	66 83	67 84	
<div><div>20</div><div>80</div></div>	20 60	20 60	23 62	24 62	25 63	45 73	47 74	50 75	60 80	63 82	64 82	65 83	68 84	69 85	
<div><div>20</div><div>100</div></div>	25 63	25 63	28 64	29 64	30 65	50 75	52 76	55 78	65 83	68 84	69 84	70 85	73 87	74 87	
<div><div>20</div><div>125</div></div>	30 65	30 65	33 67	34 67	35 68	55 78	57 79	60 80	70 85	73 87	74 87	75 88	78 89	79 90	
<div><div>20</div><div>150</div></div>	34 67	34 67	37 68	38 69	39 70	59 80	61 81	64 82	74 87	77 88	78 89	79 90	82 91	83 92	
<div><div>20</div><div>200</div></div>	40 70	40 70	43 72	44 72	45 73	65 83	67 84	70 85	80 90	83 91	84 92	85 93	88 94	89 95	
<div><div>20</div><div>300</div></div>	43 72	43 72	45 73	46 73	48 74	68 84	70 85	73 87	83 91	85 93	86 93	88 94	90 95	92 96	
<div><div>20</div><div>400</div></div>	45 73	45 73	48 74	49 74	50 75	70 85	72 86	75 88	85 93	88 94	89 94	90 95	93 97	94 97	
<div><div>20</div><div>800</div></div>	48 74	48 74	50 75	51 76	53 77	73 87	75 88	78 89	88 94	90 95	91 96	93 97	95 98	97 99	

Upper number shows % loss of central vision without allowance for monocular aphakia or monocular pseudophakia:

Lower number shows % loss of central vision with allowance for monocular aphakia or monocular pseudophakia.

Table 5. Loss of Monocular Visual Field.

Total degrees		% of Loss
Lost	Retained	
0	500*	0
5	495	1
10	490	2
15	485	3
20	480	4
25	475	5
30	470	6
35	465	7
40	460	8
45	455	9
50	450	10
55	445	11
60	440	12
65	435	13
70	430	14
75	425	15
80	420	16
85	415	17
90	410	18
95	405	19
100	400	20
105	395	21
110	390	22
115	385	23
120	380	24
125	375	25
130	370	26
135	365	27
140	360	28
145	355	29
150	350	30
155	345	31
160	340	32
165	335	33

Total degrees		% of Loss
Lost	Retained	
170	330	34
175	325	35
180	320	36
185	315	37
190	310	38
195	305	39
200	300	40
205	295	41
210	290	42
215	285	43
220	280	44
225	275	45
230	270	46
235	265	47
240	260	48
245	255	49
250	250	50
255	245	51
260	240	52
265	235	53
270	230	54
275	225	55
280	220	56
285	215	57
290	210	58
295	205	59
300	200	60
305	195	61
310	190	62
315	185	63
320	180	64
325	175	65
330	170	66
335	165	67

Total degrees		% of Loss
Lost	Retained	
340	160	68
345	155	69
350	150	70
355	145	71
360	140	72
365	135	73
370	130	74
375	125	75
380	120	76
385	115	77
390	110	78
395	105	79
400	100	80
405	95	81
410	90	82
415	85	83
420	80	84
425	75	85
430	70	86
435	65	87
440	60	88
445	55	89
450	50	90
455	45	91
460	40	92
465	35	93
470	30	94
475	25	95
480	20	96
485	15	97
490	10	98
495	5	99
500	0	100

*Or more.

Case 2 - Visual System

Monocular method of visual field assessment (*pages 217-218*)

Right Eye

- Loss of central vision
 - Distance 20/25, near 14/21 = 5% right eye
 - Normal visual field
 - 5% right eye cw 0% right eye = 5% right eye



Table 3. Loss (in %) of Central Vision* in a Single Eye.

Snellen rating for distance in feet		Approximate Snellen rating for near in inches													
		<div>14 14</div>	<div>14 18</div>	<div>14 21</div>	<div>14 24</div>	<div>14 28</div>	<div>14 35</div>	<div>14 40</div>	<div>14 45</div>	<div>14 60</div>	<div>14 70</div>	<div>14 80</div>	<div>14 88</div>	<div>14 112</div>	<div>14 140</div>
<div>20 15</div>		0 50	0 50	3 52	4 52	5 53	25 63	27 64	30 65	40 70	43 72	44 72	45 73	48 74	49 75
<div>20 20</div>		0 50	0 50	3 52	4 52	5 53	25 63	27 64	30 65	40 70	43 72	44 72	46 73	48 74	49 75
<div>20 25</div>		3 52	3 52	5 53	6 53	8 54	28 64	30 65	33 67	43 72	45 73	46 73	48 74	50 75	52 76
<div>20 30</div>		5 53	5 53	8 54	9 54	10 55	30 65	32 66	35 68	45 73	48 74	49 74	50 75	53 76	54 77
<div>20 40</div>		8 54	8 54	10 55	11 56	13 57	33 67	35 68	38 69	48 74	50 75	51 76	53 77	55 78	57 79
<div>20 50</div>		13 57	13 57	15 58	16 58	18 59	38 69	40 70	43 72	53 77	55 78	56 78	58 79	60 80	62 81
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<div>20 300</div>		43 72	43 72	45 73	46 73	48 74	68 84	70 85	73 87	83 91	85 93	86 93	88 94	90 95	92 96
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55	445	11
60	440	12
65	435	13
70	430	14
75	425	15
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85	415	17
90	410	18
95	405	19
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110	390	22
115	385	23
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140	360	28
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240	260	48
245	255	49
250	250	50
255	245	51
260	240	52
265	235	53
270	230	54
275	225	55
280	220	56
285	215	57
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360	140	72
365	135	73
370	130	74
375	125	75
380	120	76
385	115	77
390	110	78
395	105	79
400	100	80
405	95	81
410	90	82
415	85	83
420	80	84
425	75	85
430	70	86
435	65	87
440	60	88
445	55	89
450	50	90
455	45	91
460	40	92
465	35	93
470	30	94
475	25	95
480	20	96
485	15	97
490	10	98
495	5	99
500	0	100

Case 2 - Visual System

Monocular method of visual field assessment (*pages 217-218*)

- For worse eye combine eye IR% for ocular motility/diplopia with eye IR% for central vision and visual field
 - Normal ocular motility/no diplopia
 - 84% left eye cw 0% = 84% left eye
- Determine visual system IR% – origin of “better eye” and “worse eye” (*Table 7, pages 219-221*)
 - Origin of 84% left eye and 5% right eye = 25% visual system
- Convert visual system to whole person (*Table 6, page 218*)
 - 25% visual system = 24% WP

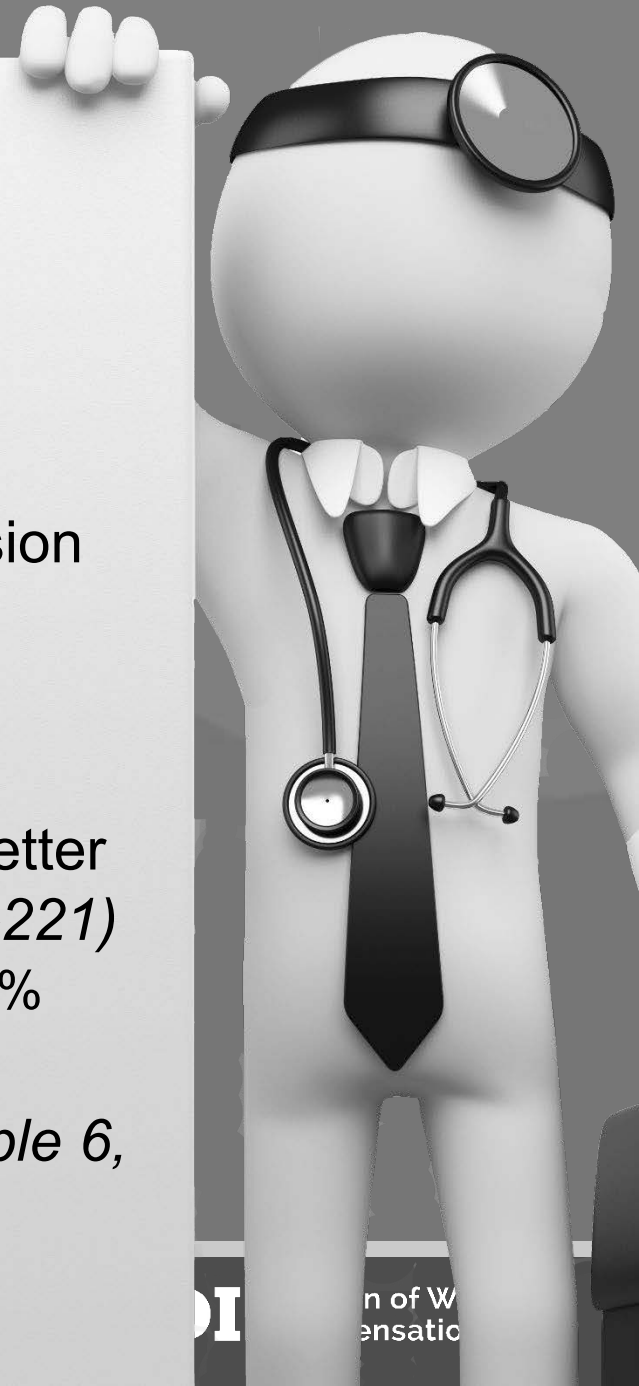






Table 6. Impairment of the Visual System as It Relates to Impairment of the Whole Person.

% Impairment of the											
Visual system	Whole person	Visual system	Whole person	Visual system	Whole person	Visual system	Whole person	Visual system	Whole person	Visual system	Whole person
0	0	15	14	30	28	45	42	60	57	75	71
1	1	16	15	31	29	46	43	61	58	76	72
2	2	17	16	32	30	47	44	62	59	77	73
3	3	18	17	33	31	48	45	63	59	78	74
4	4	19	18	34	32	49	46	64	60	79	75
5	5	20	19	35	33	50	47	65	61	80	76
6	6	21	20	36	34	51	48	66	62	81	76
7	7	22	21	37	35	52	49	67	63	82	77
8	8	23	22	38	36	53	50	68	64	83	78
9	8	24	23	39	37	54	51	69	65	84	79
10	9	25	24	40	38	55	52	70	66	85	80
11	10	26	25	41	39	56	53	71	67	86	81
12	11	27	25	42	40	57	54	72	68	87	82
13	12	28	26	43	41	58	55	73	69	88	83
14	13	29	27	44	42	59	56	74	70	89	84
										90-100	85

Questions about Case 2?



Case 3 - *Hernia*

History of Injury

- IE sustained ventral and left inguinal hernias while working
- Underwent ventral hernia repair and left inguinal hernia repair, both with mesh
- At MMI no palpable defect in either surgical site
- With increased pressure maneuvers including Valsalva, coughing, and lifting head up while supine, slight protrusions in inguinal canal and abdominal hernia repair which were reducible
- Returned to work in warehouse lifting more than 50 pounds occasionally

Case 3

Hernia

Question for DD:
On MMI date, what
is whole person IR?






Case 3

Hernia





Case 3

Hernia

To assess impairment for hernia-related injury under Table 7 "Classes of Hernia-related Impairment", page 10/247 of Guides 4th Edition, there must be a palpable defect in the supporting structures of the abdominal wall.

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Case 3 – Hernia

Table 7 vs. Text, Page 247

- Table 7
 - Class 1 = 0% - 9%
 - Class 2 = 10% -19%
 - Class 3 = 20% - 30%

VS.

- Text
 - Class 1; 0% to10%
 - Class 2; 10% to 20%
 - Class 3; 20% to 30%



Case 3 – Hernia
Table 7 vs. Text, Page 247

For Either Table 7 or Text

- Select single IR percentage within range that best fits clinical condition of IE



Questions about Case 3?



Case 4

Skin

History of Injury

- Injured employee sustained 3rd degree burn to right arm and forearm which required skin grafting
- Some activities of daily living affected, including intolerance of sunlight exposure.
- Had to apply moisturizing cream daily to prevent skin from cracking

Case 4

Skin

At MMI

- Grafting area atrophic, elevated and indurated
- Wrist ROM full
- Active elbow ROM
 - Extension minus 10°
 - Flexion 130°
 - Supination 70°
 - Pronation 70°
- Some decreased sensation over scar, but normal sensation proximal and distal to scar
- 5/5 strength of upper extremities bilaterally



Case 4

Skin

Question for DD:
On MMI date, what
is whole person IR?





Skin – AMA Guides, Chapter 13

- Table 2, page 280
- Based on effect on ADLs
- Most surgical scars not rated separately
- If burn scar or graft results in limited ROM, that impairment should be rated according to Chapter 3
- IR accrues from both burn scar and limited ROM; combine whole person impairments
- Discrepancies between Table 2 and text in Section 13.7, pages 281-289

Case 4 - Skin

- Class 2, Table 2, Page 280
 - 10%-24% (10%-25% in text)
 - Signs/symptoms present or intermittently present
- *AND*
 - *Some* limitation of ADLs
- *AND*
 - Intermittent to constant treatment may be required



Table 2, Page 280

Table 2. Impairment Classes and Percents for Skin Disorders:*

Class 1: 0%-9% impairment	Class 2: 10%-24% impairment	Class 3: 25%-54% impairment	Class 4: 55%-84% impairment	Class 5: 85%-95% impairment
Signs and symptoms of skin disorder are present or only intermittently present; and There is no limitation or limitation in the performance of <i>few</i> activities of daily living, although exposure to certain chemical or physical agents might increase limitation temporarily; and No treatment or intermittent treatment is required.	Signs and symptoms of skin disorder are present or intermittently present; and There is limitation in the performance of <i>some</i> of the activities of daily living; and Intermittent to constant treatment may be required.	Signs and symptoms of skin disorder are present or intermittently present; and There is limitation in the performance of <i>many</i> of the activities of daily living; and Intermittent to constant treatment may be required.	Signs and symptoms of skin disorder are <i>constantly</i> present; and There is limitation in the performance of <i>many</i> of the activities of daily living that may include intermittent confinement at home or other domicile; and Intermittent to constant treatment may be required.	Signs and symptoms of skin disorder are <i>constantly</i> present; and There is limitation in the performance of <i>most</i> of the activities of daily living, including occasional to constant confinement at home or other domicile; and Intermittent to constant treatment may be required.

*The signs and symptoms of disorders in classes 1 and 2 may be intermittent and not present at the time of examination. The impact of the skin disorder on daily activities should be the primary consideration in determining the class of impairment. The frequency and intensity of signs and symptoms and the frequency and complexity of medical treatment should guide the selection of an appropriate impairment percentage and estimate within any class (see chapter introduction).

Class 2 - Text From Page 282

Class 2: Impairment of the Whole Person, 10% to 25%

A person belongs in class 2 when (1) signs and symptoms of a skin disorder are present or intermittently present; *and* (2) there is limitation in the performance of *some* of the activities of daily living; *and* (3) intermittent to constant treatment may be required.

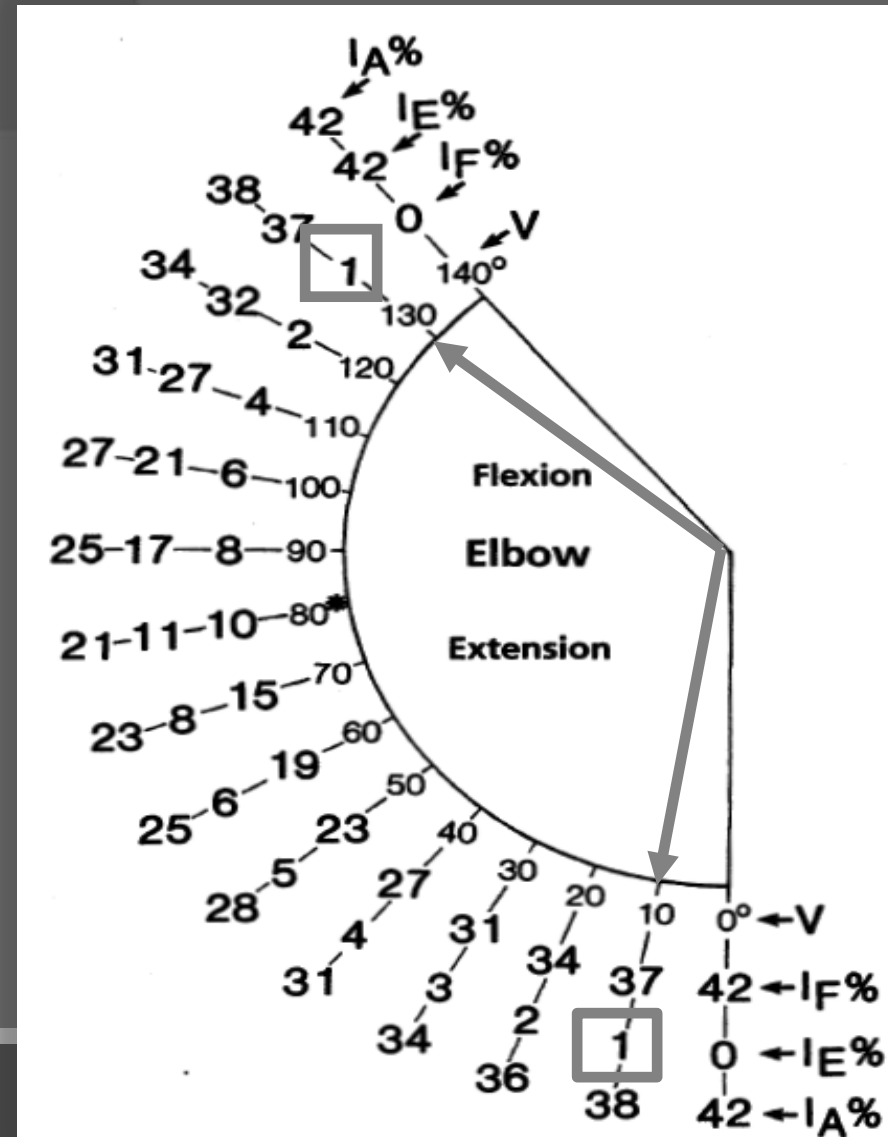
Case 4

Skin

Active elbow ROM

Extension minus $10^\circ = 1\%$ UE

Flexion $130^\circ = 1\%$ UE



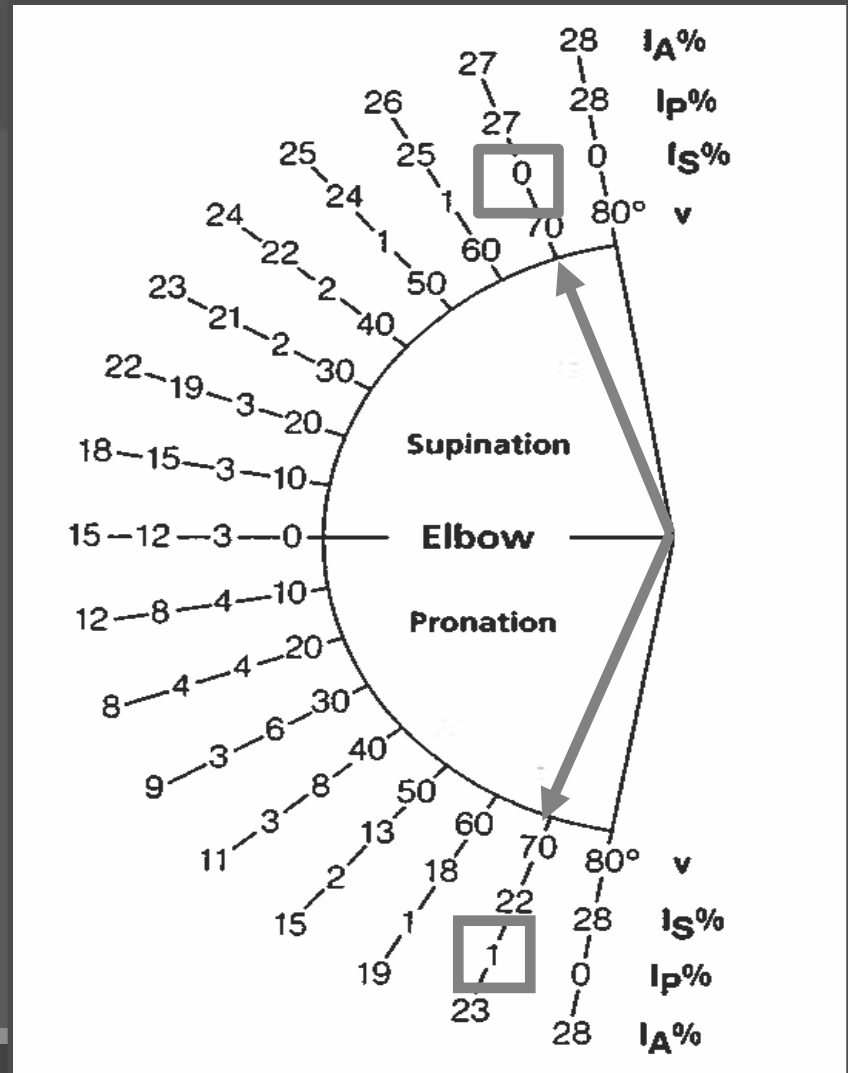
Case 4

Skin

Active elbow ROM

Supination 70° = 0% UE

Pronation 70° = 1% UE



Case 4 - Skin

- Elbow ROM (*Figures 32 and 35, pages 40-41*)
 - Extension minus $10^{\circ} = 1\%$ UE
 - Flexion $130^{\circ} = 1\%$ UE
 - Supination $70^{\circ} = 0\%$ UE
 - Pronation $70^{\circ} = 1\%$ UE
- Total Elbow ROM = 3% UE = 2% WP



Case 4 - Skin

- Combine skin WP IR with elbow ROM WP IR
 - 10% - 24% (or 25%) cw 2% =
12% WP - 26% WP
(or 12% - 27% WP)
 - Select single IR percentage within range that best fits clinical condition of IE





Questions about Case 4?



Case 5

PTSD

History of Injury

- Convenience store clerk robbed and assaulted
- Subsequently diagnosed and treated for PTSD
- Treatment included focused cognitive behavioral therapy and Lexapro
- Psychological evaluation at MMI 12 months post injury reveals RTW in different job as retail stock clerk
- Complains of disrupted sleep due to nightmares about robbery

Case 5

PTSD

History of Injury (cont'd)

- Reports feeling hopeless about future and disinterested in activities previously found enjoyable
- Wife reports he is "jumpy" and not spending as much time with friends, including bi-weekly poker game
- Mood highly irritable and fighting much more than normal with wife
- Wife also reports he has begun to drink 2-5 alcoholic beverages most evenings

Case 5

PTSD

Question for DD:
On MMI date, what
is whole person IR?



How to Determine Mental and Behavioral Impairment

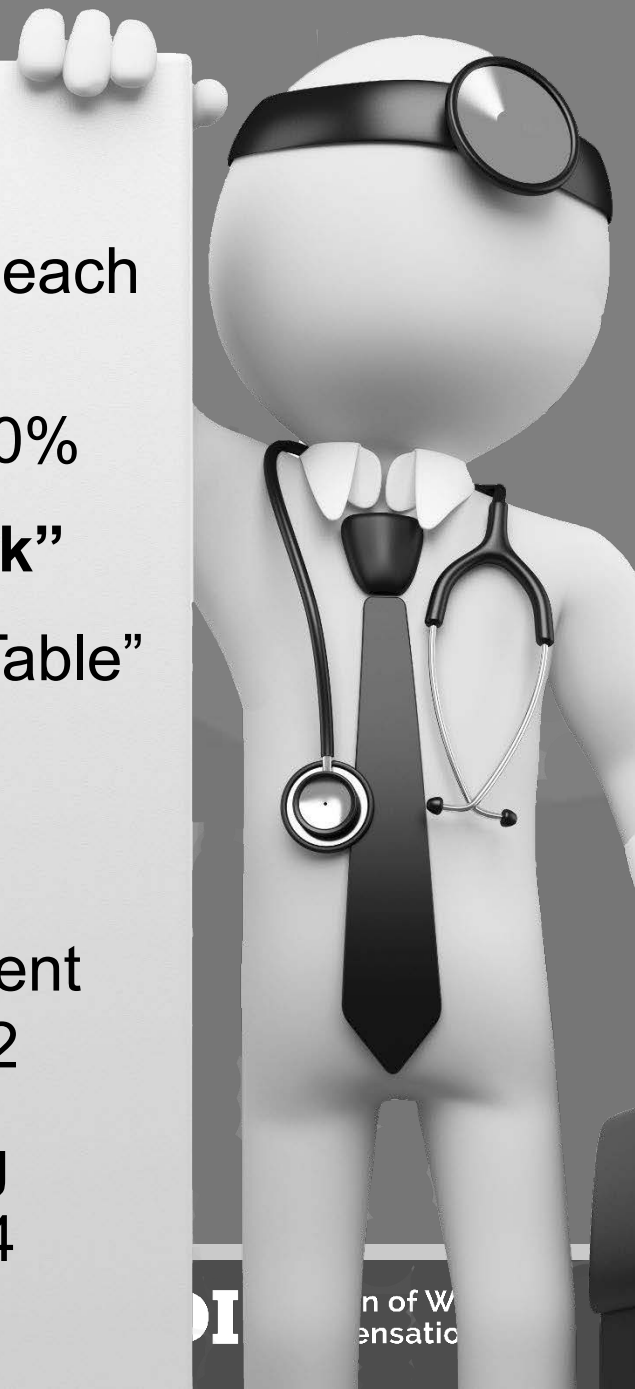
Apply findings to four areas of functioning:

- Activities of daily living
- Social functioning
- Concentration / persistence / pace
- Deterioration or decompensation in work or work-like settings



How to Determine Mental and Behavioral Impairment

- May assign rating globally, **or** assign to each area of functioning and **average**
 - $10\% + 10\% + 40\% + 20\% = 80/4 = 20\%$
 - **Explain method used – “Show work”**
- Determine appropriate class from “the Table” Chapter 14, page 301
- Consult Chapter 4, Table 3, page 142
- Determine appropriate percent impairment value from Chapter 4, Table 3, page 142
- Combine with other body systems using Combined Values Chart, pages 322-324



Case 5

PTSD

Class 3 - “Impairment levels are compatible with *some*, but not all, useful functioning”

- Chapter 14, “The Table”, page 301



Case 5 - Non-MSK MMI/IR *PTSD*

- Correlates with “Moderate limitation of *some* but not all social and interpersonal daily living functions”
 - Chapter 4, Emotional or Behavioral Impairments, Table 3, page 142
- 15% WP – 29% WP
 - Select single IR percentage within range that best fits clinical condition of IE

Classification of Impairments Due to Mental and Behavioral Disorders

“The Table” , Page 301



Classification of Impairments Due to Mental and Behavioral Disorders

“The Table”, Page 301

Area of Function	CLASS 1 No Impairment	CLASS 2 Mild	CLASS 3 Moderate	CLASS 4 Marked	CLASS 5 Extreme
ADL	↑	↑	↑	↑	↑
Social	No impairment	Most useful function	Some, but not all useful function	Significant loss of useful function	Precludes useful function
Concentration, Pace	↓	↓	↓	↓	↓
Adaptation	↓	↓	↓	↓	↓

Chapter 4, Table 3, Page 142



Chapter 14, Table 14 and Chapter 4, Table 3

Chapter 14 Table 1, Page 301	Chapter 4 Table 3, Page 142
Class 1: None	None
Class 2: Mild – Most useful function	Mild: 0 – 14%
Class 3: Moderate – Some but not all useful function	Moderate: 15 – 29%
Class 4: Marked – Significantly impedes useful function	Severe: 30 – 49% Impedes almost all daily function
Class 5: Extreme – Precludes useful function	Severe: 50 – 70% Total dependence



Questions about Case 5?



UPDATE – Sec 607.055

SB 02551F Cancer

(a) A firefighter (FF) or emergency medical technician (EMT) who suffers from cancer resulting in death or total or partial disability is presumed to have developed the cancer during the course and scope of employment as a FF or EMT IF:

UPDATE – Sec 607.055

SB 02551F Cancer

(1) The FF or EMT:

(A) regularly responded to the scene to calls involving fires or firefighting; OR

(B) regularly responded to an event involving the documented release of radiation or known or suspected carcinogen while the person was employed as a FF or EMT;

AND the cancer is described by subsection (b)

UPDATE – Sec 607.055

SB 02551F Cancer

Subsection (b) This section only applies to:

- (1) Cancer that originates at the stomach, colon, rectum, skin, prostate, testis, or brain;
- (2) Non-Hodgkin's lymphoma;
- (3) Multiple Myeloma;
- (4) Malignant Melanoma; and
- (5) Renal cell carcinoma.

UPDATE – Sec 607.058

Presumption Rebuttal - Cancer

The presumption may be rebutted through showing “*a preponderance of evidence that a risk factor, accident, hazard or other cause not associated with the service as a FF or EMT was a substantial factor in bringing about the individuals disease or illness, without which the disease or illness would not have occurred*”.

Sec 607.055 / Sec 607.058

Cancer

- So expect to receive requests for EOI and MMI / IR regarding cancers in FFs / EMTs.
- Refer to respiratory Chapter 5, Table 10 for definition MMI regarding at least lung cancers.
- At MMI, rate any direct impairment for the cancer, it's metastasis or sequelae of treatment (Nephrectomy, permanent neuropathy as a result of chemotherapy, radiation complications, etc.).


Questions?



NON-MSK PEARLS

HOW TO READ TABLES

- The first row in a table should ALWAYS be present.
- When **AND** and **AND** present. BOTH the second and third row must be present
- When **AND** and **OR** present. EITHER the second and third row must be present.



Nervous System – Chapter 4

Impairment Categories

- BE AWARE OF THE OTHER SECTIONS AND TABLES
- 4.1 Central Nervous System
 - Cerebrum or Forebrain (p. 140)
- 4.2 Brain Stem (p. 145)
- 4.3 Spinal Cord (p. 147)
- 4.4 Muscular and Peripheral Nervous System (p. 149)
- 4.5 Pain (p. 152)

NON-MSK PEARLS

CHAPTER 4 – Nervous System:

Concussion IS a TBI.

- Be aware of classification of TBI via GCS.
MILD = 13 – 15 MODERATE = 8/9 - 12 SEVERE = < 8/9
- Most concussions with GCS 14 – 15. THOSE with GCS of 15 highly improbable to not resolve within 3 months.
- EBM - That is because > 90 % of concussions will resolve within 3 months (unless repeat concussions).
- 1st three months = sequelae of concussion.
- Collections of potential concussion related symptoms that increase days TBI (unless post traumatic edema) to weeks after the injury event unlikely to be due to a concussion.



NON-MSK PEARLS

CHAPTER 4 – Nervous System:

- Persistence of Symptoms > 3 months = Post-Concussion syndrome
- Post-Concussion Syndrome is not until the symptoms of a bona fide concussion is present for > 3 months. A frequent MIS-USED term. (Especially with ICD-10 coding)
- Consider that EBM shows that persistent TBI symptoms is ~15 – 30 % malingered.



CHAPTER 4 – Nervous System:

- **THOSE WITH MILD TBI UNLIKELY to HAVE:**
 - Permanent Disturbances of Consciousness
 - Aphasia or Communication issues
 - Major Motor or Sensory Movement Disorder
 - Episodic Neurologic issues
 - Sleep and Arousal Issues (Central Sleep Apnea)
- Those conditions usually require:
 - Evidence of an intracerebral lesion / depressed skull fracture (Intracerebral Hematoma, Intracerebral Contusion, Cerebral Edema).
 - Moderate (GCS = 9 – 12) and Severe (GCS = 3 – 8).
- In Mod / Severe TBI, don't forget complications such as pituitary dysfunction, heterotopic ossification, etc.

CHAPTER 4 – Nervous System:

Assessing Impairment in 4.1a – 4.1c

- Covered in 2015 lecture AND the AMA Guides in section 4.1a and 4.1c
- Goal is to objectively assess change in/loss of functioning due to brain injury or ‘concussion’ in order to have an accurate rating
- Chapter 14 notes, “*neuropsychological assessment . . . may be useful in determining deficiencies in brain functioning, particularly in individuals with subtle signs such as those that may be seen in traumatic brain injuries.*”



NON-MSK PEARLS

CHAPTER 4 – Nervous System:

Neuropsych Testing to assess objectively.

- MMPI – 2 – RF = Personality Testing.
- Specific tests with embedded validity criteria.
 - Victoria Symptom Validity Test (VSVT)
 - Dot Counting Test (DCT)
 - Portland Digit Recognition Test (PDRT)
 - Rey 15 Item Test
 - Test of Memory Malingering (TOMM)
 - Structured Inventory of Malingered Symptomatology
 - Word Memory Test (WMT)

4.1f The Cranial Nerves

THIS IS IN THE 2015 lecture with more detail

- CN I (Olfactory)
 - Anosmia (only if interferes with ADLs) = 5% WP
- CN II, III, IV, VI
(Optic, Oculomotor, Trochlear, Abducens)
 - Refer to Visual System (Chapter 8). It usually results in Diplopia, so don't double impair.
- CN VIII (Auditory)
 - Refer to ENT Chapter
 - Significant equilibrium/balance ADL limitations due to CN VIII may be rated with Table 11 (p. 146)

4.4e Nerves of the Head and Neck, Trunk and Inguinal Region

THIS IS IN THE 2015 lecture with more detail.

- Tables 23 and 24 list maximum values for these nerves.
- Maximum motor or sensory value for a thoracic nerve is 2% WP.
- Evaluate sensory and motor function, using severity ranges from Tables 20 and 21, p. 151.
- Combine sensory and motor.



4.3 The Spinal Cord

- 4.3a Station and Gait
- 4.3b Use of Upper Extremities
- 4.3c Respiration
- 4.3d Urinary Bladder Dysfunction
- 4.3e Anorectal Dysfunction
- 4.3f Sexual Function
- May combine multiple impairments

NON-MSK PEARLS

Chapter 5 – Respiratory System

- Covered well in 2015 lecture.
- Be familiar with how to use Tables, especially 8, 10 and 11.
- Look at examples!
- Be aware that now that Occupational Cancers in First Responders is one of your tasks, pay attention to Table 10 for Lung Cancers. Look to examples.



NON-MSK PEARLS

CHAPTER 6 - Cardiovascular:

- Not Covered in 2015 lecture. Please read chapter for important points.
- Not common in work setting.
- Work related heart attacks. Unusual physical exertion related to employment.



NON-MSK PEARLS

CHAPTER 7 - Hematopoietic:

- Not Covered in 2015 lecture. Please review chapter for important points
- Not common.
- Work related due to:
 - Needle sticks; HCV, HIV.
 - Drug Reactions; Stevens-Johnson syndrome
 - Exposures resulting in lymphomas

NON-MSK PEARLS

CHAPTER 8 - Visual System:

- Visual Fields, Visual Acuity and Diplopia covered well in current and 2015 lecture.
- Other - Page 209
- Ocular / Adnexa: An additional 5 – 10 % combined with the affected eye.

Media opacities

Cornel or lens opacities

Epiphoria - overflow of tears on the face

Metamorphosia – distortion of vision

Photophobia

- Deformities of the Orbit – As high as an additional 10 %.
Be careful not to overlap with deformities / scarring of the face addressed in Chapter 9 for ENT structures.



NON-MSK PEARLS

CHAPTER 9 – ENT

- Covered well in 2015 lecture
- 9.1a and 9.1b – Hearing
- 9.1c – Equilibrium
- 9.2 – Face (Facial Scarring and disfigurement)
- 9.3a – Ear, Nose and Throat
- 9.a - Respiration (Naso / oro pharynx, neck and chest)
- 9.3b – mastication and Deglutition
- 9.3c – Olfaction and Taste
- 9.3d - Speech

NON-MSK PEARLS

CHAPTER 10 – Digestive System:

- Covered well in 2015 lecture
- Hernia: Maximal Value is 30 % WP.
- IF sensory changes in the Ilioinguinal and Iliohypogastric nerve distribution (NOT just scar pain) - Can combine nerve injury.

Chapter 4- Table 24

Max value must be multiplied by Table 20.

NON-MSK PEARLS

CHAPTER 11-

Urinary and Reproductive System:

- NOT covered in 2015 lecture.
- Be familiar with pertinent areas in the Chapter. If due to trauma, likely associated with pelvic fractures or other abdominal trauma.

NON-MSK PEARLS

CHAPTER 12 - Endocrine System:

- Not Covered in 2015 lecture.
- Please review chapter for important points
- Could be see associated with:
 - Some cancers
 - Some Moderate / Severe TBI (disrupts pituitary / hypothalamus)

NON-MSK PEARLS

CHAPTER 13 - Skin:

- Covered well in 2015 lecture.
- Look at examples for GUIDANCE regarding Class and Grade.
- MUST USE ADL Table.
- If more than one extremity with disease / burn, DO NOT give a Class IR for each extremity and combine. SKIN is at the WPI value!

NON-MSK PEARLS

CHAPTER 13 - Skin:

BURNS:

- ROM of any joint in which a burn scar crosses can be considered a different organ system. Once ROM at WP value it is COMBINED with the BURN WPI.
- **Don't forget to COMBINE with:**
 - Respiratory for inhalational injuries
 - Urinary Chapter for kidney injury due to rhabdomyolysis,
 - Heterotopic ossification, etc.
 - Facial Disfigurement and loss of facial structures

NON-MSK PEARLS

- DON'T GO OUTSIDE YOUR QUAL TABLE.
- However, if you seem to be out of your Qual table based on records or DWC-32 - CALL DWC.
- You MAY be the most qualified individual that is a DD in that county.
- Why it is important that you know as a DD how to do all the non-MSK sections.

Don't forget!

- Please submit your evaluation for the Non-MSK MMI/IR presentation and the Overall Course evaluation.
 - <https://www.tdi.texas.gov/wc/dd/training.html>
- Please submit your attestation form for the pre-recorded presentations.
 - <https://www.tdi.texas.gov/wc/dd/documents/ddattestation.pdf>

Thank you