

The Nuts And Bolts Of The Einstein-Horner Calculation
What To Do When Rating Overlapping Subjective Factors Of Disability

I. The Terminology of Subjective Disability: DWC-California Rating Schedule - Pages 1-3, 1-7 & 1-8

Pain is not always disabling. It becomes disabling when its degree affects function. Regulations define four degrees of subjective pain - minimal, slight, moderate and severe. By definition minimal (mild) pain is not disabling because it causes no handicap in the activity precipitating the pain. However, slight, moderate and severe pain reflects increasingly greater degrees of handicap on work activity, and is ratable factors of disability.

Pain (Subjective Disability) is characterized in terms of body part affected, intensity, frequency, and activity giving rise to the pain. **Subjective Disability must always be described by the frequency, severity and activities that produce the pain.**

A Severity Levels & Scheduled Values: Spine & Torso Guidelines - Schedule, pgs. 2-14 & 2-15.

Turn to “Subjective Factors As Index of Disability “ Under this column the terms listed are defined as having the following values:

1. **Constant Slight:** (10% Rating Standard of Permanent Disability)
2. **Constant Slight To Moderate:** (30% Rating Standard of Permanent Disability)
3. **Constant Moderate:** (50% Rating Standard of Permanent Disability)
4. **Constant Severe:** (100% Rating Standard of Permanent Disability) *

*Disabilities 12.16, 12.32,14.113,14.133.14.871 and 7.143 (Loss of Both hands at Wrist Joints.)

B Severity Level Pain Scale: The above definitions establish the groundwork for the following values:

1. **SEVERE:** Pain that Precludes Activity causing the pain. (Loss of Work Capacity≈ Analogous to the rating standards of immobility or the Work Restrictions.
≈ **100% functional loss.**
2. **MODERATE-TO-SEVERE:** Pain that causes substantial handicap but allows occasional performance of the activities precipitating the pain.
≈ **75% functional loss.**
3. **MODERATE:** Pain that can be tolerated and causes would cause a marked handicap in the performance of the activity precipitating the pain.
≈ **50% functional loss.**
4. **SLIGHT-TO-MODERATE:** Pain initiating at a level of hardly any handicap exacerbated to cause an increased level of handicap in the performance of the activity precipitating the pain.
≈ **30% functional loss.**
5. **SLIGHT:** Pain that could be tolerated but would cause some handicap in the performance of the activity precipitating the pain.
≈ **10% functional loss.**
6. **MINIMAL-TO SLIGHT:** Annoying pain that exacerbates to cause some handicap in the performance of the activity precipitating the pain.
≈ **05% functional loss.**
7. **MINIMAL/MILD:** Pain that constitutes an annoyance but causes no handicap in the performance of the particular activity precipitating the pain.
≈ **00% functional loss.**

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C Frequency Levels:

When the frequency of pain is less than constant, the assigned value decreases proportionately. Rating Schedule
 – Page 1-7

To describe the frequency with which symptoms occur; the following words are defined as having specific meanings and can be combined to describe an employee's level of subjective factors:

- **Rare/Infrequent:** Anything Less Than Occasional **1/5** of the time or less.
- **Occasional:** Approximately 25% or **1/4** of the time.
- **Intermittent:** Approximately **50%** or **1/2** of the time.
- **Frequent:** Approximately 75% or 3/4 of the time.
- **Constant:** Approximately **90% to 100%** of the time.

1. **For Example:** When the frequency of pain is less than constant, the assigned value decreases proportionately. Thus, an intermittent slight pain of the minor wrist would be 50% of the value of slight pain in the wrist, or one-half of 05%. Since all ratings are rounded to the nearest whole number the final value would be 03%. *

* *When mathematically calculating a rating standard, it should be expressed as one of the following values: 1,2,3,5,8,10,13,15 & multiples of 5% thereafter, before modification for age and occupation. [See Page 1-13 of The Schedule.]*

D Basic Level Of Pain: Frequency & Severity Level Chart

To facilitate the values' calculation for the basic level of pain in the Einstein-Horner Formula, the following chart combines the first two components of Subjective Disability, the frequency and severity levels, before modification for the activities precipitating the pain.

Basic Level Of Pain: Frequency & Severity Level Chart This chart can be used to determine rating standards for subjective factors for: (1) The Spine / (2) The Bilateral Upper Extremities / (3) The Bilateral Lower Extremities B When Addressing Disability To An Entire Upper Or Lower Extremity, Divide All Values by 50% (1/2). When addressing functional loss for one or more joints of an injured extremity, we must not forget how the loss affects specific abilities or overall function. Rating Schedule -Pages 1-8 to 1-13					
↓ Severity Key ↓	↓ Frequency Key ↓				
	Rare/Infrequen t 1/5 – 20%	Occasional ¼ - 25%	Intermittent ½ - 50%	Frequent ¾ - 75%	Constant 90-100%
Minimal To Slight	01%	02%	03%	05%	05%
Slight	02%	03%	05%	08%	10%
Slight To Moderate	05%	08%	15%	20%	30%
Moderate	10%	13%	25%	40%	50%
Moderate To Severe	15%	20%	40%	55%	75%
Severe	20%	25%	50%	75%	100%
The Rating Standard calculations in this table mathematically abide to the rating principles of The Schedule. Standards should be expressed as one of the following values: 1,2,3,5,8,10,13,15 & multiples of 5% thereafter, before modification for age and occupation. Rating Schedule-Page 1-13					
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E Determining Equivalent Values for Activities: By ‘Analogy’ or Use of Scheduled Guidelines.

Spine & Torso Guidelines - Schedule, pages 2-14 & 2-15 or

Lower Extremity Guidelines - Schedule, page 2-19 or Lower Extremity Chart on This Web Site

Since work restrictions establish limits of specific activities or tasks due to a disability that impedes an activity, body position & motion the rating standards assigned to the Scheduled Spine & Torso Guidelines or the Lower Extremity Guidelines, when used to describe subjective factors of disability, their scheduled rating standards of permanent disability are equivalent to the severe level of pain.

1. For Example: Einstein-Horner Calculation for Basic Pain (Spine)

a. Constant slight-to-moderate pain with Heavy Lifting:

E.H. Calculation: Basic Pain: 30%(constant slight-to-moderate) x 20 = 06 ≈ 05 *

b. Occasional slight pain with activities requiring minimal effort (Limitation to Light Work).

E.H. Calculation: Basic Pain: 10% (slight pain) x 50 = 05 x ¼ (occasional) = 1.25 ≈ 01 *

c. Constant moderate pain with Heavy Work (Use the Table!)

E.H. Calculation: Basic Pain: 50% x 30 = 15% *

d. Frequent moderate Pain With Repetitive Motions of the neck and spine.

E.H. Calculation: Basic Pain: 40% (Use the Table!) x 15% = 06 ≈ 05 % *

* At the end of the calculation the Rating Standard is expressed as one of the following values: 1,2,3,5,8,10,13,15 & multiples of 5% thereafter, before modification for age and occupation. Rating Schedule-Page 1-13

Work Capacity Functional Loss / Work Capacity Guidelines(Spine)														
Multiple disability factors will have some redundancy in how they affect specific abilities or overall function, and an unrealistic result will be achieved by simply adding factors together. Multiple factors are compacted (scaled down) to avoid duplication and pyramiding. Rating Schedule-Pages 2-12 to 2-15														
Evaluation Guidelines 46, 9725 & 9727.														
00	03	05	08	10	13	15	20	25	30	35	40	45	50	
Pre-Injury Loss:		10%	15%	20%	25%	30%	40%	50%	55/60	65-70%	75-80%	85-90%	95-100	
Spine/Torso Motion:				↑ 20-25%		↑	↑	↑	50%		↑		80%+	
No Fixed Neck/Head ↓				↑		↑ No Repetitive Motions of the Neck or Spine					↑			
Residual Lifting Capacity for 76-100^{lbs.}:				↑ 51-75		↑	26-50	↑	11-25		0-10 (Minimal Demands for Lifting)			
Residual Lifting Capacity for 51-75^{lbs.}:				↑ 26-50		11--25	0-10	↑	↑		↑			
↑ No Very Heavy Lifting						↑ No Heavy Lifting						↑		
No Very Heavy Work ↓								↑ No Heavy Work						
No Heavy Lifting Repeated Bending & Stooping ↓										↑ No Substantial Work Limitation to Light Work ↓				
Protracted/Stationary Positioning of the Spine/Extremities: (05%)														
Frequency Key: Prolonged (25%) Repetitive (50%) Substantial (75%) Sustain (100%)														
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2. For Example: Einstein-Horner Calculation for Basic Pain (Lower Extremities)

- a. **Constant slight-to-moderate pain with Sustained Weight bearing**
E.H. Calculation: Basic Pain: 30%(constant slight-to-moderate) x 20 = 06 ≈ 05 *
- b. **Occasional slight pain with activities requiring minimal effort** (Limitation to Light Work).
E.H. Calculation: Basic Pain: 10%(slight pain) x 50 = 05 x ¼ (occasional) = 1.25 ≈ 01 *
- c. **Constant moderate pain with Heavy Work would modify the 20% rating standard to a 10% standard.**
E.H. Calculation: Basic Pain: 50% x 30 = 15% *
- d. **Frequent moderate Pain With Repetitive Motions of the neck and spine.**
E.H. Calculation: Basic Pain: 40% (Use the Table!) x 15% = 06 ≈ 05 % *

- *At the end of the calculation the Rating Standard is expressed as one of the following values: 1,2,3,5,8,10,13,15 & multiples of 5% thereafter, before modification for age and occupation.*
Rating Schedule-Page 1-13

Work Capacity Functional Loss: One Or Both Lower Extremities																							
Multiple disability factors will have some redundancy in how they affect specific abilities or overall function, and an unrealistic result will be achieved by simply adding factors together. Multiple factors are compacted (scaled down) to avoid duplication and pyramiding. Schedule: Refer to Pages 2-16 to 217, notes 35 to 50 and Page 2-19, notes 1 and 2. On Page 2-16, refer also to Disability # 14 .461 - 80%: Immobility of One Hip Joint requiring the use of Crutch/Crutches.																							
0	03	05	08	10	13	15	20	25	30	35	40	45	50	55	60	65	70	75	80				
↑ No Kneeling or Squatting or Crouching				↑ (A):Climbing, Uneven Ground, Squatting, Kneeling, Crouching, Crawling, Pivoting, Other Similar Activities.																			
↑				↑				↑				↑ No Heavy Work				Limited to Sedentary Work ↓							
Prolonged Sitting ↓				↑				↑				↑ Repetitive Activities				↑ Minimal Physical Demands (Light Work)							
No Very Heavy Work ↓				↑				↑ No Heavy Lifting and all of (A)															
↑				↑ No Climbing or Walking Over Un-even Ground								Semi-Sedentary Work ↓											
↑ No Running				↑ No Prolonged Standing				↑ No Heavy Lifting/Prolonged Weight bearing+(A)															
↑ No Prolonged weight bearing (75% Standing – 25% Sitting Approximately 25%)																							
↑ No Work At Unprotected Heights								↑ Limitation to Weight bearing ½ time (50%)															
↑ No Sustained Activities of The lower Extremities																							
Bilateral Lower Extremities - Functional Loss As Expressed By The Disabling Effects Of Pain.																							
Regulation states that subjective factors of disability should be identified by a description of the activity that produces the symptoms. Pain becomes disabling when its degree affects function. Minimal pain is not disabling. However, slight, moderate and severe reflect increasingly greater degrees of disability on work activity.																							
Evaluation Protocols: 8 CCR 46, 9725 & 9727																							
00	01	02	03	05	08	10	13	15	20	25	30	35	40	45	50	55	60	75	80	90	100		
Constant Level of Pain: As Weighted Index of Disability						Constant Slight-to-moderate ↓						↑				↑ Moderate				Severe ↓			
↑ Minimal/Mild						↑				↑				↑				↑ Severe Pain with Substantial Work					
↑						↑				↑				↑				↑ Severe Pain with Lifting + all of (A)					
Severe Pain: Running ↓				↑ Severe Pain with Kneeling				↑ Severe Pain with Prolonged Weight bearing															
Severe Pain with Prolonged Standing ↓								↑ Severe Pain with All Ankle Motion															
Severity Key: Minimal (00%) Slight (10%) slight-to-moderate (30%) moderate (50%) moderate-to-severe (75%) Severe (100%)																							
Frequency Key: Infrequent (1/5) Occasional (1/4) Intermittent (1/2) Frequent (3/4) (4/4) Constant																							

Einstein-Horner Formulation

Multiple Levels of Pain and Precipitating Activities			
Example # 1: Constant slight pain that increases to moderate with heavy lifting and to moderate-to-severe intermittently with Heavy Work.			
(1) Basic Level of Pain	Constant Slight Pain	10	
(2) Next Level of Pain	Moderate	50	
(3) Subtract #1 from # 2:	Minus (-)	10	
(4) Modify Result by Value Of Activities Precipitating # 2	Heavy Lifting 20%	= 1/5 x	40 = 08
(5) Add Result of # 4 to # 1	10 + 08% = 18% (New Basic Level of Pain)		18
(6) Next Level: Moderate-to-severe Pain	Moderate-To-Severe (75%)	75	
(7) Subtract The Result of # 5: (New Basic Level of Pain)	Minus -	-18	
(8) Modify Result by Frequency in which # 6 occurs: (Intermittently) = 50%	1/2	(57)	28.5
(9) Modify Result by % value for activities precipitating the pain – Heavy Work 30%	30% (28.5) = 8.55		
(10) Add result of #9 to #5 After rounding, the addition becomes the subjective disability rating standard.	18 + 8.55 = 26.55 = 25%*		Standard After Rounding: 25%

By Severity/Frequency/Activities Precipitating the Pain			
Example # 2: Constant slight-to-moderate back pain increasing intermittently to moderate with Very Heavy Lifting			
1. Basic Level of Pain	Constant Slight-To-Moderate Back Pain (30%)	30	
2. "Highest" level of Pain:	Moderate-To-Severe (75%)	75	
3. Subtract #1 from # 2:		Minus -	30
4. Modify # 3 by Frequency in which # 2 occurs: (Intermittently) = 50%		1/2 X	45 22.5
5. Modify # 4 by % value for activities precipitating the pain – Very Heavy Work 10% X			22.5 = 2.25
6. Add result of #4 (or #5) to # 1, the value for the basic level of pain. The sum of # 1 and # 4 (or #5), after rounding, becomes the subjective factors rating standard before modification for age and occupation	30 + 2.25 = 32.25 *		Standard After Rounding: 30%

By Activity That Precipitates The Pain			
Example # 3: Intermittent slight-to-moderate pain with sedentary type activities.			
1. Level of Pain	Intermittent Slight-to-Moderate	15	
2. Activities Values:	Sedentary Type Activities	70%	
3. Multiply # 1 by X 2	15 X 70 =	11	
4. Round result of # 3. After rounding, the rating standard becomes the subjective factors rating standard before modification for age and occupation	11 = 10% *		Standard After Rounding: 10%
* The Resulting standard should be expressed as one of the following values: 1,2,3,5,8,10,13,15 & multiples of 5% thereafter, before modification for age and occupation. (See Page 1-13 of The Schedule.)			

Avoid Compounding Of Disability - Incomplete Descriptions
Incomplete When The Description Is Only By Severity And Frequency

- The "Einstein-Horner Formula" is a valid mathematical process, but must only be used when subjective disability has been properly described by the qualifying factors of 8 CCR 9727.**
- Great caution should be exerted in the use of this formulation when calculating a rating standard for an incomplete description of subjective factors of disability since this is contrary to procedures established by the California Code of Regulations and the result is a compounding of disability.
- Without the proper description of the activities that produces an increased level of pain, it must be assumed that pain increases with all activities.**