

Mechanism of Onset Study – Overview Data Sheet

(Percentages rounded to the nearest 10th)

This surveillance data was collected while providing onsite physical therapy services at a major manufacturing corporation (heavy industrial operation). Services were provided for work-related and not work-related musculoskeletal disorders (MSD).

Category	NIE	Incident Type A	Incident Type B	Trauma	Unknown	Totals	Study Population (Less Unknown & Other)
Overall	690	345	128	158	10	1331	1316
Population %	52.4	26.2	9.7	12.0	N/A	N/A	100
Work-related	462	295	109	103	6	975	967
Group %	47.8	30.5	11.3	10.7	N/A	N/A	100
Population %	35.1	22.4	11.2	7.8	N/A	N/A	73.6
Not Work-related	228	50	19	55	4	356	349
Group %	65.3	14.3	5.4	15.8	N/A	N/A	100
Population %	17.3	3.8	1.4	4.2	N/A	N/A	26.7
Low back	165	144	18	17	2	346	344
Group %	48.0	41.9	5.2	4.9	N/A	N/A	100
Population %					N/A	N/A	26.1
Neck	102	43	6	7	0	158	158
Group %	64.6	27.2	3.8	4.4	N/A	N/A	100
Population %					N/A	N/A	12.0
Mid-back	13	16	2	3	0	34	34
Group %	38.2	47.0	5.9	8.8	N/A	N/A	100
Population %					N/A	N/A	2.6
Spine Combo	24	6	5	8	0	43	43
Group %	55.8	14.0	11.6	18.6	N/A	N/A	100
Population %					N/A	N/A	3.3
LB + Leg	3	4	0	1	0	8	8
Group %	37.5	50.0	0	12.5	N/A	N/A	100
Population %					N/A	N/A	0.6
C/T + Upper Limb	47	4	6	7	0	64	64
Group %	73.4	6.3	9.4	10.9	N/A	N/A	100
Population %					N/A	N/A	4.9
Spine Sub-total:	354	217	37	43	2	653	651
Group %	54.4	33.3	5.7	6.6	N/A	N/A	100
Population %	26.9	16.5	2.8	3.3	N/A	N/A	49.5
Shoulder	69	61	16	21	3	170	167
Group %	41.3	36.5	9.6	12.6	N/A	N/A	100
Population %					N/A	N/A	12.7
Elbow	63	19	14	5	1	102	101
Group %	62.4	18.8	13.9	5.0	N/A	N/A	100
Population %					N/A	N/A	7.7
Wrist/Hand	90	13	3	28	2	136	134
Group %	67.2	9.7	2.2	20.9	N/A	N/A	100
Population %					N/A	N/A	10.2
Arm Combo	34	4	5	2	0	45	45
Group %	75.6	8.9	11.1	4.4	N/A	N/A	100
Population %					N/A	N/A	3.4

U-Limb Sub-total:	256	97	38	56	6	453	447
Group %	57.3	21.7	8.5	12.5	N/A	N/A	100
Population %	19.5	7.4	2.9	4.3	N/A	N/A	34.0
Hip	5	2	0	0	0	7	7
Group %	71.4	28.6	0	0	N/A	N/A	100
Population %					N/A	N/A	0.5
Knee	34	25	42	26	1	128	127
Group %	26.8	19.7	33.1	20.5	N/A	N/A	100
Population %					N/A	N/A	9.7
Ft/Ankle	35	4	11	25	0	75	75
Group %	46.7	5.3	14.7	33.3	N/A	N/A	100
Population %					N/A	N/A	5.7
Leg-Combo	1	0	0	0	0	1	1
Group %	100	0	0	0	N/A	N/A	100
Population %					N/A	N/A	0.08
L-Limb Sub-total:	75	31	53	51	1	211	210
Group %	35.7	14.8	25.2	24.3	N/A	N/A	100
Population %	5.7	2.4	4.0	3.9	N/A	N/A	16.0
Other (3 NWR /2 WR)	5	0	0	0	0	5	0
Group %	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population %	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Overview of History-taking Process to Identify the Mechanism of Onset (MOO):

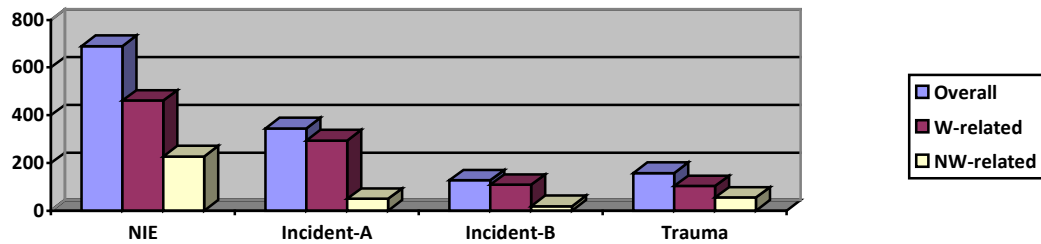
Identifying onset information is the first key question in the Duffy-Rath System© structured interview. The process for obtaining this information is as follows:

1. The patient is first asked to identify when the symptoms of the problem they have come for treatment started; an exact date of onset is listed when possible, or an estimated date when the patient cannot identify an exact date (i.e. list month and year; identify beginning, middle or end of the month when the problem has been present less than 6 months).
2. Once the onset date is identified, the patient is then asked to identify if there was a specific incident or event that caused the symptoms to start at the onset?
3. Trauma is identified as the MOO when there is clear and unambiguous evidence of high velocity, large magnitude impact loading to the musculoskeletal system.
4. No Incident or Event (NIE) is identified when the patient unambiguously reports there is no identifiable event, incident or trauma that led to the onset of their symptoms and signs (i.e. they simply say “I don’t know”).
5. Further questioning is pursued when the MOO is not clearly trauma or NIE:
 - 4.1 If they identify an incident or event, ascertain the biomechanics (position, movement, activity, task etc.) performed when the symptoms first commenced.

- 4.1.1 If the event or incident involved no unusual biomechanical forces (i.e. an activity normally performed without incident) the MOO is Incident Type A. The position of the body part and the type of biomechanical loading are identified.
- 4.1.2 If the event or incident involves an unusual, unguarded or unexpected biomechanical force (i.e. a slip, but did not fall, attempted to catch a falling box etc.) the MOO is Incident Type B. The position of the body part and the type of biomechanical loading is identified.
- 4.1.3 If they cannot associate an incident or event with the start of the symptoms the MOO is NIE.

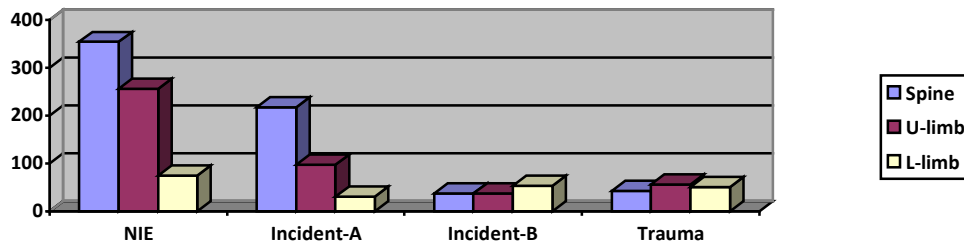
Overall Analysis - Mechanism of Onset for Musculoskeletal Disorders: for the entire study population, three-quarters of the patients had a non-traumatic mechanism of onset; i.e. NIE + Incident-A. Half of the patients were unable to identify any mechanism of onset (NIE); not work-related > work-related. In these two groups lifestyle factors (home, work & play) are the sole root cause for the problem.

Consecutive Case Series - Mechanism of Onset (n-1,316)



Body Region Analysis - Mechanism of Onset for Musculoskeletal Disorders: lifestyle factors are more prominent as the mechanism of onset for spine and upper limb disorders than for lower limb disorders.

Body Region - Mechanism of Onset Study



References:

Rath W, Rath JD. Clinical assessment of the spine and proximal limbs. Duffy-Rath Workshops and Seminars Course Manual, 2008.