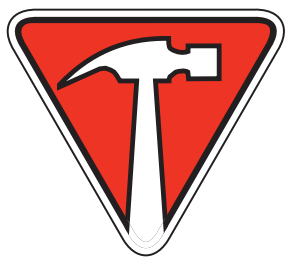


Illnesses and Injuries in the Manitoba Construction Sector

2000-2005

January 2007



SAFE WORK

S SPOT THE HAZARD
A ASSESS THE RISK
F FIND A SAFER WAY
E EVERYDAY

TM

Acknowledgements

Development of this report on Trends in Injuries and Illnesses in the Manitoba Construction Sector 2000 to 2005 is the result of the cooperative efforts of the Workplace Safety and Health Division of Manitoba Labour and Immigration and the Workers Compensation Board of Manitoba (WCB). It is an integral component of Manitoba's joint injury prevention strategy (*SAFE Work*).

Committee members involved in this initiative to develop improved workplace injury and illness surveillance and reporting systems for the province have included Dr. Ted Redekop and Jo-Anna Guerra from the Workplace Safety and Health Division of Manitoba Labour and Immigration and from the Workers Compensation Board of Manitoba, Barry Warrack, Michael Rohatynsky, Janet Sprout, Murray Lempen, Jim Brown, Kwame Darko-Mensah and Krista Breckman.

Executive Summary

This report on injuries and illnesses in Manitoba's construction industry is a joint initiative of the Workers Compensation Board of Manitoba and the Workplace Safety and Health Division of Manitoba Labour and Immigration. It is one component of the SAFE Work strategy to foster a strong workplace safety and health culture in Manitoba.

This report provides a comprehensive review of injuries and illnesses in Manitoba's construction sector for the period 2000 through 2005. Data has been provided on trends in numbers and types of both time loss and no time loss injuries, injury rates, fatalities and characteristics of injured workers. The data is presented in a series of figures with summary tables provided at the end of this report.

Major highlights of the Report are:

- ☑ Following an initial 17% drop in the number of injuries between 2000 and 2001, construction injuries rose by 23% from 2001 to 2005. Heavy construction had a 30% increase over this period while the number of injuries in the building construction subsector grew by 21%. Over the 2000 to 2005 period, the number of accepted work related injuries in Manitoba declined 12%.
- ☑ After a drop of 13% from 2000 to 2001, the construction industry's time loss injury rate fluctuated over the period from 2001 to 2005. There was a reduction in the rate of 4% from 2000 to 2005. Over this period of time, Manitoba's time loss injury rate for all industry sectors declined 21%.
- ☑ About one-fifth of construction industry injuries are incurred by youth.
- ☑ From 2000 to 2005, 35 construction workers suffered a work-related fatality, representing 17% of all occupational fatalities in Manitoba since 2000. Half of these deaths were due to occupational diseases – primarily due to asbestos exposure -- in the building construction subsector.

Introduction

Over the last several years, economic activity in the construction industry in Manitoba has been very strong. A buoyant housing market coupled with several large-scale construction projects have contributed to labour shortages in this sector.

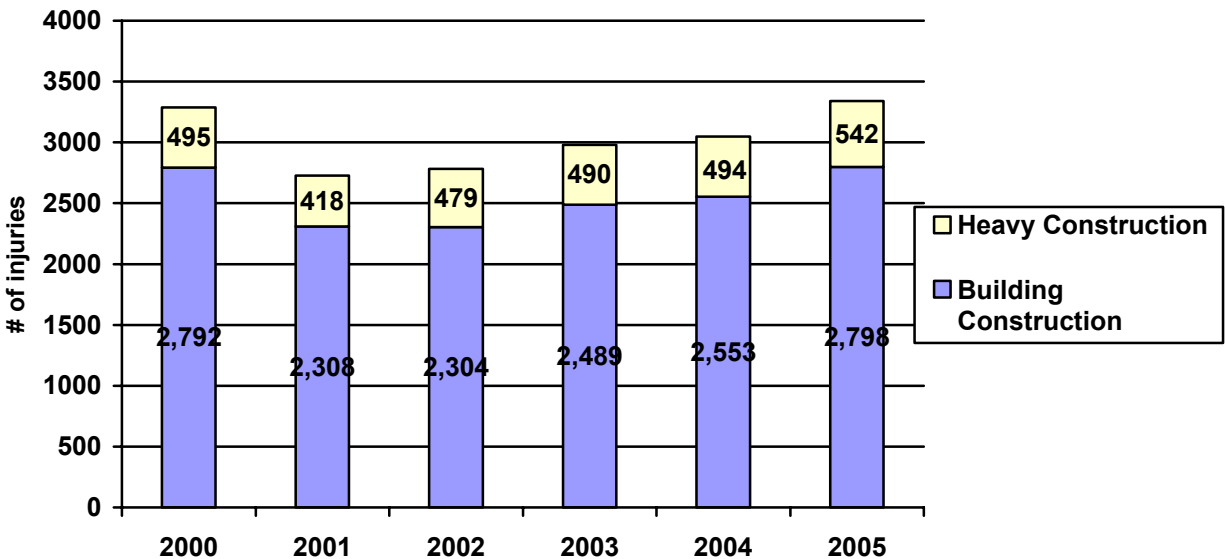
In Manitoba, the construction industry can be divided into two sub-sectors: building construction and heavy construction. Building construction consists of building contractors, home builders, electrical, plumbing/mechanical systems contractors, bridge building and roofing contractors. The heavy construction sub-sector is made up of road construction and foundation excavation, sewer and water, equipment operators and piling.

This report provides a comprehensive review of injuries and illnesses in Manitoba's construction sector for the period 2000 through 2005. Data has been provided on trends in numbers and types of both time loss and no time loss injuries, injury rates, fatalities and characteristics of injured workers. The data is presented in a series of figures with summary tables provided at the end of this report.

Trends in Numbers of Injuries

The number of accepted work related injuries in Manitoba declined 12% from 2000 to 2005. However, following a promising but short lived 17% drop in injuries between 2000 and 2001, construction injuries have risen by 23% from 2001 to 2005. Heavy construction had the largest increase, 30% over this period. Building construction's injuries grew by 21% (Figure 1).

Figure 1 Injuries and Illness Trends, Construction

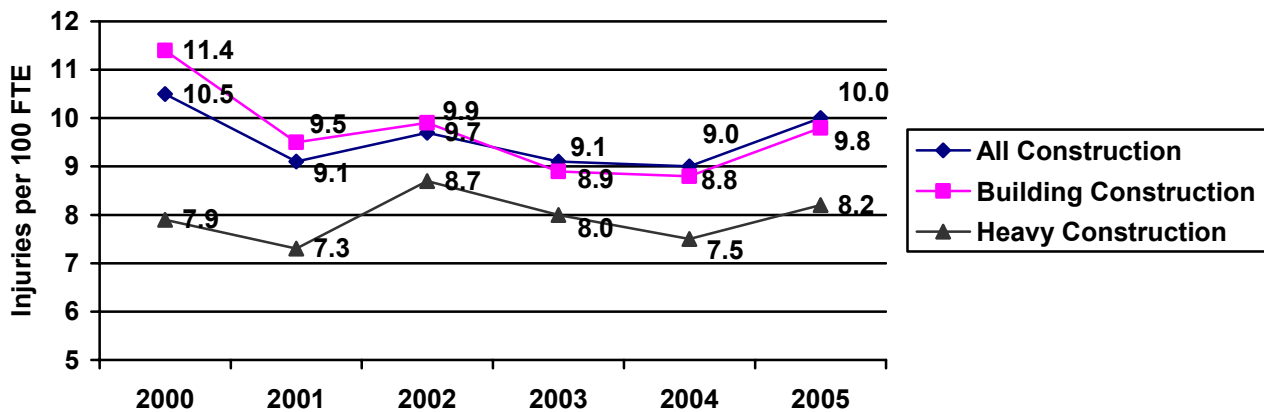


Injury Rate Trends

Since 2000, Manitoba's time loss injury rate for all industry sectors declined 21%. The construction industry's time loss injury rate fell 13% from 2000 to 2001, but lost almost all of that single year's improvements in the period from 2001 to 2005. Both the building and heavy construction sub-sectors also experienced a significant drop in time loss injury rates in 2000/2001. The building construction sub-sector's time loss rates fluctuated from 2001 to 2005, resulting in an overall decline in the time loss rate of 14% over the six-year period. The time loss rate in heavy construction has risen 4% since 2000 (Figure 2).

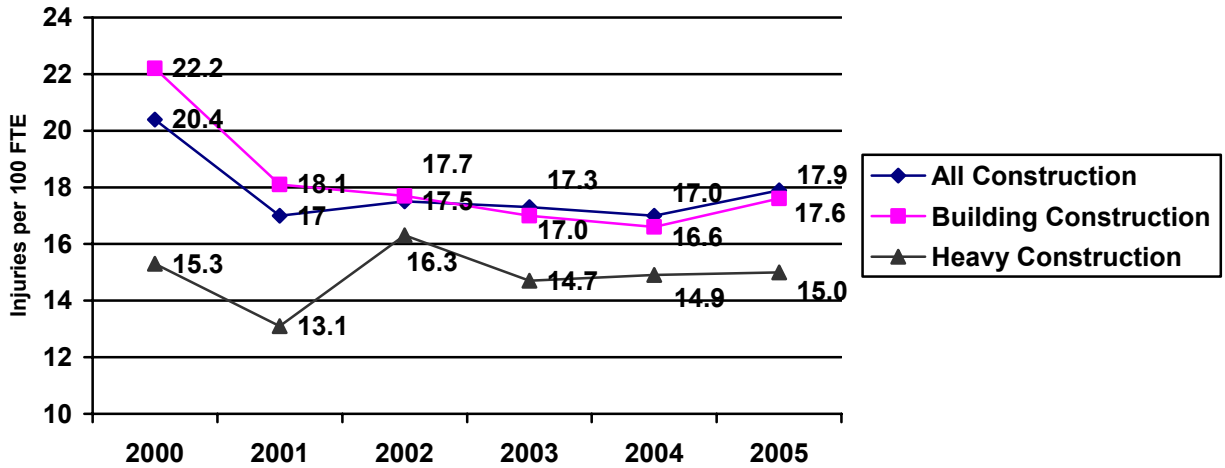
The construction industry's all injury rates have shown similar trends, falling initially and leveling out at the end of the six-year period (Figure 3).

Figure 2 Time Loss Injury Rates, Construction Industry Sub-sectors¹



¹ Note: The methodology used to develop the injury rates uses Statistics Canada wage data (collected using a survey methodology) classified by industry sector and sub-sector using the NAICS classification system. In matching ratecode groups to NAICS classifications to select the average weekly wage to be used, not all ratecode groups can be strictly matched on a one-to-one basis. This can result in the situation where the overall sector injury rate in construction may be higher than either of the injury rates for building or heavy construction.

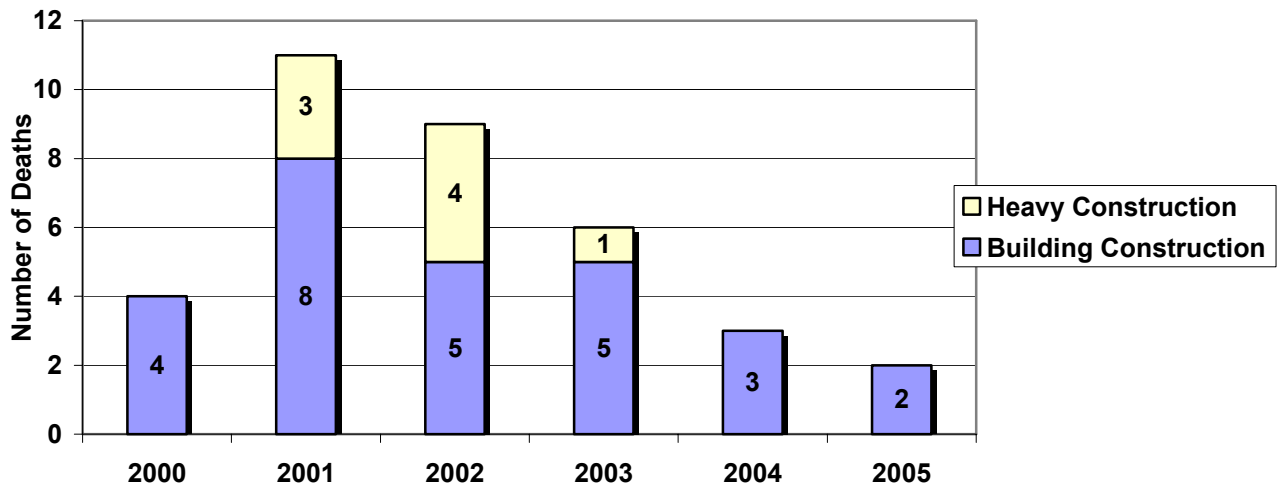
Figure 3 All Injury Rates, Construction Sub-sectors



Fatalities

From 2000 to 2005, 35 construction workers suffered a work-related fatality, representing 17% of all occupational fatalities in Manitoba since 2000. Of these 35 fatalities, 18 were from trauma sustained from acute hazards while 17 were from occupational disease. Figure 4 outlines the yearly fatalities in the construction sectors over this period. All occupational disease fatalities occurred in the building construction sector and were primarily related to asbestos exposure.

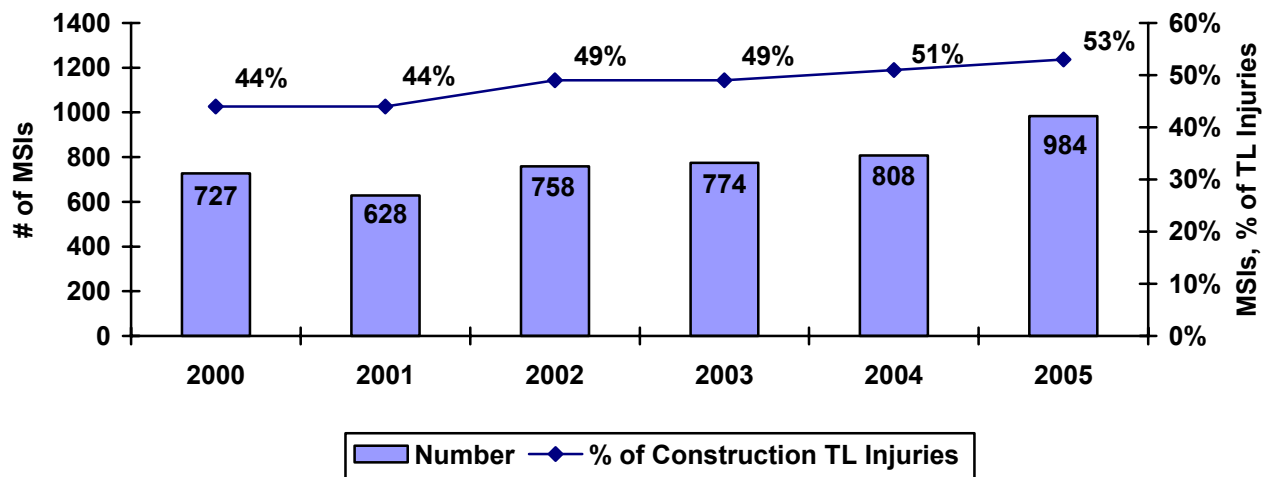
Figure 4 Fatalities, Construction Sub-sectors



Musculoskeletal Injuries

Musculoskeletal injuries² (MSIs) are increasingly significant types of workplace injuries, with their share of all time loss injuries growing from 52% in 2000 to 61% in 2005. MSIs are less prevalent in the construction industry than in Manitoba workplaces as a whole. However, their incidence is growing and they now make up more than half of all time loss injuries in the construction sector (Figure 5). The building construction sector is responsible for about 85% of all MSIs in the sector overall, which is approximately consistent with their percentage of all time loss injuries in the construction sector.

Figure 5 Trends in Musculoskeletal Injuries, Construction



² Musculoskeletal injuries, or MSIs, are injuries or disorders of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including sprains, strains, and inflammation that may be caused or aggravated by work. Research is showing that MSIs may be caused by a combination of several factors, including the physical demands of work (such as vibration, heavy lifting and awkward postures), workplace psychosocial issues (such as the worker's perception of the work and the degree to which they have control over their job, and job satisfaction), and individual characteristics (such as gender, weight, previous injury, and smoking habits).

Age Group Trends

The proportion of accepted workplace injuries incurred by Manitoba youth in the construction industry — holding steady from 2000 to 2005 at 21% — is higher than their proportion of all Manitoba accepted injuries. Youth’s proportion of all Manitoba workplace injuries improved slightly from 2000 to 2005 (declining from 19% of all injuries in 2000 to 17% in 2005). In the heavy construction sub-sector, while there was some improvement (to as low as 15% of injuries in 2003), youth’s share of all injuries increased to 21% in 2005 (Figures 6 and 7, Summary Tables 1 and 2).

Figure 6 Proportion of Injuries and Illnesses by Age Group, Building Construction

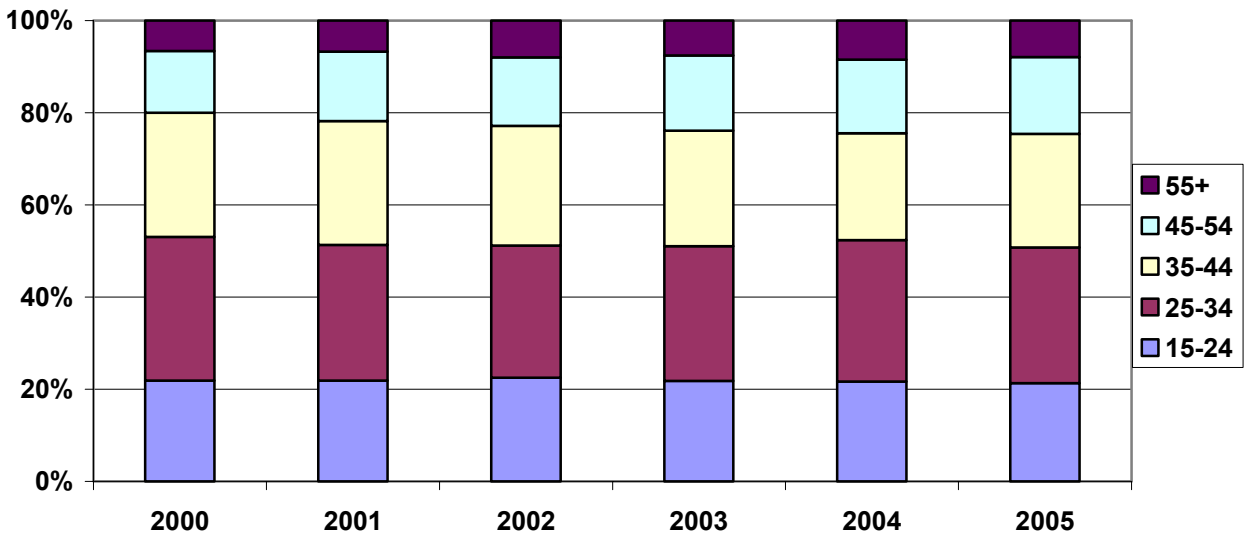
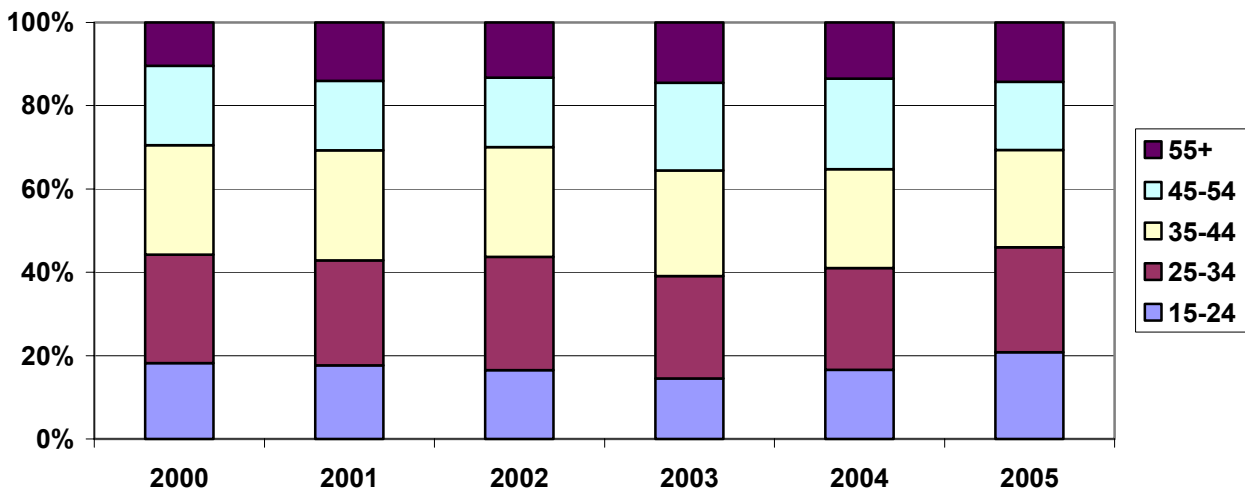


Figure 7 Proportion of Injuries and Illnesses by Age Group, Heavy Construction

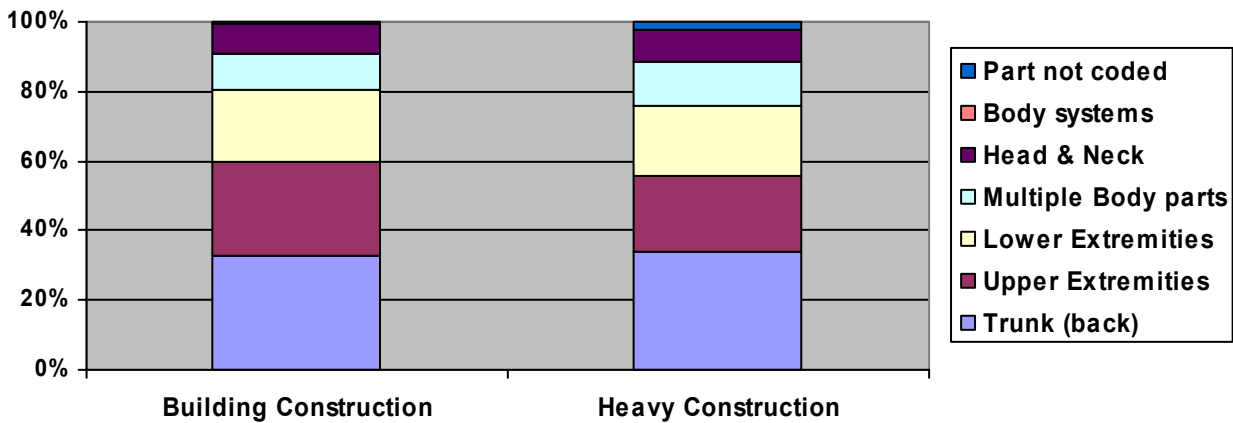


Workers aged 45 and older increased their share of all accepted injuries in both the construction sector and in Manitoba workplaces overall. Construction workers in this age group had 21% of all accepted injuries in 2000, rising to 26% in 2005. This trend was stronger in the building construction subsector. The proportion of workplace injuries in all sectors incurred by workers aged 45 and above increased from 25% in 2000 to 34% in 2005.

Body Part Injured

Time loss injuries in the construction sector tend to occur to the trunk (primarily the back) and upper extremities (arms and legs). Workers in the building construction sub-sector are more likely to incur injury to their upper extremities than their counterparts in the heavy construction sub-sector.

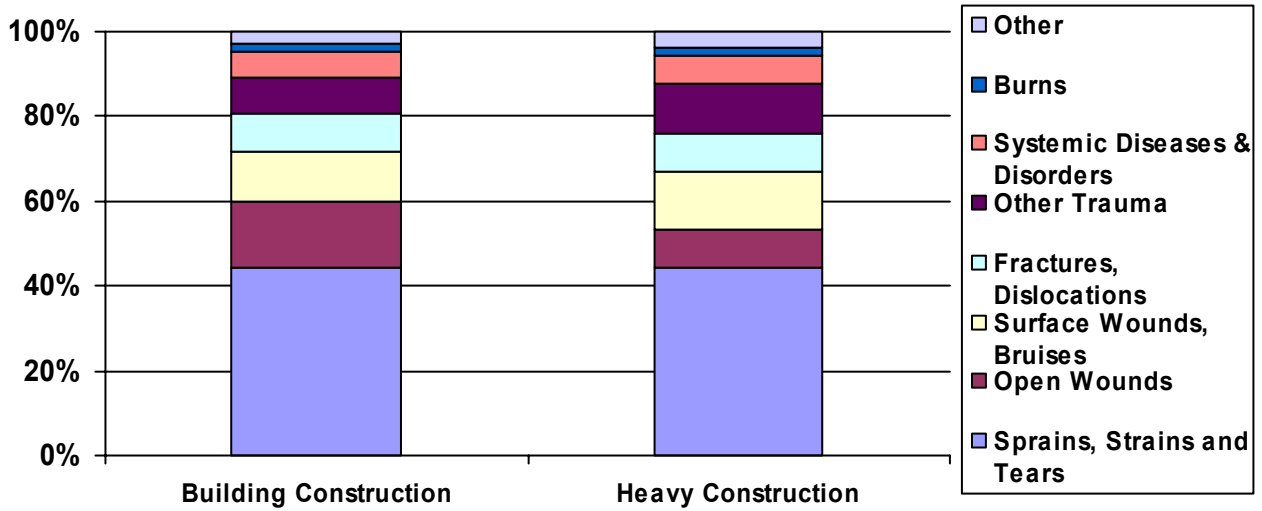
Figure 8 Percentage of Injuries and Illnesses by Part of Body Injured, Construction Sub-sectors, Data aggregated from 2000 to 2005



Nature of Injury

The nature of injury is the medical diagnosis related to a particular injury or illness. Construction workers are most likely to incur sprains, strains and tears. From 2000 to 2005, a greater percentage of the building construction sub-sector's time loss injuries were open wounds while the heavy construction sub-sector had a higher prevalence of surface wounds and bruises and other traumatic injuries and disorders. Both sub-sectors had similar prevalence of sprains, strains and tears, fractures and dislocations and systemic diseases like hearing loss (Figure 9).

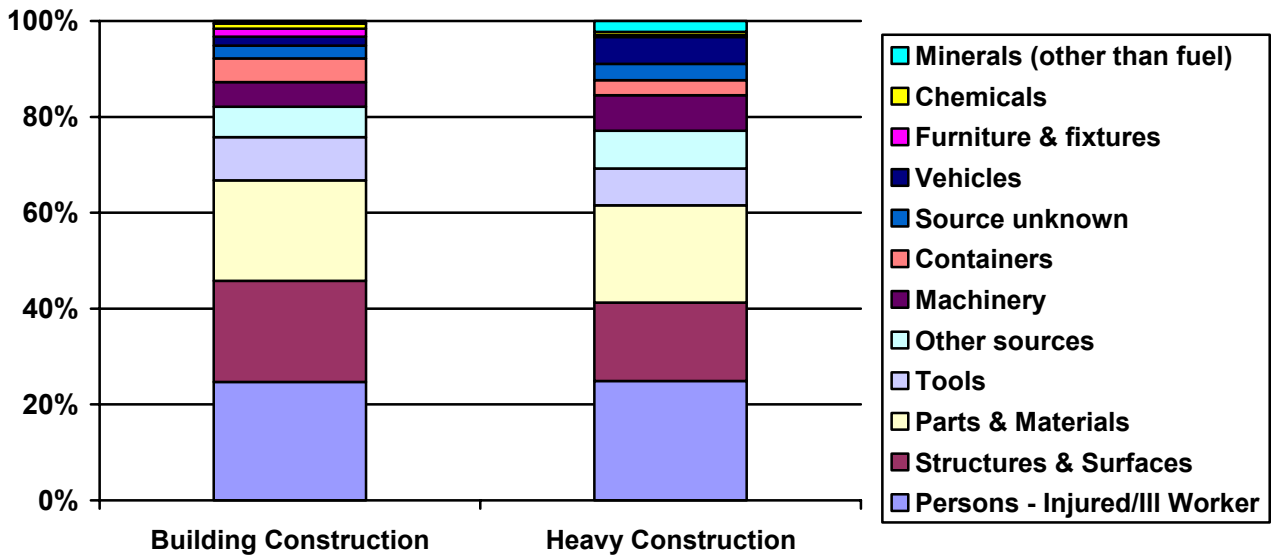
Figure 9 Percentage of Injuries and Illnesses by Nature of Injury, Construction Sub-sectors, Data aggregated from 2000 to 2005



Source of Injury

The source of injury is the object, substance, exposure or bodily motion that caused the injury or illness. Construction workers, regardless of whether they work in the building or heavy construction sub-sectors, are most likely to incur a time loss injury as a result of their own bodily motion or reaction (noted in Figure 10 as 'Persons – Injured/Ill Worker), or from contact with structures and surfaces or tools, parts and materials. Due to the type of work undertaken in the heavy construction sub-sector, workers in that industry are more likely than those employed in building construction to be injured by a vehicle or machinery. Building construction workers are more likely to be injured due to contact with structures and surfaces.

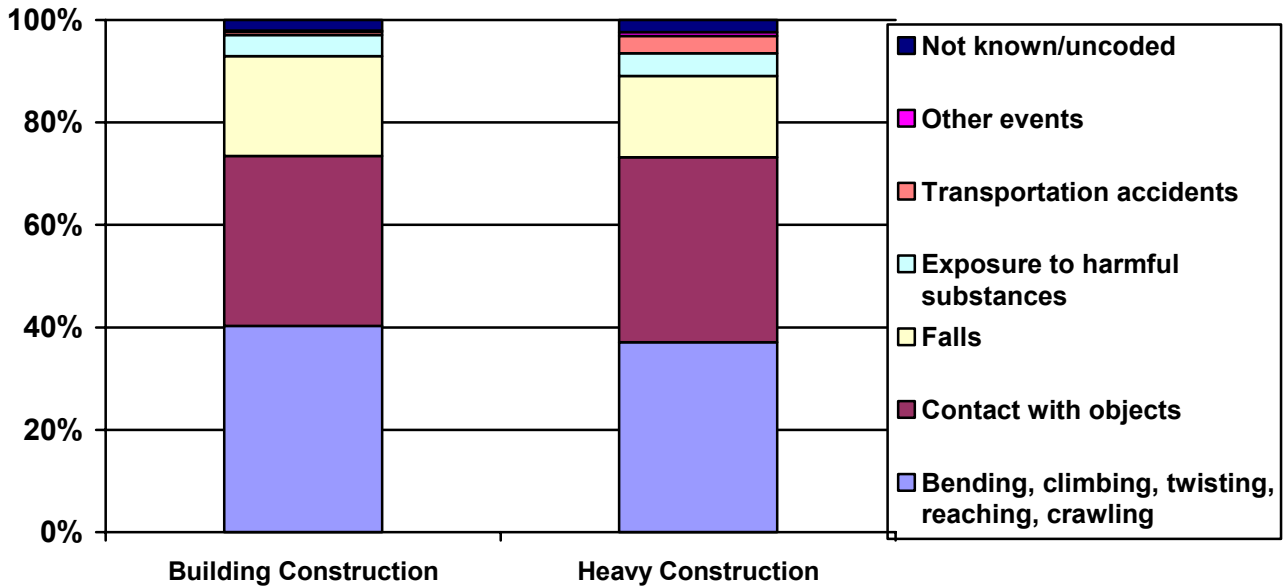
Figure 10 Percentage of Injuries and Illnesses by Source of Injury, Construction Sub-sectors, Data aggregated from 2000 to 2005



Event Causing Injury

The event causing injury refers to the manner in which the injury was incurred. Construction workers are most likely to be injured due to bending, twisting, reaching or climbing, contact with objects, or falls. Building construction workers were more likely than their counterparts in heavy construction to miss work due to an injury caused by bending, twisting, reaching, or climbing. They were also more likely to have a fall resulting in a time loss injury than those working in the heavy construction sub-sector (Figure 11). In the heavy construction sub-sector, there was a greater likelihood than in the building construction sub-sector of time loss injuries occurring as a result of contact with objects and from transportation accidents.

Figure 11 Percentage of Injuries and Illnesses by Event, Construction Sub-sectors, Data aggregated from 2000 to 2005



Summary Table 1: Building Construction Sector Injuries and Illnesses, 2000-2005

Category	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Injury Type												
Time-loss Injuries	1,415	51	1,221	53	1,283	56	1,306	52	1,343	53	1,576	56
No Time-loss	1,377	49	1,087	47	1,021	44	1,183	48	1,210	47	1,222	44
Total	2,792	100	2,308	100	2,304	100	2,489	100	2,553	100	2,798	100
FTE Workers	12,650		12,900		13,150		14,750		15,450		16,250	
Musculoskeletal Injuries (Time Loss)												
MSI Time-loss (MSIs as a Percentage of Time loss)	618	44	552	45	616	48	654	50	673	50	833	53
Building Construction MSI Injury Rate (per 100 FTE Workers)	4.9		4.3		4.7		4.4		4.4		5.1	
Building Construction Injury Rates (These rates are based on time loss claims reported year not accident year.)												
Building Construction Time Loss Injury Rate (per 100 FTE Workers)	11.4		9.5		9.9		8.9		8.8		9.8	
Building Construction All Injury Rate (per 100 FTE Workers)	22.2		18.1		17.7		17.0		16.6		17.5	
Gender (All Injuries)												
Male	2,725	99	2,271	99	2,267	99	2,444	99	2,514	99	2,739	99
Female	36	1	25	1	24	1	38	1	26	1	48	1
Total	2,761	100	2,296	100	2,291	100	2,482	100	2,540	100	2,787	100

Note: Because of rounding, percentage totals may not always add to 100%

Summary Table 1: Building Construction Sector Injuries and Illnesses, 2000-2005 Cont'd

Category	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Age (All Injuries)												
15-24	596	22	498	22	512	23	538	22	543	22	590	21
25-34	848	31	669	29	652	29	720	29	771	31	816	29
35-44	732	27	610	27	590	26	618	25	582	23	683	24
45-54	366	13	343	15	339	15	403	16	400	16	461	17
55+	179	7	153	7	181	8	186	8	213	8	219	8
Total	2,721	100	2,273	100	2,274	100	2,465	100	2,509	100	2,769	100
Body Part Injured (Time-loss Injuries)												
Trunk	439	32	380	32	398	32	440	34	444	33	540	34
Upper Extremities	342	25	343	29	305	24	341	26	369	28	431	27
Lower Extremities	284	21	230	19	283	23	277	22	260	20	308	20
Head and Neck	124	9	98	8	96	8	97	8	132	10	142	9
Multiple Body Parts	161	12	136	11	156	12	128	10	112	8	135	9
Body Systems	18	1	5	0	15	1	4	0	11	1	13	1
Total	1,368	100	1,192	100	1,253	100	1,287	100	1,328	100	1,569	100
Nature of Injury (Time-loss Injuries)												
Traumatic Injuries and Disorders	1,261	92	1,116	94	1,171	93	1,183	92	1,221	92	1,451	92
Occupational Illnesses	107	8	76	6	85	7	104	8	107	8	118	8
Total	1,368	100	1,192	100	1,256	100	1,287	100	1,328	100	1,569	100

Note: Because of rounding, percentage totals may not always add to 100%

Summary Table 1: Building Construction Sector Injuries and Illnesses, 2000-2005

Primary Source of Injury (Time-loss Injuries)	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Persons-injured, ill worker	350	25	364	30	401	32	387	30	265	20	324	21
Structures and Surfaces	256	18	245	20	276	22	269	21	291	22	381	24
Parts and Materials	301	22	245	20	224	18	241	19	309	23	388	25
Containers	99	7	46	4	56	4	50	4	64	5	87	6
Vehicles	26	2	18	1	18	1	23	2	34	3	35	2
Tools, Instruments and Equipment	128	9	95	8	121	10	111	9	140	10	137	9
Machinery	76	5	60	5	50	4	86	7	78	6	69	4
Other Sources	72	5	78	6	58	5	76	6	99	7	101	6
Furniture and Fixtures	24	2	17	1	14	1	23	2	27	2	31	2
Chemicals and Chemical Products	18	1	7	1	14	1	15	1	19	1	12	1
Source Unknown or Not Coded	47	3	29	2	27	2	19	1	15	1	7	0
Total	1,397	100	1,204	100	1,259	100	1,300	100	1,341	100	1,572	100
Type of Event or Exposure of Injury (Time-loss Injuries)												
Bending, Reaching, Twisting, Crawling	570	40	485	40	523	41	558	43	503	38	644	41
Contact with Objects, Equipment	478	34	415	34	397	31	399	31	480	36	528	34
Falls	230	16	230	19	274	21	260	20	266	20	329	21
Exposure to Harmful Substances	67	5	50	4	45	4	56	4	64	5	52	3
Transportation Incidents	13	1	4	0	5	0	8	1	13	1	11	1
Assaults and Violent Acts	3	0	1	0	0	0	4	0	0	0	2	0
Fires and Explosions	3	0	0	0	5	0	0	0	0	0	1	0
Event Unknown/Missing/Not Coded	48	3	29	2	27	2	19	1	15	1	7	0
Total	1,412	100	1,214	100	1,276	100	1,304	100	1,341	100	1,574	100

Summary Table 2: Heavy Construction Sector Injuries and Illnesses, 2000-2005

Category	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Injury Type												
Time-loss Injuries	258	52	229	55	252	53	265	54	247	50	299	55
No Time-loss	237	48	189	45	227	47	225	46	247	50	243	45
Total	495	100	418	100	479	100	490	100	494	100	542	100
FTE Workers	3,400	-	3,300	-	3,100	-	3,400		3,400		3,750	
Musculoskeletal Injuries (Time Loss)												
MSI Time-loss (MSIs as a percent of Time loss)	109	42	86	38	142	56	120	45	135	55	151	51
Heavy Construction MSI Injury Rate (per 100 FTE Workers)	3.2		2.6		4.6		3.5		4.0		4.0	
Heavy Construction Injury Rates												
Heavy Construction Time Loss Injury Rate (per 100 FTE Workers)	7.9	-	7.3	-	8.7	-	8.0		7.5		8.2	
Heavy Construction All Injury Rate (per 100 FTE Workers)	15.3	-	13.1	-	16.3	-	14.7		14.9		15.0	
Gender (All Injuries)												
Male	479	98	409	99	472	100	477	98	482	98	533	99
Female	12	2	4	1	2	0	9	2	8	2	8	1
Total	491	100	413	100	474	100	486	100	490	100	541	100

Note: Because of rounding, percentage totals may not always add to 100%

Summary Table 2: Heavy Construction Sector Injuries and Illnesses, 2000-2005

Category	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Age (All Injuries)												
15-24	89	18	73	18	77	16	70	15	81	17	112	21
25-34	127	26	104	25	127	27	118	25	119	24	136	25
35-44	128	26	109	26	123	26	122	25	116	24	126	23
45-54	93	19	69	17	78	17	101	21	106	22	88	16
55+	51	10	58	14	62	13	70	15	66	14	77	14
Total	488	100	413	100	467	100	481	100	488	100	539	100
<i>Body Part Injured (Time-loss Injuries)</i>												
Trunk	85	35	67	31	90	36	84	32	88	36	112	38
Upper Extremities	47	19	52	24	51	20	72	28	53	22	65	22
Lower Extremities	58	24	48	22	62	25	53	20	47	19	46	15
Head and Neck	22	9	17	8	17	7	21	8	24	10	38	13
Multiple Body Parts	34	14	31	14	30	12	30	11	32	13	35	12
Body Systems	0	0	1	0	1	0	1	0	0	0	2	1
Total	246	100	216	100	251	100	261	100	244	100	298	100
<i>Nature of Injury (Time-loss Injuries)</i>												
Traumatic Injuries and Disorders (sprains, fractures, open wounds)	230	93	200	93	234	93	230	88	224	92	269	90
Occupational Illnesses (hearing loss, asbestos related cancers)	16	7	16	7	17	7	31	12	20	8	29	10
Total	246	100	216	100	251	100	261	100	244	100	298	100

Note: Because of rounding, percentage totals may not always add to 100%

Summary Table 2: Heavy Construction Sector Injuries and Illnesses, 2000-2005

Primary Source of Injury (Time-loss Injuries)	2000		2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%	N	%
Persons-bodily position or repetitive motion	64	25	75	33	101	40	72	27	69	28	57	19
Structures and Surfaces	36	14	30	13	46	18	49	18	37	15	55	18
Parts and Materials	50	19	49	21	49	19	47	18	44	18	76	25
Containers	13	5	6	3	6	2	9	3	10	4	5	2
Vehicles	20	8	12	5	6	2	7	3	24	10	18	6
Tools, Instruments and Equipment	20	8	11	5	13	5	24	9	19	8	32	11
Machinery	20	8	8	4	12	5	28	11	23	9	24	8
Other Sources	18	7	12	5	12	5	21	8	15	6	27	9
Furniture and Fixtures	0	0	4	2	0	0	1	0	0	0	1	0
Chemicals and Chemical Products	1	0	0	0	3	1	3	1	3	1	1	0
Source Unknown or Not Coded	16	6	22.	10	4	2	4	2	3	1	3	1
Total	258	100	229	100	252	100	265	100	247	100	299	100
Type of Event or Exposure of Injury (Time-loss Injuries)												
Bending, Reaching, Twisting, Crawling	87	34	84	37	120	48	94	35	100	40	90	30
Contact with Objects, Equipment	99	38	88	38	74	29	107	40	78	32	114	38
Falls	30	12	29	13	43	17	45	17	41	17	58	19
Exposure to Harmful Substances	11	4	7	3	9	4	11	4	11	4	19	6
Transportation Incidents	16	6	5	2	2	1	4	2	10	4	16	5
Assaults and Violent Acts	1	0	1	0	0	0	0	0	2	1	0	0
Fires and Explosions	2	1	1	0	1	0	0	0	2	1	1	0
Event Unknown/Missing/Not Coded	12	5	14	6	3	1	4	2	3	1	1	0
Total	258	100	229	100	252	100	265	100	247	100	299	100