

Back injuries at work, 1982-1990

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Work injuries not only cause physical, financial and emotional hardships for workers and their families, but they also reduce employee productivity and morale. Each year, Workers' Compensation Boards in Canada accept more than half a million time-loss claims due to work accidents. More than one-quarter of these claims are for back injuries. [\(1\)](#)

Work-related back injuries may be caused, for example, by a single instance of overexertion or develop as a result of repeated motion over time. All workers, however, are not equally likely to sustain back injuries, as some occupations and industries expose men and women to greater risks than do others.

This article traces the pattern of growth in the number of back-injury claims accepted by Workers' Compensation Boards during the last decade. It also outlines the characteristics of workers filing those claims, and describes the nature of their injuries and the circumstances in which they occurred. [\(2\)](#)

Most common injury

Throughout the past decade, back injuries accounted for more Workers' Compensation claims than injuries to any other body part. In 1990, for example, Workers' Compensation Boards across Canada paid lost time benefits to workers for 164,000 back injuries. [\(3\)](#) The next most common claims were for hand, wrist or finger injuries (122,000). The number of other time-loss claims ranged from 56,000 for foot, ankle or toe injuries down to 25,000 for injuries to the chest, hips or abdomen ([Chart A](#)).



Chart A Back injuries were the most frequently compensated claims in 1990.

Source: National Work Injuries Statistics Program

During the 1980s, claims for back injuries rose faster than claims for other injuries. Back-injury claims grew 33% between 1982 and 1990, while other injury claims increased only 18%. Thus, back injuries constituted a gradually rising share of compensated work injuries: 28% in 1990, compared with 26% in 1982. (Note: The drop in claims for all types of injuries between 1989 and 1990 ([Table 1](#)) may be partly attributed to plant closures and layoffs stemming from the economic recession.) [\(4\)](#)



Table 1 **Time-loss claims by sex, 1982 to 1990.***

Source: *National Work Injuries Statistics Program*

* *The Yukon is excluded from work injuries data.*

Men make most back-injury claims

Far more men than women suffer work-related back injuries (121,000 compared with 42,000 in 1990). This undoubtedly reflects the concentration of men in industries and occupations where accidents tend to occur. In 1990, men accounted for 74% of all time-loss back-injury claims, although they comprised 54% of paid workers [\(5\)](#) ([Chart B](#)).



Chart B **In 1990, men accounted for three-quarters of back injuries, but just over half of paid workers.**

Source: *National Work Injuries Statistics Program and Labour Force Survey*

However, among people filing claims, women were more likely than men to have injured their backs. Nearly one-third of women's time-loss claims in 1990 were for back injuries, compared with just over one-quarter of men's claims.

As well, women's share of back-injury claims increased throughout the 1980s. By 1990, 26% of back-injury claims were made by women, compared with just 18% in 1982 ([Table 1](#)). Much of this rise mirrors the increase in women's labour force participation, as well as expansion of Workers' Compensation coverage to the service sector, [\(6\)](#) where many women are employed and where most of their claims

originate.

Different age patterns for men and women

Overall, back-injury claims tend to be made by younger workers. But this general trend is a reflection of men's back injuries, which constitute three-quarters of all claims. In fact, the ages at which male and female workers are likely to experience back injuries differ.

The majority of male workers who made back-injury claims in 1990 were under age 35. That year, 37% of men with back-injury claims were aged 25 to 34, surpassing the proportion of employed men in this age range (29%). Another 17% were aged 15 to 24, roughly the same as their share of paid workers (18%). On the other hand, fewer than half (46%) of men making back-injury claims were aged 35 and over, although 53% of employed men were in this age group ([Table 2](#)).



Table 2 **Back-injury time-loss claims and paid workers by selected characteristics, 1990.**

Source: *National Work Injuries Statistics Program and Labour Force Survey*

Men make most back-injury claims

Women making back-injury claims tend to be older. Fully 54% of women with back injuries were aged 35 and over, whereas this age group represented 50% of female workers. Just under a third (31%) of women with back-injury claims were aged 25 to 34, closely matching the proportion of female workers in this age group (30%). The remaining 15% of women making claims were aged 15 to 24, even though this age group represented 20% of female workers.

Overexertion is main cause

In 1990, almost all back injuries were sprains or strains (83%). Another 5% were impact injuries, while a variety of other conditions, such as inflammations and multiple injuries, made up the remaining 12%.

Overexertion was the major cause of back injuries ([Chart C](#)). Nearly two-thirds (63%) of all job-related back injuries sustained by both men and women in 1990 were due to overexertion, usually while lifting heavy objects. [\(7\)](#) Another 17% of back injuries were the result of specific movements (for example,

stretching to move a patient in bed) or involuntary movements (for instance, recovering from a slip on a wet floor). Falls accounted for about 12% of all back injuries. Most of the falls experienced by women were from the same level (onto floors or against objects), but about half of those experienced by men were from elevations, such as ladders, stairs, or vehicles.



Chart C In 1990, most back injuries resulted from overexertion.

Source: National Work Injuries Statistics Program

Risk related to industry

Not surprisingly, back-injury claims are distributed unevenly among industries because of variations in the physical effort required to produce different goods and services. In addition, coverage of workers in high-risk industries, such as forestry and construction, may vary by province.

In 1990, 29% of back-injury claims originated in manufacturing, although these industries employed just 17% of the paid workforce. The pattern was similar in health and social services, [\(8\)](#) the source of 13% of claims, but just 10% of the paid workforce. As well, in construction, the proportion of claims for back injuries (9%) exceeded that industry's share of paid workers (6%).

By contrast, industries normally associated with little physical effort accounted for relatively few back-injury claims. For instance, the proportion of claims originating in education (2%) was far surpassed by the percentage of workers employed in this industry (7%).

Injury-prone occupations

Of course, the probability of experiencing a back injury is directly linked to a worker's occupation and the related daily tasks. Much of the difference in the prevalence of back-injury claims among industries, and indeed, between men and women, is attributable to the clustering of occupations within industries and also to the relative concentration of men and women in these occupations.

Among men, six blue-collar occupation groups accounted for over 70% of back-injury claims: product fabricating, assembling and repairing; construction trades; transport equipment operating; material handling; processing; and machining. However, together these occupations represented only 39% of male workers.

More specifically, back-injury claims were most common among men employed in occupations that

involve lifting, for example, truck drivers, [\(9\)](#) longshoremen, construction labourers, and motor vehicle mechanics and repairmen.

By contrast, back injuries were rare among men in most white-collar occupations. For instance, just 1% of back-injury claims were made by men in managerial or administrative positions, whereas 15% of male workers were employed in these occupations. The pattern was similar in natural sciences, social sciences, and teaching, as well as in clerical and sales occupations.

Among women, the distribution of back-injury claims by occupation differed from that of men. Fully 33% of women with claims for back injuries in 1990 worked in health-related occupations, far above the proportion of female workers employed in this occupation group (10%). Service occupations accounted for another 22% of back-injury claims made by women, whereas 15% of women worked in such jobs. And although few women have blue-collar occupations, they represented a relatively large share of back injuries. In 1990, 15% of the women who made back-injury claims worked in product fabricating, assembling and repairing, processing, or material handling, yet just 6% of female workers were employed in these occupations.

As is the case for men, back injuries tend to be experienced by women in jobs that require considerable physical exertion. For instance, nurses, chefs and cooks, waitresses, janitors and cleaners accounted for relatively large shares of women's back-injury claims.

A small number of back-injury claims in some occupations does not necessarily mean that few workers are being injured. Instead, it may reflect a low level of coverage by Workers' Compensation. For example, many workers in beauty and barber shops, and laundries and cleaners are excluded from coverage under some provincial Workers' Compensation Acts.

Summary

Throughout the 1980s, back injuries increased faster than other compensable injuries, so that by 1990 they constituted 28% of time-loss claims. Despite rapid growth in the number of women filing such claims, they were still far outnumbered by men.

Men in blue-collar occupations such as fabricating, assembling and repairing, construction trades, transport equipment operating, and material handling were over-represented among back-injury claimants. On the other hand, among women those working in health-related and service occupations accounted for the highest proportions of back injuries. Given the nature of work in these occupations, it is not surprising that the majority of these injuries were sprains or strains due to overexertion.

Time-loss injury claims

A time-loss work injury or illness is one that is serious enough for an individual to take time off work to recover. Time-loss injuries and illnesses may result from accidents, the environment, or specific working conditions. Employees injured at work must apply to provincial Workers' Compensation Boards to receive compensation for lost wages. The level of compensation differs by province.

The National Work Injuries Statistics Program (NWISP) collects data from administrative records on time-loss claims accepted by all Workers' Compensation Boards in Canada, except the Yukon. NWISP publishes the age and sex of an injured worker, the occupation and industry, the nature and source of the injury, the body part injured, and the accident that resulted in the injury. Data are not collected on the benefits paid to injured workers, and claims for medical expenses that did not involve time off work are excluded.

Notes

Note 1

Back injuries include injuries to the back muscles, spine, spinal cord, thoracic spine, lumbar spine, sacrum and coccyx.

Note 2

No national data are available on the number of days lost from work specifically because of back injuries. The Absence from Work Survey (AWS), an annual supplement to Statistics Canada's Labour Force Survey, collects data on all work absences of two or more weeks. According to the AWS, 49% of individuals receiving Workers' Compensation in 1990 were absent from work for two to five weeks. (Contact Mike Sivyer at (613) 951-4598 for more information.) In addition, [Labour Canada](#) (1991) estimates that in the 1990s, injured workers will lose an average of 30 days per year for work-related accidents or illnesses.

Little national information is available on the cost of back injuries to Workers' Compensation Boards or to workers sustaining these injuries. Labour Canada publishes the cost of benefits paid to injured workers for medical aid, hospitalization, pensions, and lost earnings, but does not have such data for back injuries specifically. Approximately \$1.8 billion was paid by Workers' Compensation Boards for lost earnings (time-loss claims) out of a total of \$3.9 billion in total benefits paid in 1989 ([Labour Canada](#), 1991). According to Statistics Canada's General Social Survey, in 1987, injured workers spent an average of \$1,112 per work accident on non-reimbursable out-of-pocket expenses ([Millar and Adams](#), 1991).

Note 3

Not all work injuries are reported to Workers' Compensation Boards. The General Social Survey found that fewer than half of work accidents causing injury were reported to Workers' Compensation in 1987 (unpublished data). Decisions by supervisors, health staff, or workers themselves, in addition to the paperwork involved, may result in non-reporting ([Webb et al.](#), 1989).

Note 4

The drop in work injuries in 1990 is partly attributable to the decline in manufacturing jobs in Ontario and Quebec.

Note 5

Paid workers are working owners of incorporated businesses or employed persons who work in an employer-employee relationship.

Note 6

Since the early 1980s, several provinces have extended universal coverage to hospitals and other health-related organizations.

Note 7

A summary of guidelines for weight limits when manually lifting objects is given in [Drewczynski](#) (1989). For a discussion of repetitive motion injuries, see [Bertolini and Drewczynski](#) (1990), and for a discussion of injuries among women, see [Messing](#) (1991).

Note 8

See "Focus on three occupations in hospitals" in the highlights section of *Work injuries, 1988-1990* ([Statistics Canada](#), December 1991).

Note 9

See "Focus on truck drivers" in the highlights section of *Work injuries, 1987-1989* ([Statistics Canada](#), February 1991).

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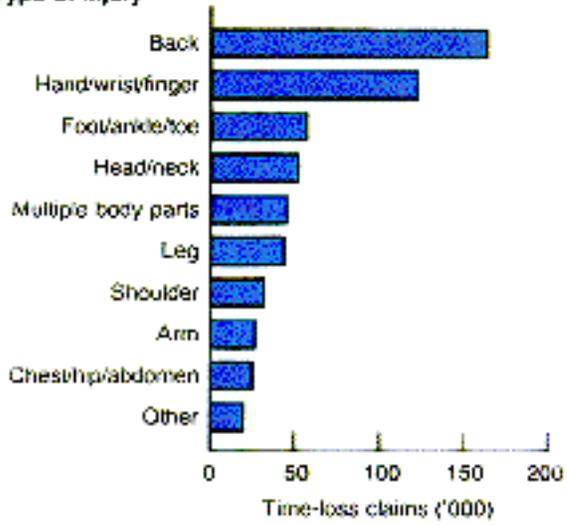
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Chart A

Back injuries were the most frequently compensated claims in 1990.

Type of injury



Source: National Work Injuries Statistics Program

Table 1

Time-loss claims by sex, 1982 to 1990*

	Work injuries			Back injuries		
	Total**	Men	Women	Total**	Men	Women
	'000			'000		
1982	480	381	79	123	95	22
1983	472	369	84	124	94	25
1984	510	410	98	137	107	30
1985	556	447	109	149	116	33
1986	587	465	121	158	121	36
1987	603	474	128	164	124	39
1988	618	482	134	168	127	41
1989	621	478	137	169	127	42
1990	587	442	136	164	121	42

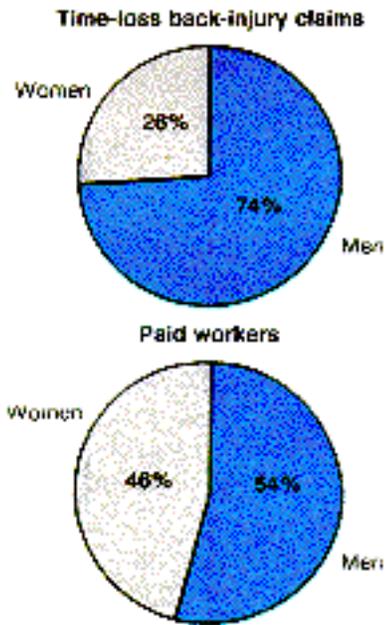
Source: National Work Injuries Statistics Program

** The Yukon is excluded from work injuries data.*

*** Includes claims where sex was not reported.*

Chart B

In 1990, men accounted for three-quarters of back injuries, but just over half of paid workers.



Sources: National Work Injuries Statistics Program and Labour Force Survey

Table 2

Back-injury time-loss claims and paid workers by selected characteristics, 1990

	Back injuries			Paid workers		
	Total	Men	Women	Total	Men	Women
All ages ('000)	162*	120	42	11,353	6,179	5,174
(%)	100	100	100	100	100	100
15-24 years	16	17	15	19	18	20
25-34 years	35	37	31	29	29	30
35-44 years	27	26	29	26	26	27
45-54 years	15	14	18	16	17	16
55-64 years	7	7	7	8	9	7
65 and over	--	--	--	1	1	1
All industries ('000)	163**	120	42	11,353	6,179	5,174
(%)	100	100	100	100	100	100
Agriculture, fishing, forestry, and mining	3	4	1	4	5	2
Manufacturing	29	33	16	17	23	11
Construction	9	12	1	6	9	1
Transportation, communication and other utilities	9	11	3	8	11	5
Trade	17	18	15	18	18	18
Finance, insurance and real estate	1	1	1	6	4	9
Education	2	2	4	7	5	9
Health and social services	13	4	39	10	3	17
Accommodation, food and beverage services	4	2	9	6	5	8
Business services and other services	5	5	5	11	9	12
Government services	6	7	6	7	8	7
All occupations ('000)	142†	104	38	11,353	6,179	5,174
(%)	100	100	100	100	100	100
Managerial and administrative	1	1	1	14	15	12
Natural science	1	1	--	4	6	2
Social science	1	--	2	2	1	3
Religion	--	--	-	--	--	--

Teaching	1	--	3	5	3	6
Medicine and health	11	3	33	5	2	10
Artistic	--	--	--	2	2	2
Clerical	7	6	11	18	7	32
Sales	5	4	7	9	9	9
Service	13	9	22	13	11	15
Farming, fishing, forestry, and mining	3	4	1	3	4	1
Processing	8	9	5	3	5	1
Machining	6	8	1	2	3	--
Fabricating, assembling and repairing	13	16	6	8	12	4
Construction trades	11	15	1	5	10	--
Transport equipment operating	9	12	1	4	6	1
Material handling	10	11	5	2	3	1
Other crafts	1	1	1	1	2	1

Sources: National Work Injuries Statistics Program and Labour Force Survey

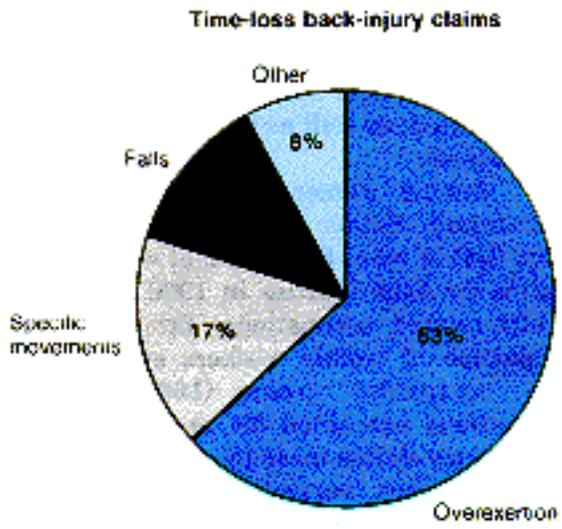
** Excludes 2,072 claims where age was not reported.*

*** Excludes 1,286 claims where industry was not reported.*

† Excludes 21,655 claims where occupation was not reported.

Chart C

In 1990, most back injuries resulted from overexertion.



Source: National Work Injuries Statistics Program