



## **An examination of the working conditions and risk factors for work-related injuries among immigrant workers in Canada**

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- Approval for the secondary data analyses was obtained through the University of Toronto, Health Sciences I Ethics committee.
- Peter Smith is supported by a New Investigator Award from the Canadian Institutes of Health Research.



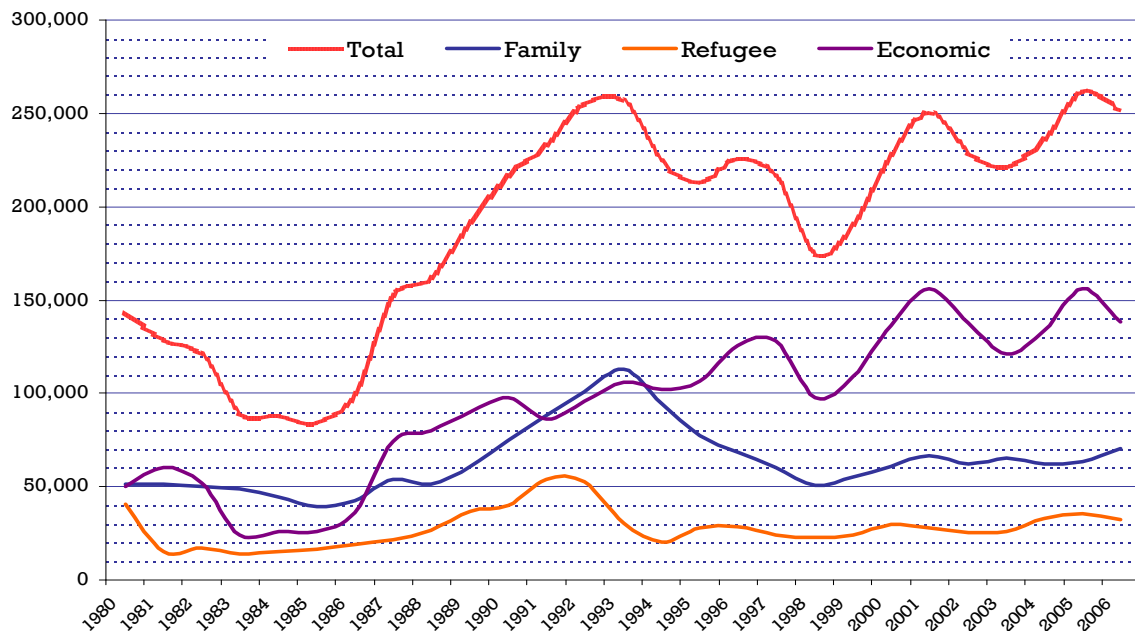
## Objectives

- To describe the labour market experiences of immigrants to Canada
- To examine the risk of work-related injuries among immigrants compared to the Canadian-born population
- To examine compensation after injury among immigrants to Canada compared to the Canadian born population
- To examine changes in physical work demands before and after arrival in a cohort of immigrants

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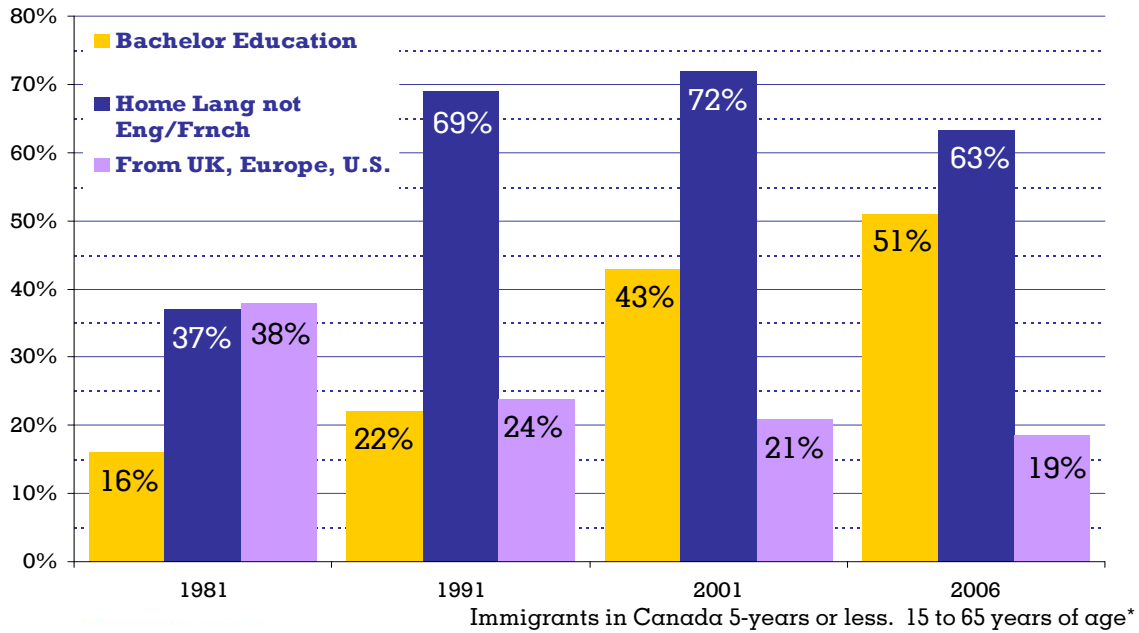


## Numbers of immigrants coming to Canada. 1980 – 2006 by group

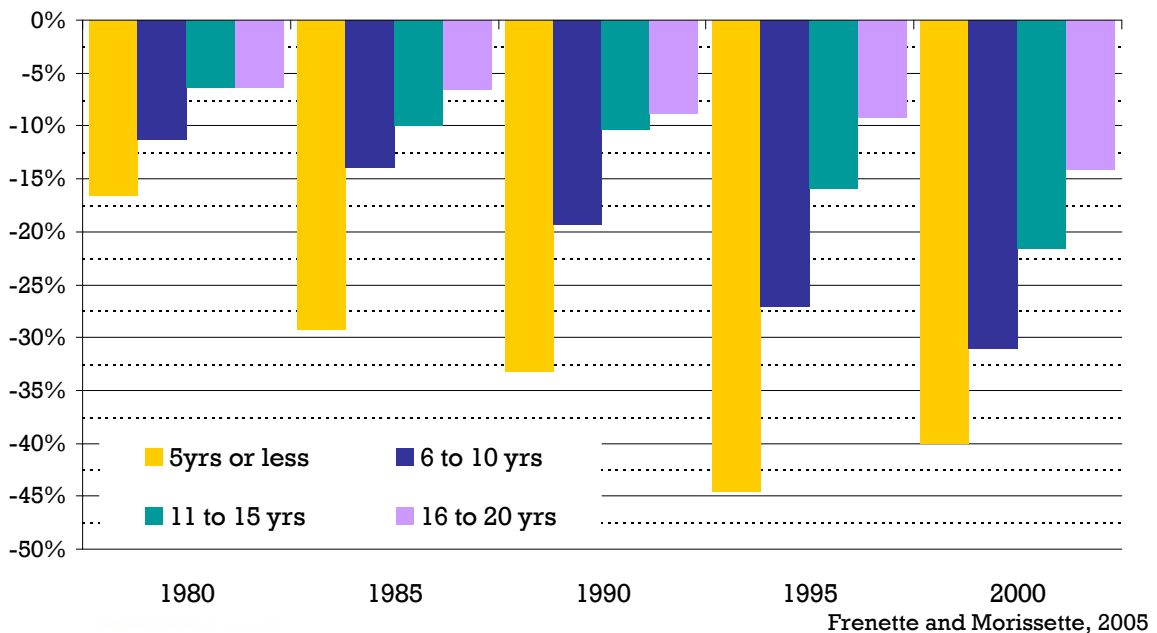




### Changing type of immigrants to Canada. 1981 to 2006 Canadian Census data

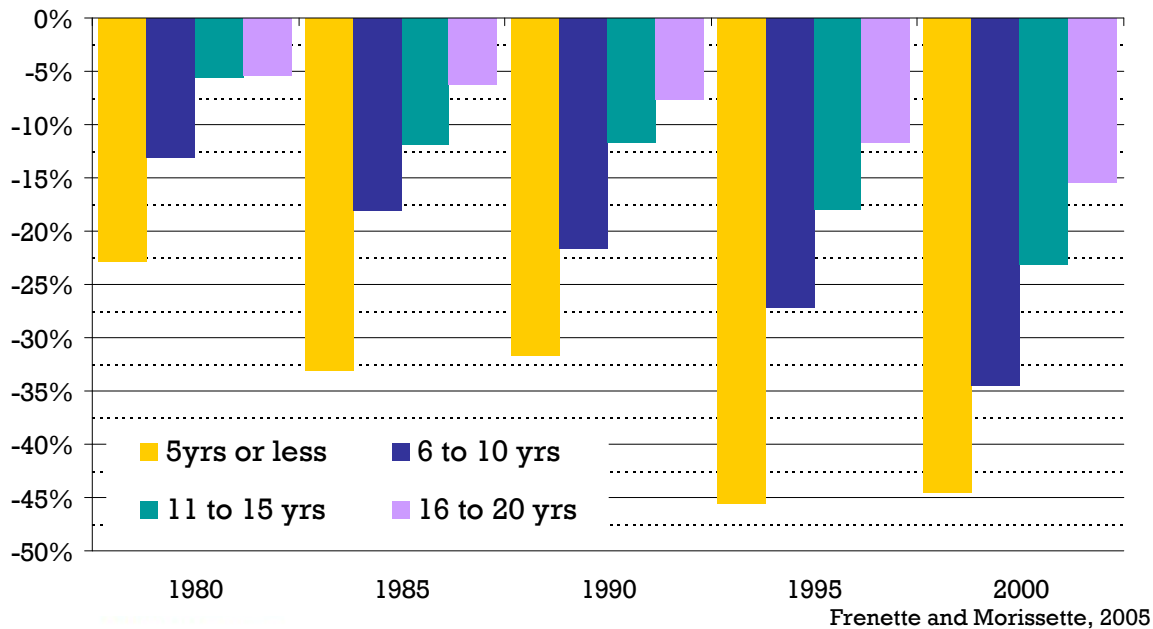


### Differences in earnings of immigrant men compared to Canadian born men by time in Canada. Census Data





## Differences in earnings of immigrant women compared to Canadian born women by time in Canada. Census Data



## Main Research Questions

### Comparing Immigrants to the Canadian-born population

1. What are the labour market experiences of immigrants to Canada outside of income – specifically those related to occupational health and safety risks?
2. Are immigrants more likely to sustain work-related injuries?
3. Are immigrants less likely to receive compensation after work-related absences

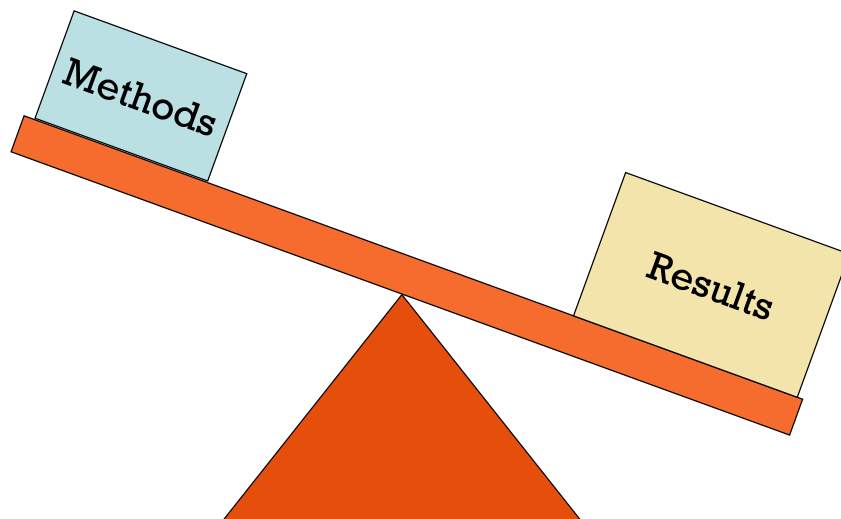


## Main Research Questions (cont)

### Examining differences among immigrants

4. Are particular groups of immigrants more likely to end up in jobs which have higher physical demands than they are used to?

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## **For first three studies presented**

### **Main measure of immigrant status:**

**Length of time in Canada:** 5yrs or less, 6 to 10 yrs, 11 to 20 yrs, 21+ yrs, Canadian-born

### **Other measures associated with immigrant status**

**Visible Minority:** Respondents who identified they belonged to one of the following cultural, ethnic or racial groups: Black, South Asian, Chinese, Korean, Japanese, South East Asian, Filipino, Oceanic, West Asian & North African, Latin American.

**Mother tongue:** First language learnt and still understood (English, French, and other)

**Highest degree from Canada (SLID only):** Age when highest degree completed versus age at immigration

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## **The unequal distribution of occupational health and safety risks among immigrants to Canada compared to Canadian-born labour market participants. 1993 to 2005**

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## Occupational health and safety risks among immigrants

Little research has examined occupational health and safety risks among immigrants to Canada compared to Canadian-born workers

Occupational health and safety risks may be particularly problematic for immigrants given:

- Lack of proficiency in English
- Different expectations about occupational health and safety protections

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## The Survey of Labour and Income Dynamics

- Annual survey initiated in 1993 by Statistics Canada
- Longitudinal and cross-sectional components
- We used five non-overlapping samples (1993, 1996, 1999, 2002 and 2005)
- Sample is respondents aged 25 to 64 who completed the labour force interview in January and had worked (non-self-employed) in the previous 12 months (N = 56,250)
- Examined six labour market experiences related to the occupational health and safety risks

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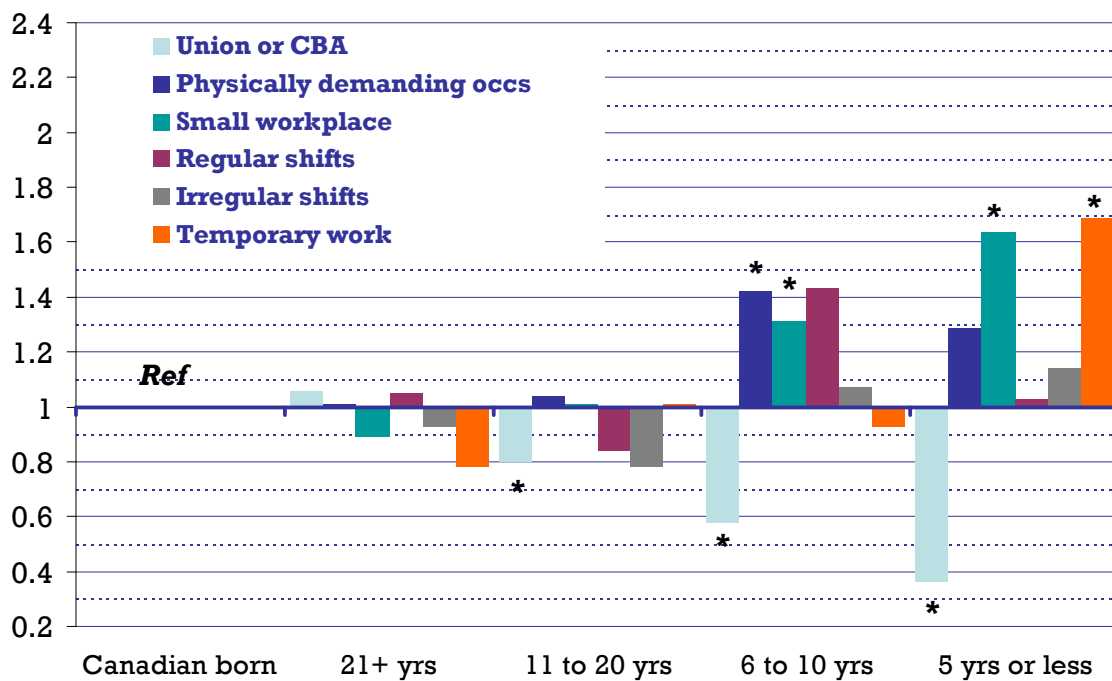


## Main outcomes

1. Membership in a union or collective bargaining agreement (reduced risk)
2. Employment in a physically demanding occupation (increased risk)
3. Employment in a small workplace (increased risk)
4. Regular shift work (increased risk)
5. Irregular shift work (increased risk)
6. Non-permanent employment (increased risk)

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## Adjusted odds for various occupational health and safety risks by length of time in Canada (N = 56,250)

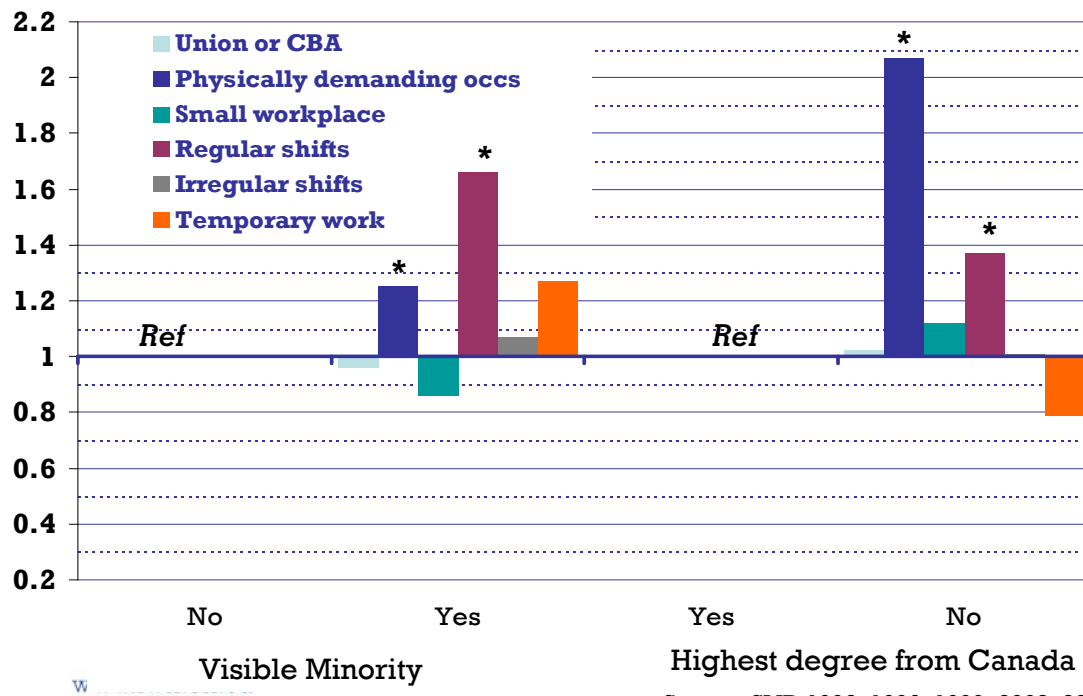


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Source: SLID 1993, 1996, 1999, 2002, 2005



## Adjusted odds for various occupational health and safety risks by visible minority status and location of highest education (N = 56,250)



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### Key Points

- Recent immigrants (up to 10 years in Canada) were more likely to work in physically demanding occupations and small workplaces. Those in Canada less than five years also were more likely to be in temporary jobs.
- Immigrants who had been in Canada up to 20 years were less likely than Canadian-born residents to be members of a union.
- Visible minority status and not having a degree from Canada was associated with working in physically demanding occupations and regular shift work



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## **Comparing the risk of work-related injuries between immigrant and Canadian-born labour market participants**

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### **Work injury among immigrants in Canada**

Immigrants are exposed to numerous occupational health and safety risks at work

No information on immigration status is collected by workers' compensation boards in Canada

Majority of studies examining occupational health and safety among immigrants use U.S. population samples

Very little evidence from Canada. Mostly, using visible minority status

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## The Canadian Community Health Survey (CCHS)

Canadian Community Health Survey collects information on  
*“Injuries that limited normal activities in the last 12-months”*

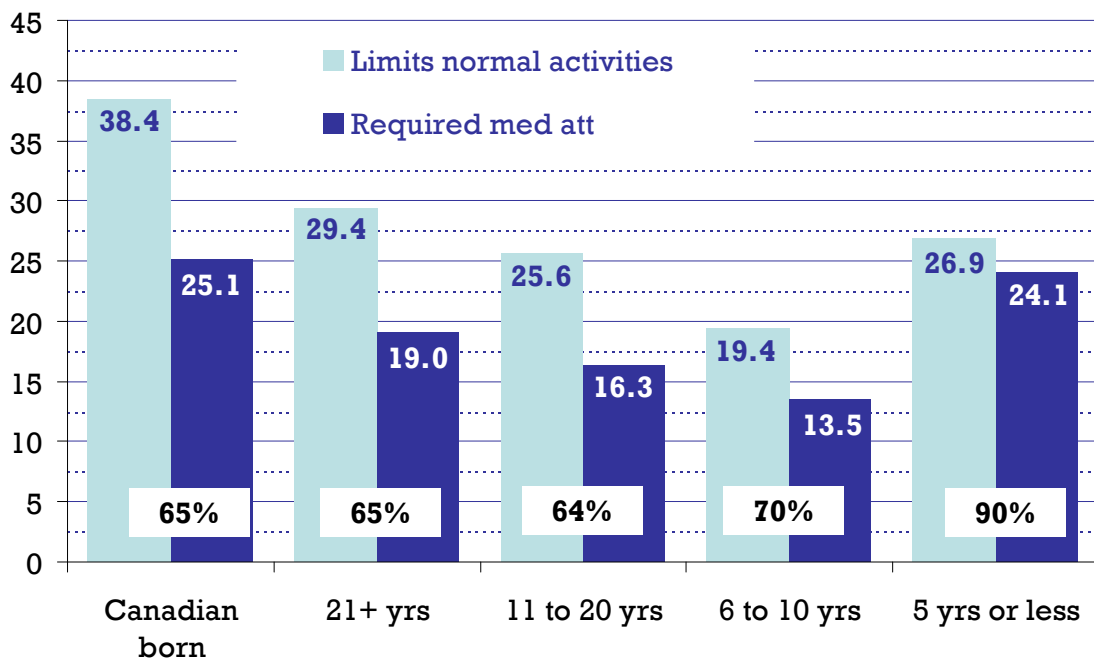
Those who respond yes are further asked if injury was work-  
related and if it required medical attention.

CCHS 2003 & 2005 (N = 97,067)

- 2,859 immigrants 5 yrs or less
- 3,013 immigrants 6 to 10 yrs
- 4,972 immigrants 11 to 20 yrs
- 8,401 immigrants 21+ yrs
- 77,823 Canadian-born

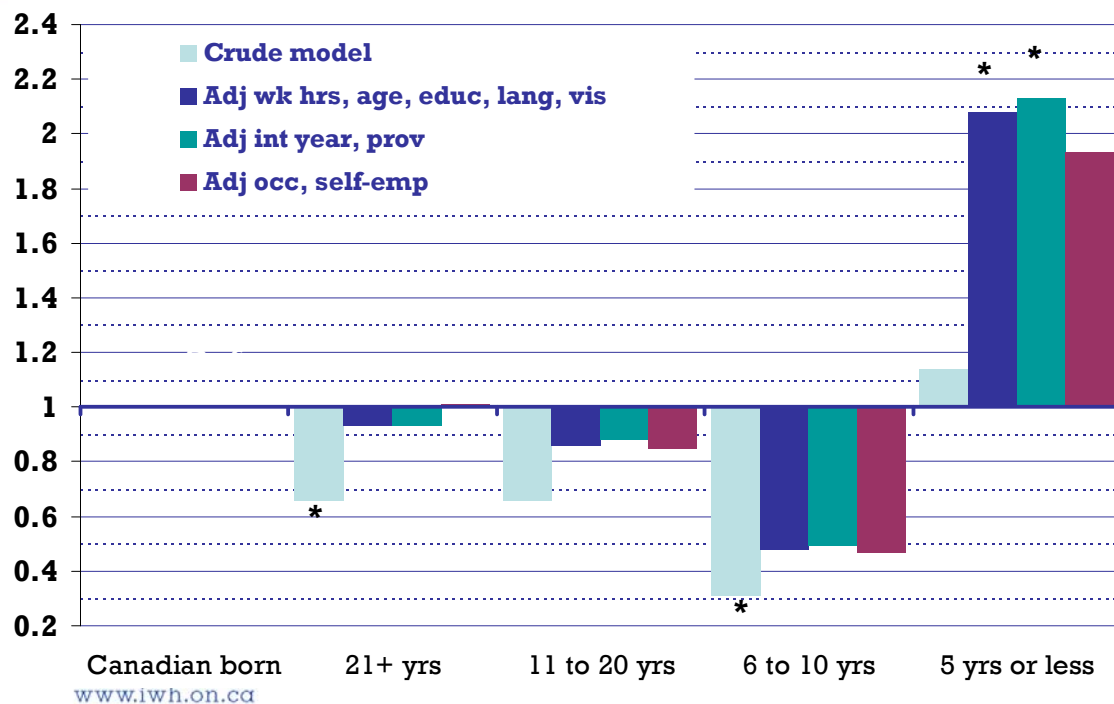
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### Injury rate per 1,000 persons by length of time in Canada. CCHS 2003 and 2005 files (N = 97,067)



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## Odds of work injuries requiring medical attention by length of time in Canada. Men only (N = 51,551)



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### Activity limitations versus medical attention

Questions on work-relatedness and medical attention are only asked from respondents with “activity limiting” injuries

- Immigrants may continue to work after injury (therefore not reporting activity limitations)
- Immigrants may define “activity limitations” different to Canadian-born respondents

Immigrants might also sustain injuries that are more severe, and thus more likely to receive medical attention?



## Key Points

The risk of serious work-related injury is twice as high for recently landed immigrant men, compared to Canadian-born men.

- The true risk of work-related injuries may be even higher
- More work is needed to assess when a work injury has occurred
- Need to understand why risk changes between 6 and 10 years after arrival.
- Need to understand why no risk is present among women (weaker labour market attachment?)



## **Differences in access to wage replacement benefits for absences due to work-related injury or illness in Canada**



- Access to wage replacement for time loss due to work-related injury is an integral part of workers' compensation in Canada
- Research has documented that particular groups may be less likely to receive compensation after injury
- Immigrants may be susceptible to lack of compensation given
  - Lack of language proficiency
  - Lower knowledge of rights to compensation
  - Not wanting to be seen as a “trouble maker”

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## Survey of Labour and Income Dynamics

Asks respondents to report any absence from work of one week or longer (January interview)

- Respondents are asked if absence was work-related and if they were paid during their absence

Asks respondents for permission to link January interview to tax-file information (which contains income from workers' compensation)

- If no permission is given respondents are re-interviewed in May and asked to report all sources of income in the previous 12 months

Sample of 3,352 respondents (69% of all persons reporting a work-related absence in the SLID datasets) – main attrition due to imputation of tax file records

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## Main outcome

### Compensation after work-related absence

- Respondents who reported more than \$100 in income from workers' compensation were classified as receiving compensation (96% of respondents gave permission to link to taxation records)
- Respondents who reported either \$100 from workers' compensation or receiving full or partial pay during their absence

Examined tax file reports in both year of absence and year after absence.

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## Independent variables

- **Immigration status:** length of time in Canada, mother tongue
- **Individual characteristics:** age, gender, education
- **Occupational characteristics:** occupation, work hours, job tenure
- **Workplace characteristics:** size, union membership
- **Other:** year of survey, province of residence, urban or rural area.

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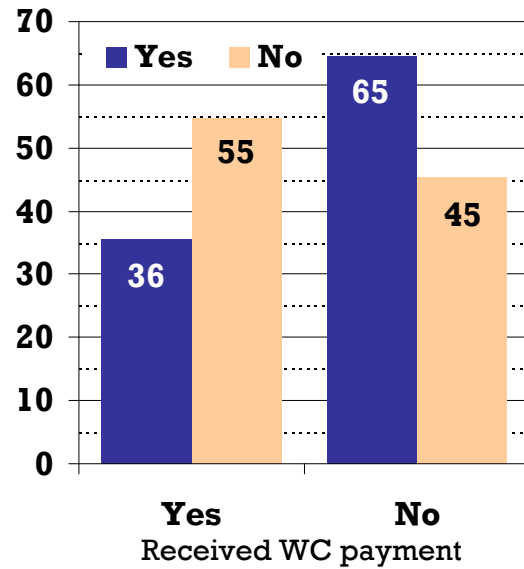


## Results

Of our 3,352 respondents with absences of one week or longer

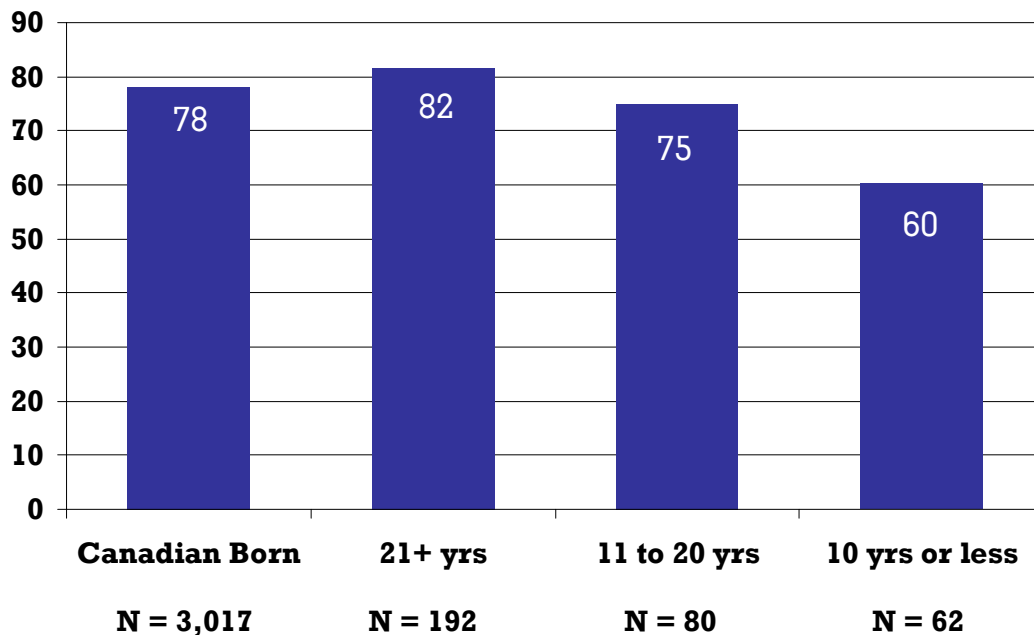
- 51% reported income from workers' compensation
- 45% reported receiving full or partial pay during their absence
- 78% reported one or the other or both

### Percent of respondents reporting receiving pay during absence



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### Percent of respondents reporting any payment during absence by length of time in Canada



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Recent immigrants (10 yrs or less in Canada) were more likely to be uncompensated after a week long absence

- **Crude model:** OR = 2.34 (95% CI 0.26 – 21.23)
- **Adj personal charact:** OR = 2.46 (95% CI 0.27 – 22.80)
- **Total Adjustment:** OR = 1.80 (95% CI 0.19 – 17.20)

Other variables associated with not receiving compensation were being a women, being younger (24 or less), being in the first year of a job, not being covered by a union of CBA and working part-time.



## Key Points

- Recent immigrants were less likely to receive any type of compensation after a absence of one-week or longer
- However, given the small number of immigrants with absences of one week or longer, caution should be taken interpreting this result
- Unfortunately we have no information on the type of injury sustained, or if respondents reported injury to workers' compensation or their employer.
- Other groups (women, younger workers, short tenure workers, non-unionised workers, and part-time workers) were also less likely to receive any type of compensation



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## **Examining differential risk of employment in more physically demanding jobs among a recent cohort of immigrants to Canada**

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Previous Canadian research has demonstrated the excess risk of work-injury in occupations with high physical demands using both workers' compensation data (Ontario) and self-reported information (CCHS and SLID).

The risks associated with employment in physically demanding occupations may be particularly problematic for recent immigrants given:

- Lower proficiency in English
- Lack of knowledge about safety regulations or rights
- Previous employment experience being in less demanding occupations

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## Objectives

1. To examine the proportion of a recent cohort of immigrants to Canada that were working in jobs that were more physically demanding than the jobs in which they had previous non-Canadian experience.
2. To examine if particular groups of immigrants were at increased probability of employment in more physically demanding occupations.

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## The Longitudinal Survey of Immigrants to Canada (LSIC)

Conducted by Statistics Canada

Consists of three interviews (waves) over a four year period among immigrants arriving in Canada between November 2000 and December 2001

We restricted our sample to those respondents who had worked before immigrating to Canada, and who were re-interviewed in wave two (N = 7,050; 77% of the baseline sample) or wave three (N = 5,903; 65% of the baseline sample).

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## Main Outcome

### Occupational physical demands

Coded using the National Occupational Classification System

- **Manual:** Occupations that require the handling of heavy, or average loads, on a regular basis, or occupations handling lighter loads, but in static postures, or occupations requiring continuous repetitive work;
- **Mixed:** Occupations requiring handling of light loads, but do not require continuous static postures or occupations that handle heavy or average loads on an occasional basis; and
- **Non-manual:** Occupations that rarely require the handling of loads or physical activity.

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## Main Outcome (movement into more physically demanding occupations)

### Job after arrival

	Manual	Mixed	Non-manual
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Job before Canada	Manual	Excluded from analysis	
	Mixed		
	Non-manual		

# Independent variables

## Human capital characteristics (variables that are included in the application process to come to Canada as a skilled immigrant)

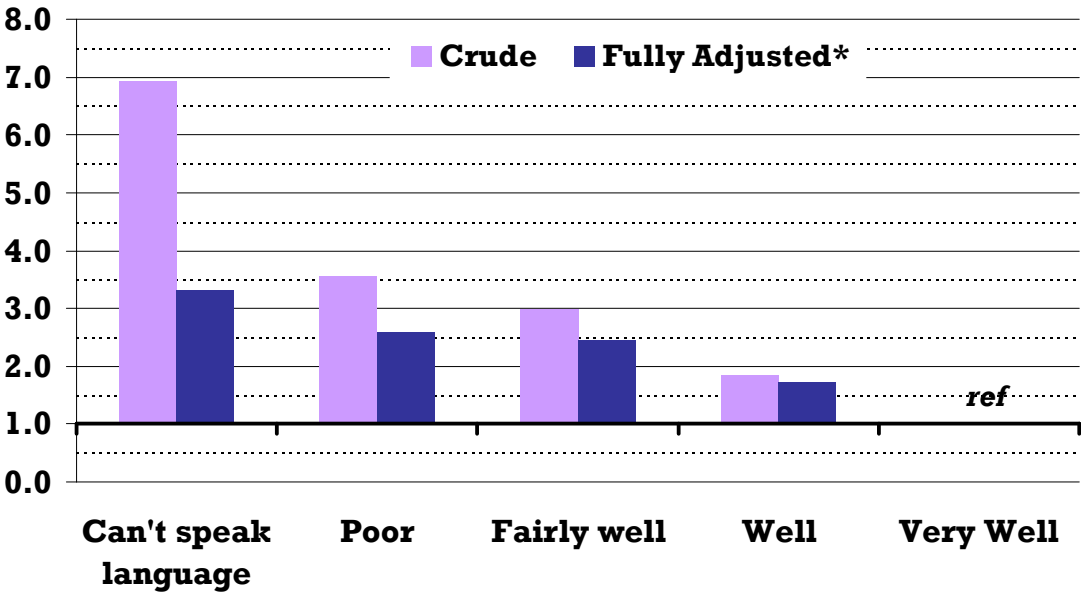
- age; self-assessed language proficiency; highest level of education and the language used in this education; if they had studied or worked in Canada previously; and the immigration application category that they came to Canada under (e.g. skilled worker, refugee).

## Respondent characteristics (other variables that might be associated with probability of employment).

- gender; marital status; region of last residence; applicant status; and the country where the respondent completed their highest level of education.

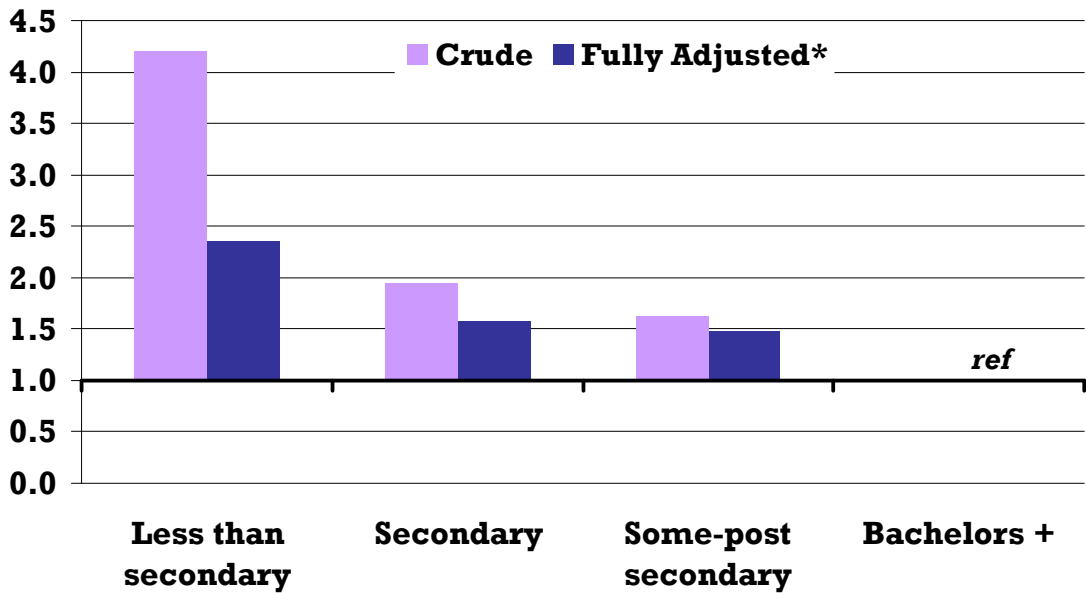
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# Odds ratio for employment in more physically demanding occupations (two years after arrival) by language proficiency



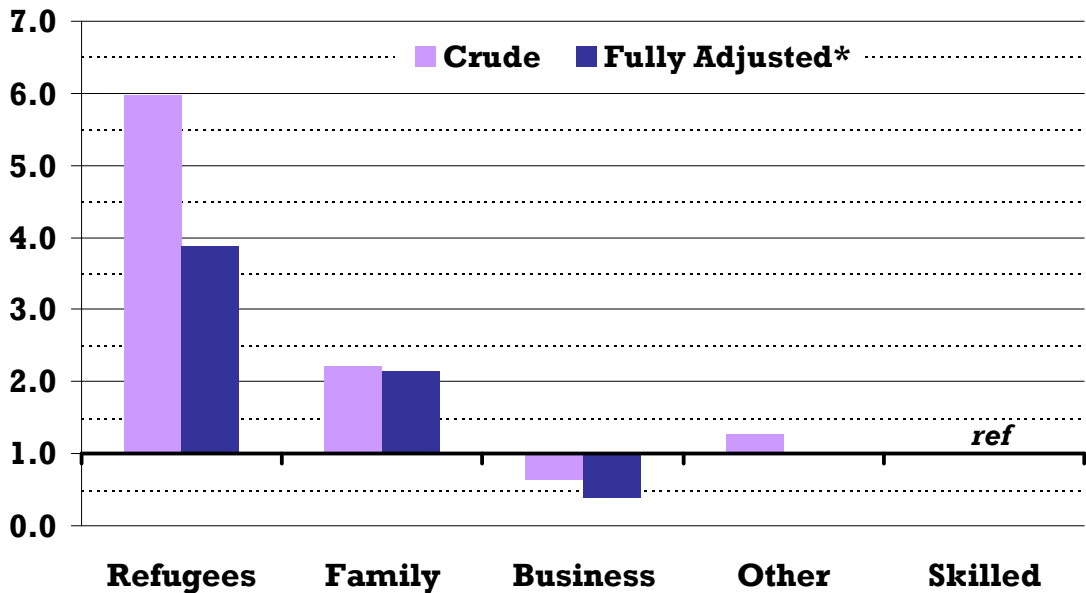
\*Adjusted for all vars except language used in highest education

## Odds ratio for employment in more physically demanding occupations (two years after arrival) by education level



\*Adjusted for all vars except language used in highest education

## Odds ratio for employment in more physically demanding occupations (two years after arrival) by immigrant class



\*Adjusted for all vars except language used in highest education



## Key Points

- Lack of proficiency in English, lower levels of education or being a refugee to Canada were associated with employment in more demanding occupations after arrival in Canada
- Each of these factors might intensify risk of injury in a physically demanding occupation
- While information on language training, health care and getting jobs are provided to immigrants when they arrive in Canada, no structured information on occupational health and safety or worker rights is provided

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## Overall Summary

- Immigrants to Canada are exposed to numerous occupational health and safety risks
- Immigrant men are at higher risk of work-injuries that require medical attention (although true risk may be higher)
- Immigrants may be at higher risk of not receiving compensation after a week long work-related absence
- Immigrants with low language proficiency, those with low education, and those coming to Canada as refugees are the most likely to be in occupations with higher physical demands than worked before arrival in Canada

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## Policy Recommendations

1. Resources need to be targeted at accurately estimating the number of work injuries that require health care among immigrants, compared to the Canadian-born population
2. Given the number of occupational health and safety risks that immigrants are exposed to, resources need to be devoted to the developing and translating tool(s) that will increase the knowledge of immigrants about their workplace rights, occupational health & safety, and workers' compensation – ideally before immigrants start work

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## More information?

Smith P, Mustard CA. (in press) Comparing the risk of work-related injuries between immigrants to Canada, and Canadian-born labour market participants [epub ahead of print]. *Occup Environ Med*

Smith P, Kosny A, Mustard CA. (in press) Differences in access to wage replacement benefits for absences due to work-related injury or illness in Canada. *Am J Ind Med*.

Smith P, Chen C, Mustard CA. Employment in more physically demanding jobs in a recent cohort of immigrants to Canada. Submitted to *Inj Prev*.

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