

# LOW BACK PAIN IN LONG-TERM PERSPECTIVE AMONG EMPLOYEES

- A cohort study with 5-, 10-, and 28-year follow-up

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# LOW BACK PAIN (LBP)

- Very common symptom among adult population
- One-year prevalence vary between 22% and 65% (Walker, 2000)
- In a Finnish nationally representative sample in 2000, approximately 80% of persons aged 30 years or more reported having suffered from LBP at least once in their lifetime and 30% during the past month (Riihimäki et al., 2002)
- The incidence of LBP is highest at working age and decreased thereafter (van Tulder et al., 2002)

## LBP (2)

- The natural course of LBP is not well known
- Acute LBP generally settles within weeks but recurrences and chronicity are common
  - Severe acute low back pain with radiating symptoms is associated with chronicity
- The frequency and intensity of pain can fluctuate with time

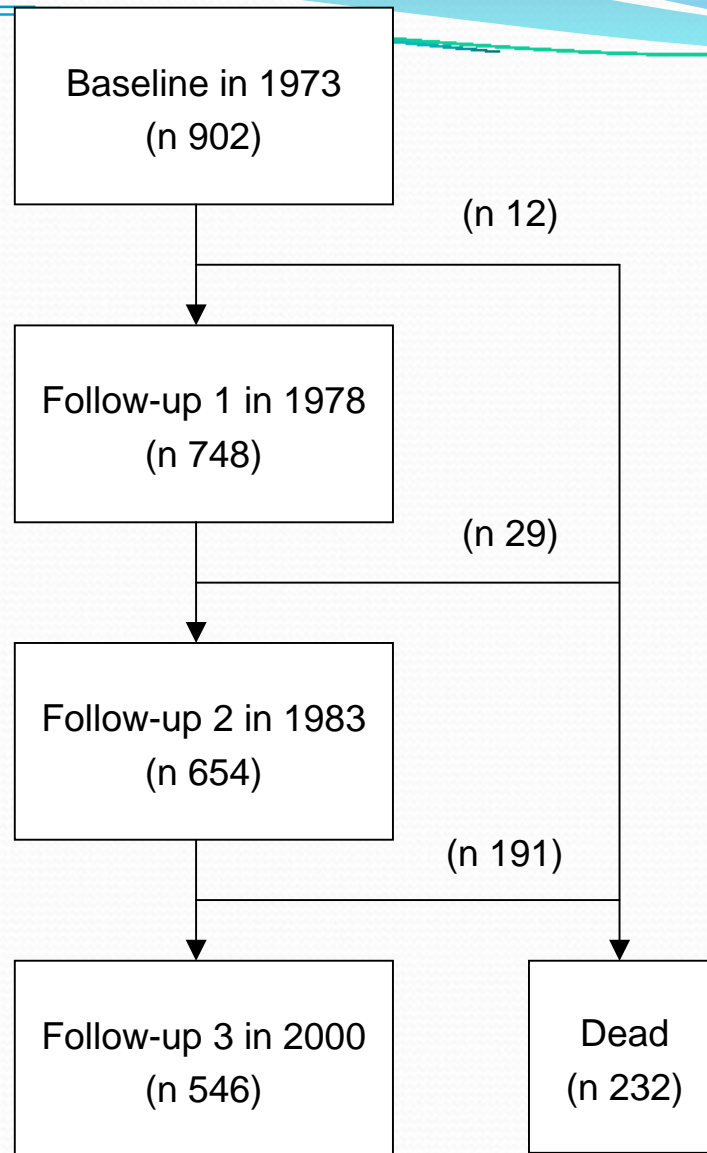
# AIM OF THE STUDY

To investigate

1. The incidence, prevalence and
2. the persistence of local and radiating LBP among employees in the engineering industry over a 28-year follow-up period

# Material and Methods

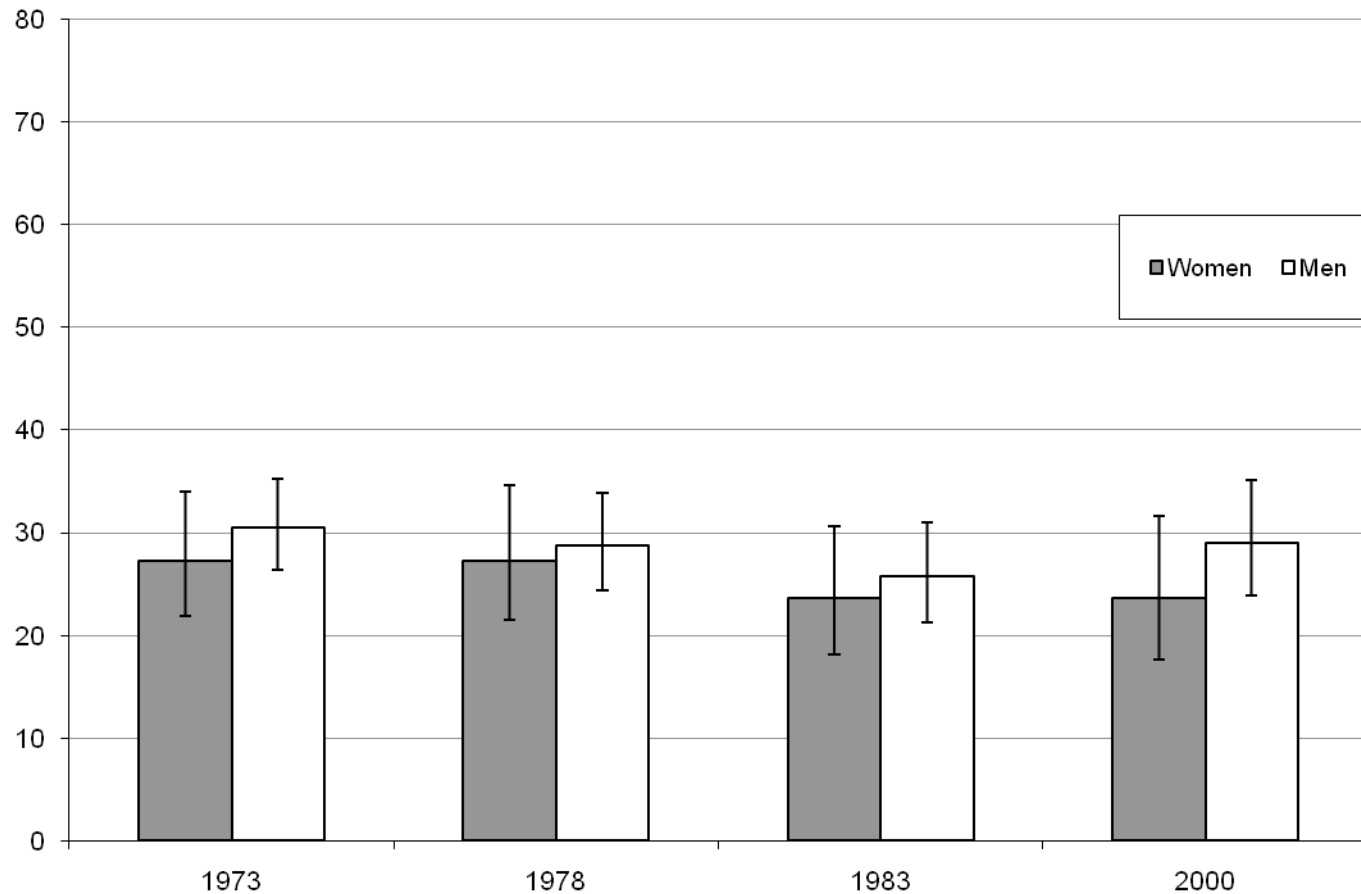
- A prospective cohort study
  - The cohort consisted of employees of four metal factories, aged 17-65 years
- A systematic, non-proportional stratified sample of 902 subjects was drawn in strata by age, gender and occupational class
- The data were gathered by questionnaire
- LBP was categorized as:
  - No LBP
  - Local LBP
  - LBP with a radiating pain component (Radiating LBP)



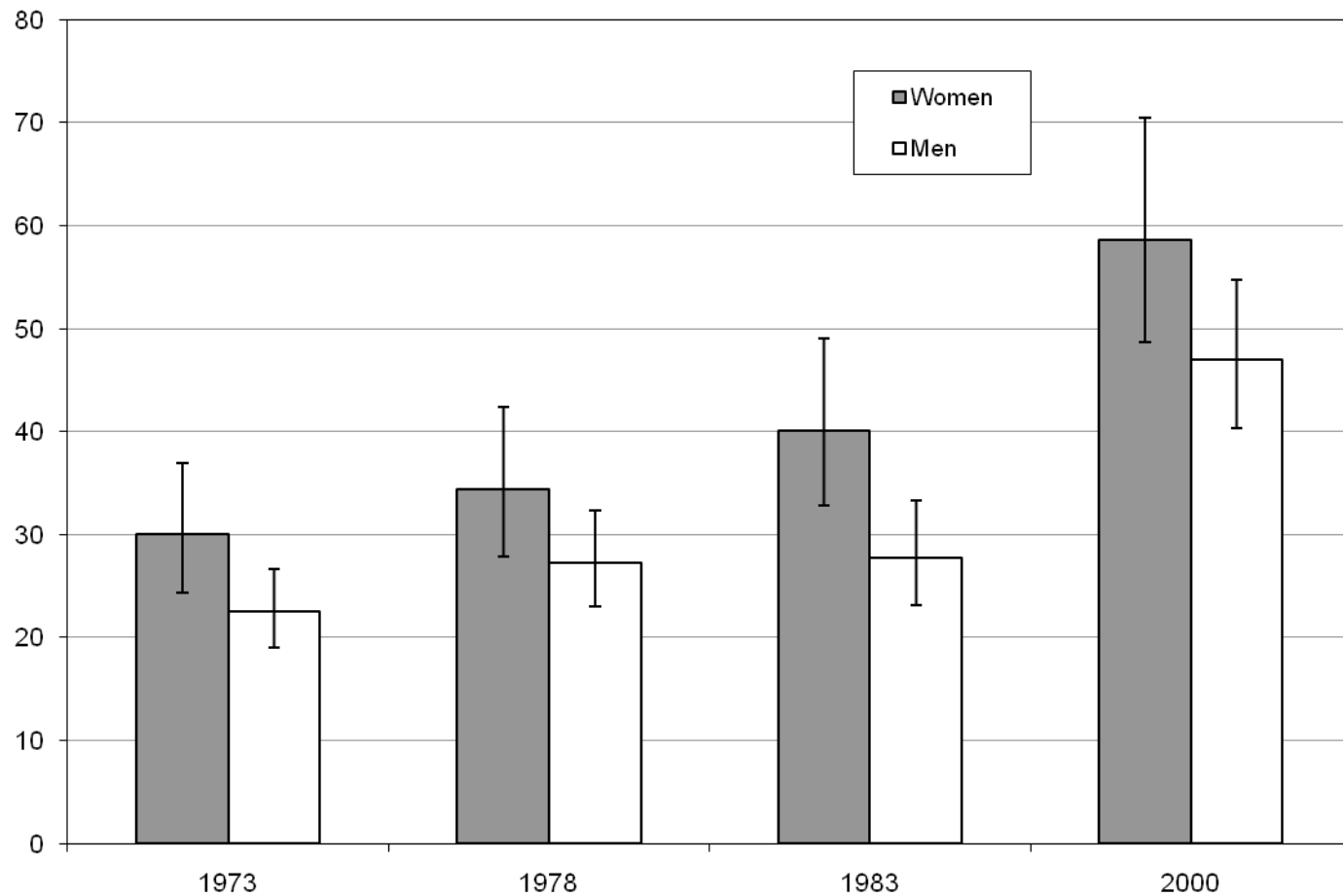
# STATISTICAL ANALYSIS

- The incidence and persistence of LBP was examined with cross-tabulations of the LBP variables at baseline and those obtained in the different follow-up surveys
- Logistic regression with the categorical covariates age, gender, and occupational class was used to estimate the interdependence of LBP occurrence at the surveys

# Prevalence of local LBP in 1973, 1978, 1983 and 2000 by gender



# Prevalence of radiating LBP in 1973, 1978, 1983 and 2000 by gender



## RESULTS: Incident LBP

- The proportion of subjects with new reports of LBP increased during the follow-ups
  - Of those who did not have local LBP at baseline, **33%**, **37%**, and **64%** reported pain in 1978, 1983 and 2000
  - Of those free of radiating pain at baseline, **17%**, **22%**, and **46%** had such pain in 1978, 1983, and 2000

## RESULTS: Chronic or recurrent LBP

- At baseline, 54% of the subjects reported local LBP and 25% radiating LBP
- The persistence of LBP reporting was high over the follow-up period
  - Local LBP: **75%**, **73%**, and **88%** were symptomatic in 1978, 1983 and 2000, respectively
  - Radiating LBP: **66%**, **65%**, and **69%**

# Local and radiating LBP at baseline as a predictor of similar pain over the follow-up period

	Crude		Adjusted for age, gender and occupational class	
	OR	95 % CI	OR	95 % CI
<b><i>Local LBP</i></b>				
5-year (n=748)	6.3	4.6-8.6	6.0	4.3-8.3
10-year (n=654)	4.6	3.3-6.4	4.7	3.3-6.6
28-year (n=546)	4.1	2.7-6.4	4.0	2.6-6.3
<b><i>Radiating LBP</i></b>				
5-year (n=746)	9.4	6.5-13.6	8.5	5.7-12.5
10-year (n=654)	6.9	4.6-10.1	6.7	4.4-10.1
28-year (n=546)	2.6	1.7-3.9	2.3	1.5-3.6

# CONCLUSION

- Prevalence of radiating LBP increased with age
- The persistence of local LBP was high
  - A previous episode of LBP is an important predictive factor for the development of a new episode (Croft et al., 1998; Müller et al., 1999; Thomas et al., 1999)
- Radiating pain at baseline predicted strongly the occurrence of such pain at the 5- and 10-year follow-ups
  - By the year 2000 the odds ratio for radiating LBP dropped to around 2, when that for local LBP remained around 4
  - There were higher increase in the occurrence of radiating pain compared with local pain towards the end of the follow-up period

# Methodological considerations

- Because of the length of the follow-up, there was a sizeable loss of subjects due to death
  - The survivor cohort was then younger and healthier than the original sample
- Other non-participation was relatively limited and the participation rates among the survivors remained good
  - 84%, 76% and 81% at the 5-, 10- and 28-year follow-ups, respectively
- A limitation of the data is the time-reference (the previous 12 months) in the questions on LBP, relative to the follow-up intervals.
  - It was not possible for us to study the exact incidence or natural history of LBP

# Main findings

- Over the three decades LBP still continues to be a common disorder among adults
- Adequate or effective therapy is still missing at large

# Methodological considerations

- There were some differences in participation between genders and occupational classes at the follow-ups
  - The loss of women was smaller than the loss of men in every survey
  - The participation rates were higher among white-collar employees than among blue-collar employees at the 10- and 28-year follow-ups.
- A limitation of the data is the time-reference (the previous 12 months) in the questions on LBP, relative to the follow-up intervals.
  - It was not possible for us to study the exact incidence or natural history of LBP