

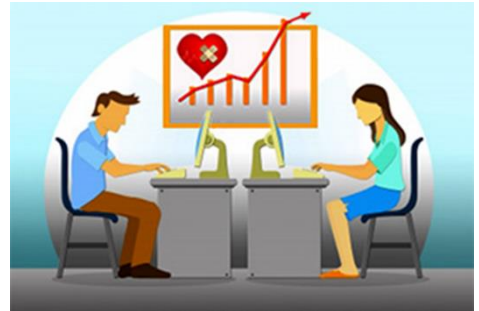
Sedentary Work and Risk of Venous Thromboembolism

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What do we know?

Immobilization increases the risk of venous thromboembolism

- Surgery
- Long-term bed rest
- Long distance air travel
- Sedentary work?



Previous studies

Case Reports and 1 Case Series

Case-Control Studies

Based on numbers of hours seated during work

2008: 97 cases and 106 controls **OR 1.8; 95% CI 0.7 - 4.8**

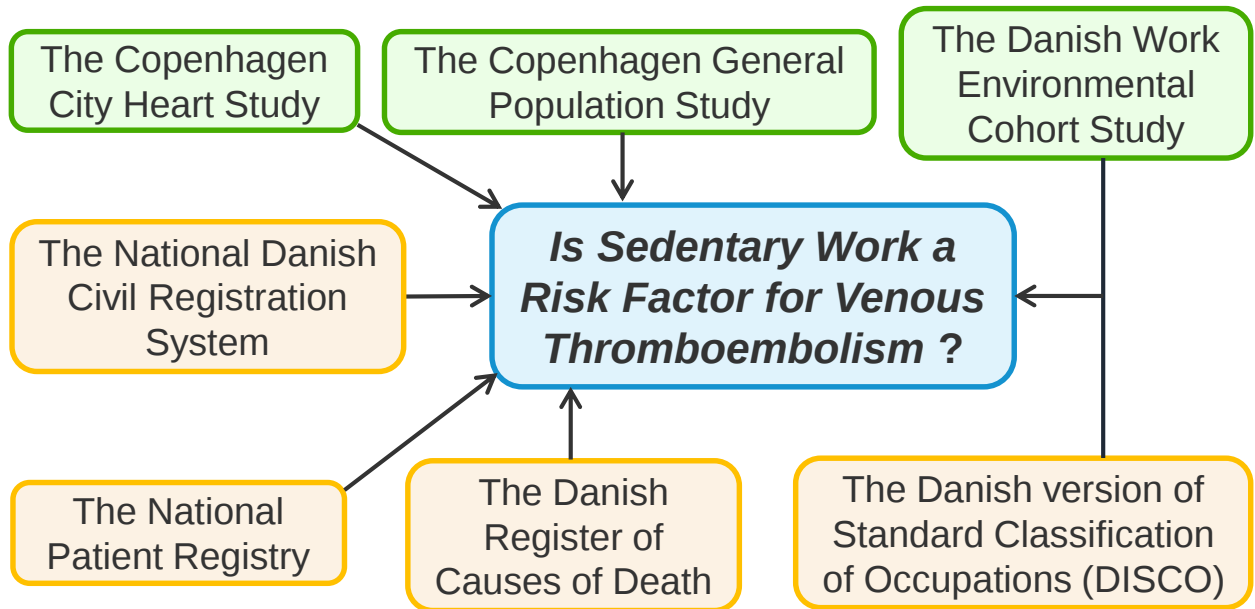
2010: 197 cases and 197 controls **OR 2.8; 95% CI 1.2 - 6.1**

Register-Based **Cohort Study** **RR 1.13; 95% CI 0.99 - 1.29**

Based on occupations: drivers vs. construction workers

No control for individual risk factors!

Study Design



Study Population

78,936	Eligible participants in total
911	Thromboembolic events
7.4	Years of mean follow-up

The Copenhagen General
Population Study
109,277 Participants

The Copenhagen City Heart Study
18,974 Participants



Exposure

Occupational sitting	Participants (%)	Events (%)
≥ 6.5 hours	9,090 (11)	95 (1)
3.5 – 6.5 hours	35,392 (45)	382 (1)
≤ 3.5 hours	34,454 (44)	434 (1)

Job Exposure Matrix
occupational sitting hours
within DISCO codes

Study population

Statistical analyses

Cox proportional hazards regression

- **Exposure:** Occupational sitting hours
- **Outcome:** Deep vein thrombosis and pulmonary embolism
- **Time axis**
 - From: start of follow-up or first examination
 - To: end of follow-up, event, death, emigration or retirement
- **Adjustments**
 - Self-reported lifestyle factors and blood samples
 - Time-varying: diagnoses on cancer, surgery and birth delivery

Results

Analyses	Self-Reported Occupational Sitting During a Workday		
	≥ 6.5 hours	3.5 – 6.5 hours	≤ 3.5 hours
	HR (95% CI)	HR (95% CI)	HR
Univariate	0.87 (0.74-1.02)	0.81 (0.74-0.89)	1.00
Multivariate, chosen variables	1.08 (0.92-1.27)	0.95 (0.87-1.05)	1.00
Multivariate, final model*	1.11 (0.92-1.34)	0.94 (0.83-1.07)	1.00
Imputation on missing values	1.16 (1.00-1.36)	1.04 (0.95-1.14)	1.00

* Complete case data 76%

Strengths and challenges

Strengths

- Large cohort
- Prospective design
- Large number of confounders
- Increased HR in well-established risk factors

Challenges

- Self-reported occupational sitting
- Too wide-range group of exposure?

Conclusion

Immobilization increases the risk of venous thromboembolism

This study found **no link** between sedentary work and venous thromboembolism in the general population

More studies are needed to address the risk in occupations with very long immobilized sitting positions

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