



# Social and geographical inequalities in the choice of foot therapy as preventive care of diabetic foot ulcers: A nationwide registry study on Danish diabetes patients

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#### Introduction and objectives

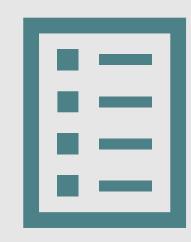
Diabetes is a disease associated with numerous complications. One such complication is diabetic foot ulcers - a serious conduction with high costs and adverse sequelae, such as lower-extremity amputations. Therefore, international guidelines recommend that all people with diabetes should have their feet inspected at least once a year.

This study aimed at determining whether socioeconomic factors influence the frequency of foot inspections on a nationally representative sample of diabetes patients.



#### Methods

We used a nationwide registry for all Danish diabetes patients as our source of data. We estimated a Logit model for the choice determinants of diabetes-related foot inspections among the identified diabetes patients.



## Registries

The Health Insurance Service Registry

✓ Information on the publicly supported service of foot therapy for patients with diabetes

National Diabetes Registry

manuscript online (28 SEP 2015)

✓ A clinical database included all patients with diabetes in Denmark

#### Key points

- If not discovered and treated diabetic foot ulcers can have serious sequelae including lower-extremity amputation
- Guidelines recommend that people with diabetes should have their feet inspected at least once a year
- In Denmark 73% of all diabetes patients fail to follow international recommendations, and there seem to be social and geographical inequalities

## Conclusion

The number of people with diabetes who use foot therapy to prevent foot ulcers is low relative to current recommendations, and further, the use is unevenly distributed among patients with different characteristics.

Recognising health inequalities in preventive treatments is the first step when aiming to reduce health inequalities in serious complications for people with diabetes.

# References

Halling, C & Ladenburg, J (2019) Social and geographical inequalities in the choice of foot therapy as preventive care: A nationwide registry study on Danish people with diabetes, Nordic Journal of Health Economics, Vol. 7, No. 1
 Green, A., Sortsø, C., Pb, J., & Emneus, M. (2014). Validation of the Danish national diabetes register. Clinical Epidemiology, 2015, 5.
 Sortsø, C., Green, A., Jensen, P., & Emneus, M. (2015). Societal costs of diabetes mellitus in Denmark. Diabetic Medicine, Accepted

Diabetes leads to high blood sugar

How diabetes causes foot ulcers

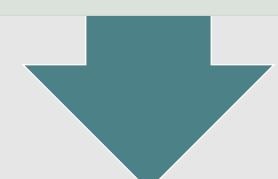
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Nerve damage he

Infections and poor healing

Damage to blood vessels







Sores are not noticed due to neuropathy and healing is limited by the reduced blood flow

#### <u>Results</u>

In total, 73% of all diabetes patients fail to follow the international recommendations for annual foot inspections.

Further, the study indicates social and geographical inequality concerning diabetic foot care. Especially for ethnic minorities, people with low income and people living in rural and remote areas. The western and non-western immigrants have a 3.13% and 13.40% lower probability, respectively. The 13.40% higher probability is high considering that the average probability in the sample is approximately 25%.

# Logistic regression on the use of publicly supported foot therapy 2012, marginal effects

	Foot ulcer treatment (yes/no)	Preventive treatment (yes/no)
Years since diagnosis in registry (Reference: 0-4 years)		
5-10 years	0.00103*** (0.000188)	0.0311*** (0.00180)
More than 10 years	0.00669*** (0.000314)	0.145*** (0.00196)
Women (Reference: men)	-0.00276*** (0.000193)	0.00628*** (0.00163)
Income quartiles (Reference: 1st quartile)		
2 <sup>nd</sup> income quartile	0.0000 (0.0003)	0.0274*** (0.00255)
3 <sup>rd</sup> income quartile	0.0000 (0.0003)	0.0299*** (0.00239)
4 <sup>th</sup> income quartile	-0.000937*** (0.000274)	0.0110*** (0.00256)
Age	0.00003*** (0.00007)	0.00440*** (6.29e-05)
Education (Reference: basic school)		
Vocational education	0.000233 (0.000194)	0.00456** (0.00185)
Short-cycle higher education	0.00138** (0.000617)	-0.00257 (0.00491)
Medium-cycle higher education	-0.000123 (0.000327)	-0.0162*** (0.00293)
Long-cycle higher education	0.000148 (0.000520)	-0.0633*** (0.00431)
Unknown	-0.000144 (0.000450)	-0.0724*** (0.00386)
Marital status (Reference: living alone)		
Other	-0.000189 (0.000395)	-0.00644** (0.00318)
Married/cohabiting	-0.00131*** (0.000220)	0.0208*** (0.00191)
Urban index, based on parishes (Reference: Urban areas)		
Intermediate urban areas	-0.00002 (0.000256)	0.0135*** (0.00240)
Rural areas	0.00009 (0.000290)	-0.00491* (0.00261)
Remote areas	-0.000625*** (0.000239)	-0.0341*** (0.00228)
Ethnic background (Reference: Danish)	(0.000_0.)	(00000)
Immigrants from Western countries	-0.000930* (0.000520)	-0.0313*** (0.00502)
Immigrants from non-Western countries	-0.00257*** (0.000223)	-0.134*** (0.00269)
Observations	317,962	317,962
Number of people receiving the type of treatment	1,562	85,375