

# Significant disparities between educational groups in smoking during pregnancy

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With the help of a multidisciplinary register and questionnaire study, Finnish researchers at the University of Turku showed that both the educational level and its occupational orientation predict the mother's smoking during early pregnancy.

Approximately 15 percent of pregnant Finnish women smoke during [early pregnancy](#). The number has remained stable during the past decades, and it is higher than in the other Nordic countries where smoking during pregnancy has decreased strongly. Smoking during pregnancy has a dramatic effect on fetal health.

Smoking during pregnancy is unevenly distributed between different socio-economic groups and sets, thus, their offspring in an unequal position. An international cohort study reveals that in Finland, the disparities of smoking during pregnancy resulting from socio-economical variation are explained by the mother's [educational level](#) and orientation to vocational or general education.

## Socio-economic Status Indicator Matters

In the earlier studies on the socio-economic disparities of smoking during pregnancy, the generally used indicator describing an individual's socio-economic status has been either education, occupational status, level of income, or housing conditions. These factors are strongly connected and predict smoking during pregnancy regardless of the

indicator.

"However, such an approach does not take the complexity of the socio-economic status into account. Despite the positive connection between education and income, not all employees with academic degrees have high incomes, for example. Therefore, education might have a different kind of an effect on smoking during pregnancy than income," explains Docent at the University of Turku Juho Härkönen, who is also Professor at the European University Institute and the Principal Investigator of the research project.

A large number of women try to quit smoking when they are planning pregnancy or find out that they are expecting. The likelihood of smoking during pregnancy is also affected by smoking habits developed earlier on in life.

Previously, it has not been precisely known which socio-economic factors most strongly contribute to smoking during pregnancy. The newly published study helps to understand the underlying factors behind the disparities of smoking during pregnancy and to develop measures to tackle the problem.

## **Low Educational Level and Vocational Education Predict Smoking during Pregnancy**

The data of 2,667 pregnant women were used in the study. The educational and occupational data and information on smoking during the first pregnancy trimester were retrieved from national registers. The information on the income support reciprocity and the mother's subjective economic well-being were retrieved from the FinnBrain birth cohort study questionnaires of the University of Turku.

In addition, the analyses took into account the mother's age, partnership status, residential area type, parental separation, parity, childhood socio-economic background, childhood adversities, and antenatal stress.

The central outcome of the study was that the socio-economic disparities of smoking during early pregnancy are linked to the educational differences between [expectant mothers](#). The mother's occupation or subjective economic well-being were not linked to smoking during pregnancy when the other factors were taken into account. Instead, income support reciprocity was linked to smoking, even though there were few such mothers involved in the study. Also, depressive symptoms during pregnancy were linked to smoking, but taking this into account did not decrease the disparities related to the socio-economic status.

"In line with the earlier studies, we observed that low educational level is strongly connected with smoking during pregnancy. In terms of expectant mothers with a [university degree](#), only approximately 2 percent smoked, whereas 44 percent of mothers with compulsory schooling only smoked during early pregnancy," says Härkönen.

In contrast to earlier studies, the study also investigated the link between the vocational orientation of education and smoking during [pregnancy](#). One significant outcome was that smoking among expectant mothers with vocational degrees was more common at all educational levels. 27 percent of mothers with vocational secondary level degrees smoked, whereas the number of smokers among those with general secondary level degrees was significantly smaller (9 percent). Additionally, smoking was more common among mothers with combined secondary level (general and vocational) degrees (13 percent) than those with general secondary level degrees only (9 percent).

"Smoking was more common also among those with a polytechnic degree (5 percent) than among those with a university degree (2

percent). According to our interpretation, these differences might be explained by the fact that deciding to start [smoking](#) and the social acceptability related to it varies between vocational and generalist schools," adds Härkönen.

Significant in terms of health care and political decision-making, the study was carried out within the Life course experiences, intergenerational processes, and child well-being and development project funded by the Academy of Finland. Combining social sciences and medicine, the project investigates the impact of the parents' life cycles on prenatal conditions and the health and early development of newborn babies. The project is a part of the FinnBrain study of the University of Turku.

Launched in 2010, FinnBrain [www.finnbrain.fi](http://www.finnbrain.fi) is a birth cohort study of the University of Turku involving over 4,000 families and aiming at exploring environmental and genetic factors influencing the development of a child. In addition to questionnaires and registers, the FinnBrain project also utilises the mapping of genes, behavioural traits, and hormonal metabolism as well as brain imaging that produce new information on the factors promoting well-being during childhood.

**More information:** Juho Härkönen et al. Education is the strongest socio-economic predictor of smoking in pregnancy, *Addiction* (2018). DOI: [10.1111/add.14158](https://doi.org/10.1111/add.14158)

Provided by University of Turku

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