

# Exploring statin use and discontinuation in older persons

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## English resumé

Statins are medications used to reduce risk of cardiovascular disease. Statin therapy should be individualized in older persons, due to changes in health status, shifts in the balance of benefits and harms of statins, and changing healthcare goals and treatment preferences in this population. Individualized therapy may involve consideration of statin discontinuation in some older persons. This is a complex decision which should be carefully considered between patients and prescribers, often general practitioners (GPs). This thesis is an examination of several topics related to statin use and discontinuation in older persons.

We first conducted a register-based drug utilization study, examining the patterns of statin prevalence and incidence among older people (age  $\geq 70$  years) in Denmark between 2011 and 2016. Around 1 in 3 older Danes were taking statins in 2016. Statin prevalence remained relatively stable over the study period, while incidence fell. The proportion of people starting statins for primary prevention decreased from 58% in 2011 to 52% in 2016. We also examined patterns of statin discontinuation among older people (age  $\geq 70$  years) in Denmark using register data. In people newly initiated on statins, the discontinuation rate was 32% over the first four years of use. In those who had been using statins for five or more years (long-term users), the discontinuation rate was 19% over three years. In both early and long-term statin users, the strongest predictor of statin discontinuation was increasing age.

We conducted a cohort study among older persons (age  $\geq 75$  years) living in Denmark. We evaluated the risk of major adverse cardiovascular events associated with statin discontinuation in older persons taking statins for five or more years. We found that statin discontinuation increased the rate of occurrence of major adverse cardiovascular events compared to statin continuation. The relative effect was similar for both primary (HR 1.32, 95% CI 1.18 to 1.48) and secondary prevention (HR 1.28, 95% CI 1.18 to 1.39), but the absolute effect was greater in secondary prevention (weighted rate difference 13 per 1000 person-years, 95% CI 8 to 17) compared to primary prevention (weighted rate difference 9 per 1000 person-years, 95% CI 5 to 12).

To provide additional context to our register-based findings, we conducted a qualitative study involving semi-structured interviews with GPs. We interviewed 11 GPs to explore how they discuss statin discontinuation in their older patients. GPs had different views on when it made sense to bring up statin discontinuation in the first place. The depth and content of discussions differed among the GPs and could also depend on the clinical situation. Common topics that GPs could discuss included: evidence on statin use in older persons, uncertainty, patient goals and preferences, and life expectancy. GPs reported that uncertainty and life expectancy were particularly challenging to discuss.

We used a questionnaire (discrete choice experiment) to examine GP views on the relative importance of different topics that could be included in a discussion of statin discontinuation. GPs felt that a range of topics were important to include in discussions, but generally preferred brief discussions on these topics rather than detailed ones. The most important topic was goals of therapy, followed by evidence on statin use in older persons; however, there was substantial heterogeneity around which topics GPs considered most important.

Further work is needed to provide more definitive evidence on the potential risk of statin discontinuation. This will help inform decisions on statin discontinuation for older persons in clinical practice. Further study of statin discontinuation discussions, including language and communication techniques as well as patient preferences, will provide additional insight into design of communication tools and training/education aimed at optimizing statin use in older persons.

### **Related publications (links)**

Thompson W, Jarbøl DE, Nielsen JB, Haastrup P, Pottegård A. Statin use and discontinuation in Danes age 70 and older: a nationwide drug utilization study. Age Ageing 2020; <https://doi.org/10.1093/ageing/afaa160>.

Thompson W, Jarbøl DE, Haastrup P, Nielsen JB, Pottegård A. Statins in older Danes: factors associated with discontinuation over the first 4 years of use. J Am Geriatr Soc 2019; Oct;67(10):2050-2057.  
<https://doi.org/10.1111/jgs.16073>

Thompson W, Le JV, Haastrup P, Nielsen JB, Pedersen LB, Jarbøl DE. Exploring how GPs discuss statin deprescribing with older people: a qualitative study. BJGP Open 2020; 4(1): bjgpopen20X101022.  
<https://doi.org/10.3399/bjgpopen20X101022>

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