

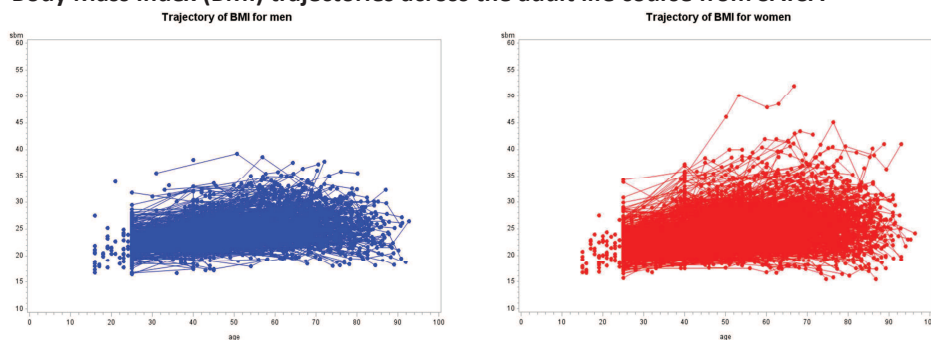
# Obesity and Health in Late Life

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**Summary of the project:** More than 50% of the European adult population is overweight or obese (hence forth overweight), including persons aged 65 and above. Older adults today are heavier and have been overweight over a longer period of time than previous generations. It is alarming since overweight is associated with several chronic health conditions, functional limitations, and mortality. However, the association is not clear cut; in late life overweight is associated with both negative and positive health outcomes. Most research has focused on weight at a specific time point in relation to late life health. But current weight does not tell the story of past weight and changes in weight. This might be especially ill-timed in late life, as there is a selection bias for people who have survived until old age, and diseases common in late life might cause weight changes. Hence, we propose that the implications of overweight on late life health can only be understood from a life course perspective.

## Body Mass Index (BMI) trajectories across the adult life course from SATSA



**Methods:** Existing population-based studies that originate from the Swedish Twin Registry (SATSA, OCTO-Twin, and Gender) containing data ranging over fifty years and including 2061 persons, will be used to study the association between weight trajectories over the life span and outcomes in late life: physical and cognitive health, functional ability, and mortality. Causal pathways between overweight and health in late life will be elucidated by adding genes and life style factors into the models.

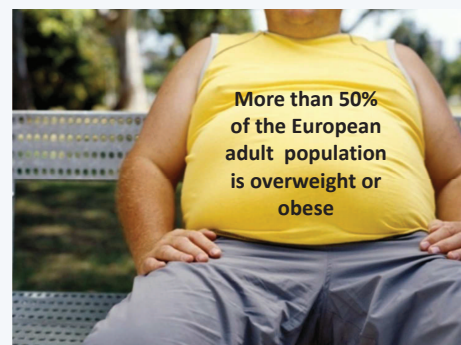
## Findings:

- Higher BMI in midlife, representing more body fat, is associated with both lower cognitive functions and steeper cognitive decline (independent of dementia), and with a higher risk of dementia
- Low BMI in late life is associated with a higher risk of lower cognitive abilities and dementia, but not when weight change is taken into account. Specifically, weight loss is associated with lower cognitive abilities in late life.
- Weight stability is associated with survival in late life. Both weight loss and weight gain in late life is associated with higher mortality risk.
- Being overweight in late life is associated with lower mortality risk compared to being underweight or normal weight.

**Conclusions :** The adverse effects of being overweight in midlife are not limited to cardiac function but also extend to cognitive decline and dementia. However, being overweight in late life might have less severe implications, and might even be associated with better health outcomes. Before firm conclusions can be drawn whether new weight recommendations are warranted in old age, as these findings indicate weight change needs to be considered. Maybe the health recommendation in old age should be to maintain a stable weight?

## Publications in selection:

- Dahl AK & Hassing, LB (in press). Obesity and Cognitive Aging - a Systematic Review. *Epi Reviews*, special issue on aging.
- Dahl A, Hassing LB, Fransson EI, Reynolds CA, Gatz M, Pedersen NL. (Epub ahead of print). Body Mass Index across midlife and cognitive change in late life. *Int J Obes*.
- Hassing LB, Dahl A, Thorvaldsson V, Berg S, Gatz M, Pedersen NL, Johansson B. (2009). Overweight in midlife and later risk of dementia: a 40-year follow-up study. *Int J Obesity* 33;893-898.
- Dahl AK, Löppönen M, Isoaho R, Berg S, Kivelä S-L. (2008). Overweight and obesity in old age are not associated with greater dementia risk. *J Am Ger Soc*;56:2261-2266.



## Presentation of the researcher

Anna Dahl received her PhD in Gerontology from the Institute of Gerontology at Jönköping University in 2009 for her thesis "Body Mass Index, Cognitive Ability, and Dementia - prospective associations and methodological issues in late life". Dr. Dahl currently holds a FLARE postdoc position at the Dep. of Medical Epidemiology and Biostatistics at Karolinska Institutet and she will spend her exchange period at Center for Cognitive Ageing and Cognitive Epidemiology, University of Edinburgh, Scotland.

## Why the FLARE Fellowship is important.

**for me:** Europe has a strong tradition of longitudinal ageing research. Combined with national registries on health these studies has an unharnessed potential of understanding the aging and the underlying causes which has not, yet, been taken advantage of. In order to exploit the full potential of these studies, advanced knowledge in harmonizing data and statistical knowledge is required as well as collaborations between research groups. Thanks to the FLARE fellowship I have the ability to:

- Work with and learn from world leading ageing researchers.
- Develop my methodological and statistical skills.
- Network with other young top European researchers from various disciplines and establish valuable research contacts.

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