



General perspectives of aging

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Paradoxes – healthy aging in many Western countries

Improvements

↑ wealth

↑ focus on physical activity

↑ awareness of nutrition

↓ working hours

Earlier diagnoses, screening

Better, more individualised medication

Step backwards

↑ inequality

↑ physical inactivity in subpopulations

↑ obesity

↑ stress

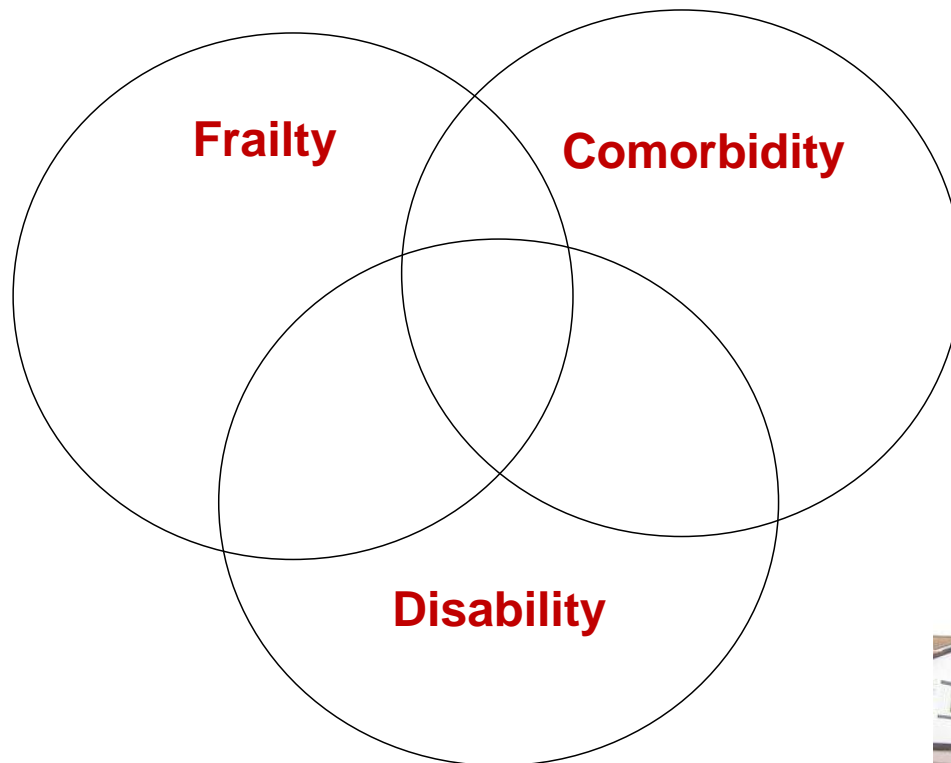
More time as "patients"

Side-effects

Polypharmacy



Three important concepts in relation to aging



Fried et al. 2004



Frailty

Definition:

A physiologic state of increased vulnerability to stressors resulting from decreased reserves in multiple physiologic and biologic systems, and possible dysregulation of those systems.

Source: Fried 2004



Comorbidity

Concurrent presence of two or more medically diagnosed diseases in the same individual

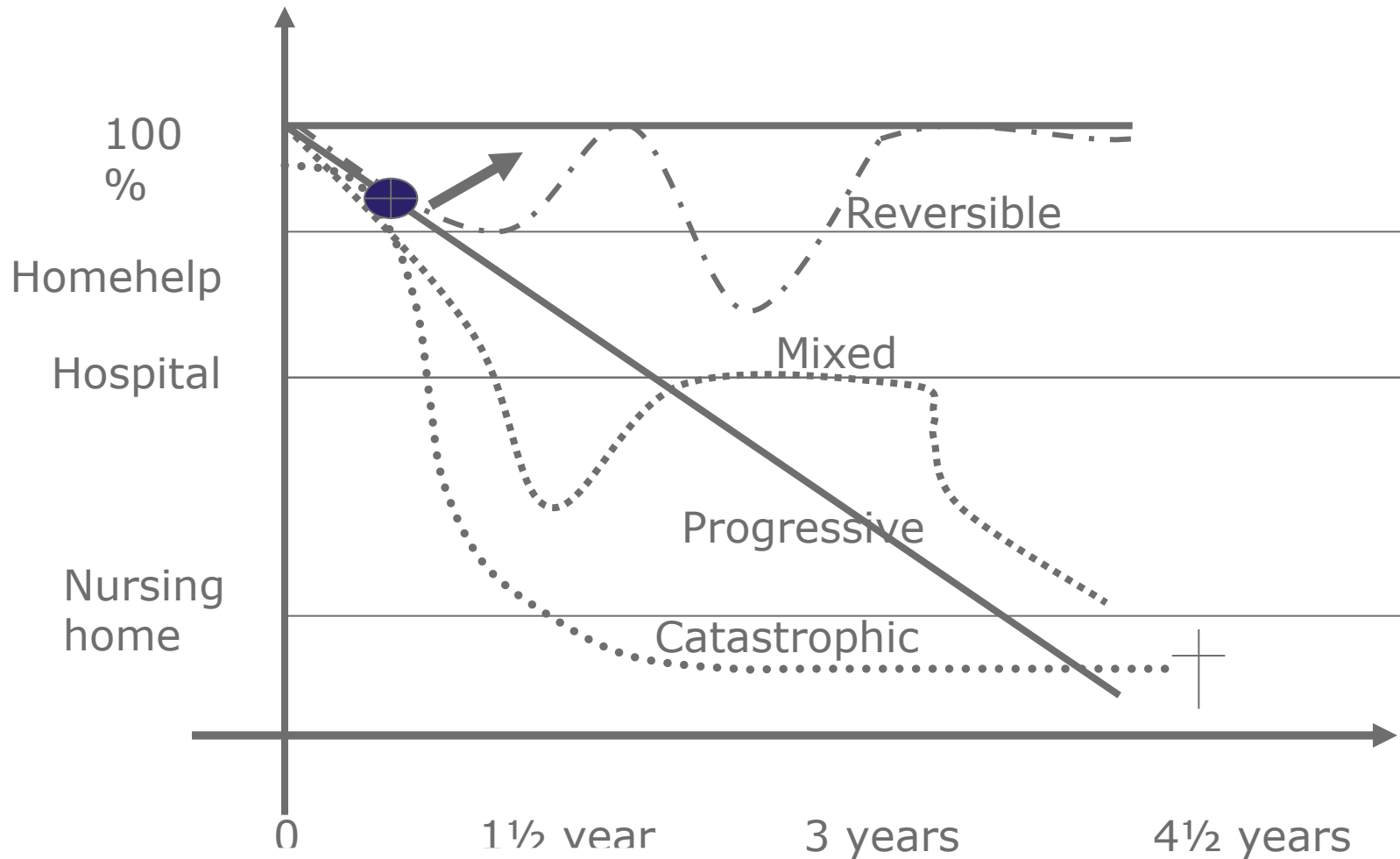


Disability

Difficulty or dependency in carrying out activities essential to independent living, including essential roles, tasks needed for self-care and living independently at home, and desired activities important to one's quality of life



Functional decline patterns



Functional ability in older people

More functional decline with higher age

But

Large variations

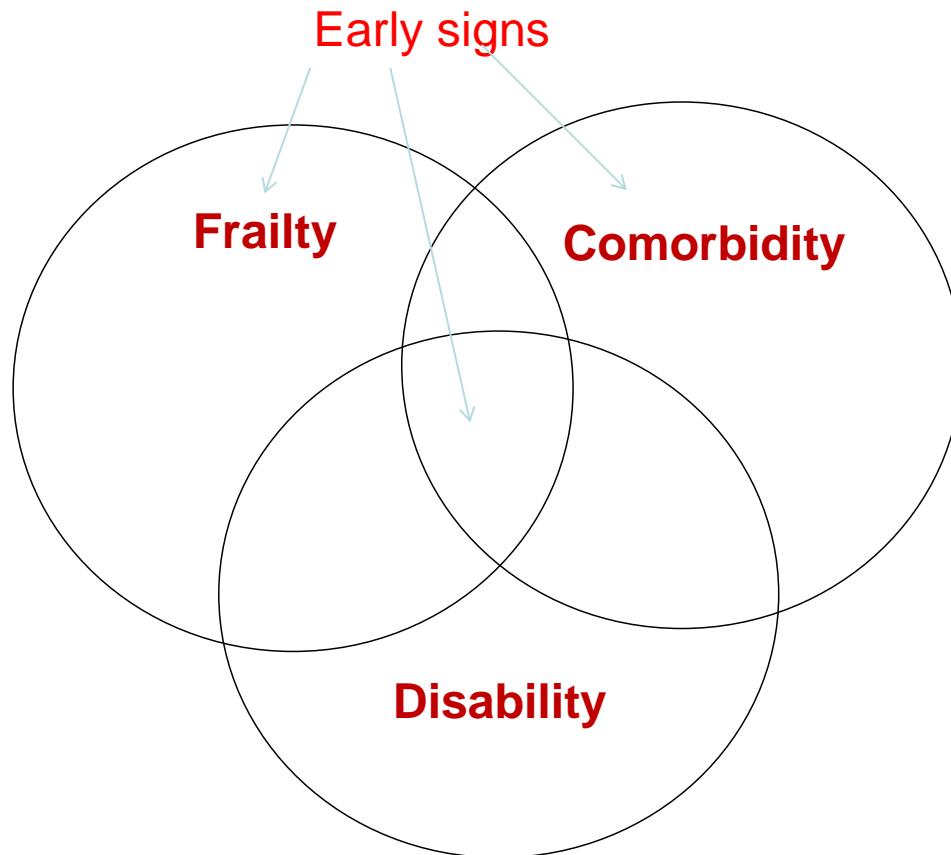
Some persons live to high age with a good functional ability

Others have decrease and improvement during the aging course

And some have a long period with functional decline/disability



Three important concepts in relation to aging

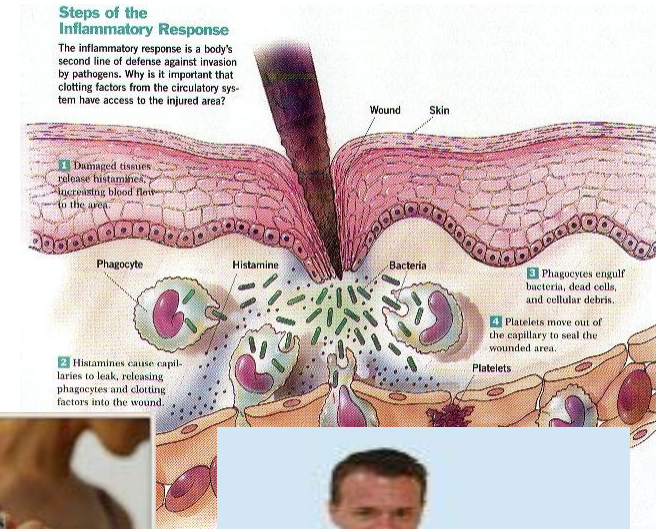


Fried et al. 2004



Early signs

- Low grade inflammation (Ferrucci et al. 1999)
- Hand grip strength (Rantanen et al. 1999)
- Difficulty with mobility, ADL (Guralnik et al. 1995; Gill et al. 1998)
- Fatigue in daily activities



Fatigue

- A common complaint in older adults
- One of the most frequent reasons for encounter in GP
- Often a symptom of underlying illness
- Prevalent in certain medical treatments
- However, for many older persons it is not possible to identify a psychological or physiological explanation
- Fatigue is thus a complaint which is poorly understood



Definition of fatigue

Fatigue is an ambiguous concept, which especially relates to the reaction to physical and psychological work loads, but the concept may also include many different experiences and states of mind, e.g. the experience of exhaustion, impaired energy and vitality and need for sleep.

Fatigue is the normal physiological reaction in an organism, a part of the body or an organ, which has reached the limits of its capacity after heavy strain.



Rationale for studying fatigue in daily activities in the Danish aging studies

Measuring fatigue in daily activities makes it possible to discriminate different levels of functional ability in well-functioning older adults

Fatigue may be an early sign of later disability and thus an early sign of the aging process

Gives possibilities for identification of older adults at risk of functional decline and thus for intervention



Fatigue measured as Tiredness in daily activities

The Mob-T Scale (Mobility-Tiredness)

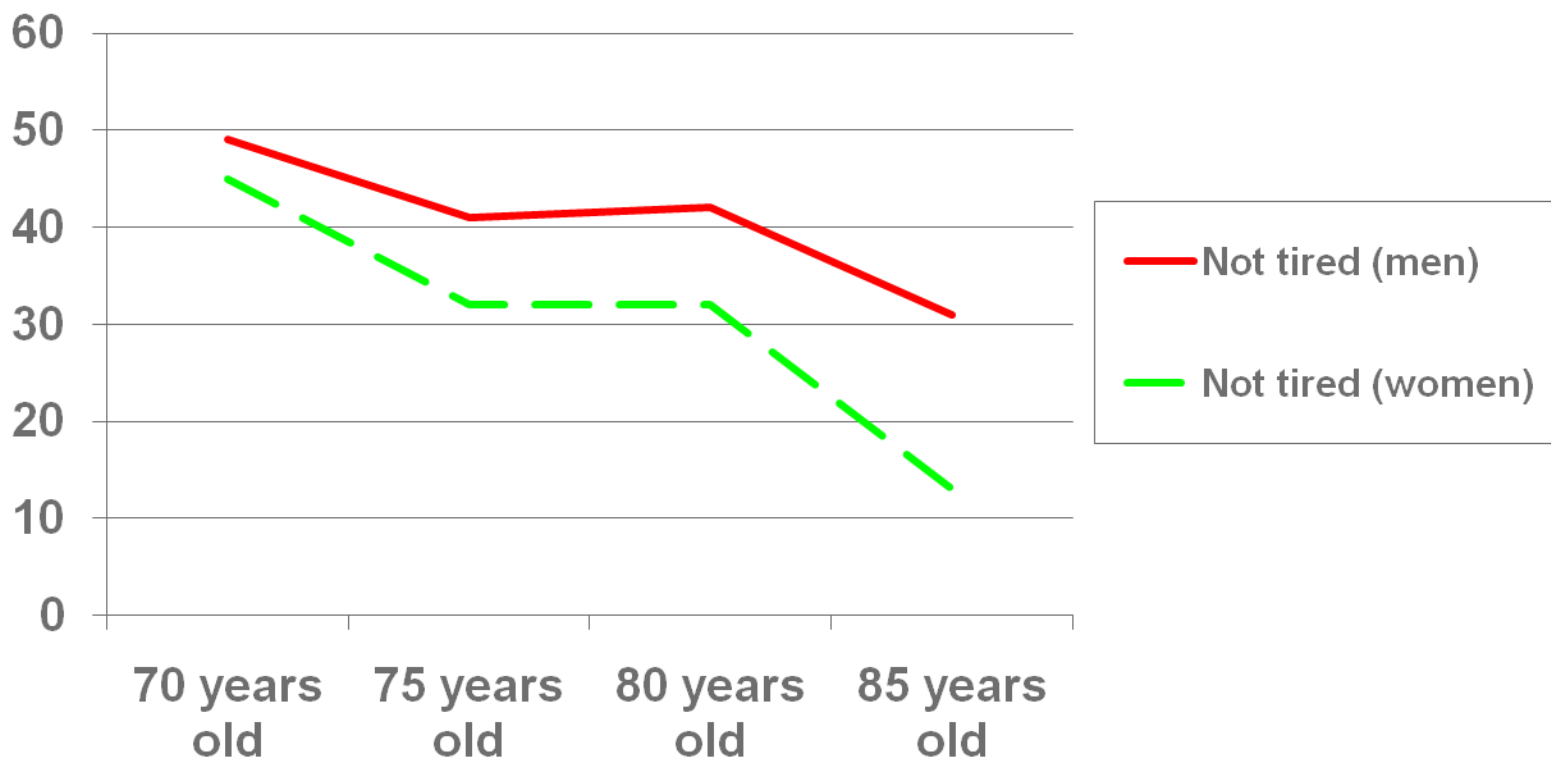
Transfer
Get outdoors
Walk indoors
Walk outdoors in nice weather
Walk outdoors in poor weather
Walk on stairs



Sources: Avlund et al. 1993; 1995; 1996;1996; 1998



Proportion of 70, 75-, 80-, and 85-year old men and women without fatigue

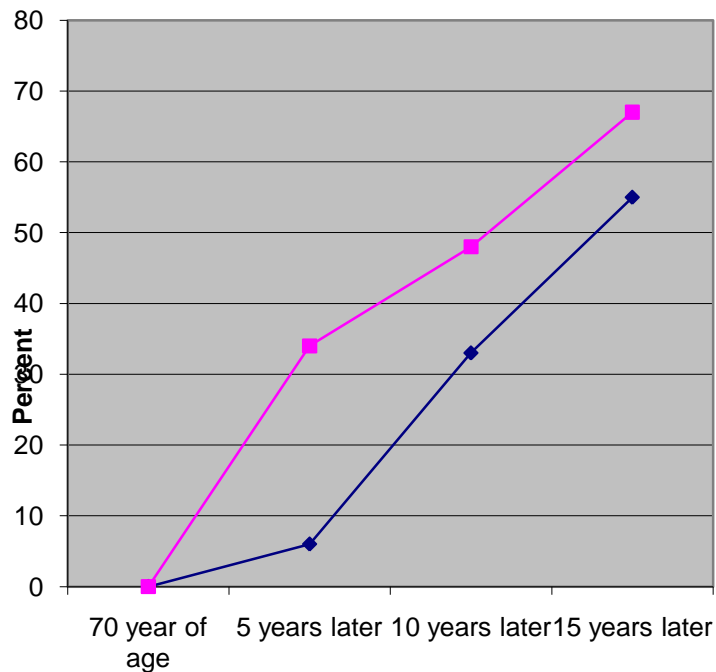


Source: Avlund 2004

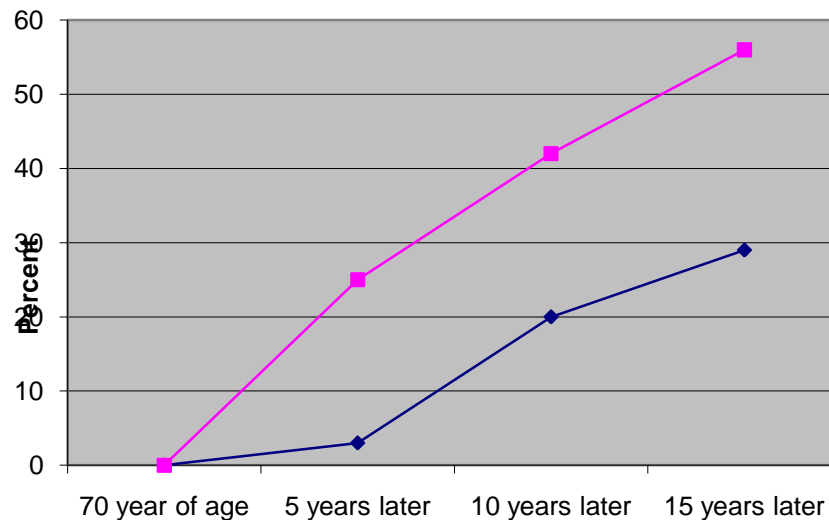


Proportions of 70-year old men and women with and without fatigue who became dependent of help during the next 15 years

Women



Men



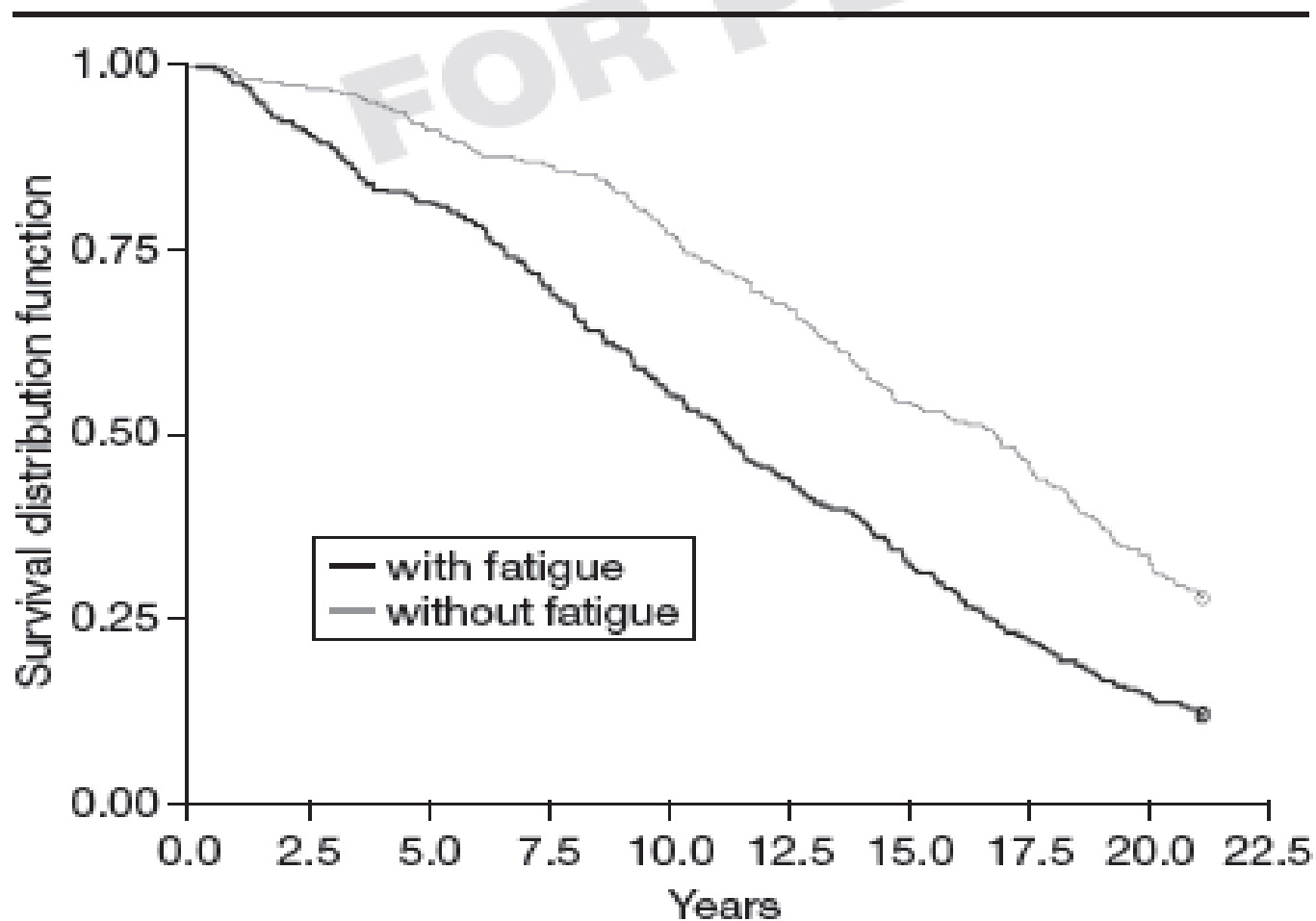


Fig. 1 - Survival curves among 70-year-olds with and without fatigue during 21-year follow-up.

Source: Avlund 2010



Fatigue in daily activities predictive of



Onset of disability after 1½, 3, 5, 10, og 15 years

(Avlund et al. 1995-2008)

Onset of functional limitations

(Avlund et al. 2004)

Mortality

(Avlund et al. 1998; 2003; Schultz-Larsen et al. 2007)

Use of health and social services

(Avlund et al. 2001)

Change and stability in physical activity

(Poulsen et al. 2007)



Fatigue in daily activities



Both in young, young old and old-old

Among persons in different geographic localities in Denmark, Sweden, Finland, and Germany

Sources: Avlund et al. 1995-2008;
Schultz-Larsen et al. 1992-2007;
Poulsen et al. 2006



Fatigue in Post-Polio Patients

Fatigue reported in up to 90% (Östlund 2011)

Reduced physical functioning, bodily pain, reduced sleep quality, psychologic distress and task-oriented coping all related to fatigue in Post Polio patients (Tersteeg et al. 2011)



Conclusions on fatigue in older adults

- Fatigue is influenced by multiple potential modifiable factors
- None of these factors explain the associations between fatigue and the various outcomes
- Fatigue may thus be regarded as a subjective measure of frailty
- Fatigue may be used to identify non-disabled individuals at high risk of functional decline

Source: Avlund. Aging Clin Exp Res 2010



Danish Aging Research Center

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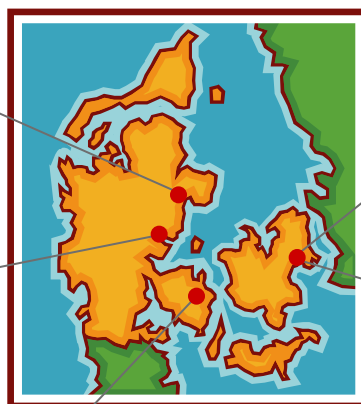
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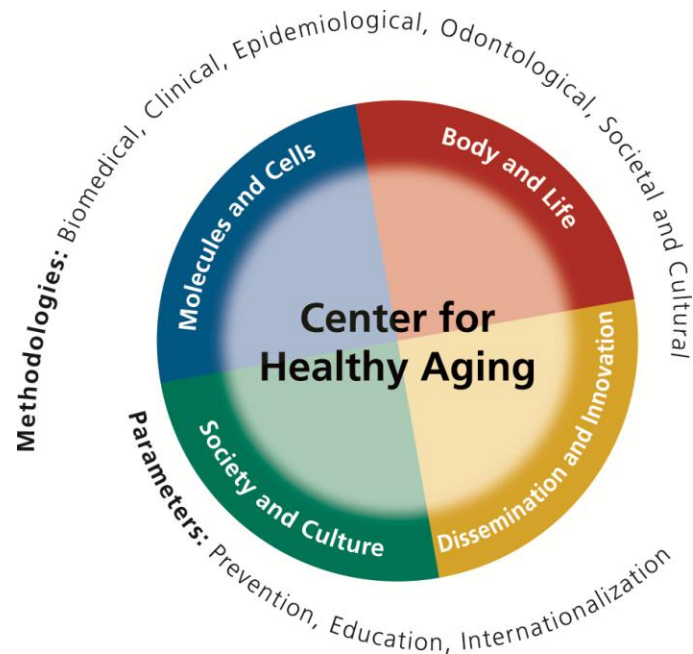
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Center for Healthy Aging



Let's hope that our research gives new knowledge that can be used to promote healthy aging, so that more people live to old age without disability

