

# **Functional status among Finnish nonagenarians in 1996-2007**



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# Background

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Absolute and relative numbers of elderly aged 90+ are increasing; in Finland

31 000 in 2008, 3% of 65+ (0.6%)

77 000 in 2030, 5% of 65+ (1.3%)

Late-life independency a central concern both for the individuals and the society

Few studies on periodic development of disability and functioning among the oldest old

# Vitality 90+ study

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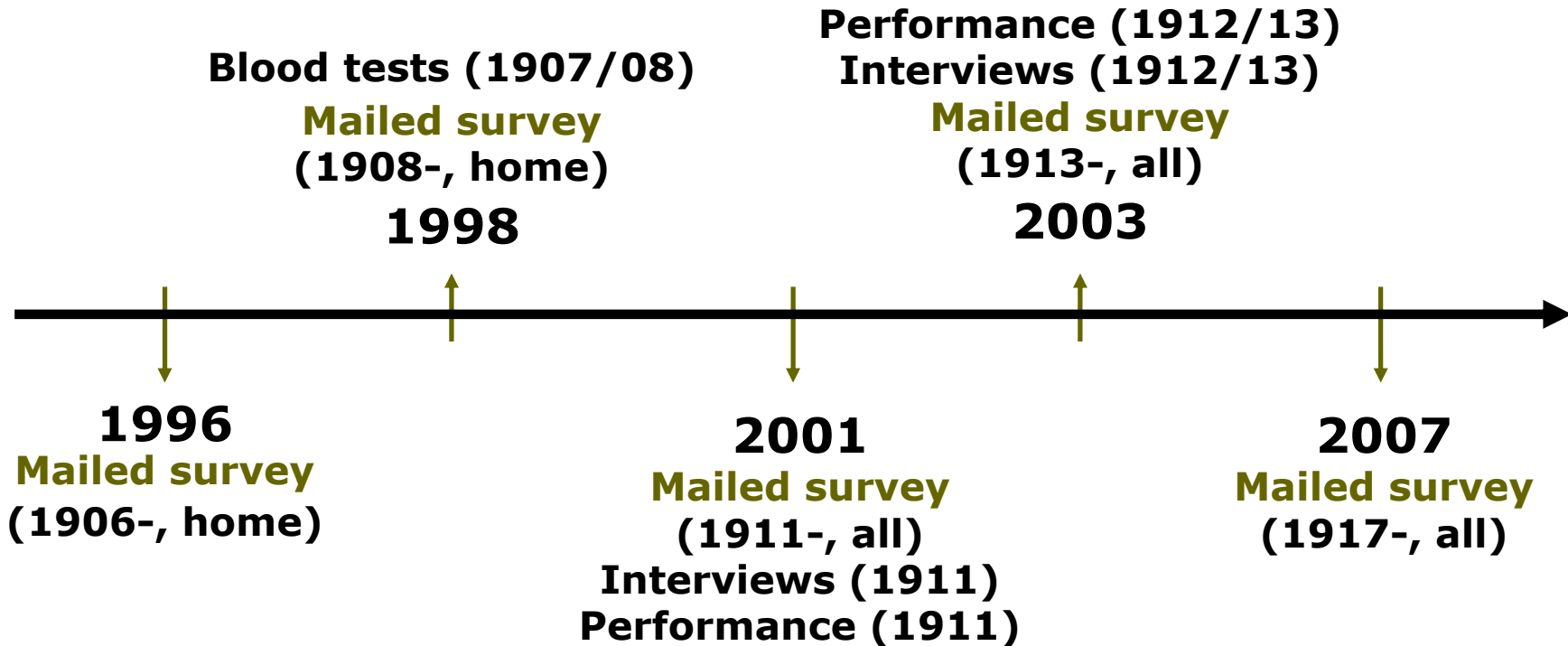
Started in 1995 in Tampere, Finland

Explores life situations and functioning among Tampere citizens aged 90+ by mailed questionnaires, home interviews, performance tests, blood samples

Baseline survey in 1995 tested feasibility of mailed survey among the oldest old

# Vitality 90+ study

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# Aim of our study

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To evaluate change of self-reported functioning among people aged 90+ by using mailed surveys from 1996, 1998, 2001, 2003, and 2007

# Study population

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Home-dwelling Tampere citizens aged 90+ in 1996 and 1998, all Tampere citizens aged 90+ in 2001, 2003, and 2007

Names, addresses, and place of residence derived from Tampere City Registries

linkages by a unique identifier

# Study population

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	<b>1996</b>	<b>1998</b>	<b>2001</b>	<b>2003</b>	<b>2007</b>
<b>Total</b>	<b>505</b>	<b>514</b>	<b>1129</b>	<b>1113</b>	<b>1146</b>
<b>Attendants</b>	<b>415</b> (82%)	<b>471</b> (91%)	<b>892</b> (79%)	<b>963</b> (84%)	<b>944</b> (82%)
<b>Men</b>	18%	23%	19%	20%	20%
<b>Women</b>	82%	77%	81%	80%	80%
<b>Median age</b>	<b>91</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
<b>Home</b>	95%	97%	63%	66%	68%
<b>Institution</b>	5%	3%	37%	34%	32%

# Measures

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Five questions from the survey; ability to  
go to/get up from bed  
dress  
move indoors  
walk 400 m  
walk stairs

Four optional answers  
'Yes without difficulty'  
'Yes with difficulty'  
'Only if someone helps'  
'Not at all'



# Measures

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## **Within each measure:**

Independent if answering 'yes'

Dependent if answering 'only if someone helps'  
or 'not at all'

## **Summary measure:**

Independent in all five measures

Independent in at least one measure

Dependent in all five measures

# Analyses, summary measure

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## **Independent in all five vs. others**

binary logistic regression

survey year, age continuous variables

sex, place of residence categorical variables

## **Distribution of summary measure**

Poisson regression

survey year, age continuous variables

sex, place of residence categorical variables

Within-subject associations in the data accounted for by using a person as a random effect in the analyses

# Home-dwelling, 1996-2007

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Almost all able to go to/get up from bed, dress, and move indoors independently

80% of men, and 60% of women able to walk 400 m and walk stairs independently

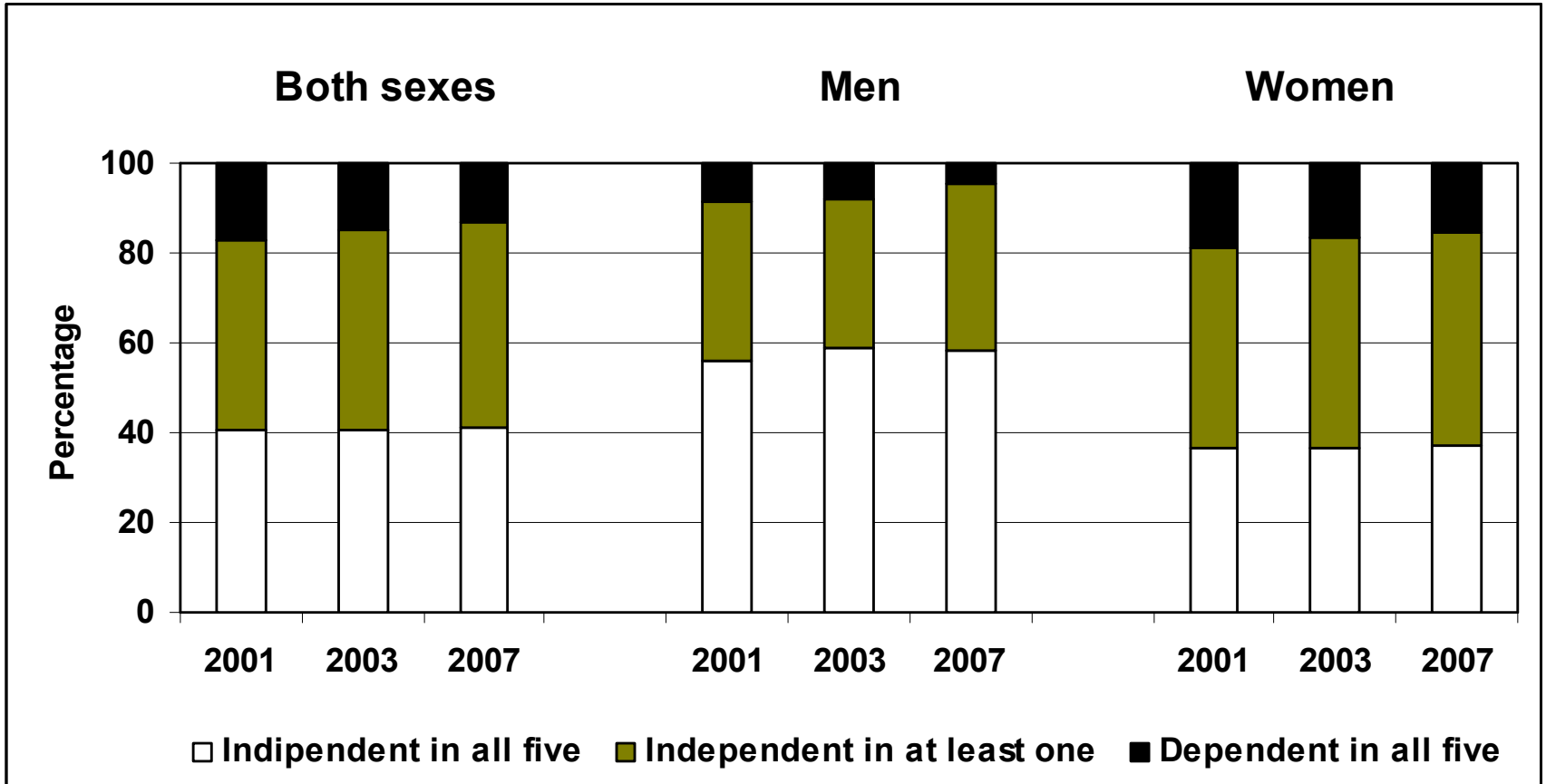
# All, 2001-2007

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90% of men, and 80% of women able to go to/get up from bed, dress, and move indoors independently

70% of men and less than half of the women able to walk 400 m and walk stairs independently

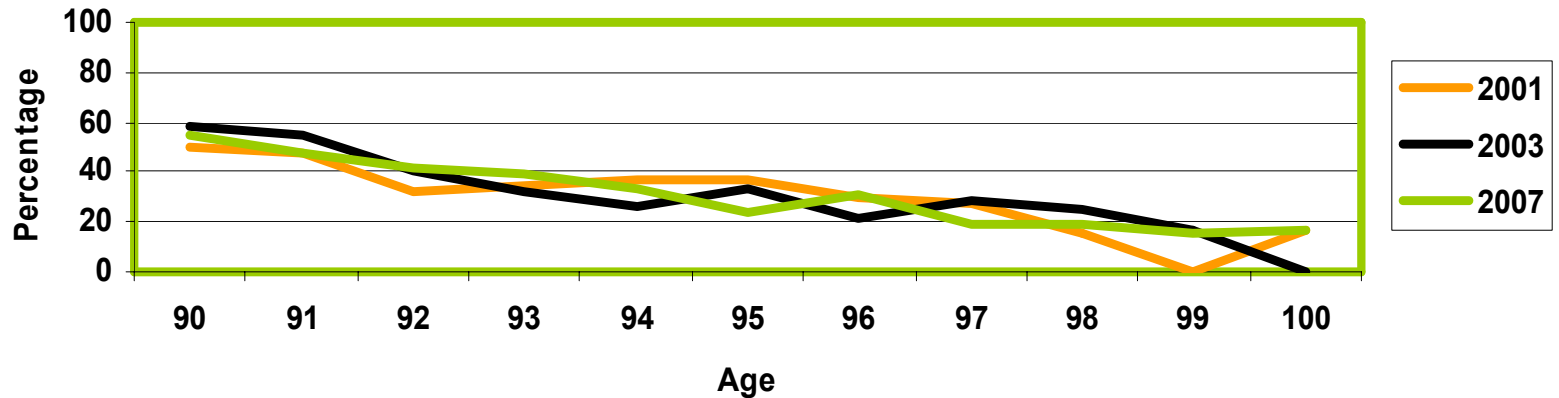
# Independency by year



# Independency by age

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Both sexes



# Discussion

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First study to evaluate self-reported functional capacity among citizens aged 90+ in Finland

Participation >80%

Linkages by a unique identifier

# Discussion

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Several cross-sectional surveys

estimates period-based, not cohort-based

Home-dwelling citizens in 1996 and 1998,  
all in 2001, 2003, and 2007

discrepancies in residential data due to varying  
sources of baseline information and changes in  
services and housing modifications

being 'at home' not similar in 1990's and 2000's  
analyses restricted to years 01, 03, 07



# Conclusion

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Functional status among the oldest old has remained more or less the same

increase in the amount of independent nonagenarians

decreasing trend in severely dependent nonagenarians(?)

Large proportion of dependent nonagenarians entails increasing demand of care and services from the society

# Thank you!

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