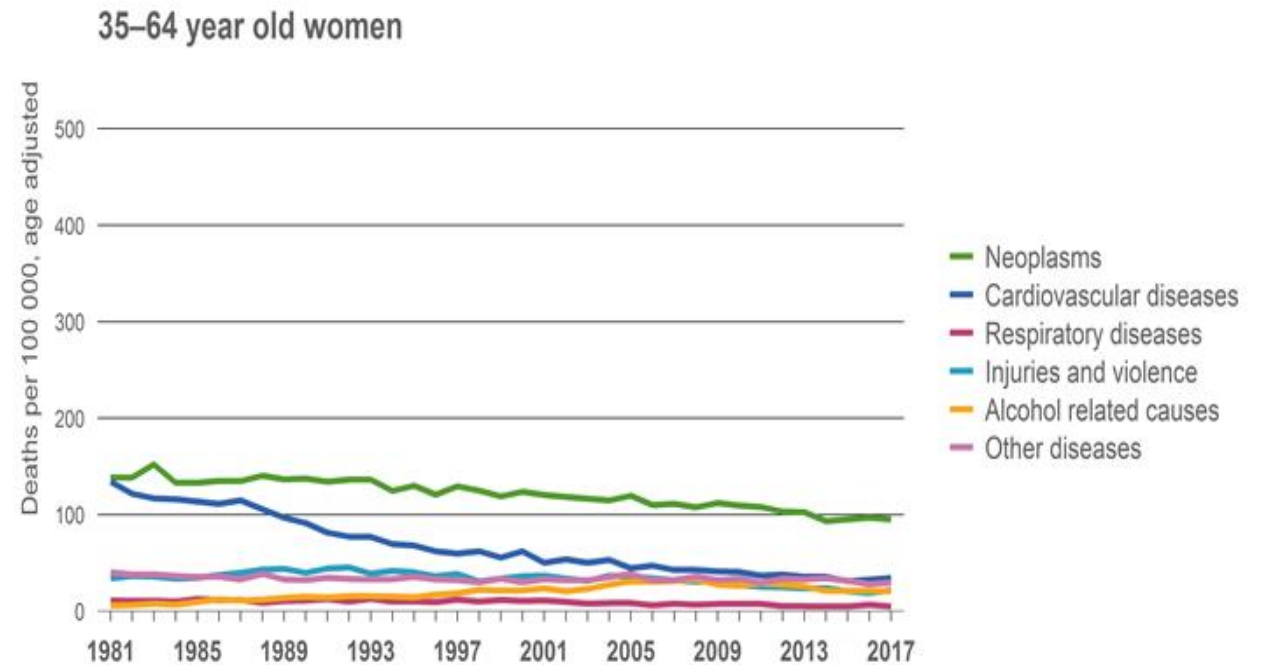
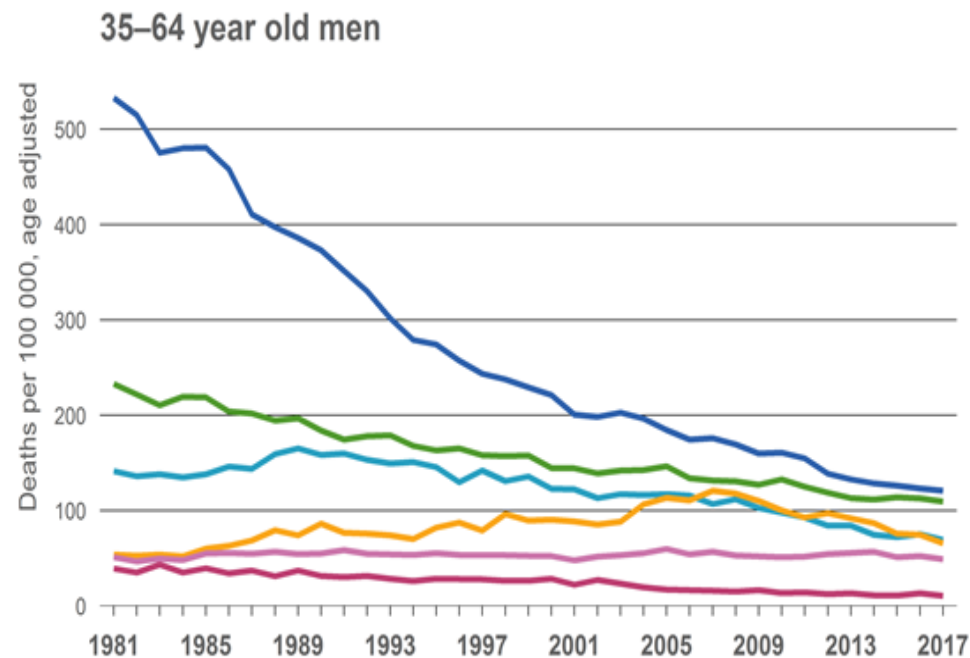




# Pitkäaikaissairauksien riskiä lisäävät elintavat Suomessa ja elintapaohjauksen vaikuttavuus

*Tiina Laatikainen, professori*

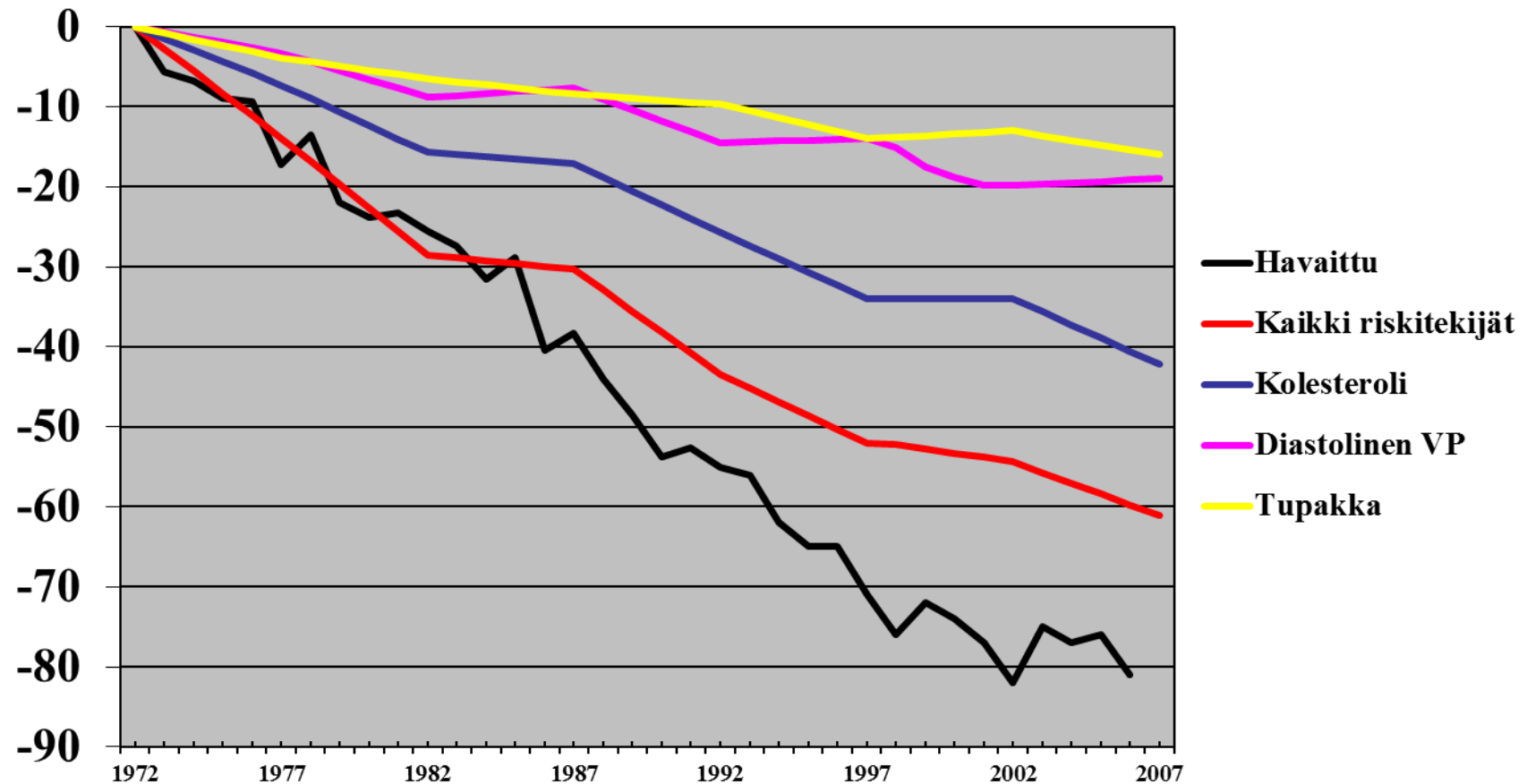
# Työikäisten miesten ja naisten kuolleisuus on laskenut merkittävästi viime vuosikymmeninä – Suurin lasku kuolleisuudessa sydän- ja verisuonitauteihin



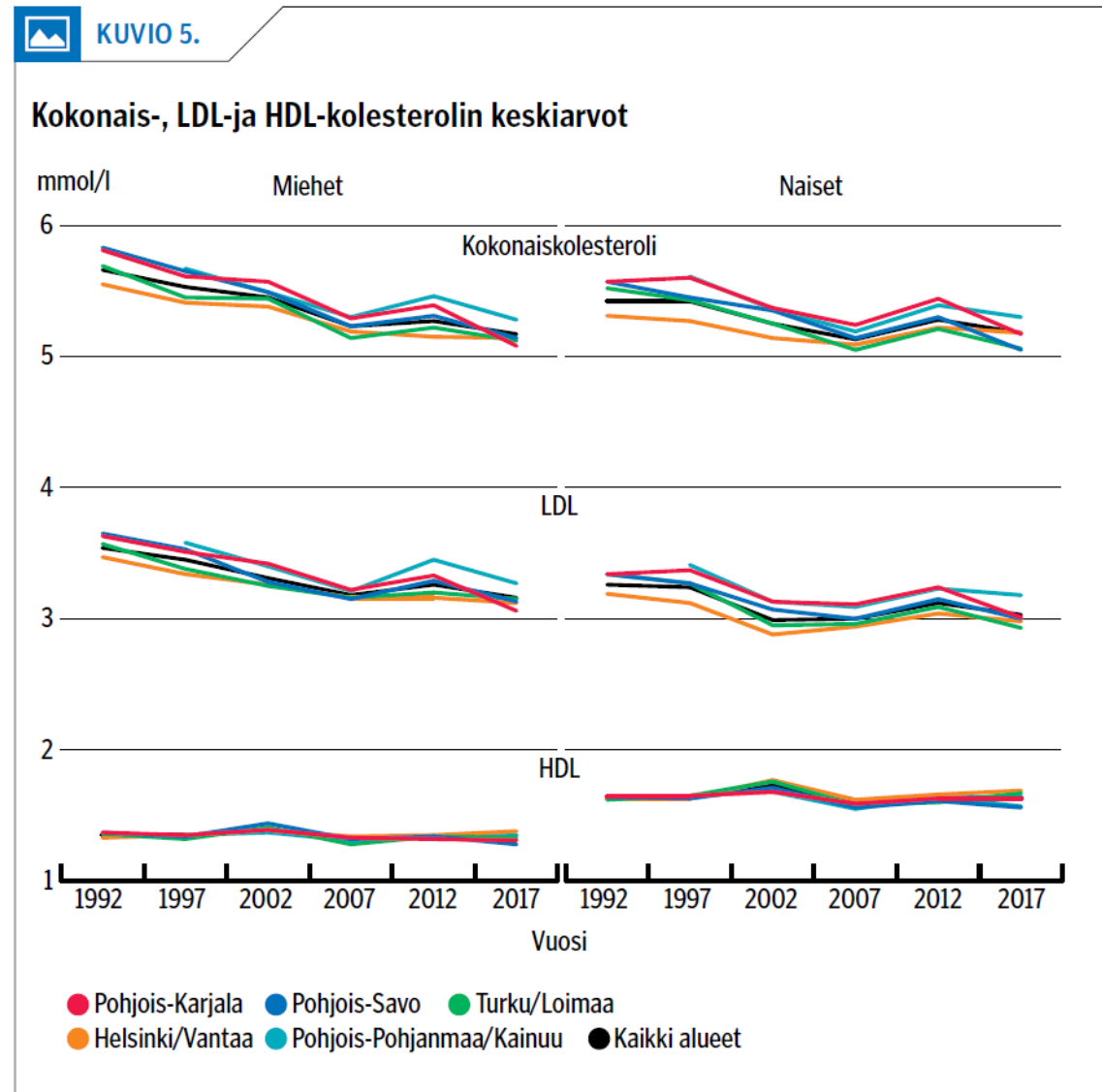
Kuvio: THL, Tietolähde: Tilastokeskus

# Havaittu ja ennustettu sydäntauti- kuolleisuuden lasku

35-64 –vuotiaat miehet

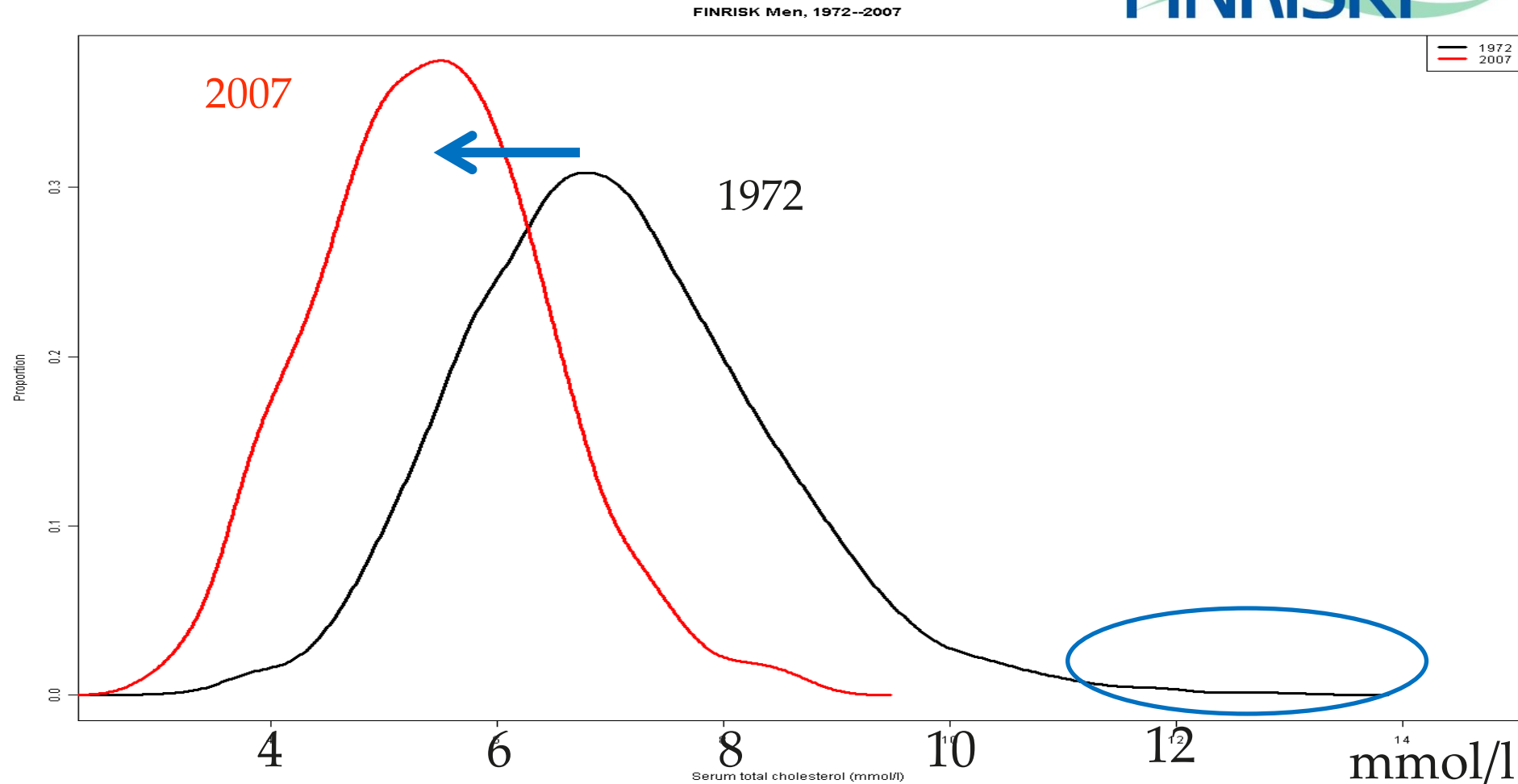


# Lipiditasojen muutokset 25-64 -vuotiailla

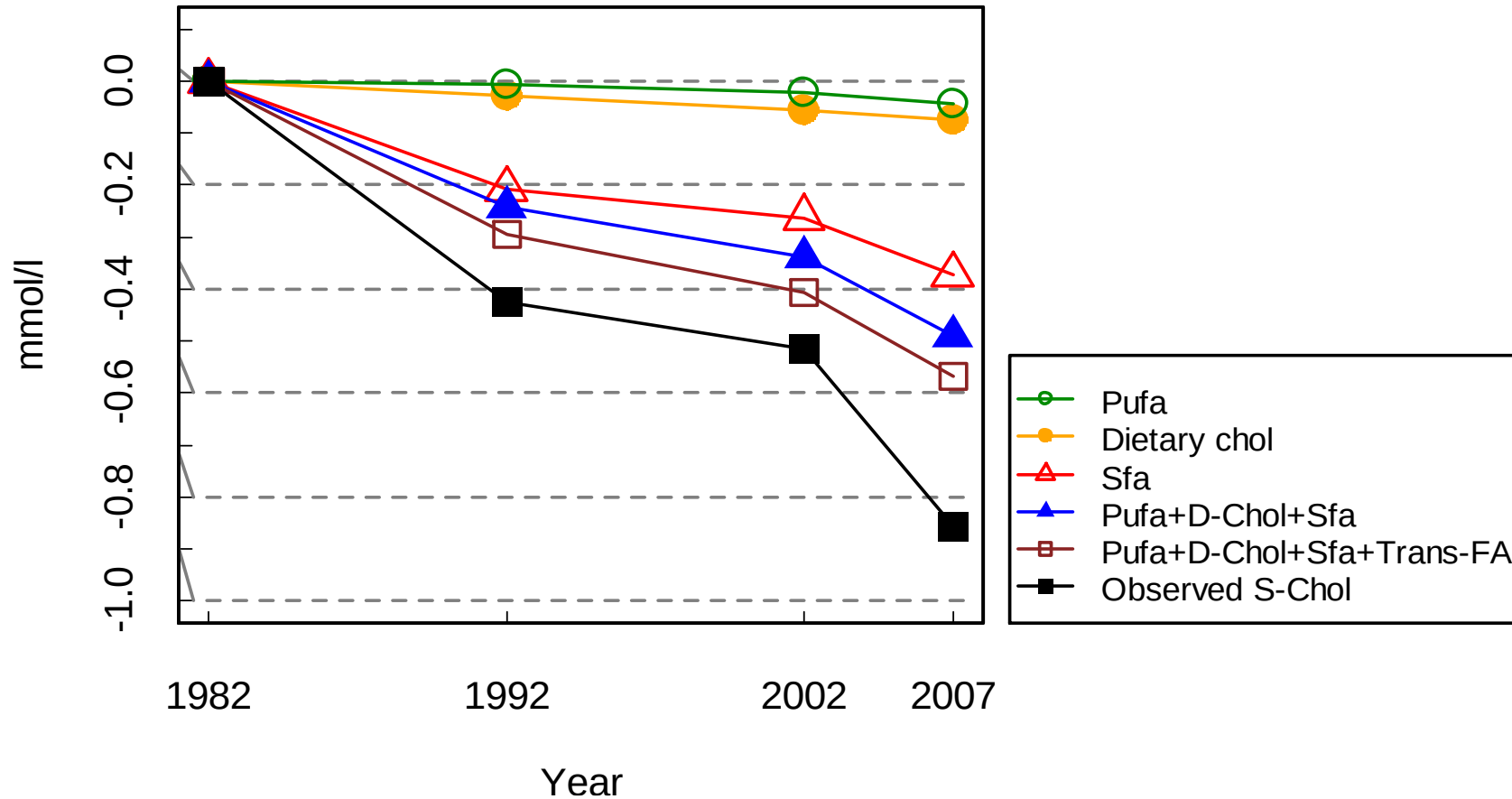


# Kolesterolin jakauma miehillä Pohjois-Karjalassa 1972 ja 2007

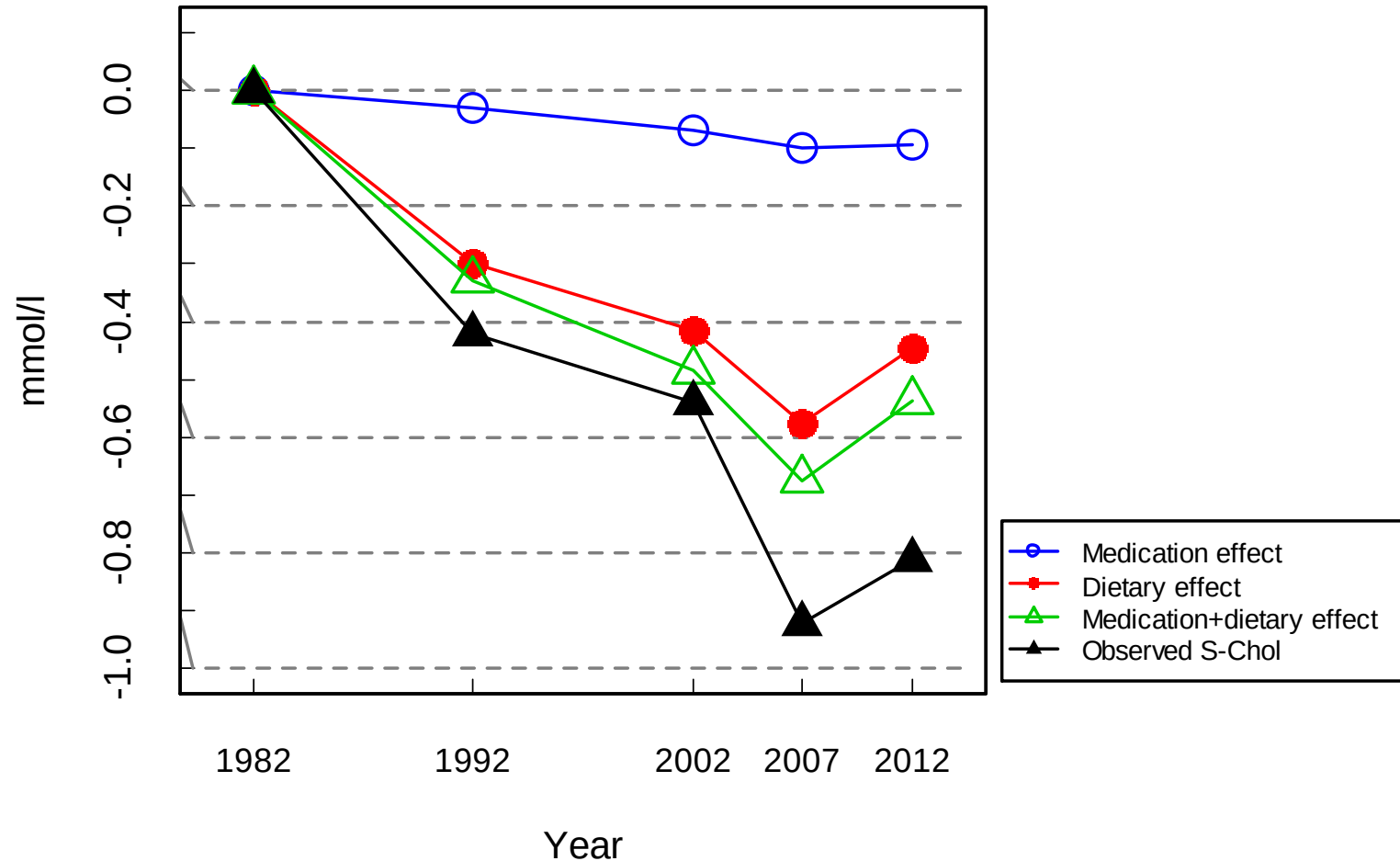
FINRISKI<sup>2007</sup>



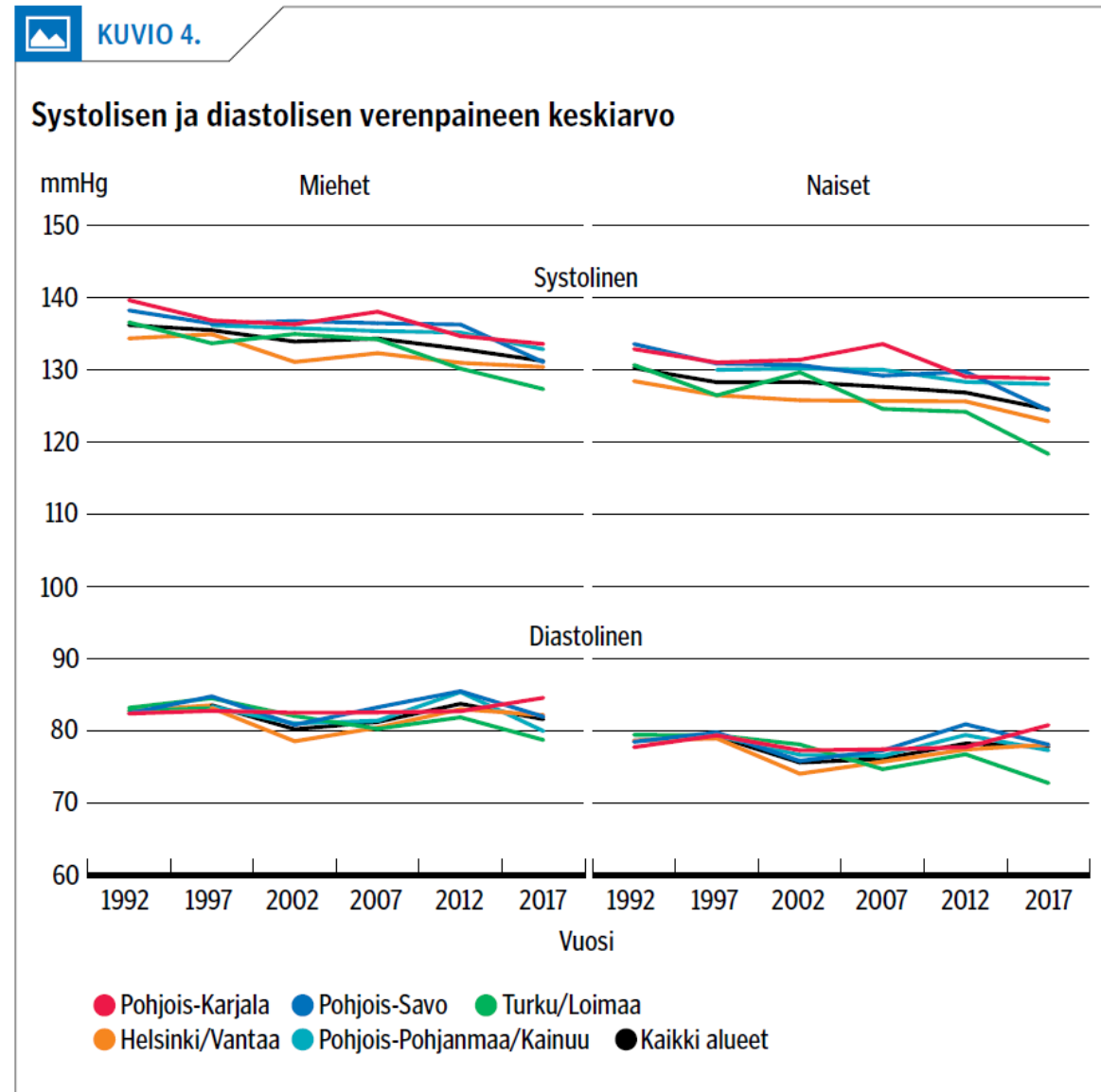
# Ruokavalion muutoksen vaikutukset seerumin kolesterolitasoon



# Ruokavalion muutoksen ja statiinilääkityksen vaikutukset seerumin kolesterolitasoon



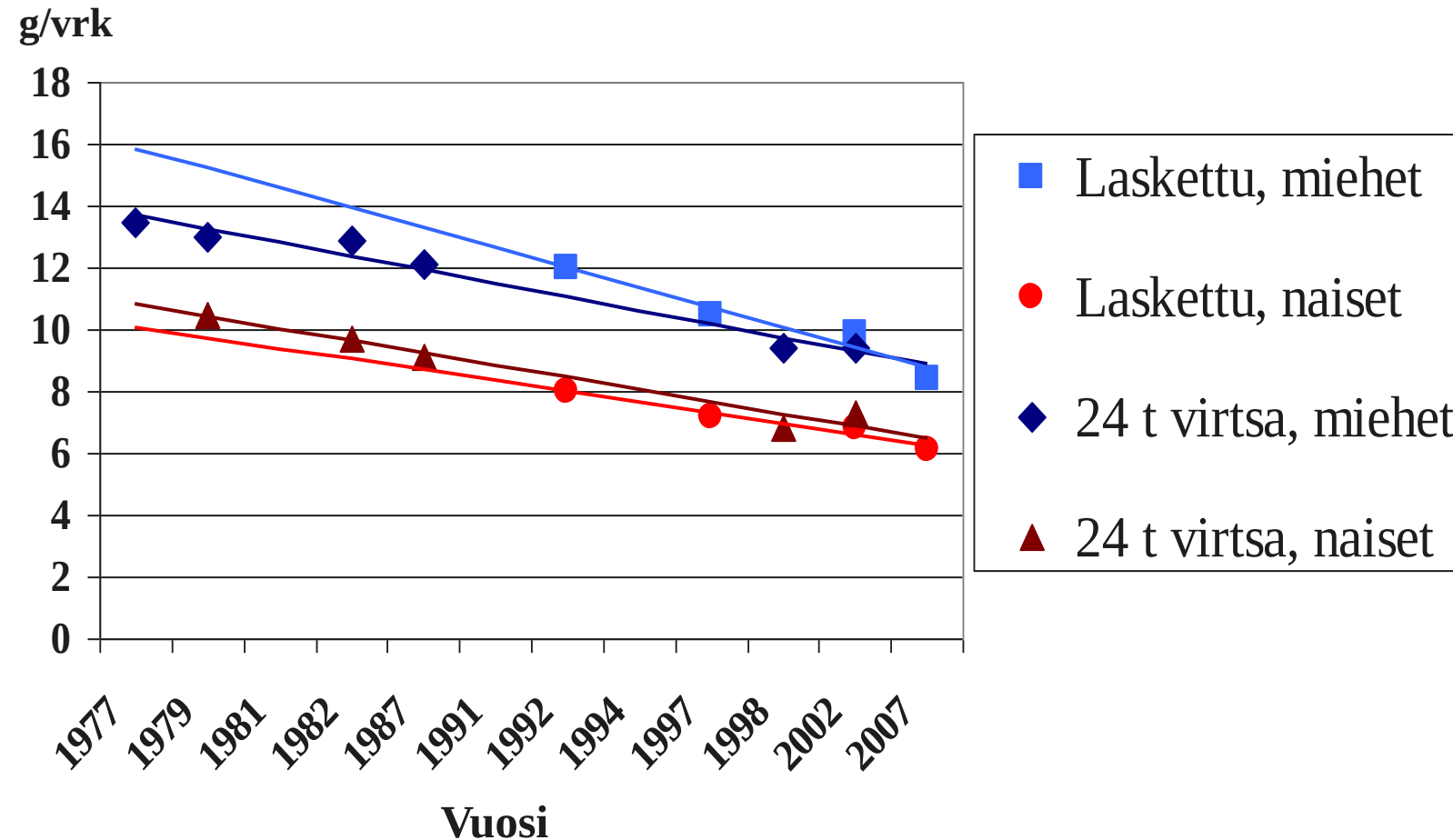
# Systolisen ja diastolisen verenpaineen muutos 1992-2017, 25-64 -vuotiaat



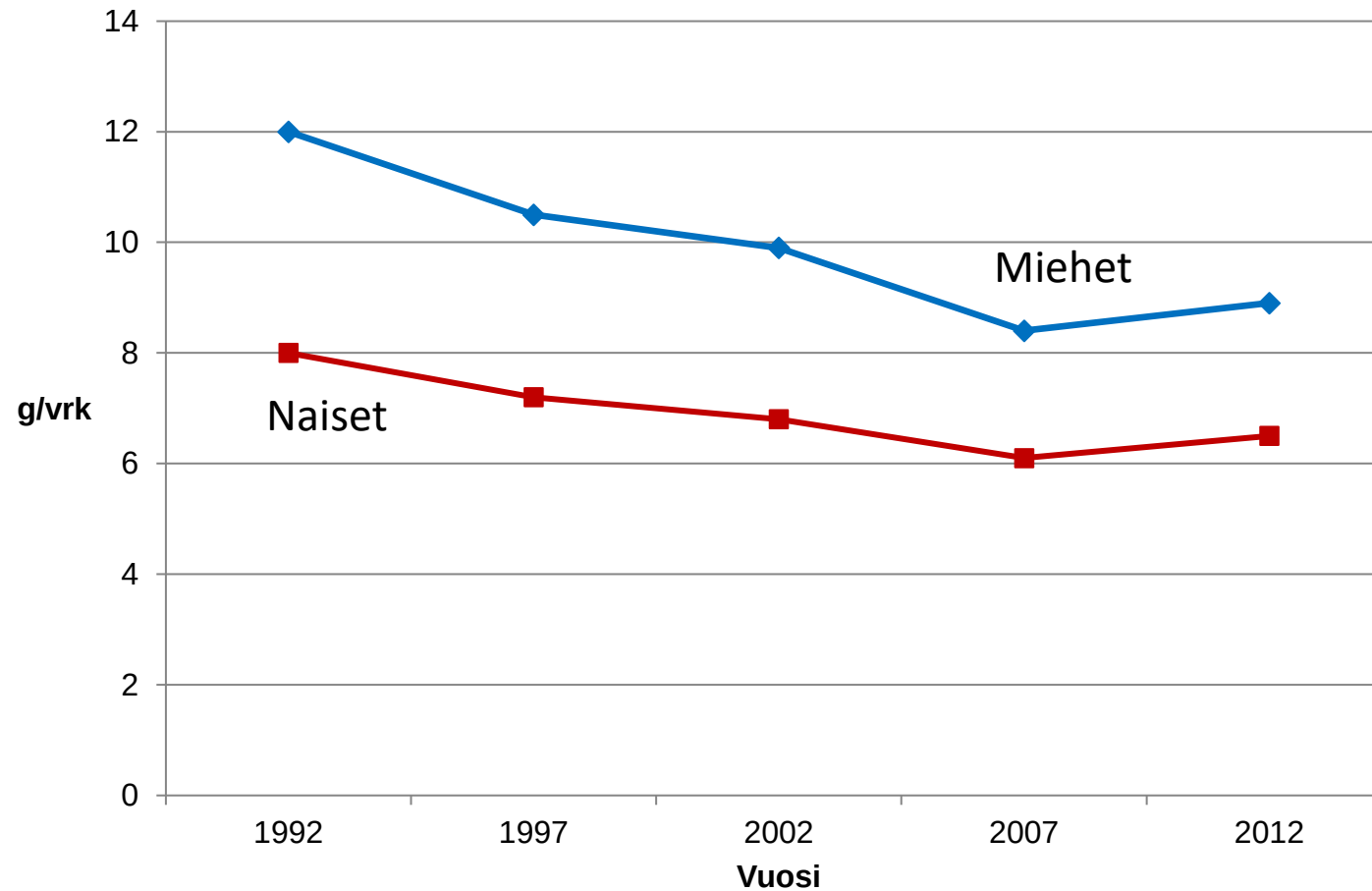
Lähde: Laatikainen ym.  
Lääkärilehti 2019



# Suolan saanti Suomessa 1977-2007

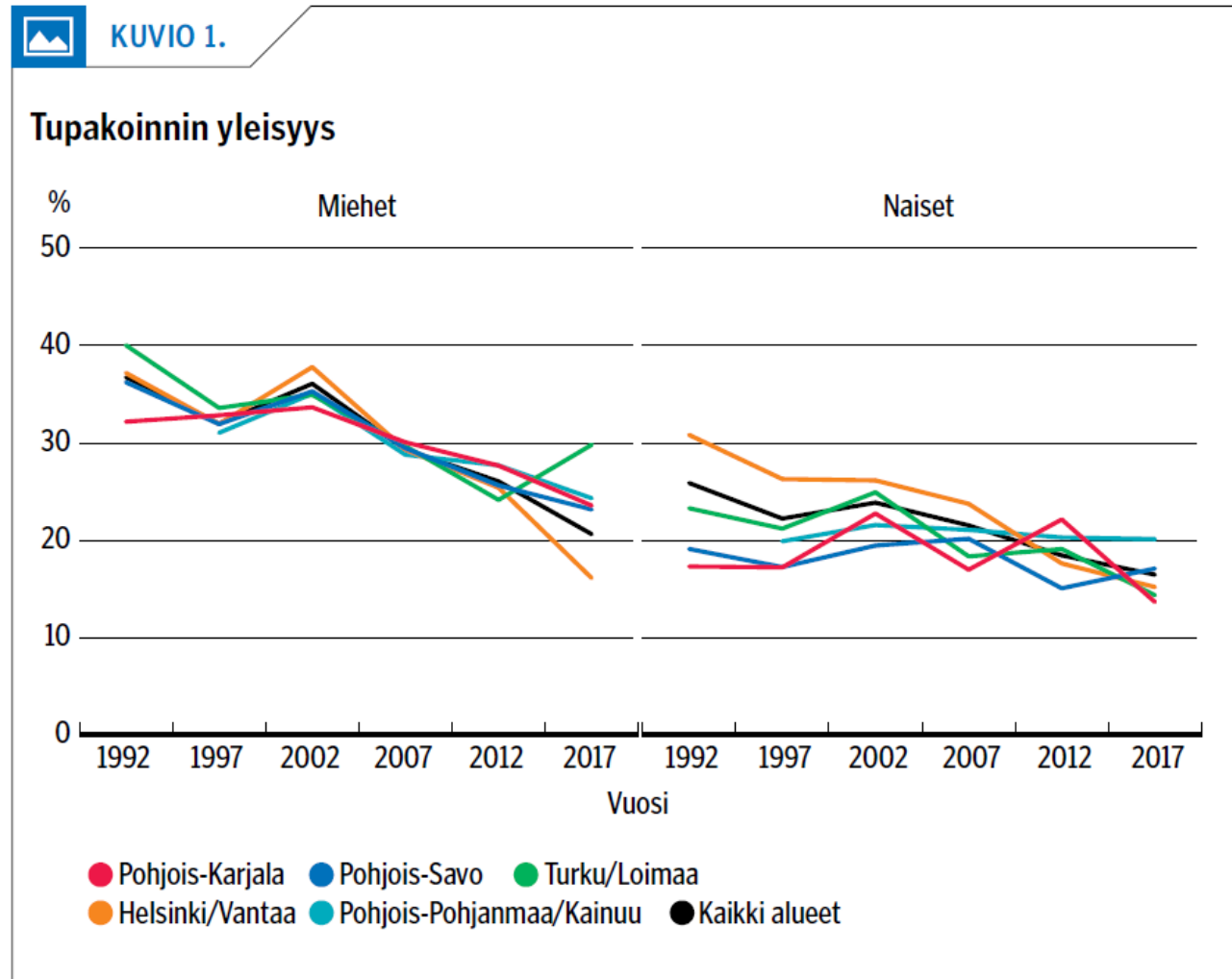


# Suolan saanti vuosina 1992-2012 25-64-vuotiaat



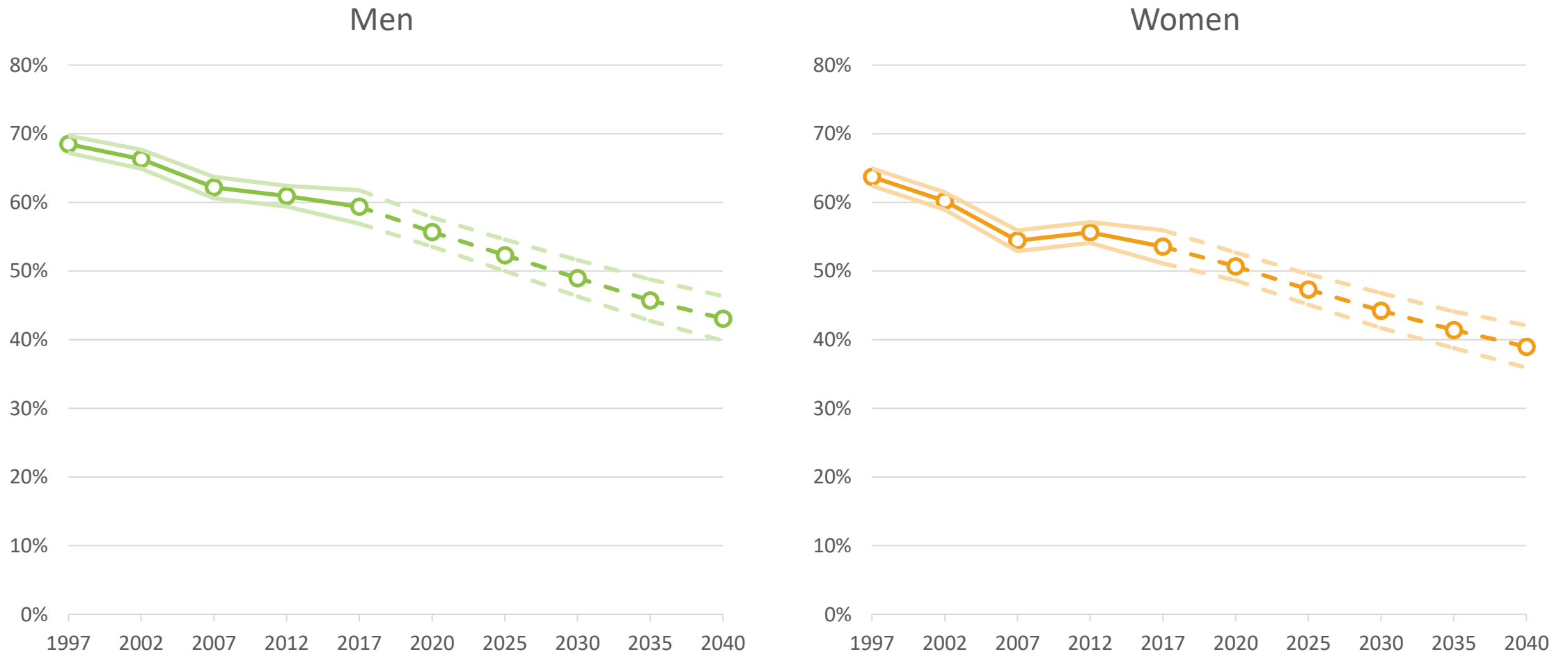
Muutos 2007-2012:  
Miehet  $p=0,006$   
Naiset  $p<0,001$

# Päivittäin tupakoivien osuus 1992-2017, 25-64 -vuotiaat



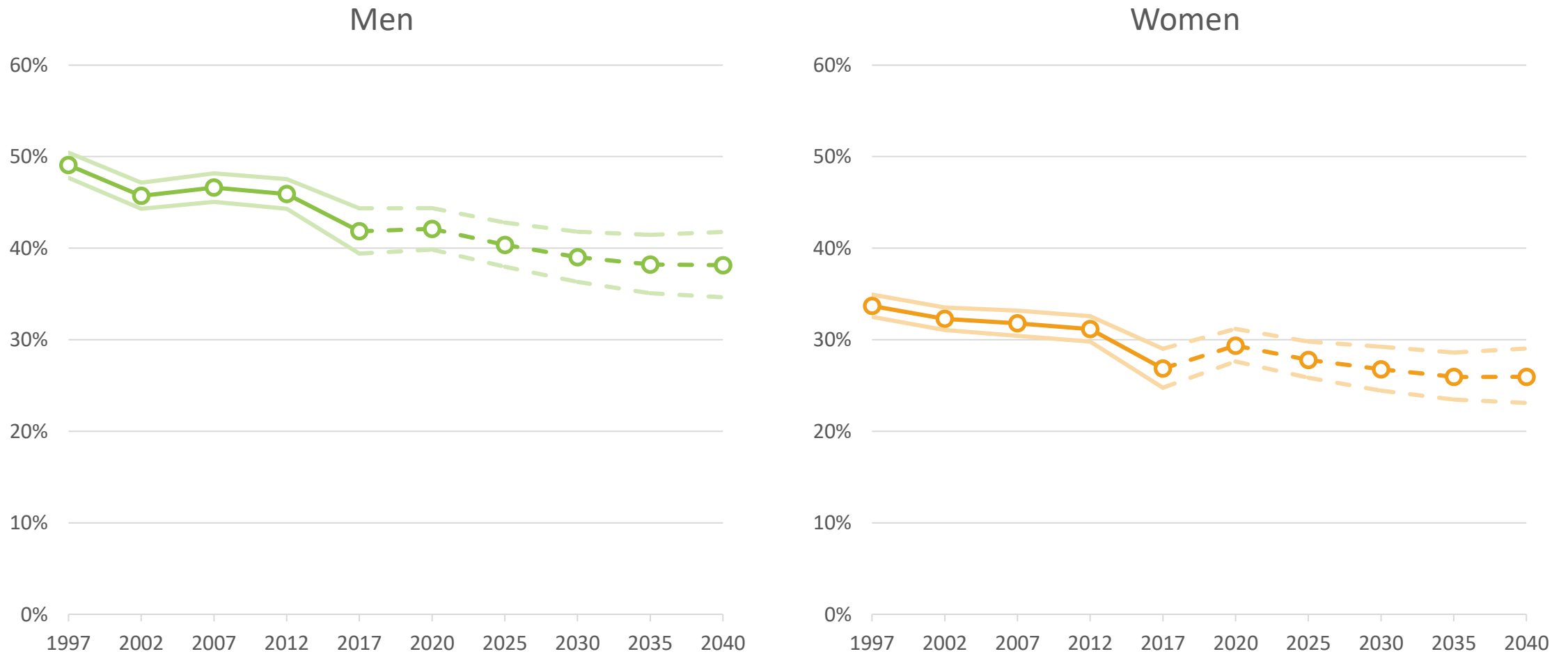
FinTerveys

# Kohonnut seerumin kolesteroli – kehitys ja ennusteet



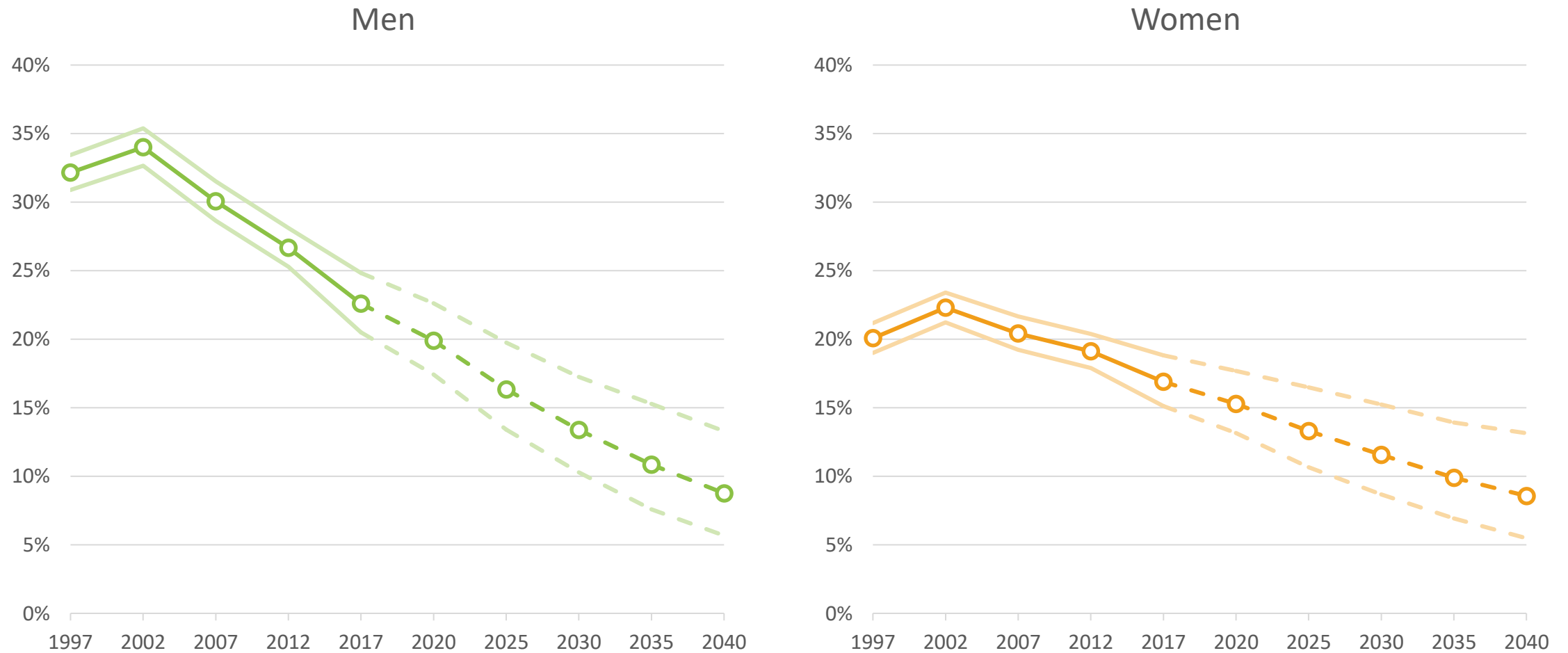
1997-2017 observed, 2017-2040 predicted

# Hypertensio – kehitys ja ennusteet



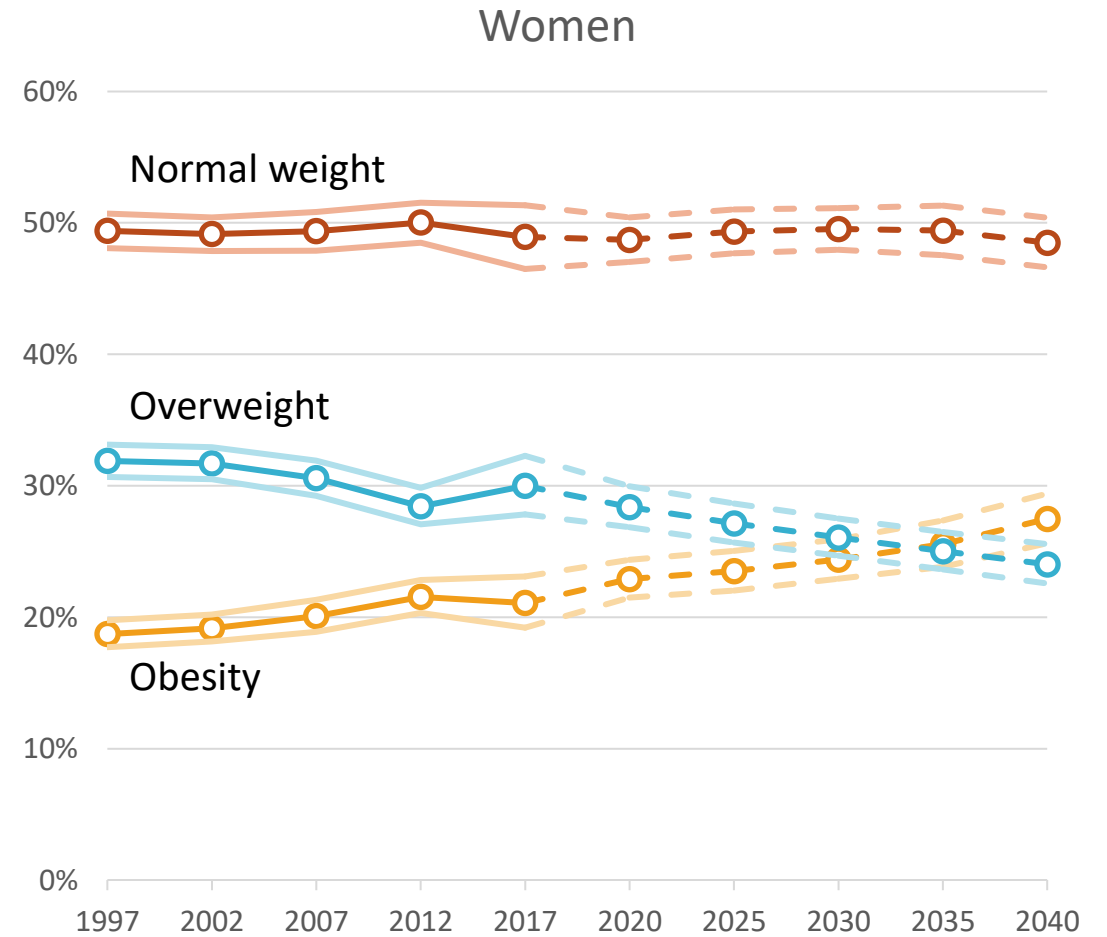
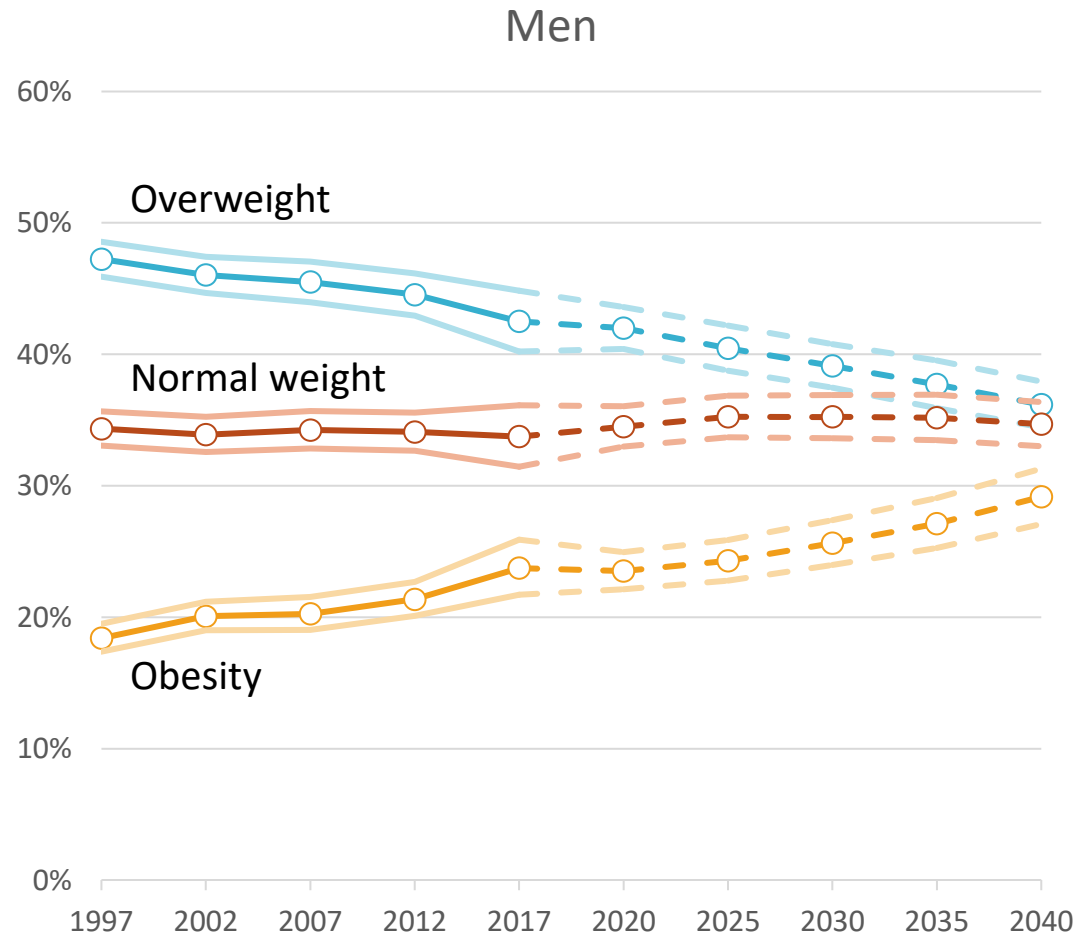
1997-2017 observed, 2017-2040 predicted

# Tupakointi – kehitys ja ennusteet



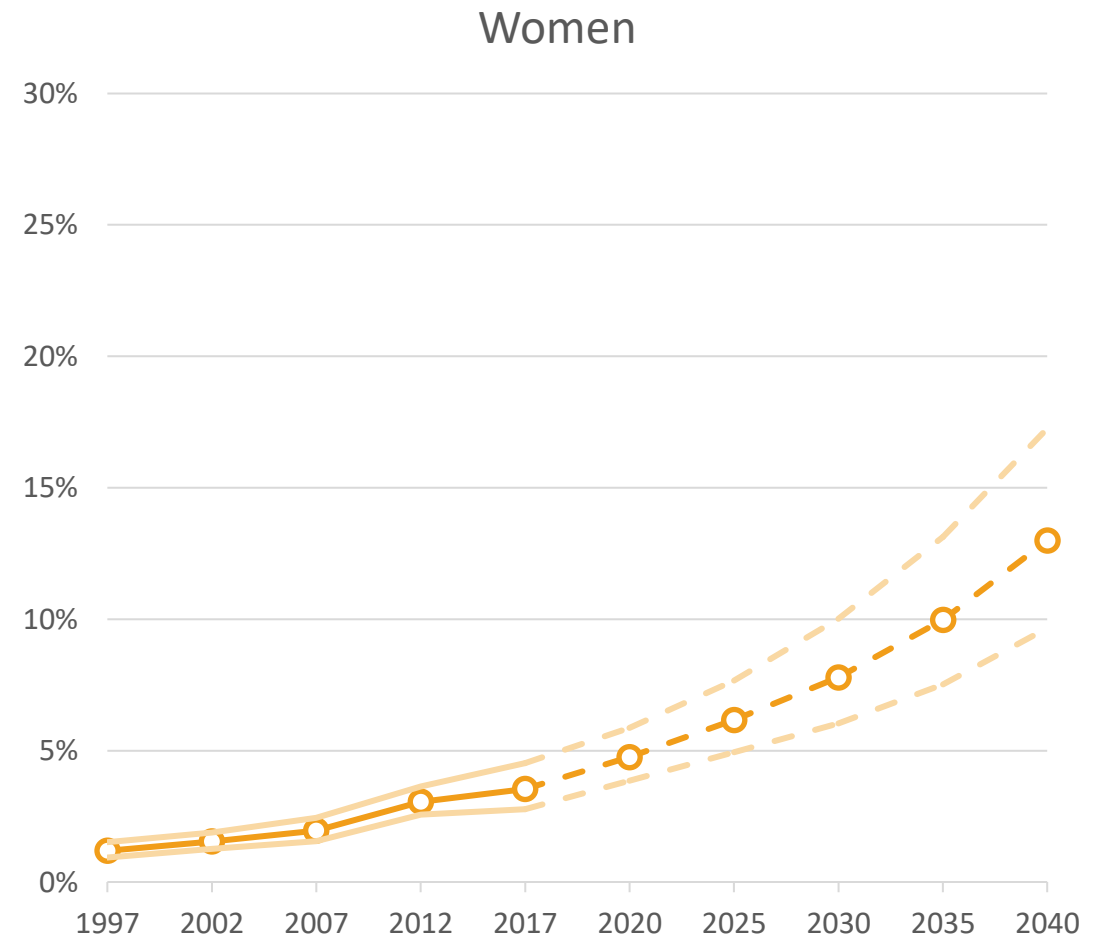
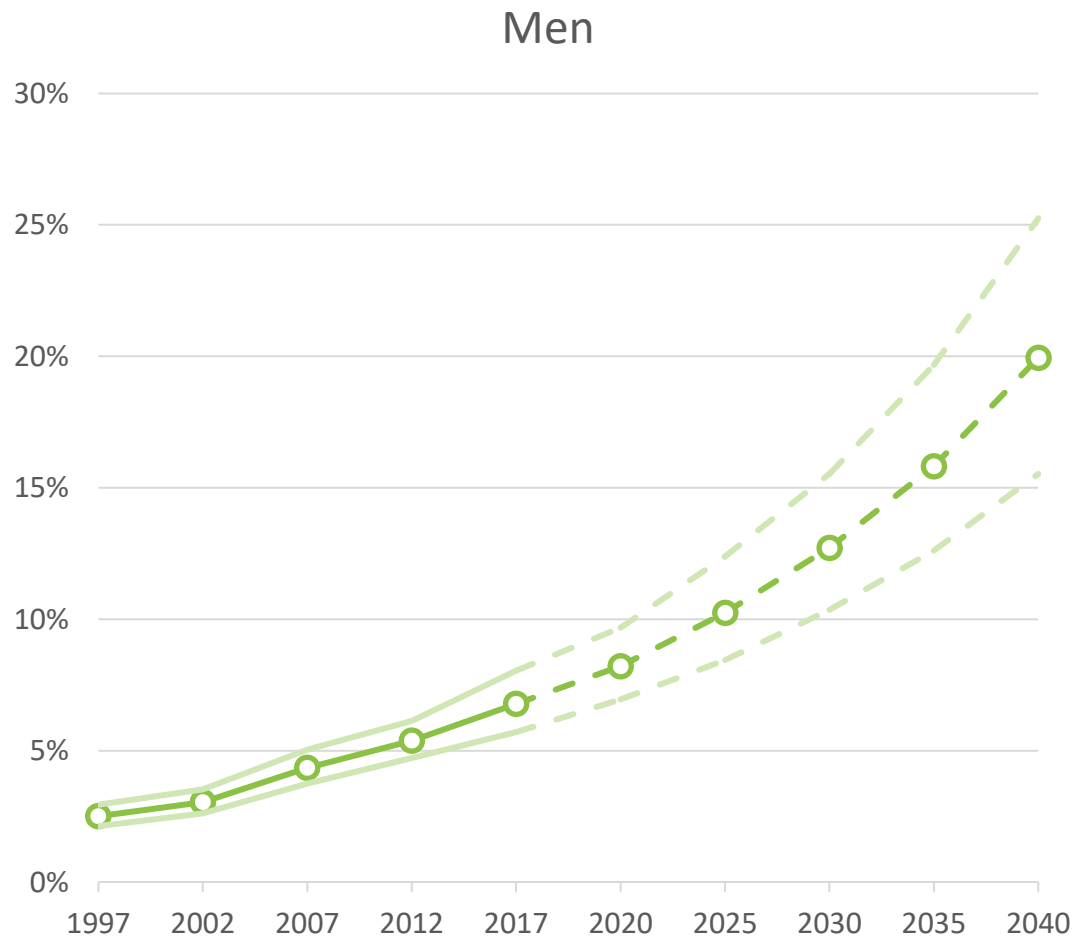
1997-2017 observed, 2017-2040 predicted

# Ylipaino ja lihavuus – kehitys ja ennusteet



1997-2017 observed, 2017-2040 predicted

# Diabetes – kehitys ja ennusteet

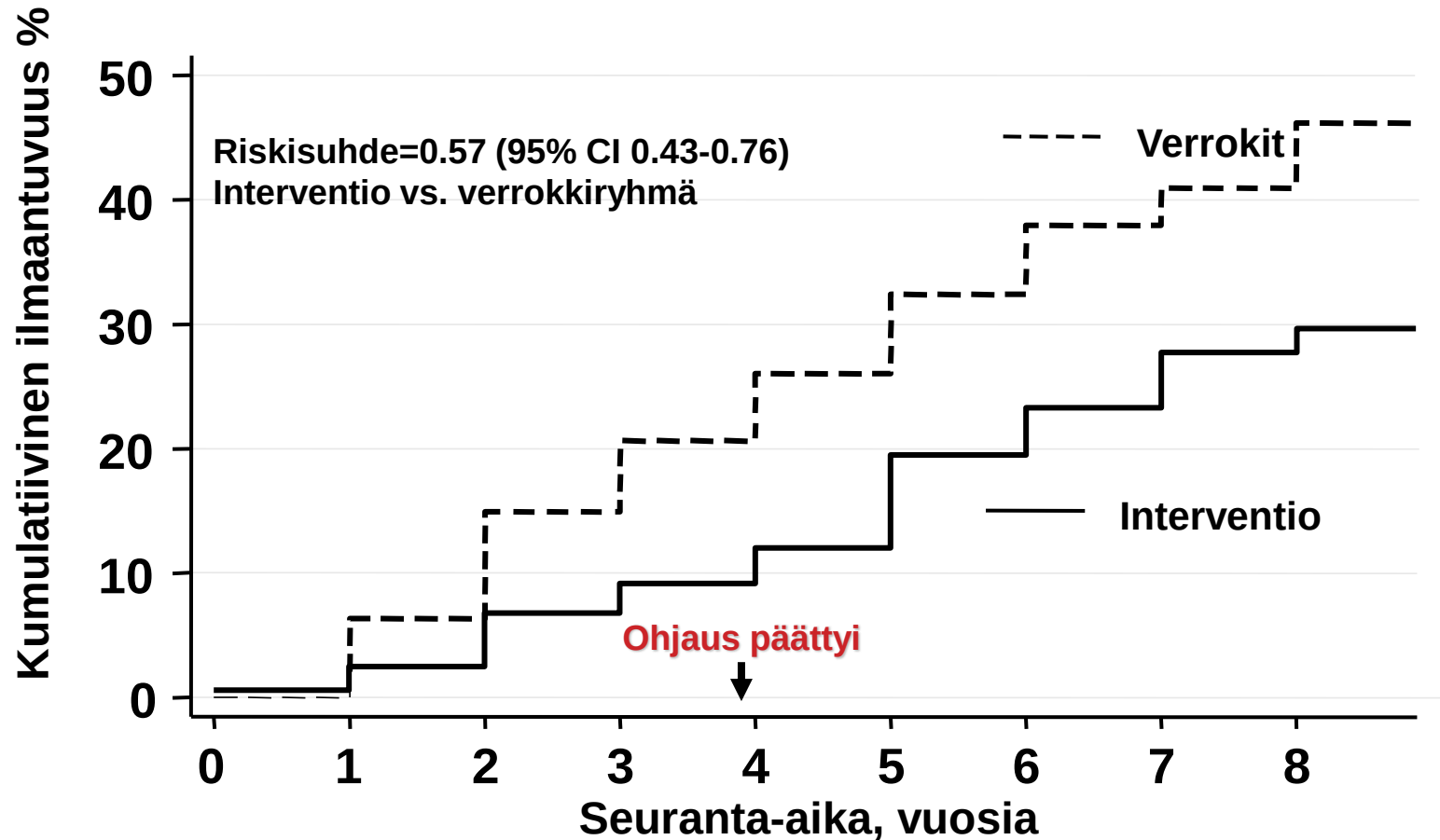


1997-2017 observed, 2017-2040 predicted



# Sustained reduction in the incidence of type 2 diabetes by lifestyle intervention: follow-up of the Finnish Diabetes Prevention Study

Jaana Lindström, Pirjo Ilanne-Parikka, Markku Peltonen, Sirkka Aunola, Johan G Eriksson, Katri Hemiö, Helena Hämäläinen, Pirjo Härkönen, Sirkka Keinänen-Kiukaanniemi, Mauri Laakso, Anne Louheranta, Marjo Mannelin, Merja Paturi, Jouko Sundvall, Timo T Valle, Matti Uusitupa, Jaakko Tuomilehto, on behalf of the Finnish Diabetes Prevention Study Group



Diabeteksen ilmaantuvuus interventioon osallistuneilla ja verrokeilla keskimäärin 7 vuoden seurantajakson aikana

# The New England Journal of Medicine

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VOLUME 346

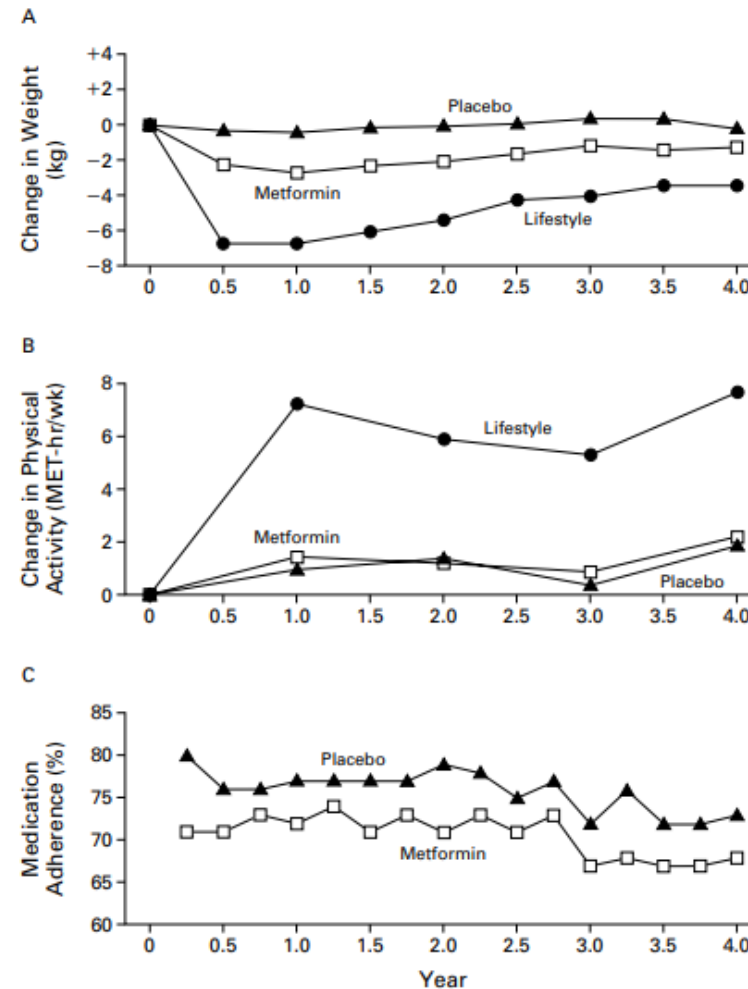
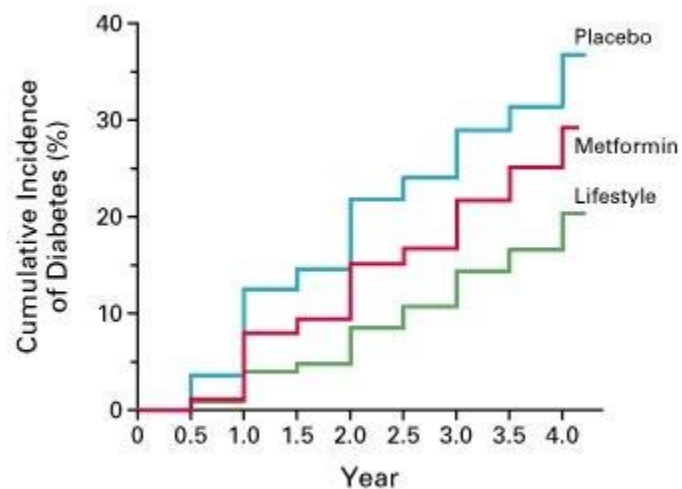
FEBRUARY 7, 2002

NUMBER 6



## REDUCTION IN THE INCIDENCE OF TYPE 2 DIABETES WITH LIFESTYLE INTERVENTION OR METFORMIN

DIABETES PREVENTION PROGRAM RESEARCH GROUP\*



**Figure 1.** Changes in Body Weight (Panel A) and Leisure Physical Activity (Panel B) and Adherence to Medication Regimen (Panel C) According to Study Group.

# Prevention of Type 2 Diabetes by lifestyle intervention in an Australian primary health care setting: Greater Green Triangle (GGT) Diabetes Prevention Project

Tiina Laatikainen<sup>1,2</sup>, James A Dunbar<sup>1</sup>, Anna Chapman<sup>1</sup>, Annamari Kilkkinen<sup>\*1</sup>, Erkki Vartiainen<sup>2</sup>, Sami Heistaro<sup>1,2</sup>, Ben Philpot<sup>1</sup>, Pilvikki Absetz<sup>2</sup>, Stephen Bunker<sup>1</sup>, Adrienne O'Neil<sup>1</sup>, Prasuna Reddy<sup>1</sup>, James D Best<sup>3</sup> and Edward D Janus<sup>1,4</sup>

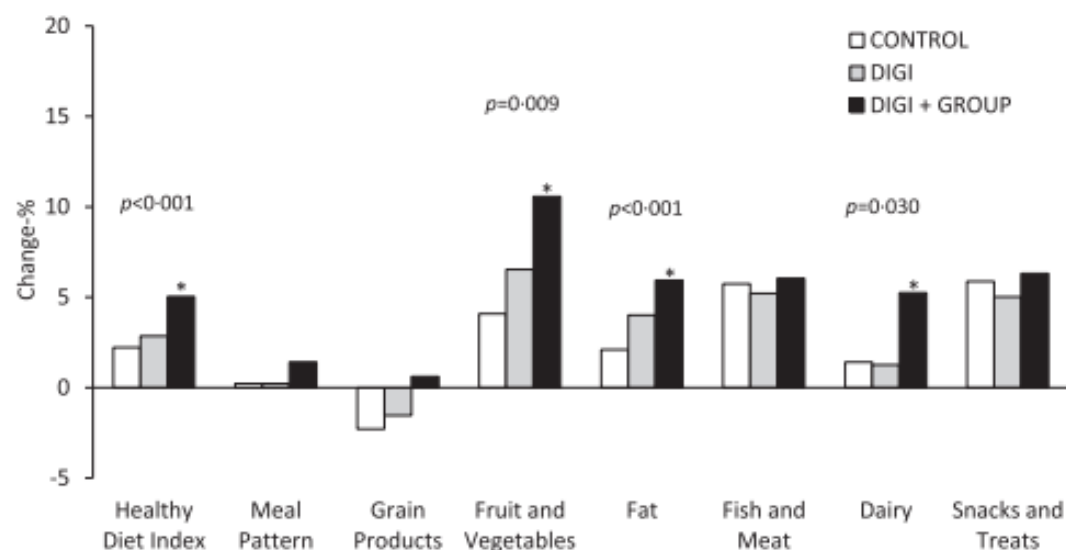
**Table 2: Changes in clinical outcome in baseline, three months and 12 months**

|                                      | n   | Baseline mean (SD) | Change from baseline to 3 months* mean (95% CI) | Change from baseline to 12 months mean (95% CI) | Change at 12 months % |
|--------------------------------------|-----|--------------------|-------------------------------------------------|-------------------------------------------------|-----------------------|
| Weight (kg)                          | 237 | 91.7 (17.7)        | -2.38 (-2.79,-1.98)                             | -2.52 (-3.19,-1.85)                             | -2.7                  |
| Body-mass index (kg/m <sup>2</sup> ) | 237 | 33.5 (5.9)         | -0.88 (-1.03,-0.74)                             | -0.93 (-1.17,-0.69)                             | -2.8                  |
| Waist circumference (cm)             | 236 | 104.9 (13.0)       | -3.16 (-3.72,-2.60)                             | -4.17 (-4.87,-3.48)                             | -4.0                  |
| Hip circumference (cm)               | 236 | 115.7 (12.5)       | -1.56 (-2.04,-1.07)                             | -2.65 (-3.26,-2.05)                             | -2.3                  |
| Plasma glucose (mmol/l)              |     |                    |                                                 |                                                 |                       |
| Fasting                              | 237 | 5.53 (0.54)        | 0.00 (-0.07,0.08)                               | -0.14 (-0.20,-0.07)                             | -2.5                  |
| 2 Hr oral glucose challenge          | 232 | 6.70 (1.69)        | -                                               | -0.58 (-0.79,-0.36)                             | -8.6                  |
| Serum lipids (mmol/l)                |     |                    |                                                 |                                                 |                       |
| Total cholesterol                    | 237 | 5.67 (1.15)        | -0.21 (-0.32,-0.09)                             | -0.29 (-0.40,-0.18)                             | -5.1                  |
| Low-density lipoprotein cholesterol  | 229 | 3.44 (0.99)        | -0.16 (-0.25,-0.07)                             | -0.25 (-0.34,-0.16)                             | -7.3                  |
| High-density lipoprotein cholesterol | 237 | 1.34 (0.37)        | 0.01 (-0.02,0.03)                               | 0.06 (0.03,0.09)                                | +4.4                  |
| Triglycerides                        | 237 | 1.90 (1.00)        | -0.10 (-0.20,0.01)                              | -0.15 (-0.24,-0.05)                             | -7.6                  |
| Blood pressure (mmHg)                |     |                    |                                                 |                                                 |                       |
| Systolic                             | 236 | 132.1 (17.1)       | -1.67 (-3.3,-0.04)                              | -1.01 (-2.60,0.58)                              | -0.8                  |
| Diastolic                            | 236 | 81.0 (9.9)         | -0.99 (-2.18,0.20)                              | -2.14 (-3.33,-0.94)                             | -2.6                  |

\* At the 3 month clinical test, n value varied between 216 and 221.

# Real-world effectiveness of digital and group-based lifestyle interventions as compared with usual care to reduce type 2 diabetes risk – A stop diabetes pragmatic randomised trial

Timo A. Lakka,<sup>a,b,c</sup> Kirsikka Aittola,<sup>d</sup> Elina Järvelä-Reijonen,<sup>d</sup> Tanja Tilles-Tirkkonen,<sup>d</sup> Reija Männikkö,<sup>d</sup> Niina Lintu,<sup>a</sup> Leila Karhunen,<sup>d</sup> Marjukka Kolehmainen,<sup>d</sup> Marja Harjuma,<sup>e</sup> Elina Mattila,<sup>e</sup> Riia Järvenpää,<sup>f</sup> Miikka Ermes,<sup>e</sup> Santtu Mikkonen,<sup>g,h</sup> Janne Martikainen,<sup>i</sup> Kaisa Poutanen,<sup>e</sup> Ursula Schwab,<sup>d,j</sup> Pilvikki Absetz,<sup>d,k</sup> Jaana Lindström,<sup>f</sup> and Jussi Pihlajamäki<sup>d,j,\*</sup>



## Anthropometry

|                                      |     |       |                        |       |       |
|--------------------------------------|-----|-------|------------------------|-------|-------|
| Body weight (kg)                     |     |       |                        |       | 0.160 |
| CONTROL                              | 834 | 0.03  | (ref)                  | ..    |       |
| DIGI                                 | 810 | -0.14 | -0.20 (-0.56 to 0.17)  | 0.287 |       |
| DIGI+GROUP                           | 812 | -0.27 | -0.35 (-0.72 to 0.01)  | 0.056 |       |
| Body mass index (kg/m <sup>2</sup> ) |     |       |                        |       | 0.177 |
| CONTROL                              | 834 | 0.01  | (ref)                  | ..    |       |
| DIGI                                 | 810 | -0.05 | -0.06 (-0.20 to 0.07)  | 0.334 |       |
| DIGI+GROUP                           | 812 | -0.10 | -0.12 (-0.26 to 0.01)  | 0.063 |       |
| Waist circumference (cm)             |     |       |                        |       | 0.068 |
| CONTROL                              | 829 | -1.32 | (ref)                  | ..    |       |
| DIGI                                 | 808 | -1.37 | -0.10 (-0.56 to 0.36)  | 0.665 |       |
| DIGI+GROUP                           | 809 | -1.78 | -0.52 (-0.98 to -0.05) | 0.028 |       |

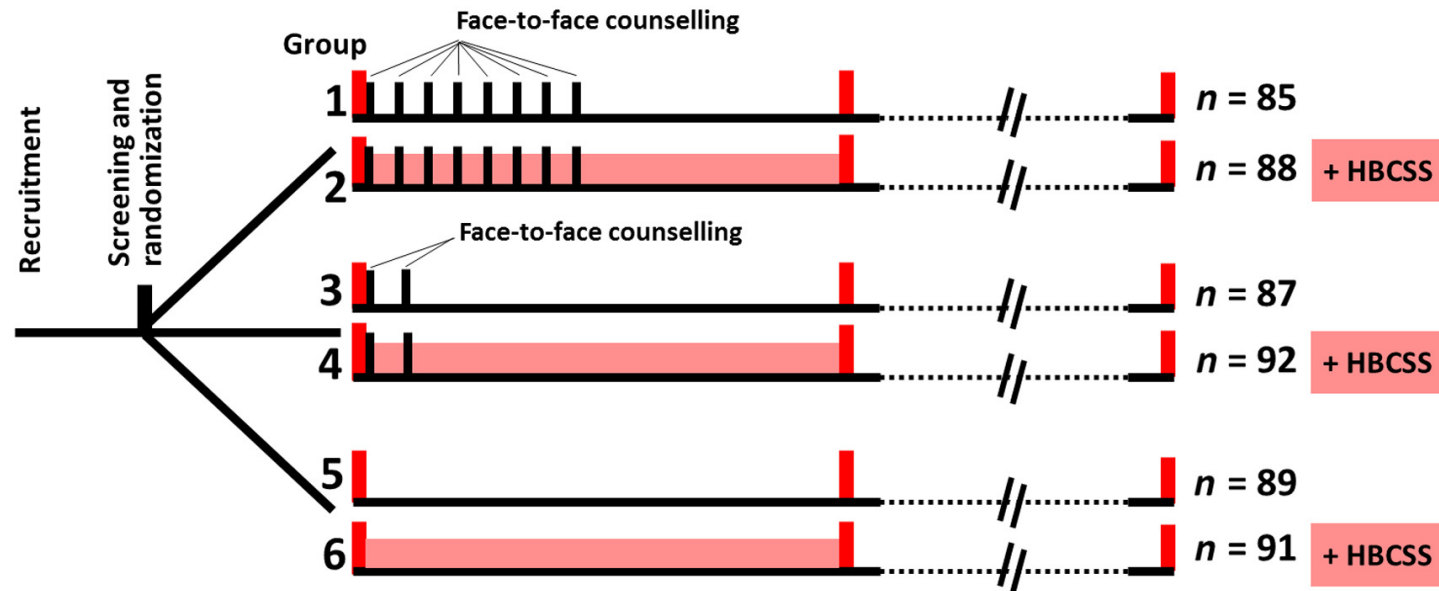
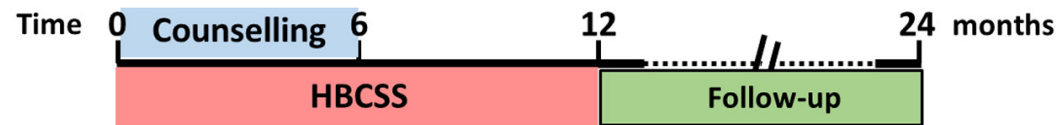
## Glucose metabolism

|                          |     |       |                        |       |       |
|--------------------------|-----|-------|------------------------|-------|-------|
| Fasting insulin (mU/L)   |     |       |                        |       | 0.054 |
| CONTROL                  | 774 | 0.99  | (ref)                  | ..    |       |
| DIGI                     | 759 | -0.01 | -0.89 (-1.70 to -0.07) | 0.033 |       |
| DIGI+GROUP               | 751 | 0.46  | -0.85 (-1.66 to -0.03) | 0.042 |       |
| Fasting glucose (mmol/L) |     |       |                        |       | 0.997 |
| CONTROL                  | 798 | 0.02  | (ref)                  | ..    |       |
| DIGI                     | 790 | 0.03  | 0.00 (-0.04 to 0.04)   | 0.984 |       |
| DIGI+GROUP               | 780 | 0.02  | 0.00 (-0.04 to 0.04)   | 0.944 |       |
| 2-hour glucose (mmol/L)  |     |       |                        |       | 0.266 |
| CONTROL                  | 793 | -0.07 | (ref)                  | ..    |       |
| DIGI                     | 782 | 0.04  | 0.07 (-0.07 to 0.21)   | 0.320 |       |
| DIGI+GROUP               | 776 | 0.05  | 0.11 (-0.02 to 0.25)   | 0.107 |       |
| HbA1c (mmol/mol)         |     |       |                        |       | 0.131 |
| CONTROL                  | 798 | 0.91  | (ref)                  | ..    |       |
| DIGI                     | 779 | 0.81  | -0.07 (-0.32 to 0.17)  | 0.562 |       |
| DIGI+GROUP               | 775 | 0.66  | -0.25 (-0.49 to 0.00)  | 0.050 |       |

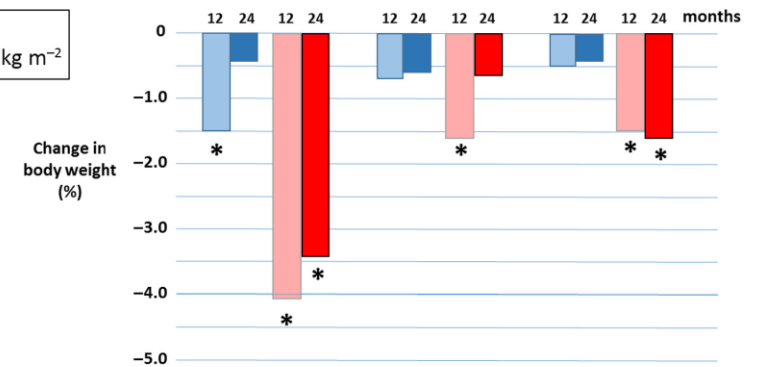
**Table 2: Effects of the digital intervention (DIGI) and the combined digital and group-based face-to-face intervention (DIGI+GROUP) on the measures of lifestyle factors, anthropometry, and glucose metabolism compared with usual care with no study intervention (CONTROL).**

# A randomized clinical trial of the effectiveness of a Web-based health behaviour change support system and group lifestyle counselling on body weight loss in overweight and obese subjects: 2-year outcomes

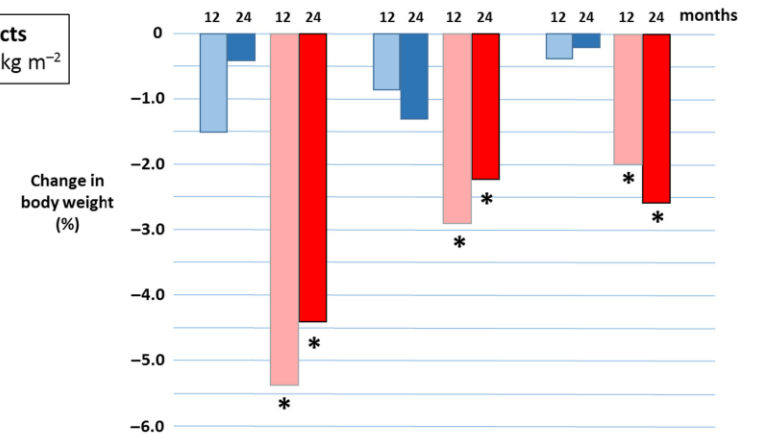
■ A.-M. Teeriniemi<sup>1,2,3,4,†</sup>, T. Salonen<sup>1,2,3,†</sup>, T. Jokelainen<sup>5</sup>, H. Vähäniikkilä<sup>6</sup>, T. Alahäivälä<sup>7</sup>, P. Karppinen<sup>7</sup>, H. Enwald<sup>3,8</sup>, M.-L. Huotari<sup>3,8</sup>, J. Laitinen<sup>9</sup>, H. Oinas-Kukkonen<sup>7</sup> & M. J. Savolainen<sup>1,2,3,5</sup>



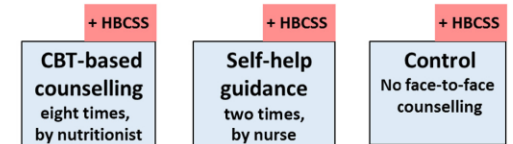
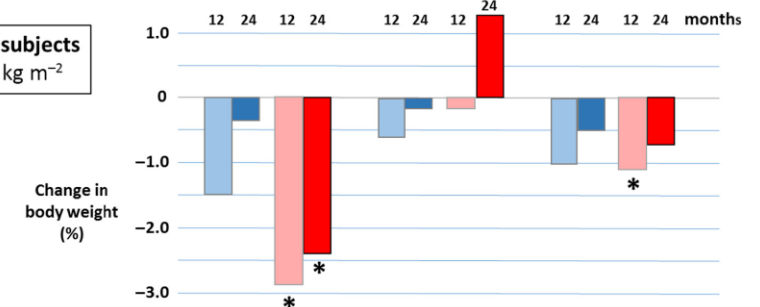
All subjects  
BMI 27 – 35 kg m<sup>-2</sup>



Obese subjects  
BMI 30 – 35 kg m<sup>-2</sup>



Overweight subjects  
BMI 27 – 30 kg m<sup>-2</sup>



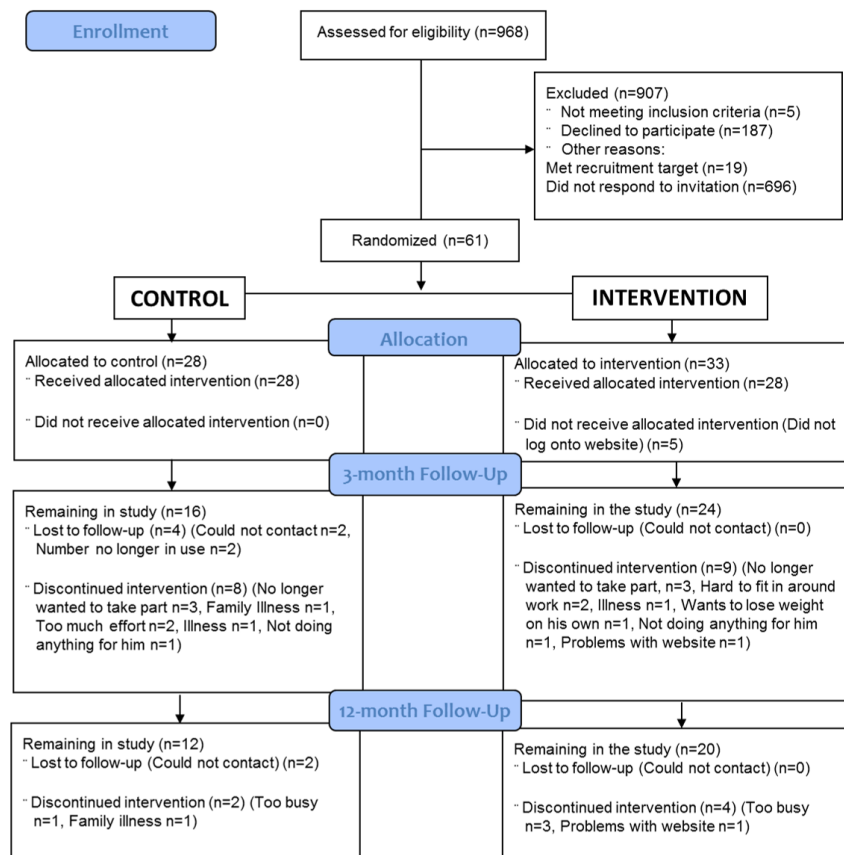


Published on 7.7.2017 in Vol 2 , No 2 (2017) :Jul-Dec



## Web-Based Weight Loss Intervention for Men With Type 2 Diabetes: Pilot Randomized Controlled Trial

Anna Haste<sup>1,2,3</sup> ; Ashley J Adamson<sup>1,2,3</sup> ; Elaine McColl<sup>3</sup> ; Vera Araujo-Soares<sup>3</sup> ; Ruth Bell<sup>3</sup>



|                          | Baseline       |                     | 3 months       |                     | 12 months      |                     |
|--------------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|
|                          | Control (n=28) | Intervention (n=33) | Control (n=16) | Intervention (n=24) | Control (n=12) | Intervention (n=20) |
| Outcome measure          | Mean (SD)      | Mean (SD)           | Mean (SD)      | Mean (SD)           | Mean (SD)      | Mean (SD)           |
| Height (cm)              | 176.9 (6.9)    | 177.7 (7.3)         | 177.0 (6.7)    | 177.7 (7.7)         | 176.0 (5.7)    | 178.2 (8.4)         |
| Weight (kg)              | 108.5 (13.4)   | 107.2 (10.9)        | 104.4 (12.2)   | 103.6 (10.2)        | 103.8 (14.3)   | 100.7 (12.3)        |
| Weight change (kg)       | -              | -                   | -2.6 (2.7)     | -2.6 (2.7)          | -2.8 (4.4)     | -5.4 (5.9)          |
| 5% weight loss (No. (%)) | -              | -                   | 3 (18.8)       | 3 (12.5)            | 4 (33.3)       | 8 (40)              |
| BMI                      | 34.6 (3.0)     | 33.9 (2.6)          | 33.3 (2.8)     | 32.8 (2.4)          | 33.4 (3.3)     | 31.6 (2.6)          |
| BMI change               | -              | -                   | -0.9 (0.9)     | -0.8 (0.9)          | -0.9 (1.4)     | -1.3 (2.0)          |
| Waist circumference (cm) | 119.7 (8.9)    | 117.7 (7.6)         | 117.7 (7.9)    | 115.4 (7.6)         | 118.2 (9.3)    | 113.1 (7.1)         |
| Waist change (cm)        | -              | -                   | -3.2 (2.7)     | -2.5 (3.1)          | -2.6 (3.5)     | -4.5 (4.9)          |

# BMJ Open Effectiveness of physical activity counselling provided for people with type 2 diabetes mellitus in primary healthcare in North Karelia, Finland: a register-based evaluation study

Tuula Marketta Martiskainen <sup>1,2</sup> Marja-Leena Lamidi,<sup>2</sup> Mika Venojärvi <sup>3</sup>,  
Heikki Tikkanen,<sup>3</sup> Tiina Laatikainen<sup>1,2,4</sup>

**Table 2**

Changes in weight, BMI, HbA1c and lipid values of persons participating in the intervention and of controls

| Variables              | Study group | Change per year, median (min, max) | Change per year, mean (SE) | P value for the difference | Estimated* value a year after the intervention, mean (SE) | P value for the difference | Meeting the target a year after the intervention, % (SE) | P value for the difference |
|------------------------|-------------|------------------------------------|----------------------------|----------------------------|-----------------------------------------------------------|----------------------------|----------------------------------------------------------|----------------------------|
| Weight, kg             | I           | 0.7 (−41, 38)                      | 1.3 (0.3)                  | 0.297                      | 100.1 (1.1)                                               | <0.001                     |                                                          |                            |
|                        | C           | 0.5 (−118, 25)                     | 0.9 (0.2)                  |                            | 92.3 (0.8)                                                |                            |                                                          |                            |
| BMI, kg/m <sup>2</sup> | I           | 0.20 (−15, 13)                     | 0.48 (0.11)                | 0.250                      | 34.8 (0.3)                                                | <0.001                     | 4.1 (1.0)                                                | <0.001                     |
|                        | C           | 0.19 (−38, 7)                      | 0.33 (0.08)                |                            | 32.1 (0.3)                                                |                            | 12.0 (1.2)                                               |                            |
| HbA1c, mmol/mol        | I           | 0.19 (−54, 38)                     | −0.98 (0.43)               | 0.001                      | 50.4 (0.7)                                                | 0.406                      | 63.1 (2.4)                                               | 0.003                      |
|                        | C           | 0.46 (−41, 36)                     | 0.41 (0.21)                |                            | 49.9 (0.4)                                                |                            | 70.6 (1.4)                                               |                            |

# Long Term Effects of a Lifestyle Intervention on Weight and Cardiovascular Risk Factors in Individuals with Type 2 Diabetes: Four Year Results of the Look AHEAD Trial

The Look AHEAD Research Group

Table 1

Mean changes in weight, fitness, and CVD risk factors in Intensive Lifestyle Intervention (ILI) and Diabetes Support and Education (DSE) and the difference between the two groups averaged over the four years

| Measure                                                | Mean Change DSE         | Mean Change ILI         | Mean Difference ILI -DSE | p-Value |
|--------------------------------------------------------|-------------------------|-------------------------|--------------------------|---------|
| Weight (% initial weight)                              | -0.88 (-1.12, -0.64)    | -6.15 (-6.39, -5.91)    | -5.27                    | <0.0001 |
| Fitness (% METS)                                       | 1.96 (1.07, 2.85)       | 12.74 (11.87, 13.62)    | 10.78                    | <0.0001 |
| HbA1c <sup>I</sup>                                     | -0.09 (-0.13, -0.06)    | -0.36 (-0.40, -0.33)    | -0.27                    | <0.0001 |
| SBP (mmHg) <sup>I</sup>                                | -2.97 (-3.44, -2.49)    | -5.33 (-5.80, -4.86)    | -2.36                    | <0.0001 |
| DBP (mmHg) <sup>I</sup>                                | -2.48 (-2.73, -2.24)    | -2.92 (-3.16, -2.68)    | -0.43                    | 0.012   |
| HDL Cholesterol (mg/dl) <sup>I</sup>                   | 1.97 (1.73, 2.22)       | 3.67 (3.43, 3.91)       | +1.70                    | <0.0001 |
| Triglyceride (mg/dl) <sup>I</sup>                      | -19.75 (-22.11, -17.39) | -25.56 (-27.91, -23.21) | -5.81                    | 0.0006  |
| LDL Cholesterol (mg/dl)                                | -12.84 (-13.67, -12.00) | -11.27 (-12.10, 10.44)  | +1.57                    | 0.009   |
| LDL Cholesterol (adjusting for medication use) (mg/dl) | -9.22 (-10.04, -8.39)   | -8.75 (-9.56, -7.94)    | +0.47                    | 0.42    |

<sup>I</sup> Data presented are average effects unadjusted for medication use.

Adjusting for baseline use of medications or changes over time did not influence the average effect or the p-value. For LDL-cholesterol, the data are presented with and without medication adjustments.

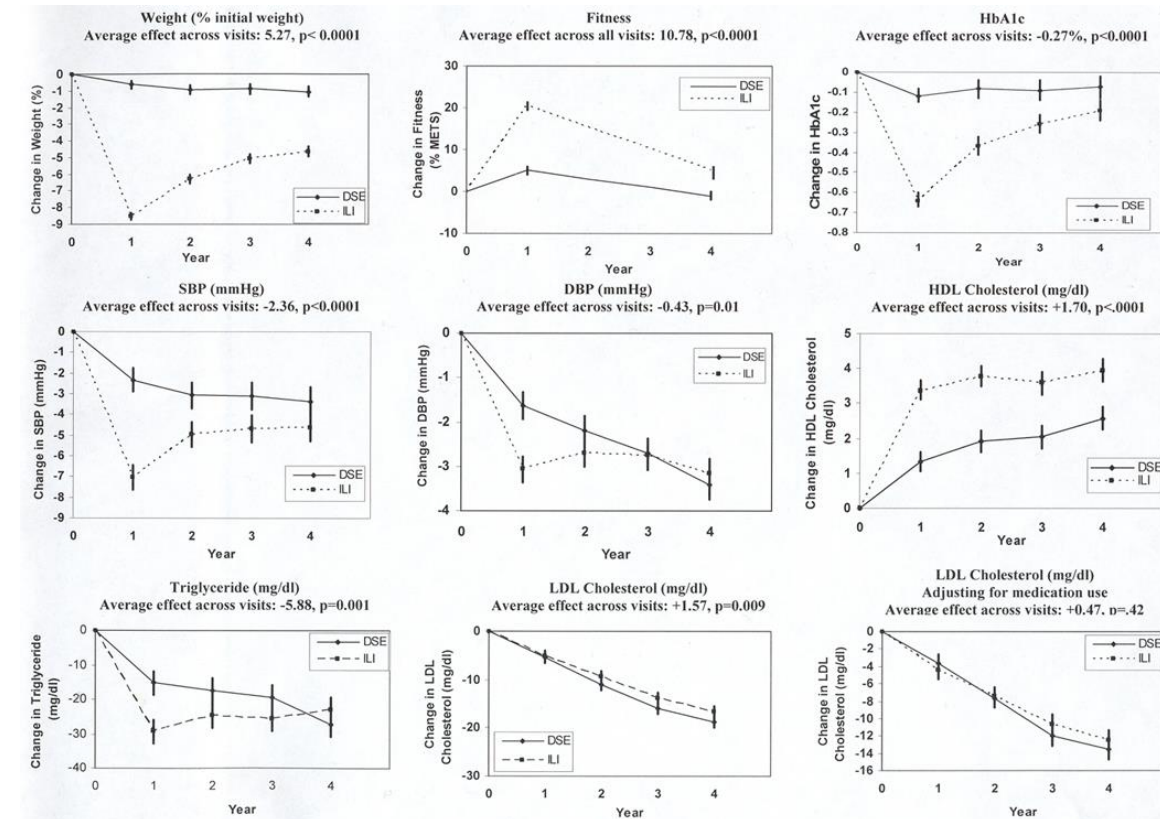
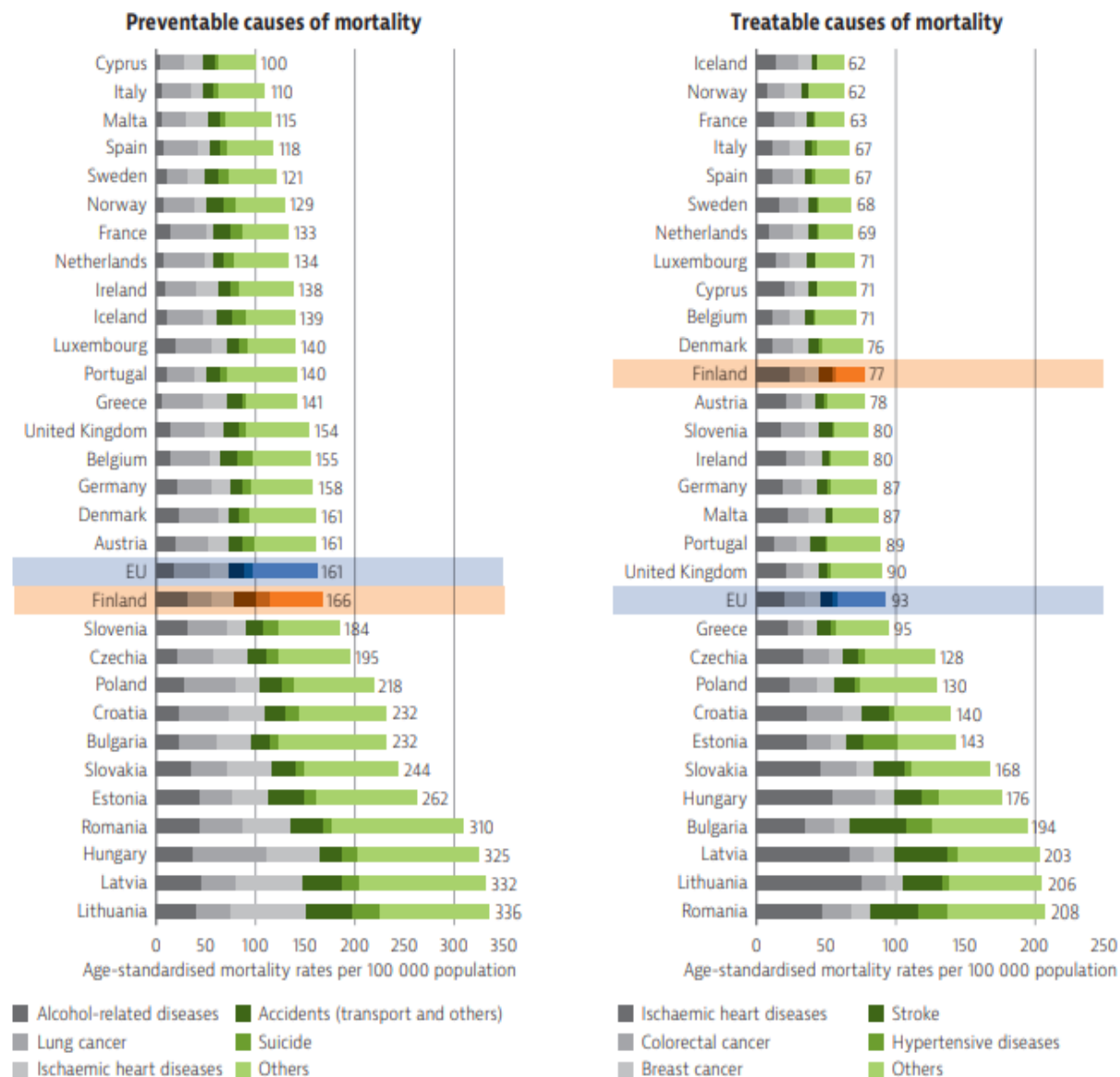




Figure 11. Rates of mortality from treatable causes are low but higher for preventable causes

Suomi EU keskiarvon  
alapuolella kun  
tarkastellaan  
kuolleisuutta  
ehkäistävissä oleviin  
kuolinsyihin



Note: Preventable mortality is defined as death that can be mainly avoided through public health and primary prevention interventions. Mortality from treatable (or amenable) causes is defined as death that can be mainly avoided through health care interventions, including screening and treatment. Both indicators refer to premature mortality (under age 75). The data is based on the revised OECD/Eurostat lists.

Source: Eurostat Database (data refer to 2016).

