



Pirkanmaa  
Hospital District

# **The implementation of the national type 2 diabetes prevention programme, FIN-D2D, in the Pirkanmaa Hospital District – Lessons learned**

**5<sup>th</sup> Meeting of the WG ISHC BSPC  
Tampere, Finland, 16–17.3.2015**

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Background

FIN-D2D Project

FIN-D2D model (high risk strategy)

FIN-D2D in practise

Experiences and models developed in Pirkanmaa

Results

Discussion

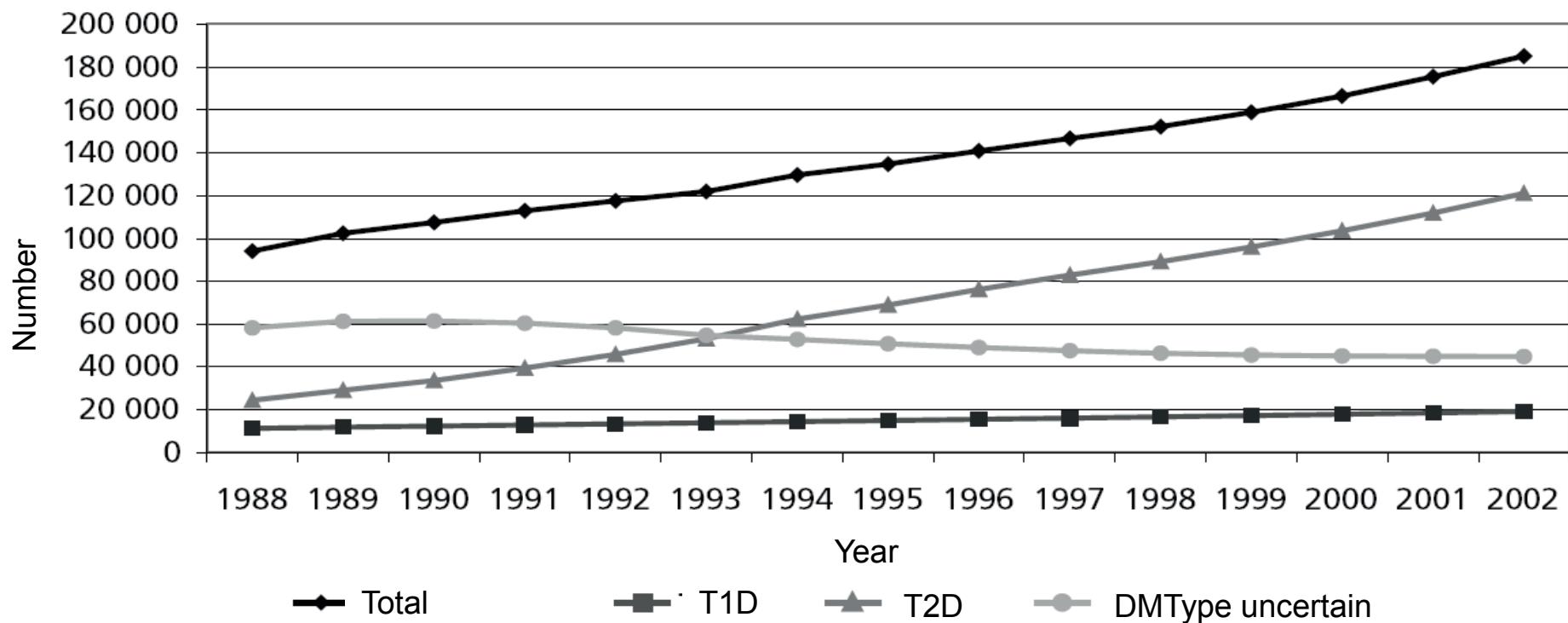
# Background

Type 2 diabetes (T2D) and its co-morbidities are rapidly increasing health problems in Finland and worldwide

Randomized trials have shown that lifestyle modification can postpone T2D among individuals at high risk for T2D

# Diabetes prevalence in Finland

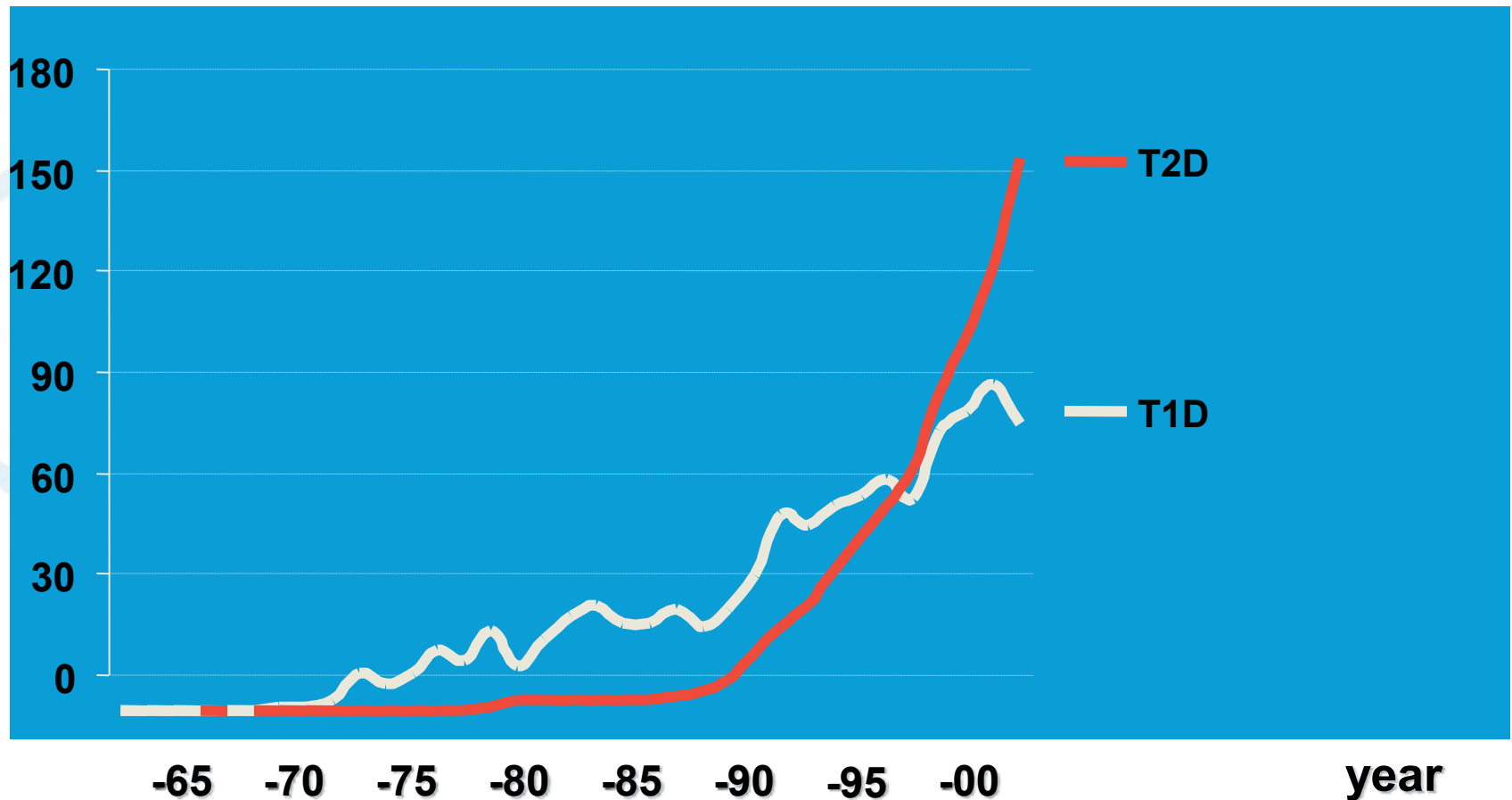
Niemi, Winell: Diabetes Suomessa, Stakes 2005





# Diabetes patients in dialysis in Finland 1965 - 2000

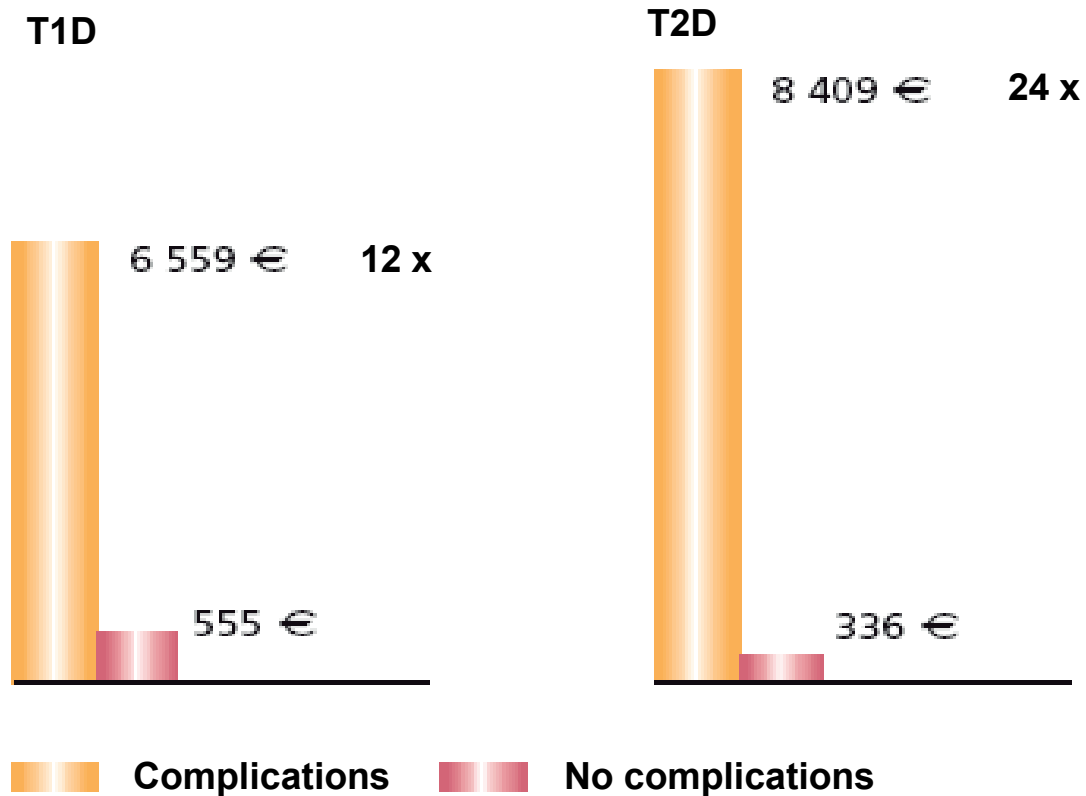
Patients/year



Finnish Registry for Kidney Diseases – Report 2000

# Costs of diabetes care

(on average, euros/person/year, Finland)



Kangas 2002

Studies:

## Risk factors of T2D and metabolic syndrome

- Obesity, central obesity and weight gain  
Physical inactivity and sedentary lifestyle
- Diet: high fat and saturated fat intake
- Diet: low nutrient fiber intake
- Insulin resistance
- Family history of diabetes
- Ethnicity
- Increasing age

⇒ Lifestyle modification and prevention?

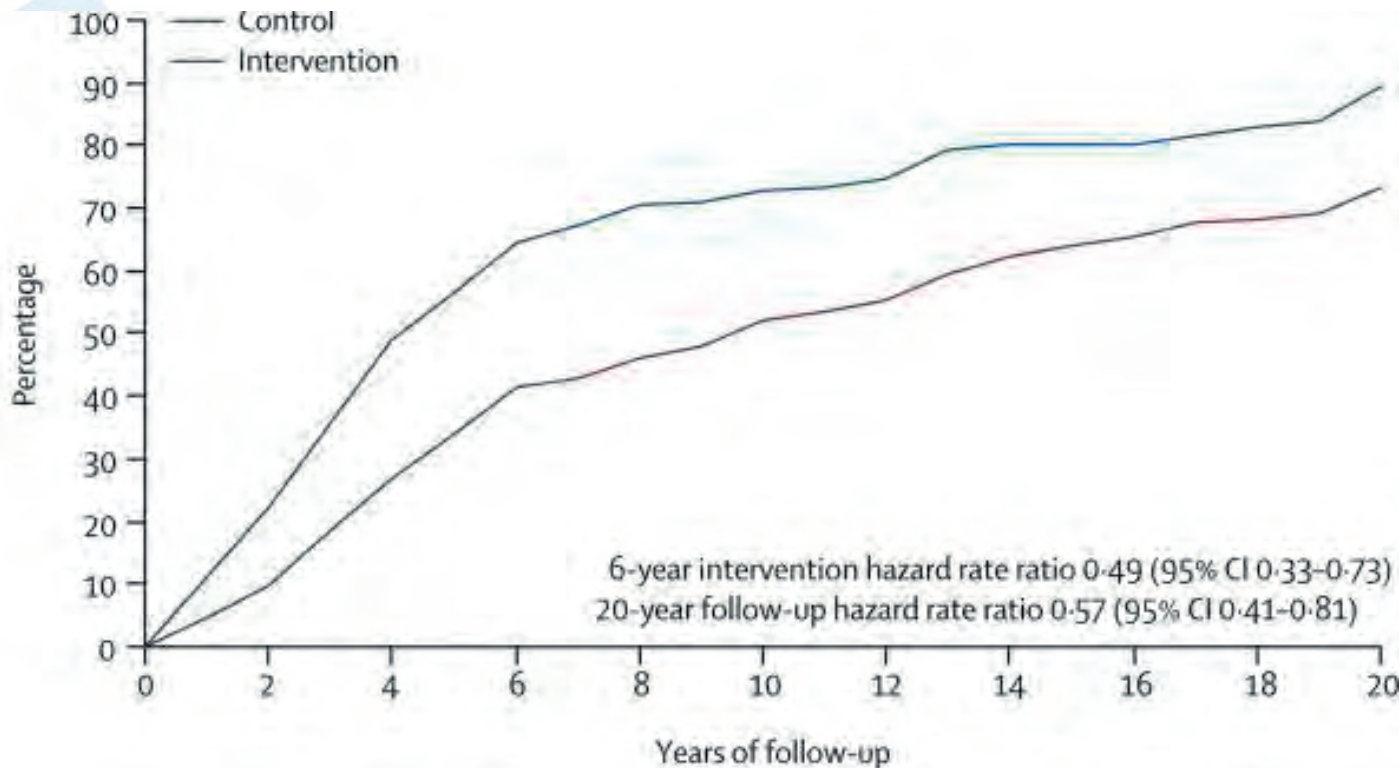
⇒ Trials

# Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance.

## The Da Qing IGT and Diabetes Study, China

Pan et al. 1997. Diabetes Care 20:537-544

### The cumulative incidence of diabetes



**Risk reduction  
at 6 years**

**Diet 31 %**

**Exercise 46 %**

**Diet + exercise 42 %**

Control n=133

Diet n=130

Exercise n=141

Diet + exc. n=126

# The Finnish Diabetes Prevention Study (DPS)

Tuomilehto et al. 2001. N Engl J Med 344:1343-1350

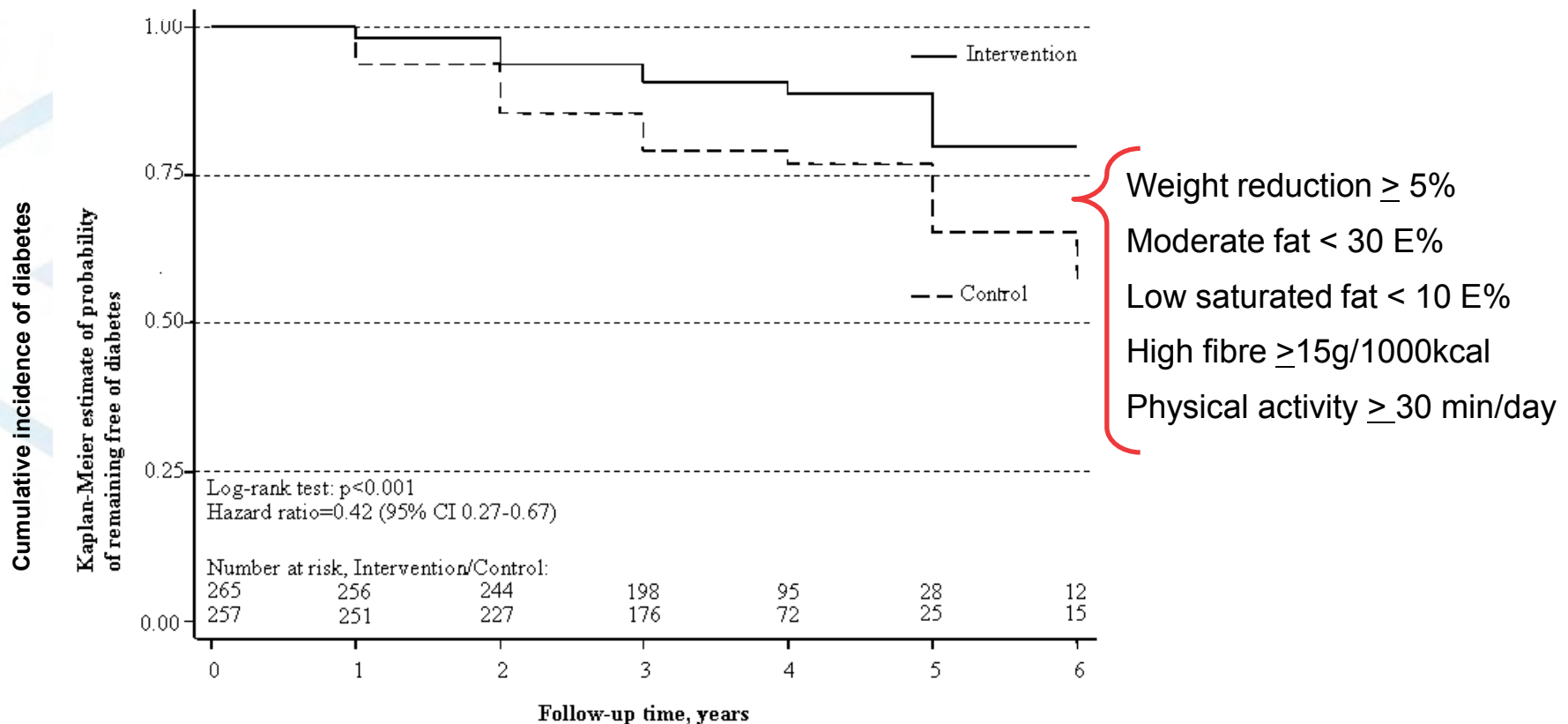
522 overweight, middle-aged men and women with IGT  
Randomly allocated to:  
intensive lifestyle intervention or control group

Intervention goals:

- Weight reduction > 5%
- Moderate fat < 30 E%
- Low saturated fat < 10 E%
- High fibre > 15g /1000 kcal
- Physical activity > 30 min / day

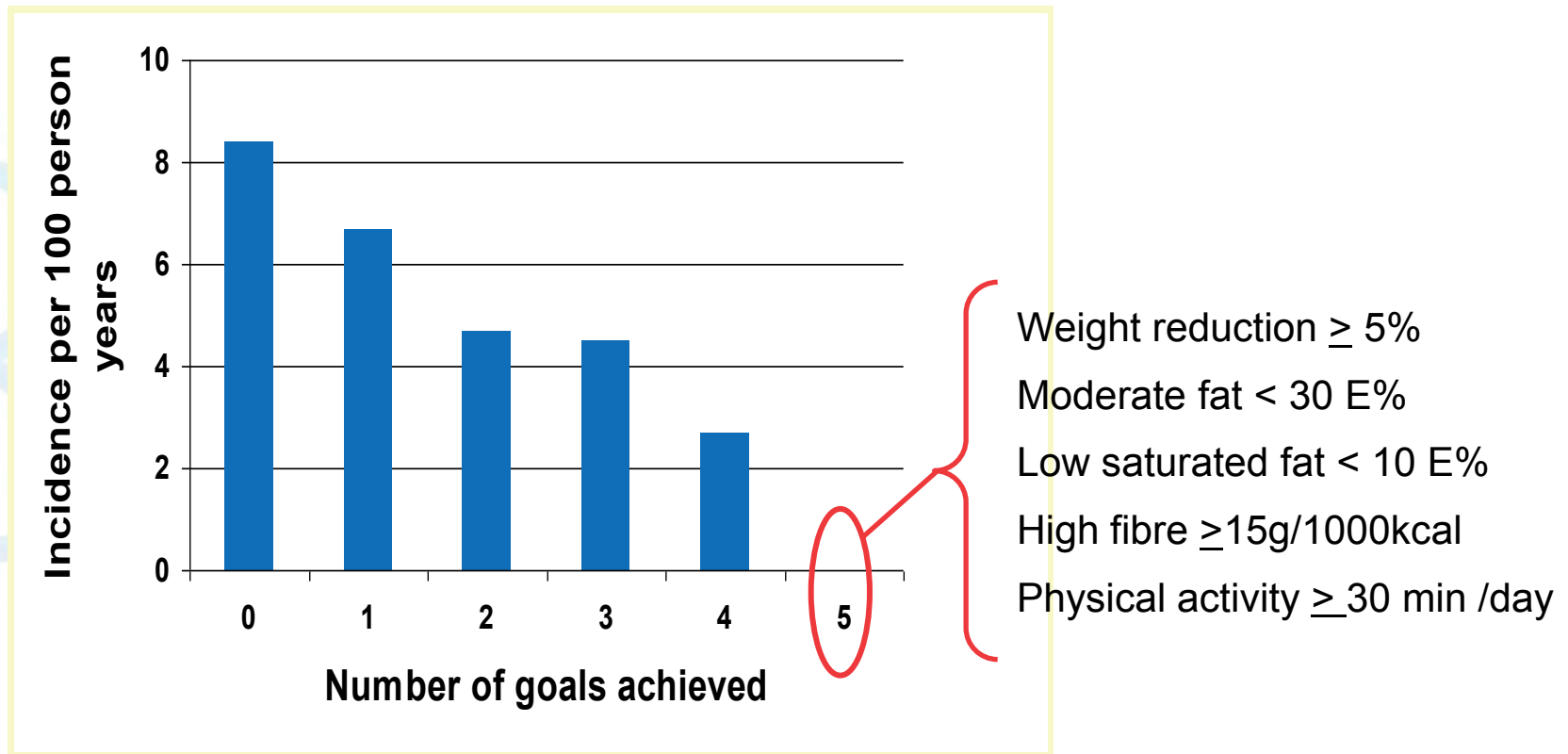
7 individual dietary counselling sessions (by dietitians)  
during the first year, every 3 months thereafter

# DPS: Diabetes incidence was **58% lower** among the intervention group compared with the control group after mean follow-up of 3.2 years



N Engl J Med 2001; 344:1343-1350

## DPS: The more goals achieved, the lower the risk!



Goals at year 3; incidence during 7 years follow-up

# Diabetes Prevention Program (DPP)

N Engl J 2002, 346:393-403

**N = 3234 , IGT and elevated fP-gluc**

**Control/Placebo group**

**Intervention groups:**

**Metformin**

**Life style**

**Weight reduction ( $\geq 7\%$ )**

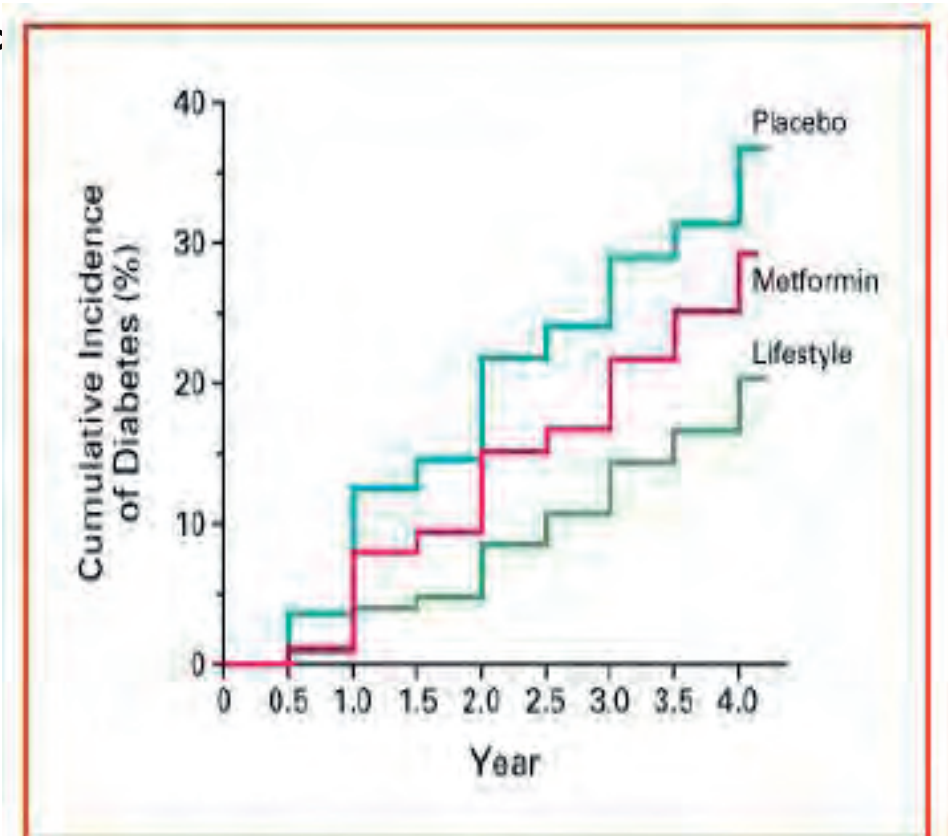
**Lower fat ja energy intake**

**Enhancing physical activity  
( $\geq 150\text{min/vko}$ )**

**Metformin intervention group risk  
for diabetes decreased 31%**

**Lifestyle intervention group:**

**Risk for diabetes decreased 58%**





# DEHKO 2000–2010

## Primary Prevention of Type 2 Diabetes

Programme for the Prevention of Type 2 Diabetes (2003–2010)

- Population Strategy
- High-Risk Strategy
- Strategy of Early Diagnosis and Management

Implementation of the Prevention Programme:  
FIN-D2D Project  
2003–2007

## Developing Diabetes Care and its Quality

Care Organization

Quality Criteria and Quality Monitoring Systems

Basic Education and Further Training of Health Care Staff

Modern Medication

## Supporting Self-Care of Persons with Diabetes

Education

Rehabilitation

Peer Support Groups

Cooperation between Finnish Diabetes Association's Local Branches and Health Care

**Influencing Municipal Decision-making**

DPS (2001), DPP etc. evidence of the prevention of T2D

⇒ **Implementation Project of T2D Prevention Programme**

**FIN-D2D Project 2003 - 2007 and the Follow-up Project 2008 - 2010**



Tuijota omaan napaasi

## FIN-D2D: Partners

Four => **Five hospital districts**

Finnish Diabetes Association

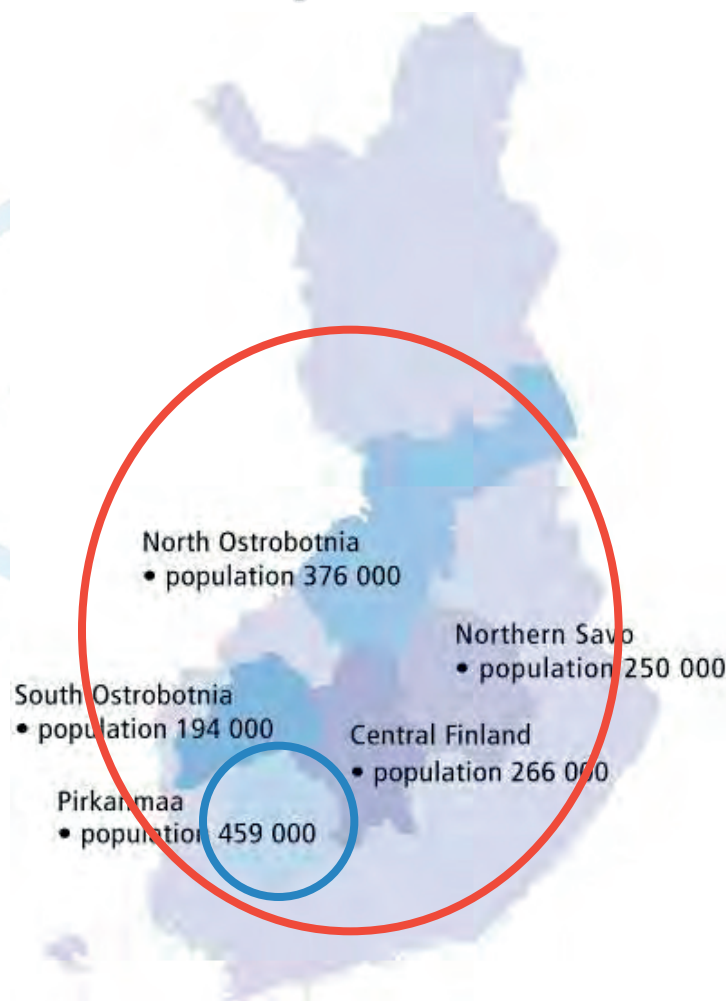
National Institute for Health and Welfare

Target population 1.5 million people

400 health care centres

200 occupational health centres

> 2000 health care professionals



Pirkanmaa  
Hospital District

## FIN-D2D Funding 2003 - 2007

Hospital districts	100 000 euros/year/district
Funding from the State	100 000 euros/year/district
Finnish Diabetes Association (The Slot Machine Association of Finland)	450 000 euros/year
National Public Health Institute	100 000 euros/year

Total: 8.4 million euros during the years 2003-2007

Target population 1.5 million  $\Rightarrow$  1.1 euro/person/year

The project had to apply for the funding every year (the State, the Slot Machine Association and municipalities separately)

# FIN-D2D Project Goals

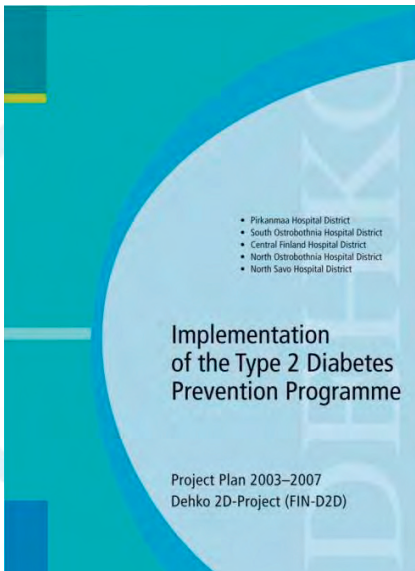
To reduce the incidence and prevalence of T2D and cardiovascular risk factors

To **identify** individuals with T2D

To generate **new models for the prevention** of T2D

To **evaluate** the effectiveness, feasibility and the cost-effectiveness of the project

To increase **awareness** of T2D and its risk factors among the population





## Three strategies:

### Population Strategy:

Prevention of obesity and T2D at population level

### High-Risk Strategy:

Screening of people with elevated risk (adults) and management of risk factors by lifestyle counselling

### Early Diagnosis and Management Strategy:

Appropriate treatment and prevention of complications among newly diagnosed people with T2D

# FINDRISC:

Age, BMI, Waist,  
Physical activity, Nutrition,  
Hypertension, Family history

## Form available:

- On-line [www.diabetes.fi](http://www.diabetes.fi)
- In pharmacies
- At selected public events
- In newspapers
- Given by a health care provider at a normal visit
- As a part of routine health care check-ups
- At self-service check-up points

Diabetes Care 2003;26:725-31.

## TYPE 2 DIABETES RISK ASSESSMENT FORM

Circle the right alternative and add up your points.

### 1. Age

- 0 p. Under 45 years
- 2 p. 45–54 years
- 3 p. 55–64 years
- 4 p. Over 64 years

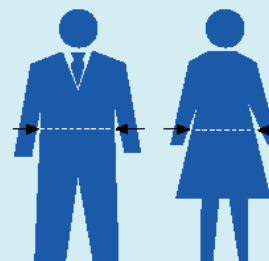
### 2. Body-mass index

(See reverse of form)

- 0 p. Lower than 25 kg/m<sup>2</sup>
- 1 p. 25–30 kg/m<sup>2</sup>
- 3 p. Higher than 30 kg/m<sup>2</sup>

### 3. Waist circumference measured below the ribs (usually at the level of the navel)

- | MEN                   | WOMEN           |
|-----------------------|-----------------|
| 0 p. Less than 94 cm  | Less than 80 cm |
| 3 p. 94–102 cm        | 80–88 cm        |
| 4 p. More than 102 cm | More than 88 cm |



### 4. Do you usually have daily at least 30 minutes of physical activity at work and/or during leisure time (including normal daily activity)?

- 0 p. Yes
- 2 p. No

### 5. How often do you eat vegetables, fruit or berries?

- 0 p. Every day
- 1 p. Not every day

### 6. Have you ever taken antihypertensive medication regularly?

- 0 p. No
- 2 p. Yes

### 7. Have you ever been found to have high blood glucose (eg in a health examination, during an illness, during pregnancy)?

- 0 p. No
- 5 p. Yes

### 8. Have any of the members of your immediate family or other relatives been diagnosed with diabetes (type 1 or type 2)?

- 0 p. No
- 3 p. Yes: grandparent, aunt, uncle or first cousin (but no own parent, brother, sister or child)
- 5 p. Yes: parent, brother, sister or own child

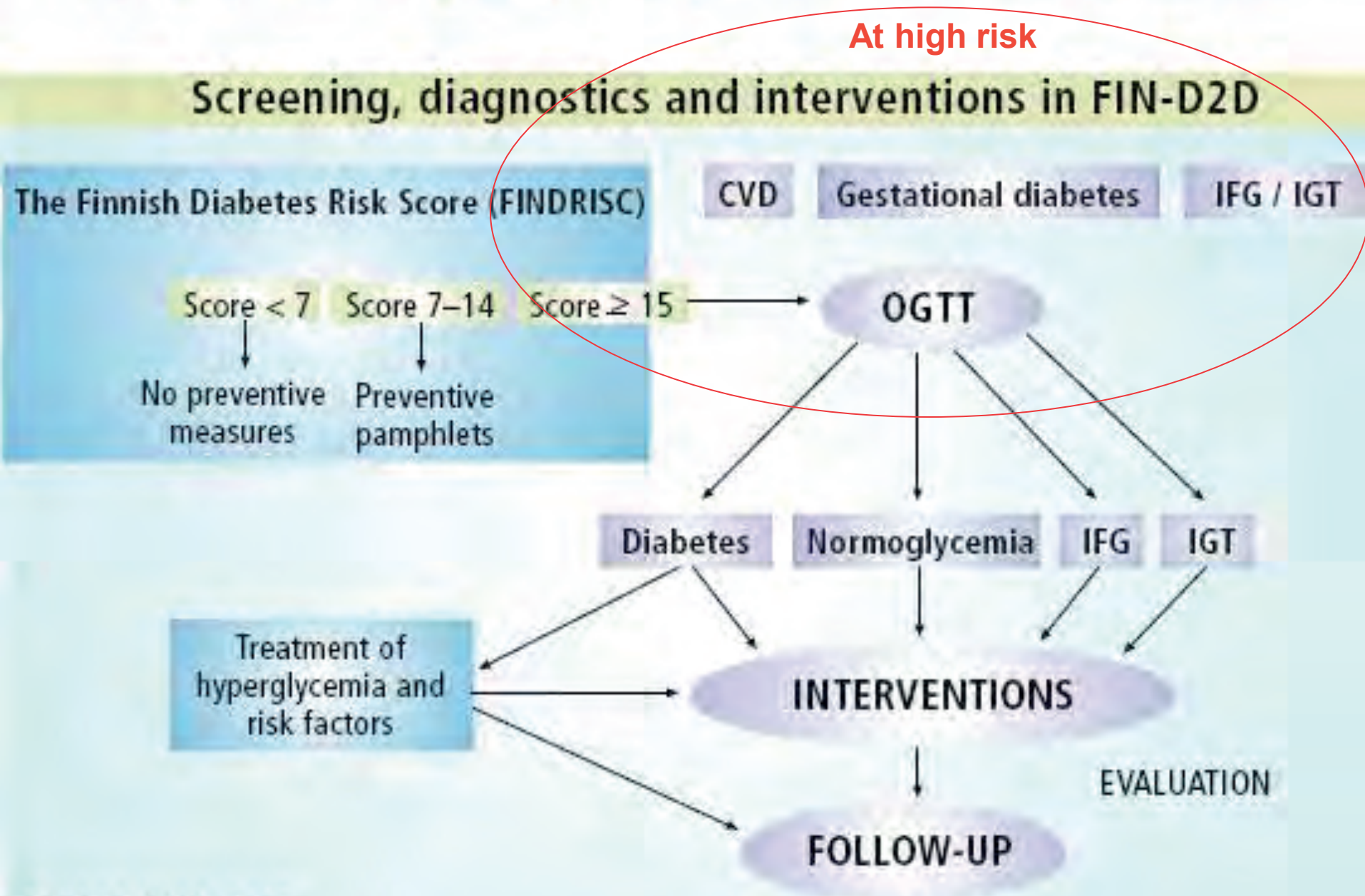
### Total Risk Score

☐ The risk of developing type 2 diabetes within 10 years is

- Lower than 7 Low: estimated 1 in 100 will develop disease
- 7–11 Slightly elevated: estimated 1 in 25 will develop disease
- 12–14 Moderate: estimated 1 in 6 will develop disease
- 15–20 High: estimated 1 in 3 will develop disease
- Higher than 20 Very high: estimated 1 in 2 will develop disease

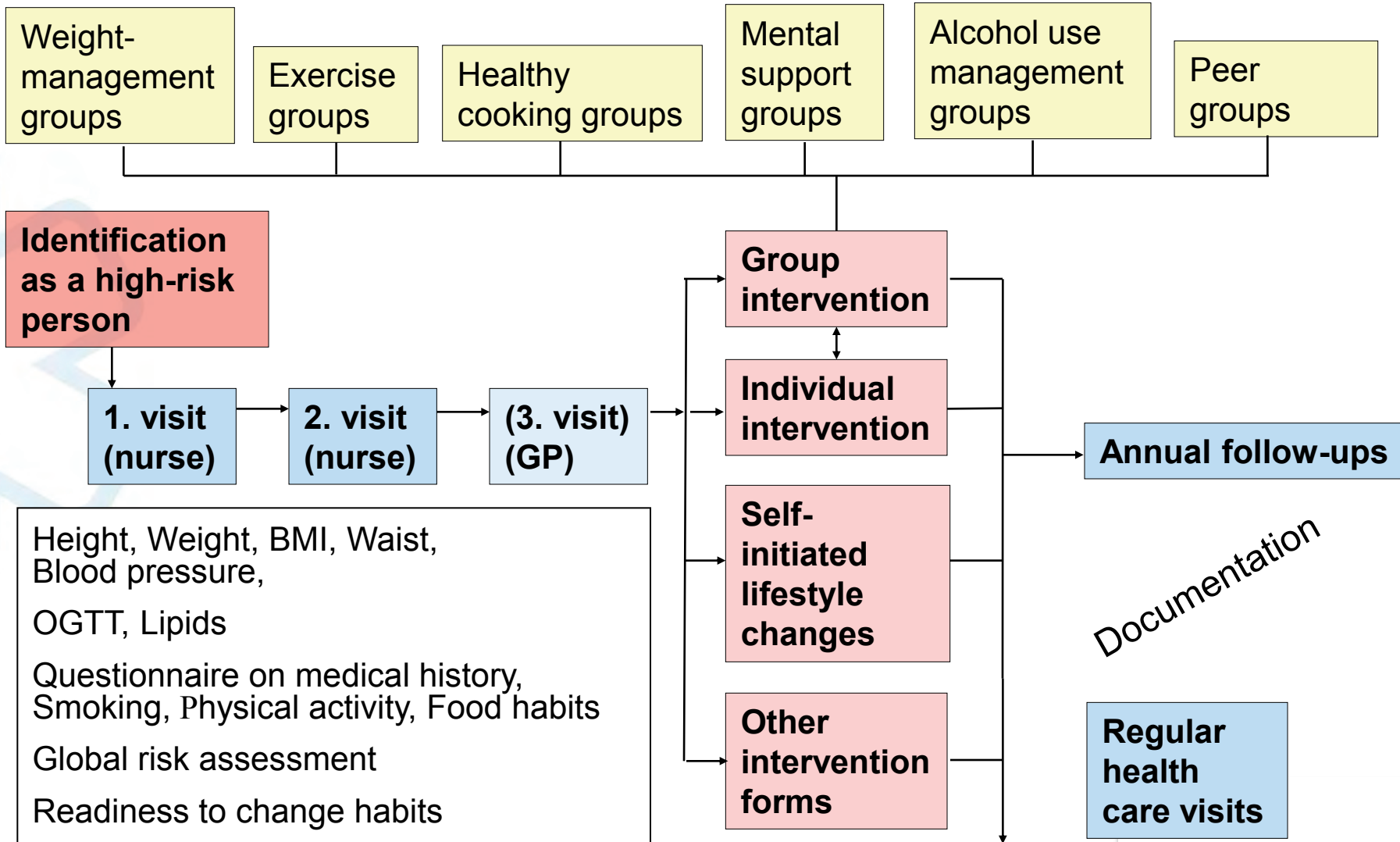
Please turn over

**Figure 1. Screening, diagnostics and interventions in FIN-D2D**



# FIN-D2D Interventions

Primary health care or other service providers:





## FIN-D2D Project: Intervention goals in life-style modification

Risk factor: Overweight (BMI > 25 kg/m<sup>2</sup>)  
Goal: ≥ 5 % reduction

Risk factor: Low physical activity  
Goal: > 30 min/day

Risk factor: High saturated fat intake  
Goal: < 10 E%

Risk factor: High fat intake  
Goal: < 30 E%

Risk factor: Low fiber intake  
Goal: > 15 g/1000 kcal

# FIN-D2D Project intervention

Based on:

- Research evidence
- Current Care Guidelines: Obesity, Hypertension, Dyslipidemias
- Finnish Nutrition and Physical Activity Recommendations
- FIN-D2D goals

Life-style modification as a long-term process, step by step:

Stages of the changes - model

New approach and methods for counselling - empowerment

Customer-oriented and target-oriented approach

Multiprofessionality  $\Rightarrow$  shared responsibilities, expertise

Protocols for screening and intervention

Validated material for counselling

Documentation

Evaluation on individual and organisational levels

Collaboration networks:

public and private primary health care, specialised care  
municipal actors, local organisations, associations etc.

# FIN-D2D, Basic questionnaire

## HEALTH STATUS

7. Have you ever been diagnosed with diabetes?

1. no
2. yes
3. yes, gestational diabetes

8. Has your biological father ever been diagnosed with diabetes?

1. no
2. yes

9. Has your biological mother ever been diagnosed with diabetes?

1. no
2. yes

10. How many siblings do you have?

11. Has at least one of your siblings been diagnosed with diabetes?

1. no
2. yes

12. Have you ever had any of the following diseases or abnormalities?

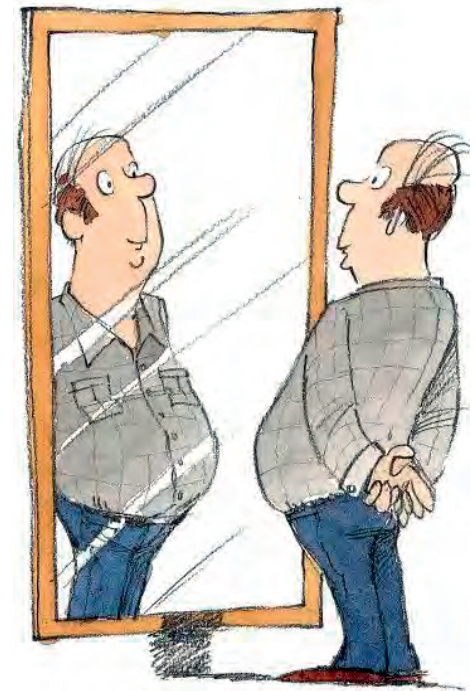
Elevated blood pressure, hypertension	<input type="checkbox"/>
Cardiac insufficiency	<input type="checkbox"/>
Angina pectoris, chest pain during exercise	<input type="checkbox"/>
Coronary artery disease	<input type="checkbox"/>
Myocardial infarction	<input type="checkbox"/>
Coronary (heart) bypass surgery or angioplasty	<input type="checkbox"/>
Cerebral palsy stroke, stroke or TIA	<input type="checkbox"/>
Intermittent claudication	<input type="checkbox"/>
High or elevated blood cholesterol level or other lipoidosis	<input type="checkbox"/>
Depression, other psychiatric illness	<input type="checkbox"/>
Physically handicapped	<input type="checkbox"/>
Other chronic disease, specify? _____	<input type="checkbox"/>

## FIN-D2D - basic questionnaire for high risk individuals

- Health status
- Smoking
- Physical activity
- Diet
- Weight management
- Sleep

As a tool for  
intervention and  
counselling  
⇒ follow ups

How Are You?



# Recommendation for health-enhancing physical activity

## PHYSICAL ACTIVITY PIE



## Take at least half-a-pie!

© UKK Institute 2006

# Everyday physical activity is beneficial as well

Examples of daily one-hour motion opportunities:

walking

from home to bus	5 min
from bus to work	7 min
to and from lunch restaurant	6 min
from work to bus	7 min
from bus to store	8 min
from store to home	6 min
using stairs during the day	8 min
clearing snow away	13 min
total	60 min





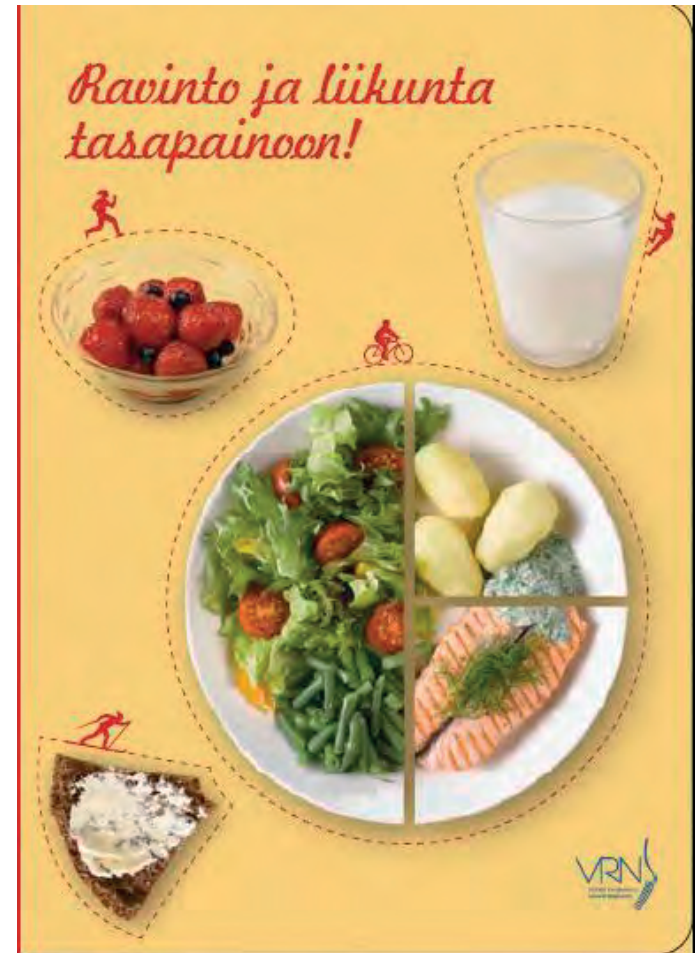
# Finnish Nutrition Recommendations



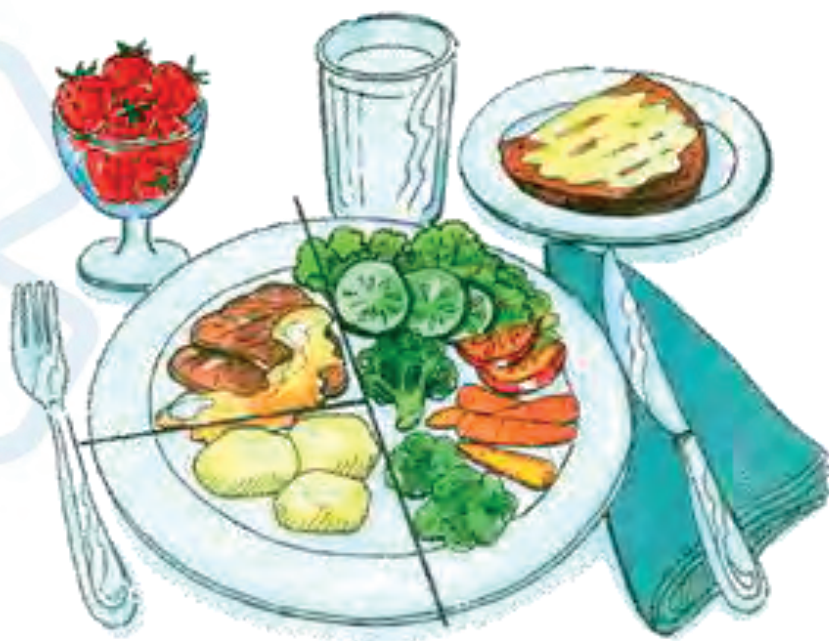
## Suomalaiset ravitsemussuositukset

— ravinto ja liikunta tasapainoon

Valtion ravitsemusneuvottelukunta 2005

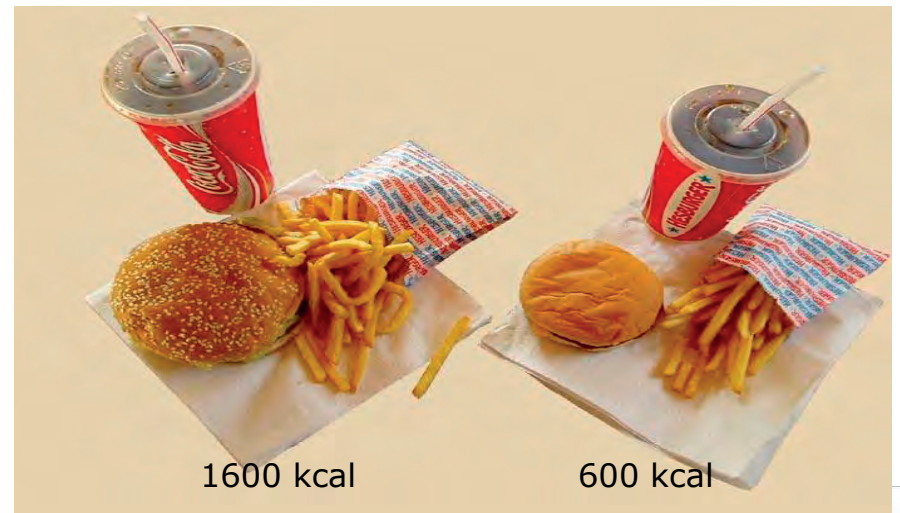
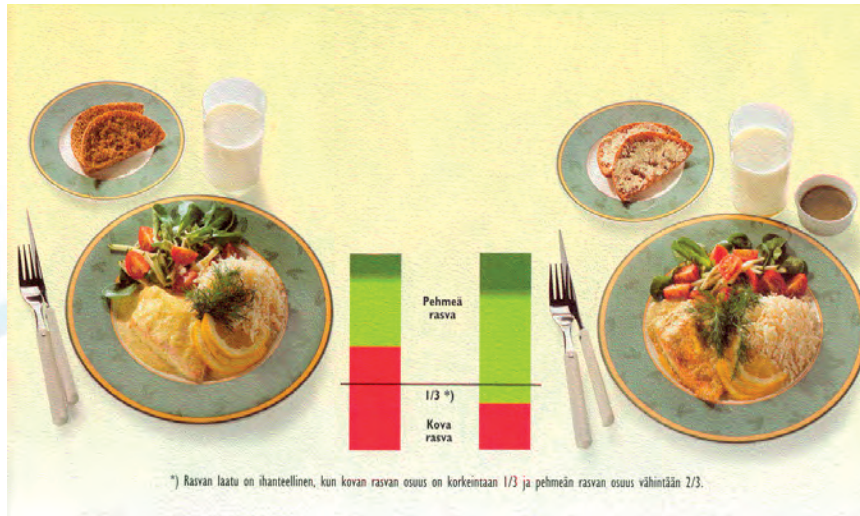


Eat well – You are well



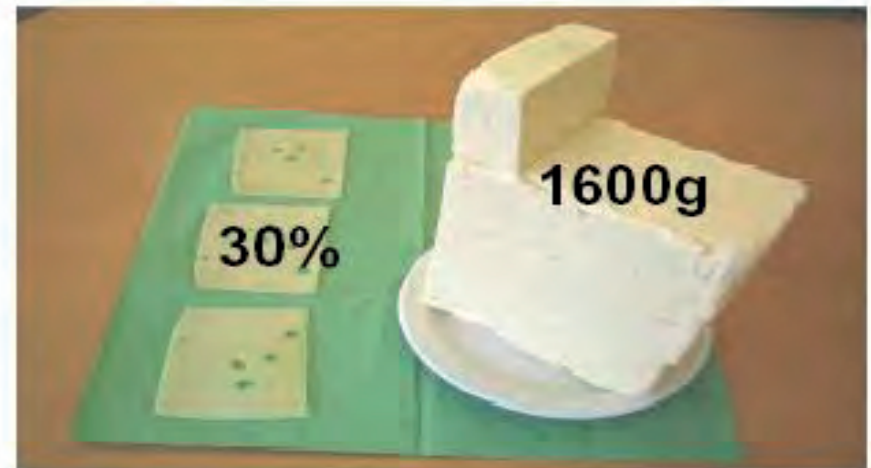
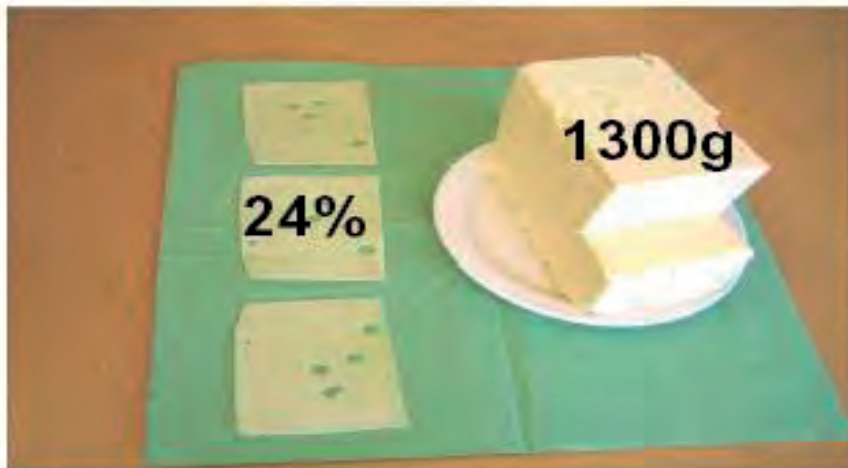
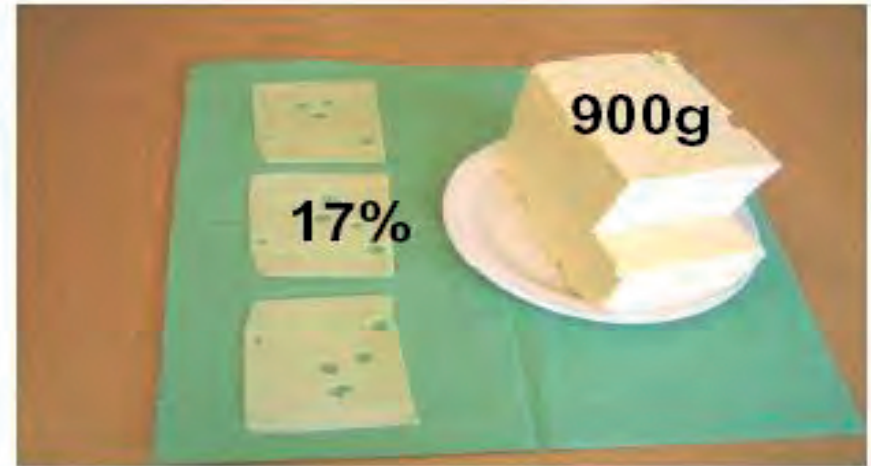
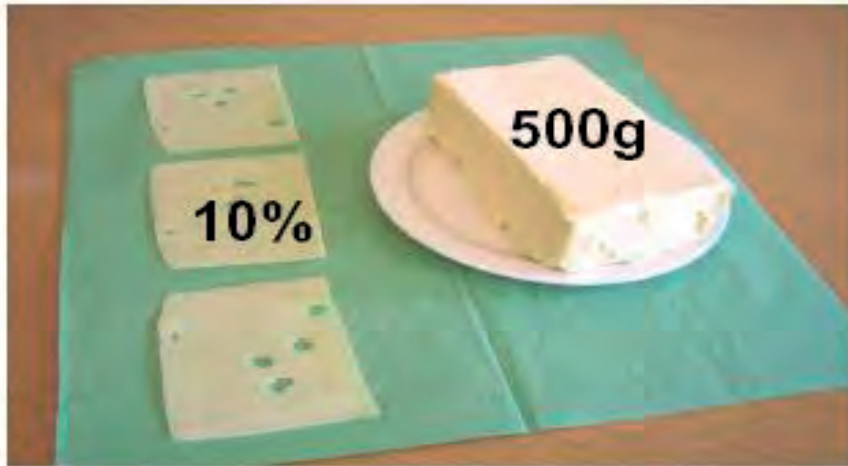


# Making the Food Choices Visible





## The Amount of Fat During Half a Year



KSSHHP, D2D-hanke 2006

## Media Campaings

FIN-D2D



**Tuijota omaan napaasi**

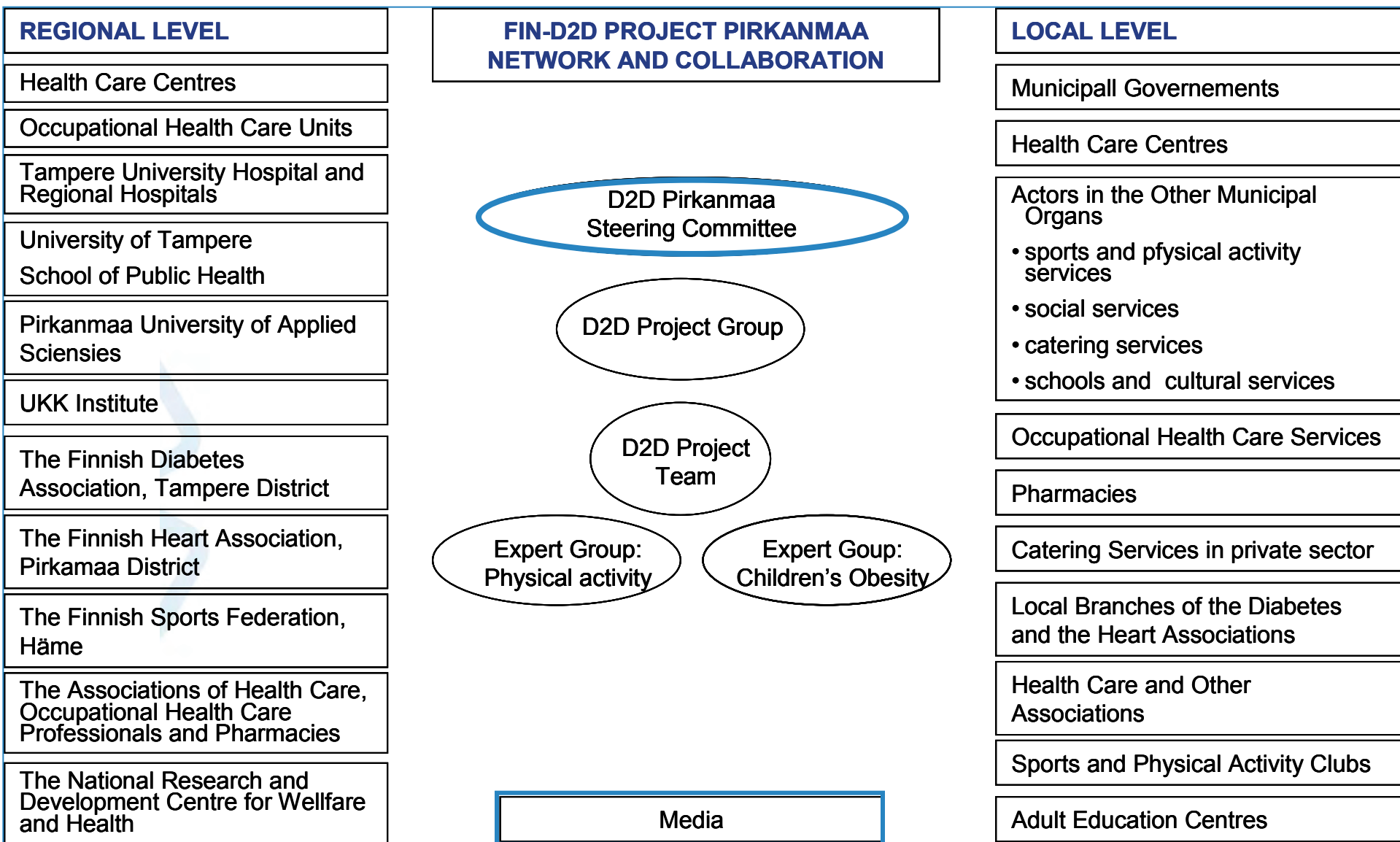
Look at Your Belly Button



A Small Decision a Day



# FIN-D2D in Pirkanmaa Hospital District



⇒ **Large variety of actors and professionals  
in screening and life style modification**





Visits to every health care center and occupational health care unit to chart resourcourses and needs for the prevention of T2D, working methods, tools, materials, and needs for education and training

⇒local D2D multidisciplinary teams, local D2D projects





Networks

Collaboration

Multidisciplinary work

Workshops

Education and training

Developing care chains, protocols

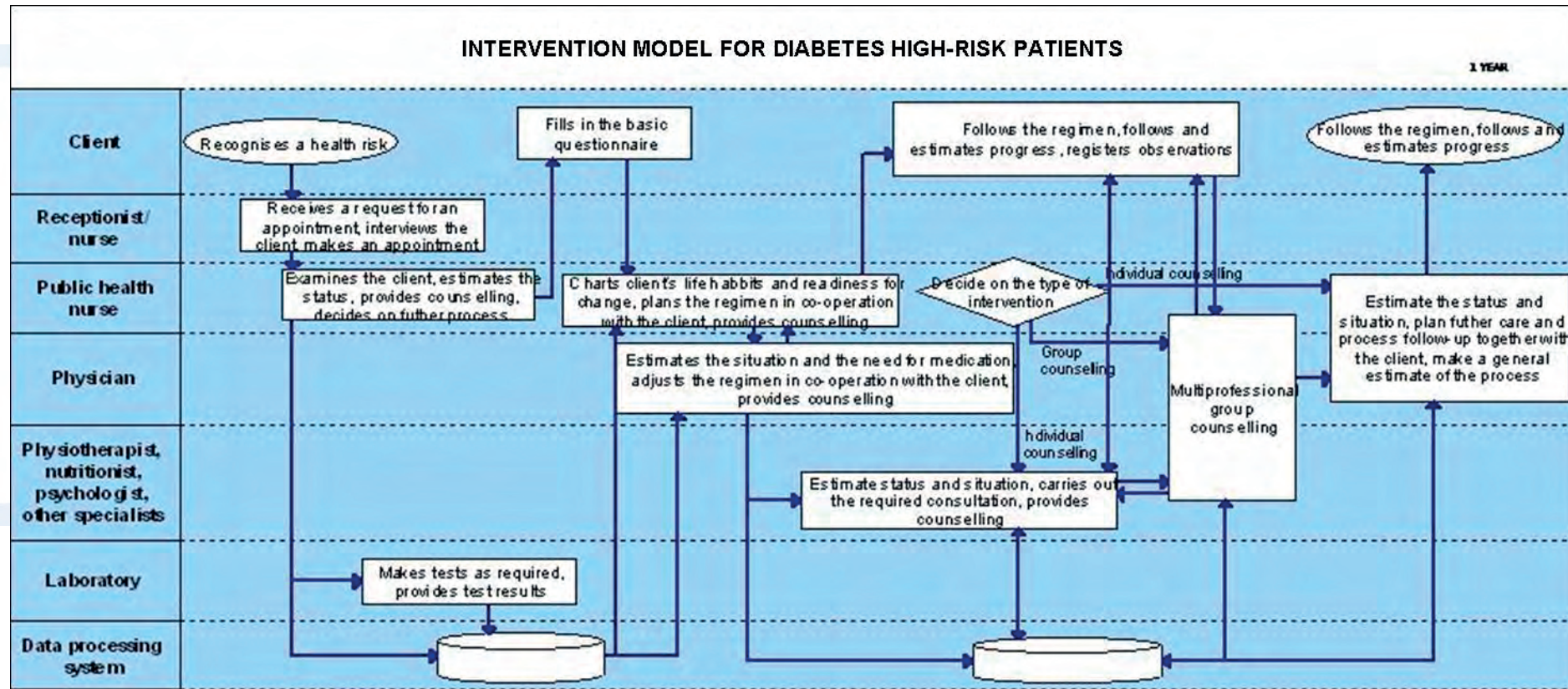
Projects plans and processes



## Multidisciplinary work,

## The regional (Valkeakoski) protocol for the prevention and care of T2D in Pirkanmaa, 2008

## The protocol for the Pirkanmaa hospital district 2011



## Documentation developed: food habits, physical activity Data collection for FIN-D2D evaluation





# Annual reports of local projects

## Workshops

### Sharing experiences

### Planning further



## New models for the occupational health care





# Catering services

## Good opportunities for health promotion and communication



## Pharmacies in collaboration





Sastamala board meeting:  
"Something for men?  
Competitions, diet information,  
physical activities, celebrities..."  
Male personnel of the municipality  
in charge of planning the seminar.

## Seminars for men in Sastamala once a year - real success



> 300 participants/event

# Campaigns for decision-makers and personnel

## Sastamala: "One cent out of your waist for the health" campaigning



**Virrat:** Checking the waist circumference of the staff annually

**Ylöjärvi:** "Light summer campaign" for the staff

**Tays:** Campaigns for the staff, well-being weeks, health promotion events



# Participating fairs together with collaborators





# Hand in hand with the third sector





# Activating physically inactive men - An adventurous approach (SuomiMies seikkailee)



FINNISH HEART  
ASSOCIATION  
PIRKANMAA

FINNISH SPORTS  
FEDERATION, HäME

D2D PIRKANMAA



KKI-AWARD 2006

KKI product since 2007

## Concern of the childrens' obesity problem

Multidisciplinary work since 2004

- ⇒ Special project to improve childrens' nutrition education at day care 2011 - 2013
- ⇒ District care chain and service network 2013





# International Reporting Days 2006 and 2007 WCPD 2008

5<sup>th</sup> World Congress  
on Prevention of Diabetes  
and Its Complications  
June 1-4, 2008  
Helsinki, Finland

## Third Announcement and Call for Abstracts

5<sup>th</sup> World Congress on Prevention of Diabetes  
and Its Complications (WCPD 2008)  
June 1-4, 2008, Helsinki, Finland



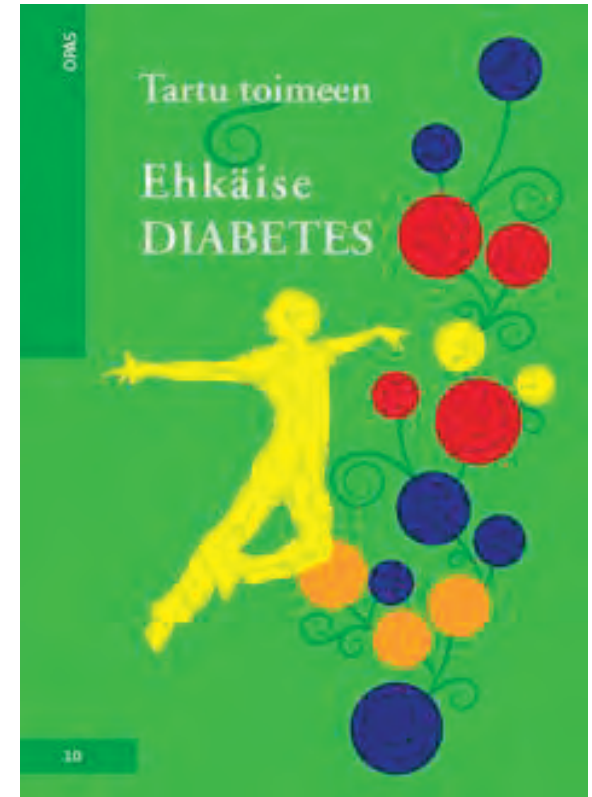
Meet the Experts on the Prevention of Diabetes

[www.wcpd2008.fi](http://www.wcpd2008.fi)





# FIN-D2D ⇒ De Plan Project and Image Project (EU) and toolkits





# **FIN-D2D**

## **Results and Lessons Learned**

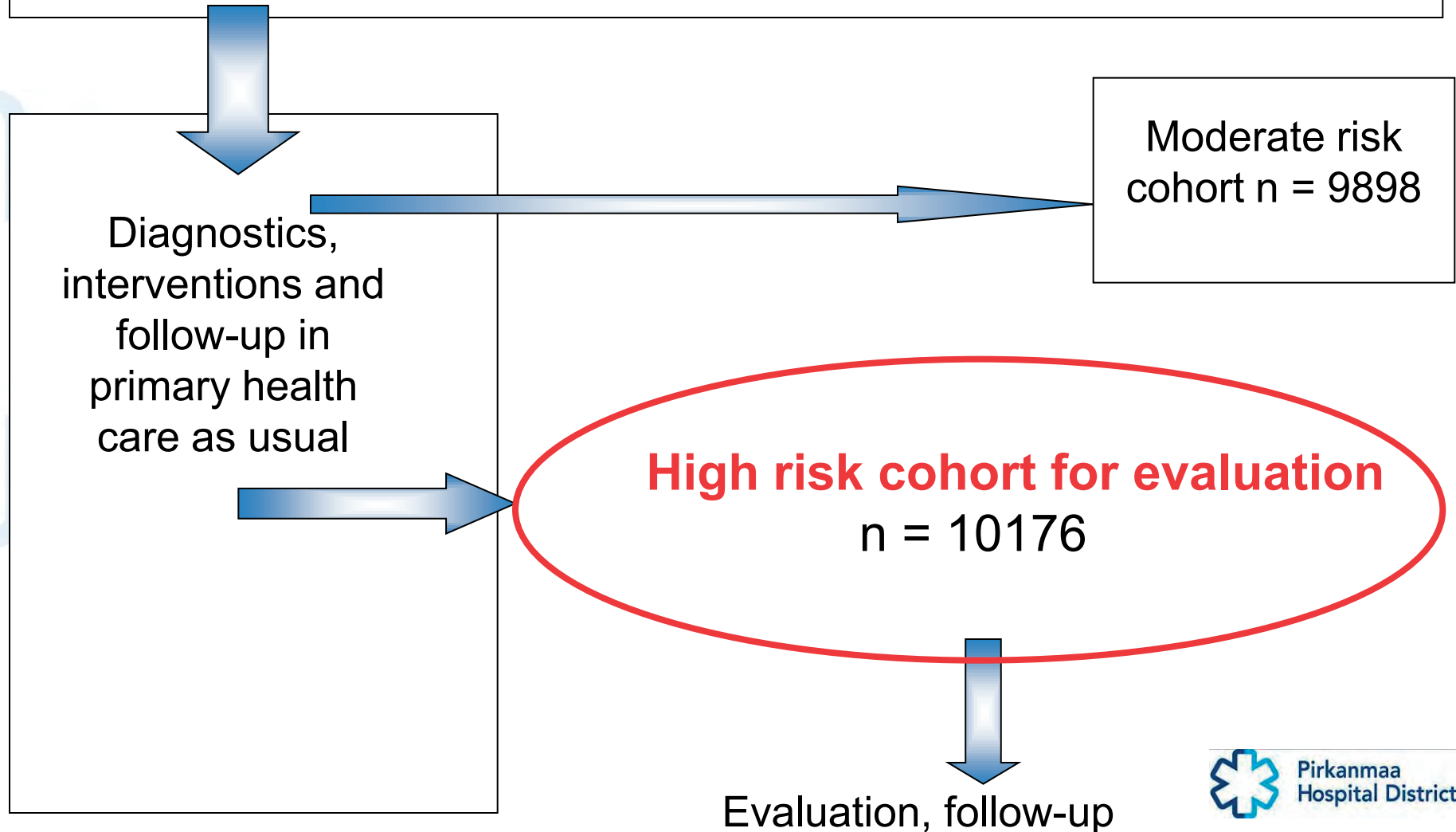
# FIN-D2D Survey 2004 (in three hospital districts): High prevalence of abnormal glucose tolerance in the middle-aged Finnish population (age group 45-74 yrs.)

	<b>Men (n = 1396)</b>	<b>Women (n = 1500)</b>
Diagnosed type 2 diabetes	7.1%	3.9%
Screen-detected type 2 diabetes	9.3%	7.3%
	<b>} 16.4%</b>	<b>} 11.2%</b>
Impaired glucose tolerance	15.5%	17.0%
Impaired fasting glucose	10.0%	5.2%
<b>Total*:</b>	<b>42.0%</b>	<b>33.4%</b>

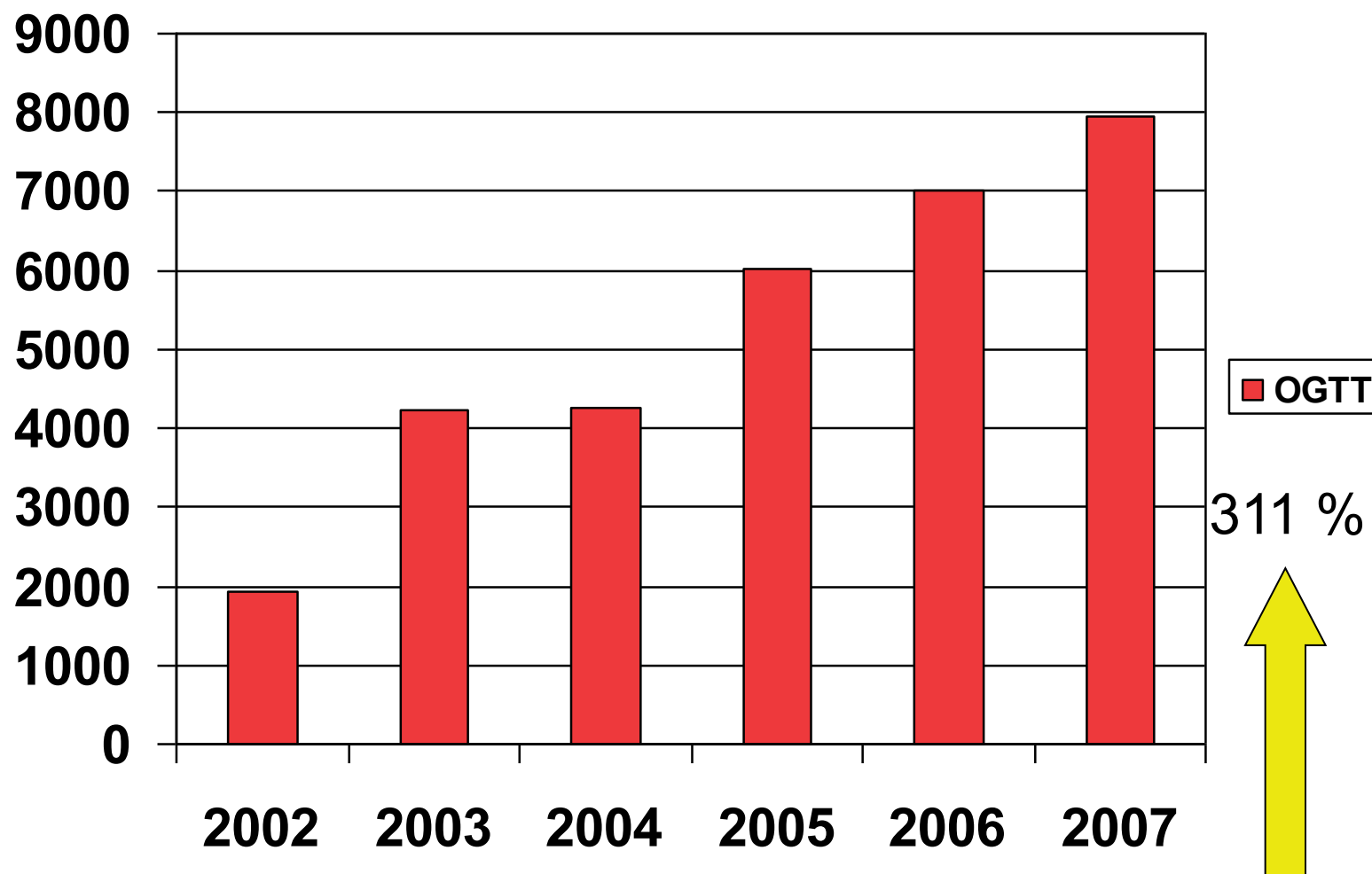
\* Age-adjusted

Saaristo T et al. BMC Public Health 2008;8:423

200 000 - 250 000 screened for risk of T2D  
during FIN-D2D



## Performed Oral Glucose Tolerance Tests in the Pirkanmaa Hospital District 2002-2007





## FIN-D2D high risk cohort participants

Number of participants 10 149 (33.4 % men)

	<b>Mean</b>
Age	53.6 (10.9) years
BMI, kg/m <sup>2</sup>	31.3 (4.7)
BMI > 30 kg/m <sup>2</sup>	59.6 %
Waist circumference	102.9 (13.1) cm
FINDRISC score	17.2 (3.2)

## Intervention visits in the high risk cohort of FIN-D2D

Number of visits	%	
	Men (n = 3421)	Women (n = 6845)
At least one	45	47
≥ 4	24	28
Visit to physician	33	27

## OGTT classification at the baseline and during the one year follow-up in the FIN-D2D high risk men and women

	Men (n = 926)		Women (n = 1972)	
OGTT	Baseline	Follow-up	Baseline	Follow-up
Normal	39 %	45 %	54 %	60 %
IFG	30 %	23 %	18 %	16 %
IGT	31 %	22 %	28 %	19 %
DM		10 %		5 %

Saaristo T et al. Primary Care Diabetes 2010

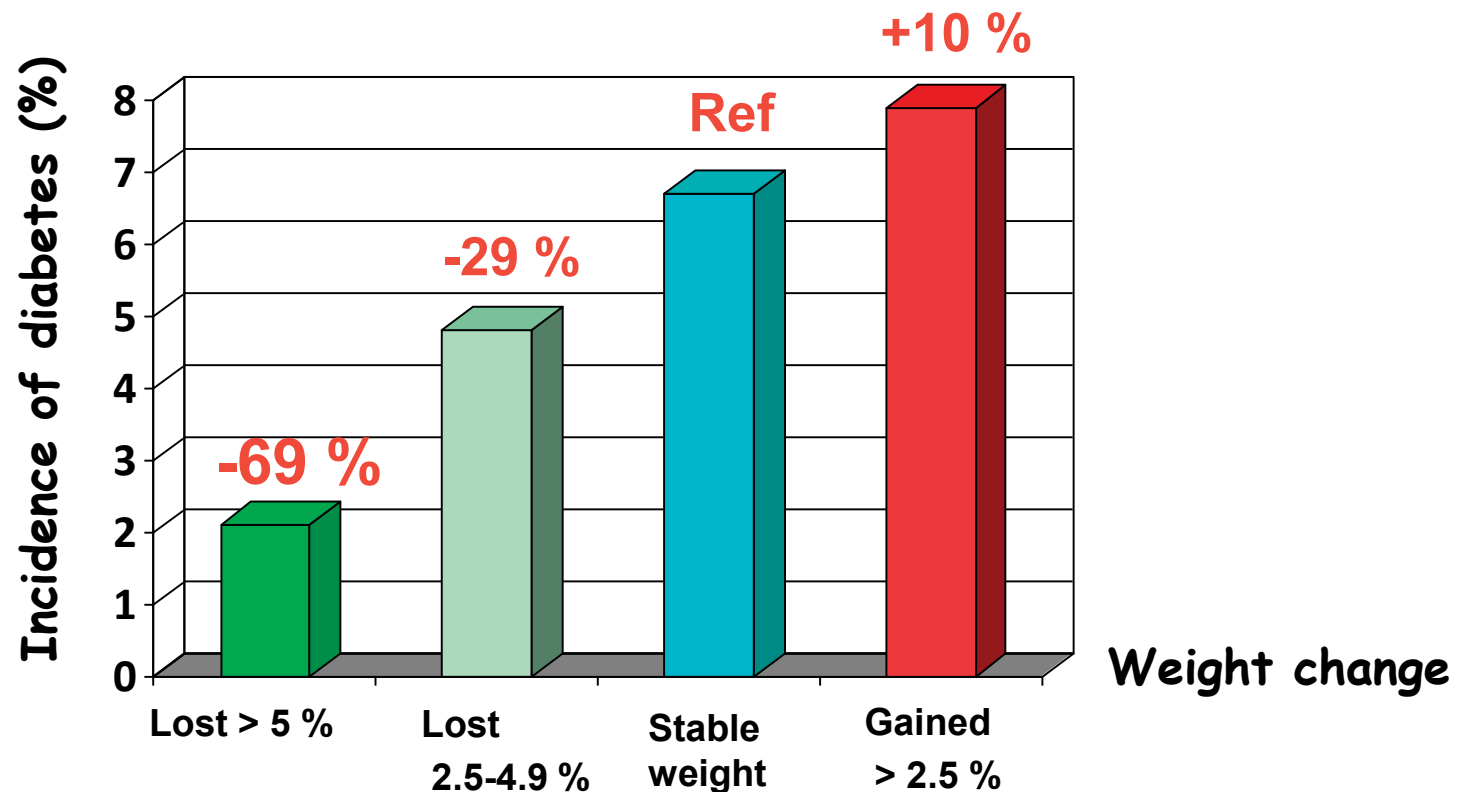
## Change in risk factors in the FIN-D2D high-risk individuals during the 1<sup>st</sup> year of intervention, all hospital districts

	Men (n = 1492)		Women (n = 3196)	
	Baseline, mean	Absolute change	Baseline, mean	Absolute change
<b>Weight</b> kg	<b>96.5</b>	<b>-1.02</b>	<b>84.1</b>	<b>-0.88</b>
<b>Waist</b> cm	<b>107.8</b>	<b>-1.06</b>	<b>99.8</b>	<b>-0.98</b>
<b>BP syst</b> mmHg	<b>142.2</b>	<b>-0.75</b>	<b>138.9</b>	<b>-1.67</b>
<b>BP diast</b> mmHg	<b>88.1</b>	<b>-1.30</b>	<b>85.5</b>	<b>-1.33</b>
<b>Cholesterol</b> mmol/l	<b>5.1</b>	<b>-0.26</b>	<b>5.2</b>	<b>-0.12</b>

Saaristo T et al. Primary Care Diabetes 2010

# Diabetes risk in one year follow-up according to weight change in FIN-D2D

Adjusted to the age of 50



Diabetes Care 2010; 33: 2146-2151



# Results – practices and models (1)

**FINDRISC** has proved out to be a practical tool for screening and mini-intervention and a useful tool for the third sector.

**D2D questionnaire** has proved out to be a practical tool when identifying, registering and evaluating customers' habits. Shorter versions developed by Northern Savo and Pirkanmaa.

**New material** for the preventive work developed by the FIN-D2D was necessary.

**The Model for the Stages of Change** provides a practical model for understanding the character of changes in habits.

The image shows a Finnish Diabetes Association Type 2 Diabetes Risk Assessment Form. It contains 10 numbered questions with multiple-choice options. Questions cover age, body mass index, waist circumference, family history, and lifestyle factors like diet and physical activity. A risk score is calculated at the bottom, ranging from 0 to 10, with corresponding risk levels: Lower than 7 (Low), 7-11 (Slightly elevated), 12-14 (Moderate), 15-19 (High), and 20 or higher (Very high).

The image shows a shorter version of the Type 2 Diabetes Risk Assessment Form, also from the Finnish Diabetes Association. It contains 10 numbered questions, similar to the FINDRISC form but with slightly different options. It also includes a risk score calculation at the bottom with the same risk level categories: Lower than 7 (Low), 7-11 (Slightly elevated), 12-14 (Moderate), 15-19 (High), and 20 or higher (Very high).

## Results (2)

FIN-D2D has shown the magnitude of the diabetic epidemic in Finland.

In 2004 the health care centres had no established practices for high-risk intervention.

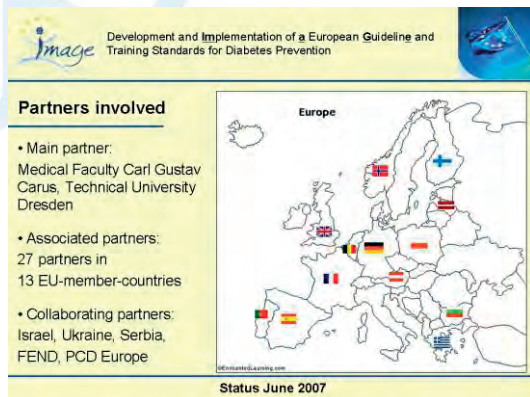
During the project a multiprofessional local steering group co-ordinated the work in most health centres.

The D2D model has been adopted in most health care centres and some occupational health units for screening and interventions.

The FIN-D2D model has been included into the local and regional T2D prevention care protocols.

The FIN-D2D model has been adopted also for the prevention of other noncommunicable diseases.

Other prevention projects in Finland, De Plan, and Image Project in Europe have adopted the FIN-D2D model as well.



## Results (3)

The need for nutrition and physical activity education became obvious. During the project health care professionals knowledge and skills of life style counselling improved.

Public nurses got a central role in the prevention of T2D. Multiprofessional guidance and support was needed.

Over 300 new models were documented.

Occupational health care got a new role in the prevention of T2D.

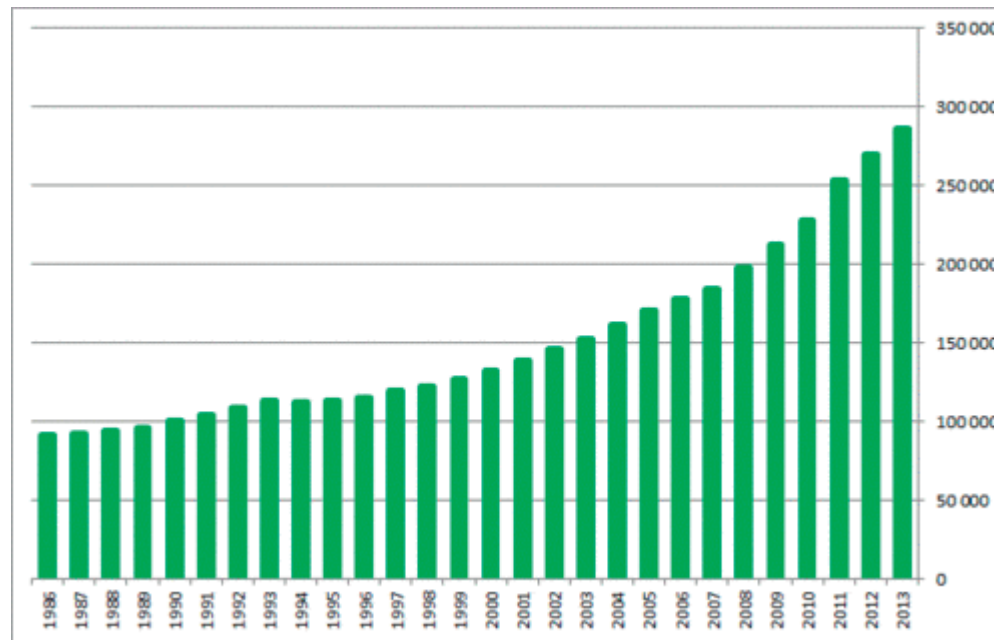
District and local networks of health care, third, and private sector were established.

At the population level the awareness of T2D and its risk factors has increased.

## Results – National Level

### The Amount of diabetes patients based on reimbursement for diabetes medication (103) in Finland 1986 – 2013

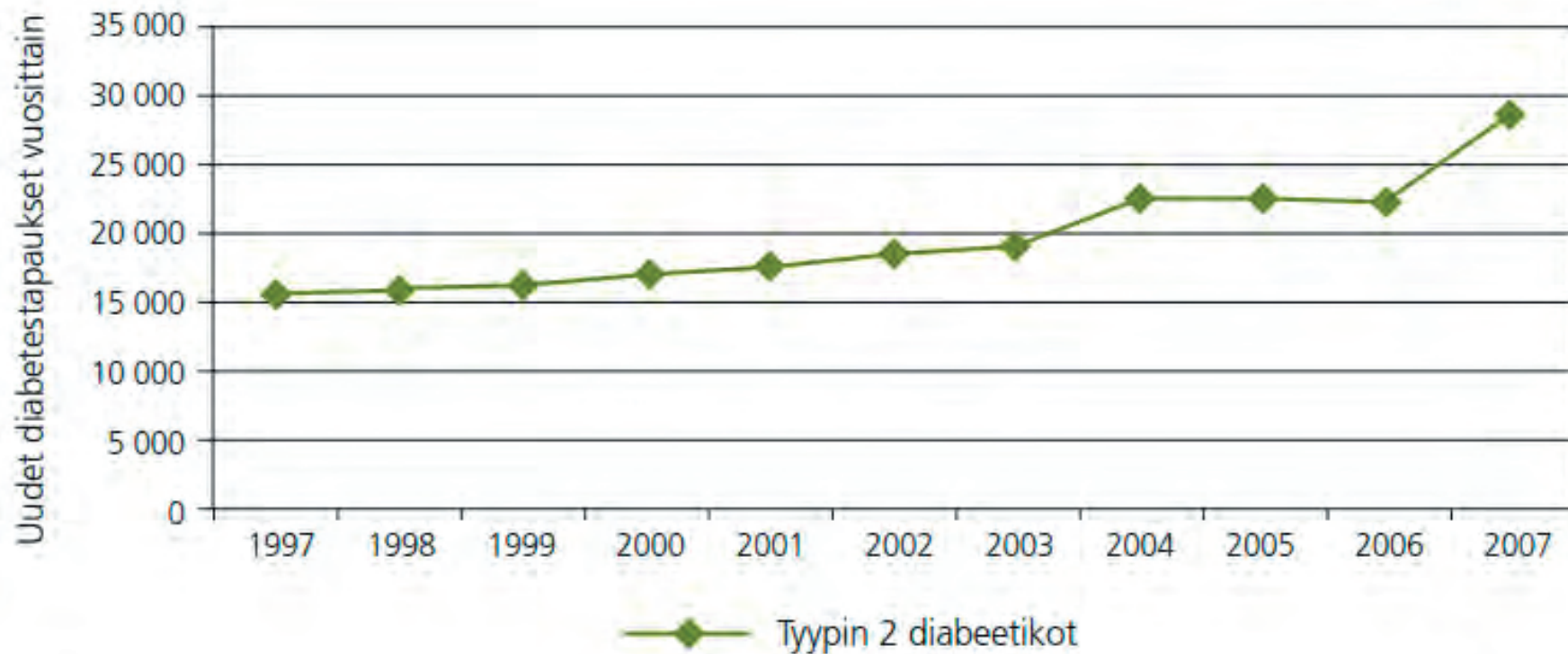
The Social Insurance Institution of Finland



Kela: [Diabeetikoiden määrä \(erityiskorvausoikeus 103\) 1986–2013](#)

Suomen Diabetesliitto 2015

## New T2D Patients in Finland 1997 - 2007



Diabetesbarometri 2010

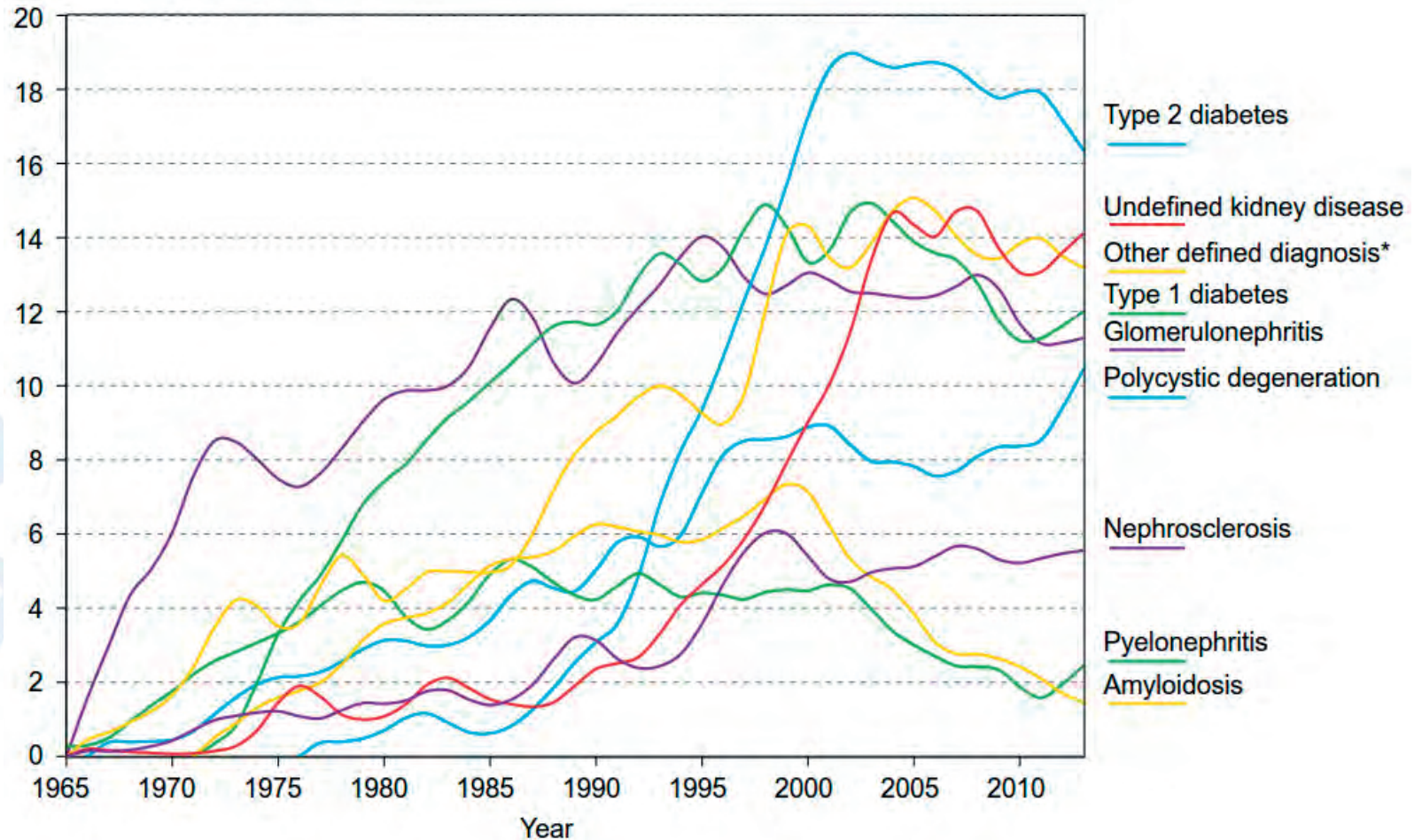


## FIN-D2D Survey 2004 and 2007

Half of all T2D in the age group 45-74 are unidentified

Obesity trend in Finland seems to leveling off

Incidence/million inhabitants



\*Other systemic diseases, urinary tract obstruction, congenital diseases, and tubulointerstitial nephritis, among others

## Finnish Registry for Kidney Diseases – Report 2013

## Public awareness regarding T2D and its prevention has been raised

- Health communication and media visibility all over the country: TV, radio, journals, newspapers
- "Look at yourself" campaign
- "A small decision every day" campaign
- FIN-D2D exhibitions
- A wide selection of training material for people at risk
- Material for health care providers
- Various local innovations for raising awareness

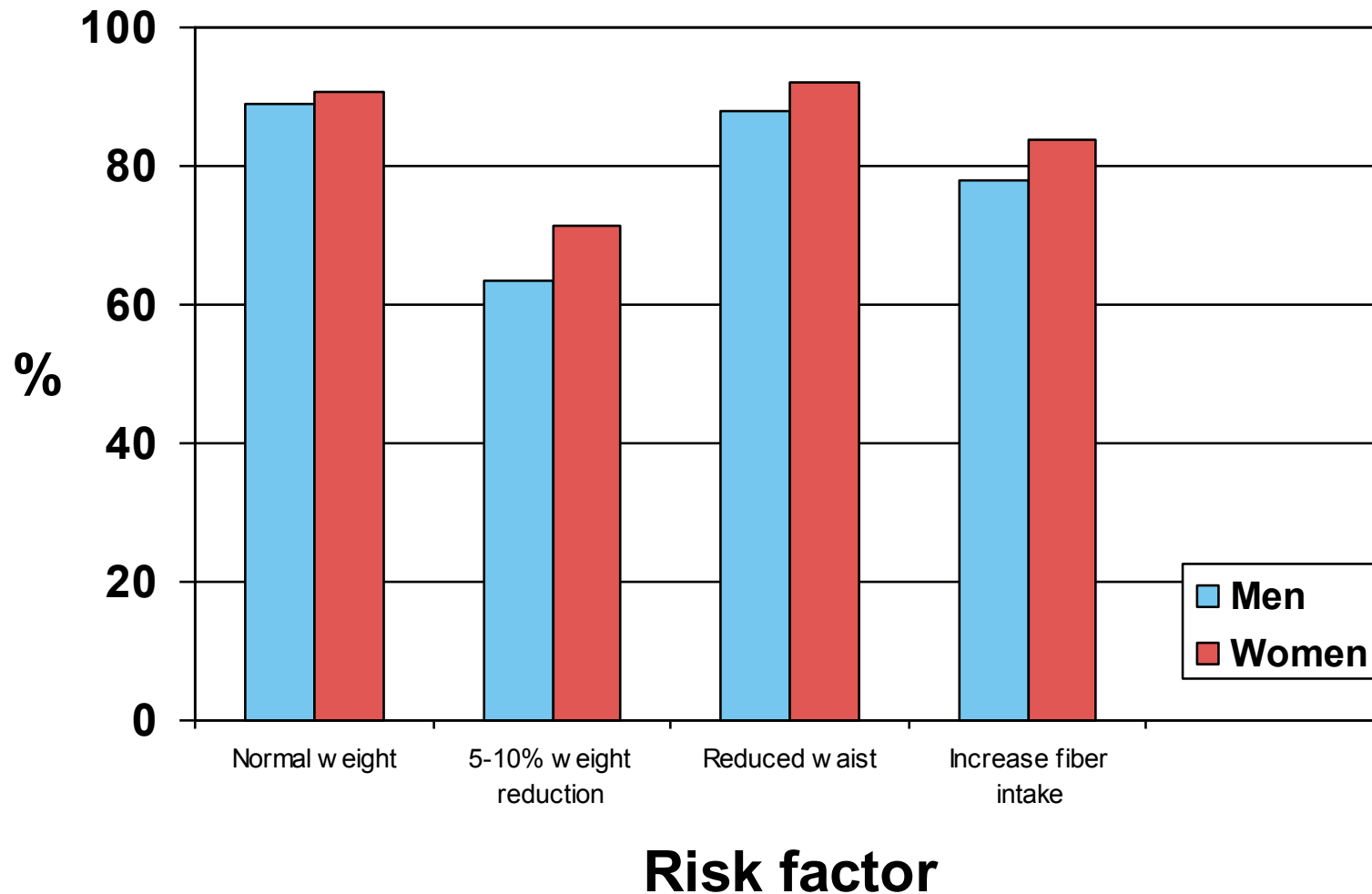
Diabetes mentioned in the media in Finland during 1980-2006

1980-1993	1300-1500
1994-1999	1800-2300
2000-2006	3700-6000

Finnish Diabetes Association 2008

# Awareness of the prevention of diabetes in the 2007 population survey

Question: Which action results in the prevention of type 2 diabetes?







Tuijota omaan napaasi

## FIN-D2D: Factors to overcome

- Limited resources for prevention in primary health care.
- Strong focus on treatment, not prevention and health promotion, in primary health care.
- Lack of knowledge and skills of the health care personnel concerning life style modification.
- Lack of long term approach to life style modification.
- Lack of documentation and systematic follow-up of life style factors
- Lack of tradition and practices of group counselling.
- Lack of cross-sectional way of working in municipalities.
- Strict job descriptions limited cross-sectional work.
- FIN-D2D models and practices were seen as project work, not permanent practice in many health care centers.
- Physicians less committed to prevention work than other personnel.
- Men less active than women in participating in T2D prevention activities.
- Sedentary life style and unhealthy food habits as a counterforce to prevention.

# Conclusions

Large-scale screening and effective life style intervention for preventing T2D are possible in primary health care setting.

There are plenty of interfering factors to overcome.

Change of paradigm is necessary both in health care organisations and in other sectors of public services.

Well-defined protocols for prevention and treatment, and systematically organised professional services are needed.

Local network and collaboration, and continuous multidisciplinary life style education and training are prerequisites for success.

Attention must be paid to the population strategy. The work must involve the entire community.

Politicians and other decision-makers are in a key role to realize the impact potential of health promotion and prevention of non-communicable diseases.

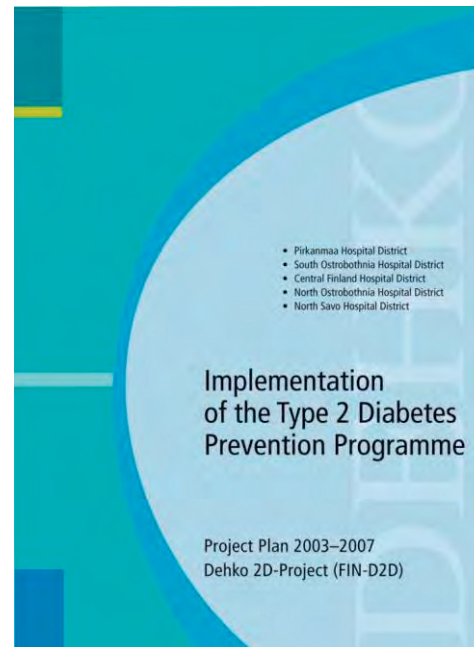
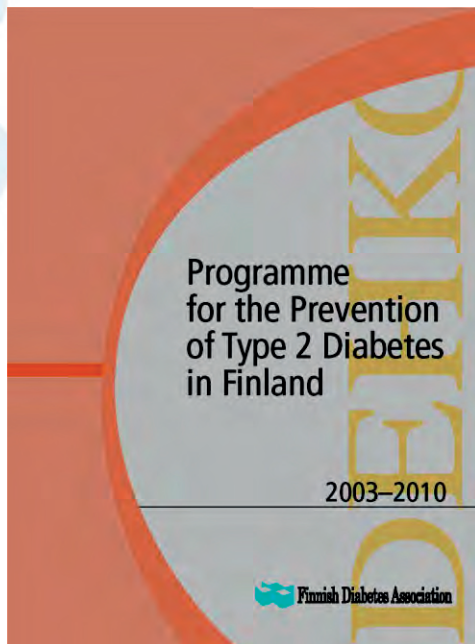
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# More information

[www.diabetes.fi/en/finnish\\_diabetes\\_association/dehko](http://www.diabetes.fi/en/finnish_diabetes_association/dehko)

[www.thl.fi](http://www.thl.fi) (in English, på svenska, D2D)



**1. Age**

<input type="checkbox"/> Under 45 years	(0 p.)
<input type="checkbox"/> 45-54 years	(2 p.)
<input type="checkbox"/> 55-64 years	(3 p.)
<input type="checkbox"/> Over 64 years	(4 p.)

**2. Body-mass index**  
(See reverse of form)

<input type="checkbox"/> Lower than 25 kg/m <sup>2</sup>	(0 p.)
<input type="checkbox"/> 25-30 kg/m <sup>2</sup>	(1 p.)
<input type="checkbox"/> Higher than 30 kg/m <sup>2</sup>	(3 p.)

**3. Waist circumference measured today**  
(the ribs (usually at the level of the navel))

<b>MEN</b>	<b>WOMEN</b>	
<input type="checkbox"/> Less than 94 cm	<input type="checkbox"/> Less than 80 cm	(0 p.)
<input type="checkbox"/> 94-102 cm	<input type="checkbox"/> 80-88 cm	(1 p.)
<input type="checkbox"/> More than 102 cm	<input type="checkbox"/> More than 88 cm	(3 p.)

**4. Do you usually have daily at least 30 minutes of physical activity at work and/or during leisure time (including several daily activities)?**

<input type="checkbox"/> Yes	(0 p.)
<input type="checkbox"/> No	(2 p.)

**5. How often do you eat vegetables, fruit or berries?**

<input type="checkbox"/> Every day	(0 p.)
<input type="checkbox"/> Not every day	(1 p.)

**6. Have you ever taken medication for high blood pressure on regular basis?**

<input type="checkbox"/> No	(0 p.)
<input type="checkbox"/> Yes	(2 p.)

**7. Have you ever been found to have high blood glucose (eg in a health examination, during an illness, during pregnancy)?**

<input type="checkbox"/> No	(0 p.)
<input type="checkbox"/> Yes	(3 p.)

**8. Have any of the members of your immediate family or other relatives been diagnosed with diabetes (Type 1 or Type 2)?**

<input type="checkbox"/> No	(0 p.)
<input type="checkbox"/> Yes: grandparent, aunt, uncle or first cousin (that no one parent, brother, sister or child)	(1 p.)
<input type="checkbox"/> Yes: parent, brother, sister or own child	(3 p.)

**Total Risk Score**

☐ The risk of developing type 2 diabetes within 10 years is:

Lower than 7	Low: estimated 1 in 100 will develop disease
7-11	Slightly elevated: estimated 1 in 25 will develop disease
12-14	Moderate: estimated 1 in 10 will develop disease
15-19	High: (estimated 1 in 5) will develop disease
Higher than 20	Very high: estimated 1 in 2 will develop disease



# The WHO Counteracting Obesity Award 2006

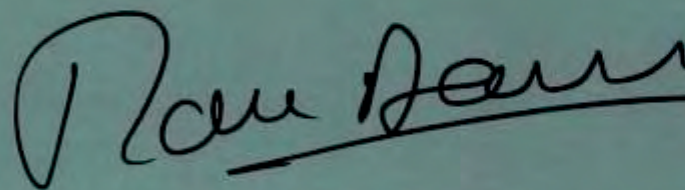
On the occasion  
of the WHO European Ministerial Conference on Counteracting Obesity,  
held in Istanbul, Turkey from 15 - 17 November 2006,  
the WHO Regional Office for Europe presents

*The DIHK and FIN-PRP Project, Finland*

with the **WHO Counteracting Obesity Award 2006**, for activities in

*supporting the health sector in addressing obesity in high-risk groups*

The award is in recognition of the valuable contribution made to  
addressing the challenge of obesity in the WHO European Region.



Dr Marc Danzon  
WHO Regional Director for Europe  
16 November 2006



**WHO European Ministerial Conference  
on Counteracting Obesity**

*Diet and physical activity for health*

**Istanbul, Turkey, 15-17 November 2006**