



Promoting healthy lifestyle  
in families across Europe

“Families across Europe following a hEalthy  
Lifestyle FOR Diabetes prevention”:

**Feel4Diabetes**

**Yannis Manios, Professor**

Department of Nutrition and Dietetics  
School of Health Science & Education  
Harokopio University, Athens, Greece



2010

2011

2012

2013

2014

ToyBox study was a EU funded project  
(Project Number: 245200, FP7-KBBE-2009-3)  
Coordinator: Yannis Manios, Harokopio University



Promoting healthy lifestyle  
in families across Europe

2015

2016

2017

2018

2019

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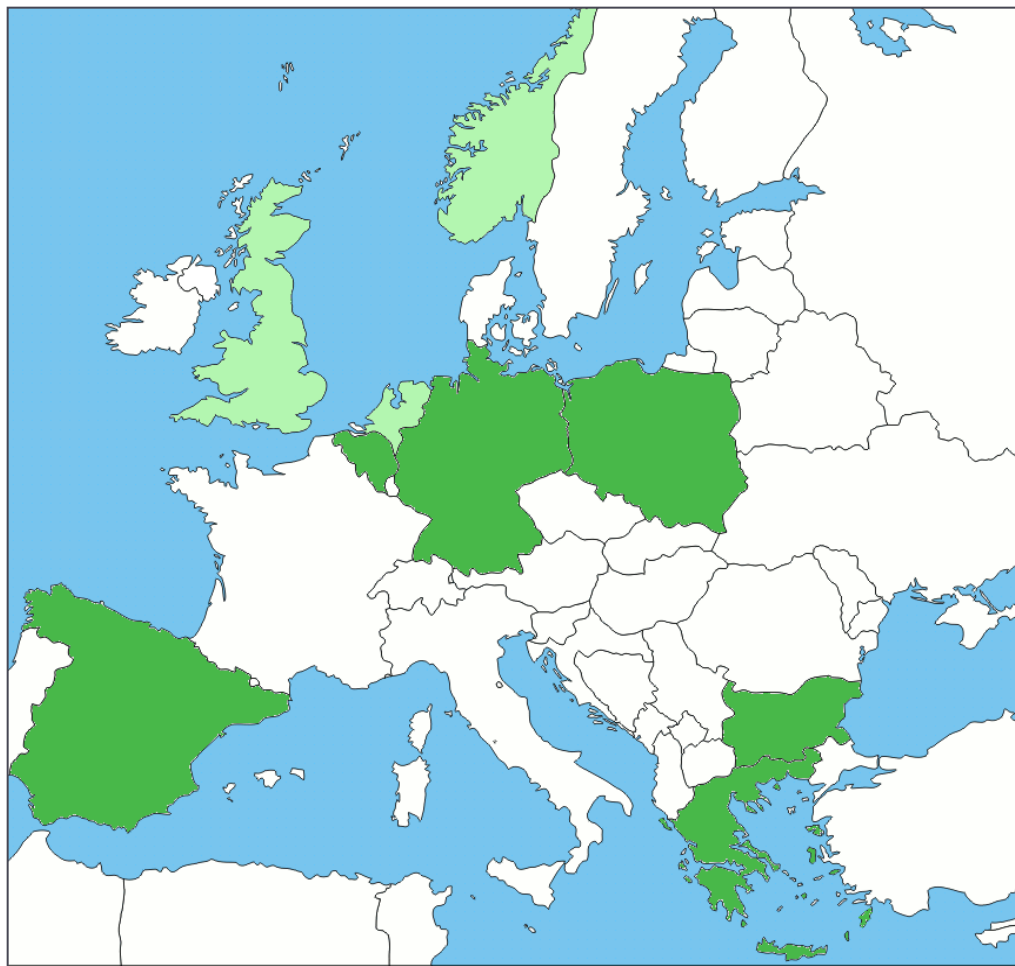


# Aims

- ▶ Prevent obesity in early childhood (preschool children and their families)
- ▶ By developing and implementing a kindergarten based- family involved intervention

# Complete baseline & follow up data

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Country	Kindergartens	Children/ Parents
Belgium	26	1032
Bulgaria	19	792
Germany	55	954
Greece	92	854
Poland	49	1065
Spain	30	853
<b>Total</b>	<b>271</b>	<b>5550</b>



# Summary of ToyBox-study findings

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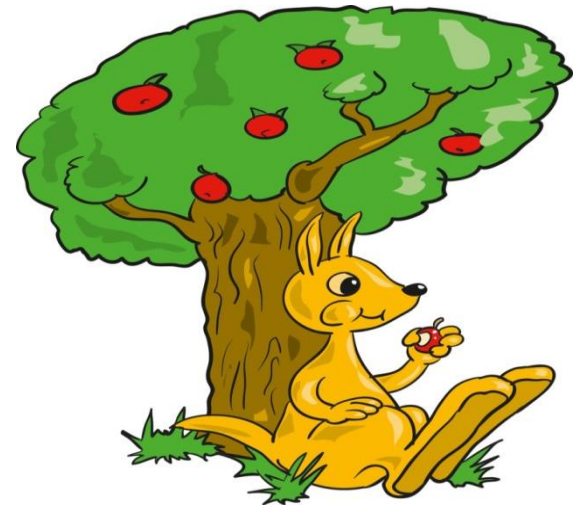
Positive findings can be seen for IG vs. CG. group for:

- children's PC/video games
- children's water consumption
- children's and parents' sweet consumption
- parents' vigorous physical activity



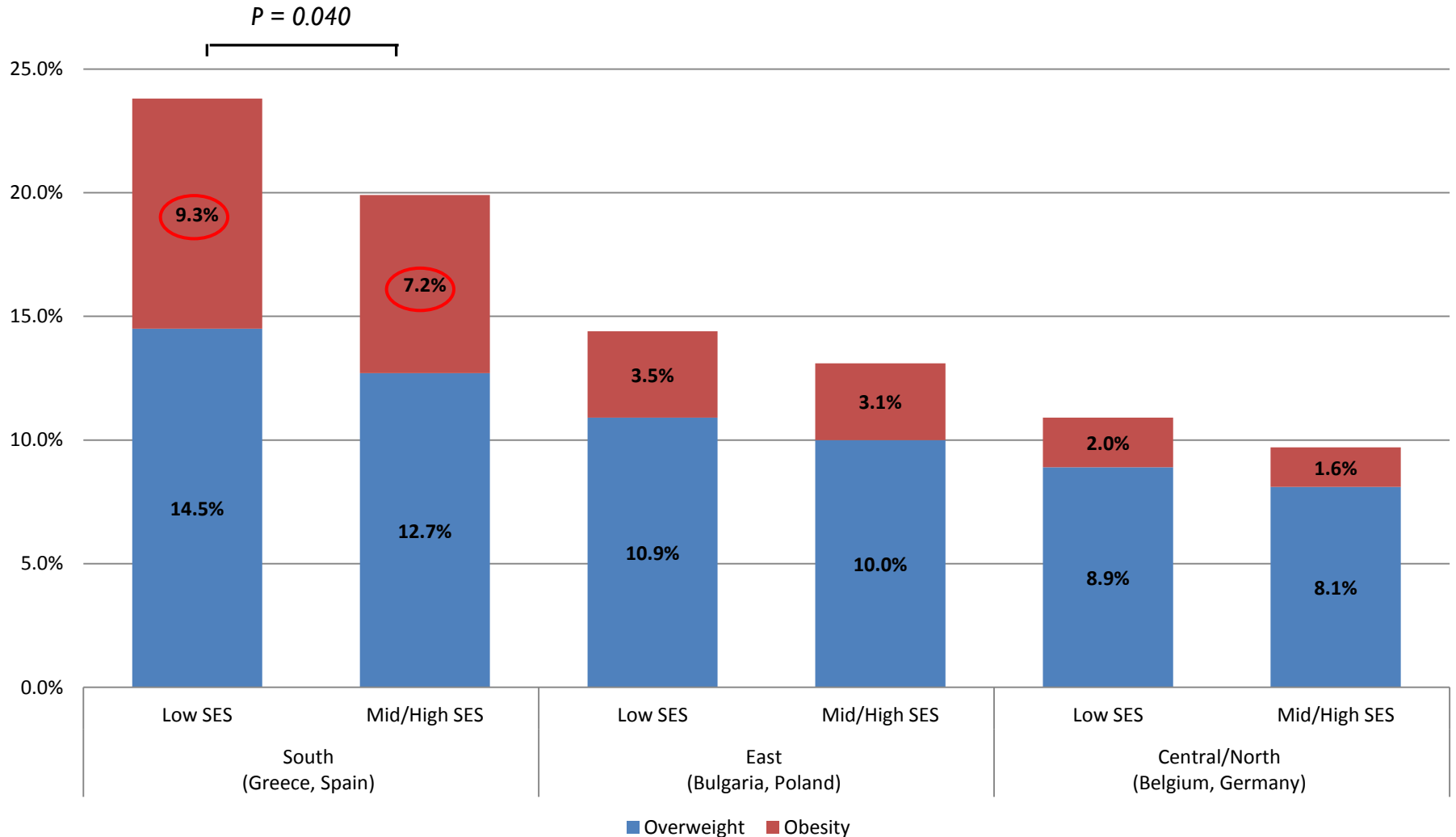
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# BMI baseline data and one year follow up



# Summary of ToyBox-study findings

Prevalence of **overweight/obesity** by region & SES-group



# Factors associated with change observed in preschool children's BMI over the 1-year intervention period

<b>Independent variables</b>	<b>Linear Mixed Model<sup>†</sup></b>		
	<b>Dependent variable: Increase in BMI (kg*m<sup>-2</sup>)</b>		
	<b>B</b>	<b>95 % C.I</b>	
Children's age at follow-up (years)	0.134	0.081	0.188
Sex (Girls vs. Boys)	-0.064	-0.106	-0.022
Children's BMI at baseline (kg*m <sup>-2</sup> )	-0.011	-0.028	0.006
Treatment arm (Intervention vs. Control)	-0.033	-0.128	0.061
Region (Belgium/Germany vs. Greece/Spain)	-0.320	-0.227	-0.023
Region (Bulgaria and Poland vs. Greece/Spain)	-0.125	-0.423	-0.217
Maternal misperception of child's weight status (Underestimation vs. correct estimation)	0.390	0.173	0.607
Maternal pre-pregnancy BMI (Overweight/obese vs. Normal-weight)	0.181	0.123	0.238
Paternal BMI (Overweight/obese vs. Normal-weight)	0.082	0.038	0.127

<sup>†</sup>: Three level logistic model adjusting for the random effects of socio-economic status and school.





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# Feel4Diabetes: Steps to a Successful Application & Project Execution

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# Identify call in Participants Portal

The screenshot displays the 'Participant Portal' for 'RESEARCH & INNOVATION' under the 'European Commission'. The breadcrumb trail is 'European Commission > Research & Innovation > Participant Portal > Calls'. The navigation menu includes 'HOME', 'FUNDING OPPORTUNITIES', 'HOW TO PARTICIPATE', 'EXPERTS', and 'SUPPORT'. A search bar labeled 'Search PP' and buttons for 'LOGIN' and 'REGISTER' are also present.

**EU Programmes 2014-2020**

- Search Topics
- Updates
- Calls
  - H2020**
  - Research Fund for Coal & Steel
  - COSME
  - 3rd Health Programme
  - Consumer Programme

**FP7 & CIP Programmes 2007-2013**

- Calls

## Calls for Proposals

**Horizon 2020** Advanced search for topics  
Calls for tenders on TED

- Societal Challenges**
  - Health, demographic change and wellbeing**
  - Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy**
  - Secure, clean and efficient energy**
  - Smart, green and integrated transport**
  - Climate action, environment, resource efficiency and raw materials**
  - Europe in a changing world - inclusive, innovative and reflective societies**

**Sort by**  Call title  Call identifier  Publication date  **FILTER**

**Societal Challenges**  
**BIO BASED INDUSTRIES JOINT UNDERTAKING**

**Societal Challenges**  
**BIO BASED INDUSTRIES PPP**

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# Topic HCO-05-2014: Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

## HCO-05-2014: Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

Type 2 diabetes is a major public health concern. The World Health Organisation (WHO) is predicting that this will increase by two thirds by 2030. It is currently estimated that 347 million people worldwide suffer from diabetes with more than 80% from low-and middle-income countries. Of those suffering from diabetes, type 2 comprises 90% of this population around the world. Halting the rise in prevalence of diabetes has been identified as one of the 9 WHO non-communicable diseases global voluntary targets to be met by Member States by 2025.

With the burden of this chronic non-communicable disease ever-increasing, the Global Alliance for Chronic Diseases (GACD) partnership, of which the Commission is a member, has agreed to launch a call for proposals on the prevention and treatment of type 2 diabetes, with a focus on implementation and intervention research in low- and middle-income countries and in vulnerable populations in high income countries.

**Scope:** Proposals must focus on type 2 diabetes. Proposals should generate new knowledge on interventions and their implementation for the prevention and treatment of type 2 diabetes in low and middle income countries, and in vulnerable populations in high income countries. Proposals must focus on existing approaches to prevention and control of type 2 diabetes rather than development of new treatments. Proposals may address prevention or treatment of specific complications of type 2 diabetes.

Proposals may focus on a wide range of prevention and/or treatment strategies. This may include programmes addressing (one or combinations of):

- Changes to lifestyle and behaviour resulting from the provision of an environment that supports and promotes better health. This may include community-wide approaches, or other strategies targeting individuals at high risk. For example, population prevention strategies designed to address unhealthy diets and physical inactivity as risk factors for diabetes;
- Structural interventions or policies designed to promote improved health outcomes. For example, evaluating the contribution of public policies to diabetes prevention efforts, or monitoring the potential effects of such policies if adopted and implemented;
- Delivery of relevant health care and health interventions;
- Approaches to implementing accessibility of or adherence to, pharmaceutical, nutritional or other promising or proven interventions.

Proposals should focus on implementation research, to examine what works, for whom and under what contextual circumstances, and how interventions can be adapted and scaled up in ways that are accessible and equitable. Proposals may address prevention or treatment of specific complications of type 2 diabetes.

Proposals may also focus on gestational diabetes. Proposals may focus on specific societal groups but a clear justification should be provided as to why the group has been chosen and how the choice will assist the funder in delivering their aim to address health inequalities at a local and/or global level. Proposal should focus on implementation research into interventions for prevention and treatment of type 2 diabetes that are applicable in low resource settings. However, in some settings, proposals may incorporate work to establish baseline data on prevalence of diabetes and its risk factors to evaluate the impact of the intervention. Proposals may include these aspects if they do not duplicate existing evidence available.

All proposals should:

- Focus on research into implementation of prevention and/or treatment strategies derived from existing knowledge and research.
- Develop an improved understanding of the key barriers and facilitators at local and national levels that affect the prevention and treatment of type 2 diabetes.
- Include an assessment of equity and gender gaps in diabetes prevention and treatment.
- Demonstrate a sound understanding of the local health system context.
- Provide evidence of a health economics dimension such as cost effectiveness of the proposed intervention and its scalability.
- Describe a clear proposed pathway to embedding the intervention into policy and practice after the study which addresses how:
  - Local and/or national policy makers will be engaged both at the start of the project as well as the end.
  - The project outcomes/evidence will be applied for the scaling up of the intervention on a local, national and international level.
  - Future scaled-up implementations will fit within the local social, cultural and economic context.
  - Identify obstacles such as inequities and equity gaps including gender that will be taken into account in the design of an implementation strategy.
- Be proposed by a multidisciplinary project team, including local researchers as co-investigators where applicable.
- Include local stakeholders such as patient groups or community groups.

- Proposals shall not include:
  - Replication of effectiveness studies and clinical trials testing the efficacy or effectiveness of new or established pharmacological agents (or combination of agents) which have wider effects than those relating to type 2 diabetes.
  - **Etiological** or mechanistic studies of type 2 diabetes.
  - Phase I or Phase IIa trials.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 to 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

**Expected impact:**

- Reducing health inequalities and inequities, including gender, in the prevention and treatment of type 2 diabetes in both a local and global context.
- Pursuing knowledge translation and exchange approaches that are designed to maximize the public health benefits of research findings within different health contexts.
- Providing evidence to inform local health service providers, policy and decision makers on the effective scaling up of the interventions at the local, national and regional levels. For example, applicants could address affordability for users and the financial implications for implementing organisations and funders or might assess scalability to various socio-political contexts.
- Contribute to the Global Alliance for Chronic Diseases.
- Appropriate leveraging of existing programmes and platforms (e.g. research, data, and delivery platforms).
- Contribute to the WHO Global Action Plan on NCDs (2013-2020) as proposals will demonstrate alignment with international and/or national commitments to halt the rise in prevalence of type 2 diabetes.
- Contribute to the United Nations Millennium Development Goals.

The GACD aims to develop a network of researchers that can enhance cumulative learning across individual projects, and work towards understanding how socio-economic, cultural, geopolitical and policy contexts have influenced results and how findings might be adapted and applied in different settings. The funded researchers should meet annually to discuss their research and share information and data in order to develop approaches to **apply** data collection, and wherever feasible to use these standardised approaches in their respective projects Type of action: Research and innovation actions

Topic HCO-05-2014:

Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

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**Specific challenge:** Implementation of an intervention in low- and middle- income countries and in vulnerable populations in high income countries



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**This may include:**

- Changes in lifestyle and behaviours (e.g. unhealthy diets and physical inactivity as risk factors for diabetes);





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### **Proposals should focus on:**

- prevention or treatment of type 2 diabetes.
  - key barriers and facilitators at local and national levels that affect the prevention of type 2 diabetes.
  - prevention strategies derived from existing knowledge and research.
  - demonstrating a sound understanding of the local health system context. Local/national policy makers to be engaged at the start and end of the project.
  - implementation of research, to examine what works and for whom and provide evidence of a health economics dimension such as cost effectiveness of the proposed intervention and its scalability.
  - how interventions can be adapted / scaled up / applicable in low resource settings.
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- Be proposed by a multidisciplinary project team, including local researchers as co-investigators where applicable.
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Feel4Diabetes includes experts on diabetes prevention, behaviours, nutrition, physical activity, policy and health economics.



## Topic HCO-05-2014:

# Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

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### **Expected impact:**

- **Reducing health inequalities and inequities**, including gender, in the prevention and treatment of type 2 diabetes in both a local and global context.
- **Pursuing knowledge to maximize public health benefits** of research findings within different health contexts.
- **Providing evidence** to inform local health service providers, policy and decision makers on the **effective scaling up of the interventions** at the local, national and regional levels.
  
- Contribute to the Global Alliance for Chronic Diseases.
- Contribute to the WHO Global Action Plan on NCDs (2013-2020) as proposals will demonstrate alignment with international and/or national commitments to halt the rise in prevalence of type 2 diabetes.
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# Feel4Diabetes: Steps to a Successful Application & Project Execution

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- 1) Identify a call in the area of interest & expertise
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Topic HCO-05-2014:

Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

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▶ **Financial information from call:**

- ▶ 9 million Euro in total
- ▶ Each project: 1-3 million



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# Identify partners

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- ▶ **Multidisciplinary team**
- ▶ **Based on:**
  - ▶ The CVs of the Principal Investigators
  - ▶ Previous experience in EU-funded projects & proven ability to successfully complete the work they have been allocated to in these projects



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- ▶ **Coordinator:**
  - feel4diabetes
  - ToyBox-study
  - food4me
  - Helena-study
  - Energy project
  - Earlynutrition-project
  - full4health
  - odin-vitD



# Feel4Diabetes: Intervention Countries

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## Low/Middle Income Countries

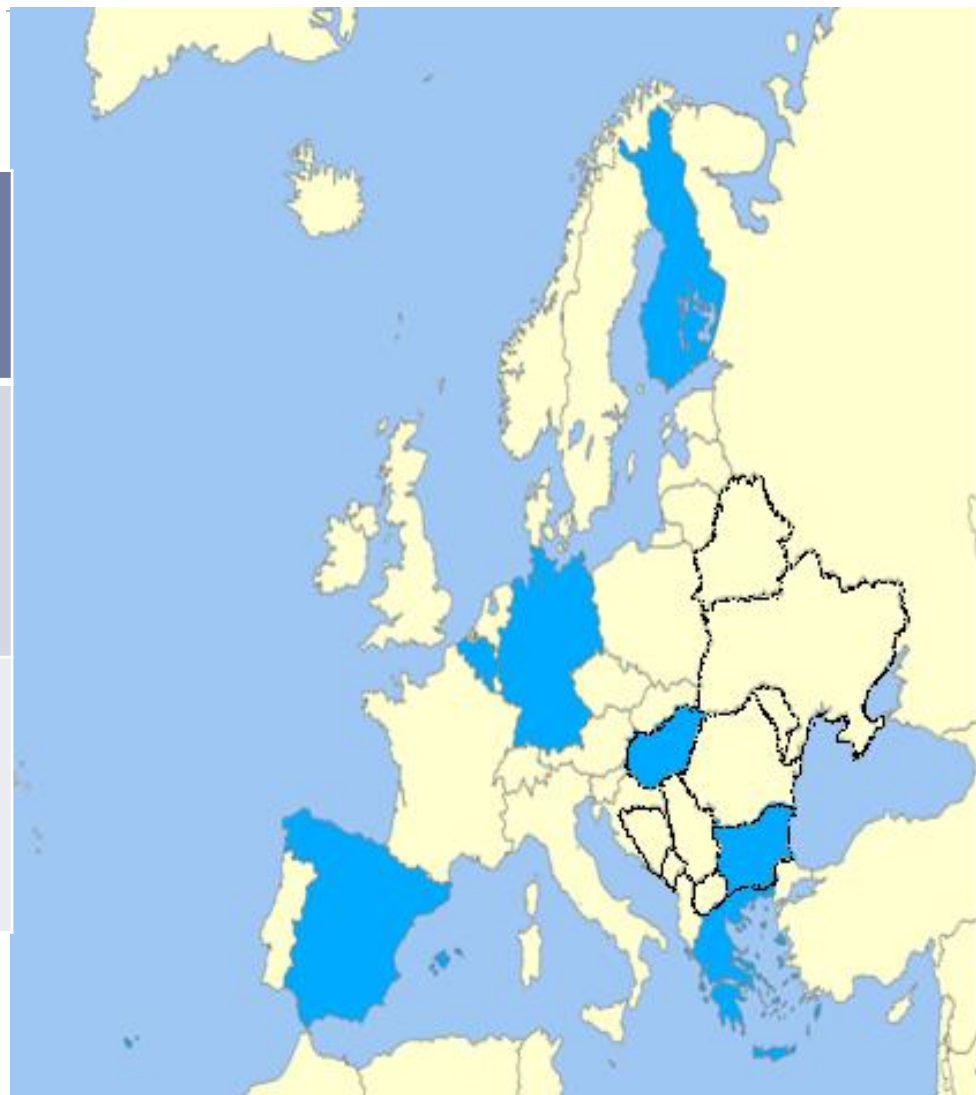
- Bulgaria
- Hungary

## High Income Countries (Under Economic Crisis)

- Greece
- Spain

## High Income Countries (low SES areas/Vulnerable groups)

- Finland
- Belgium



# Feel4Diabetes: Steps to a Successful Application & Project Execution

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# Feel4Diabetes project

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## **Objective:**

To develop, implement and evaluate a community-based intervention to prevent type 2 diabetes

- Among families from low and middle income countries
- From vulnerable populations in high income countries in Europe

The intervention will be low-cost, applicable in low resource settings using any available infrastructure and human resources

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# Feel4Diabetes: Χώρες παρέμβασης

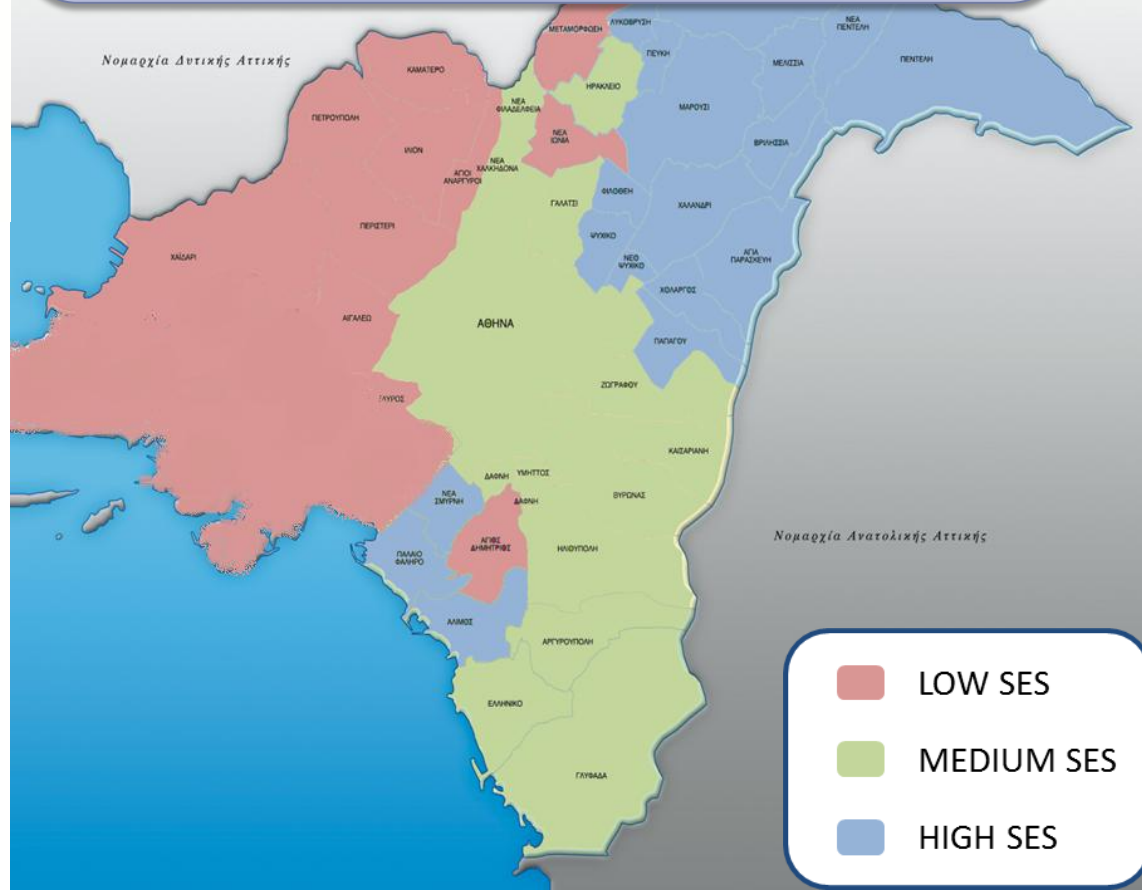




Promoting healthy lifestyle  
in families across Europe

Low SES	Mid SES	High SES
17 Municipalities	17 Municipalities	16 Municipalities

Example for the case of Greece

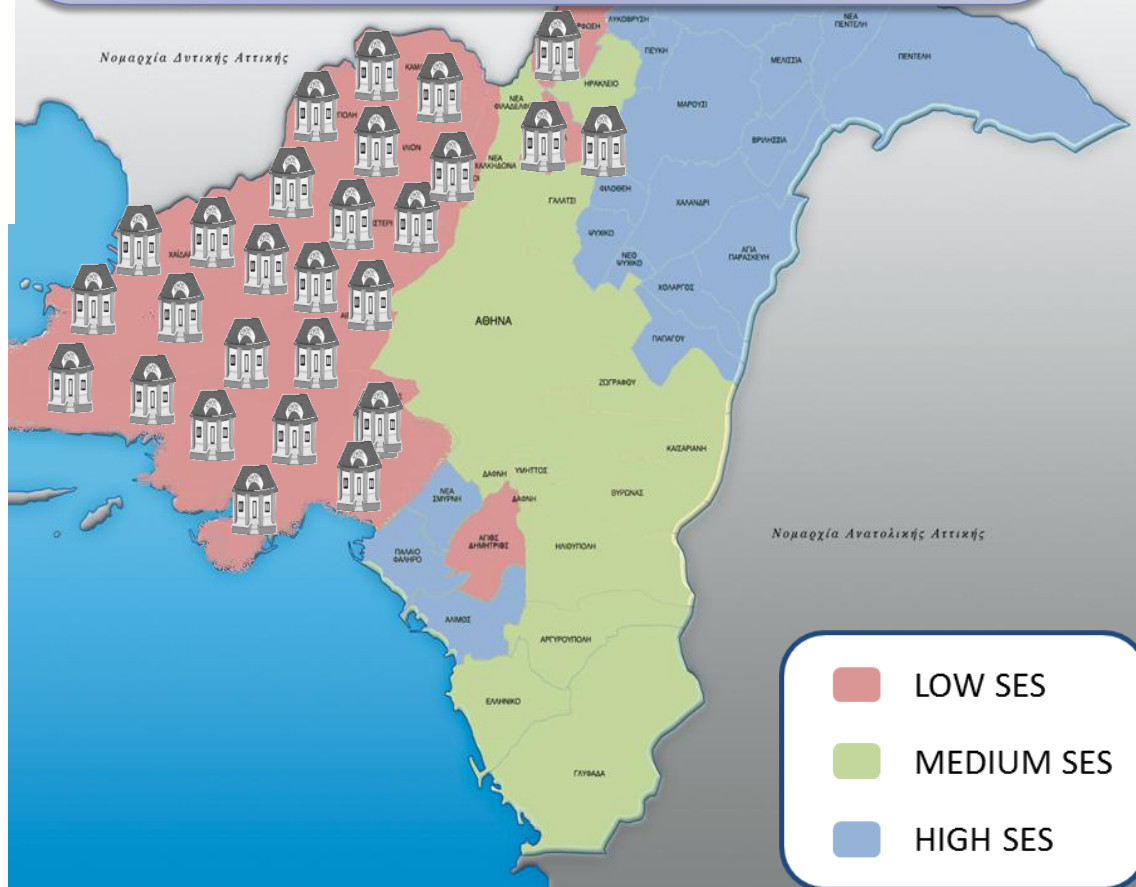




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- LOW SES
- MEDIUM SES
- HIGH SES





## 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 medication for high blood pressure on regular basis?**

- 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



Finnish Diabetes Association

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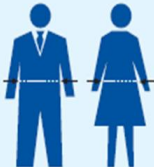
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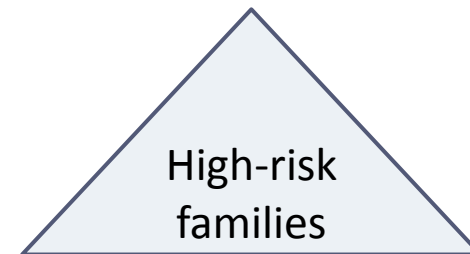
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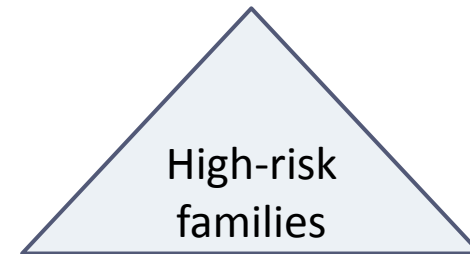
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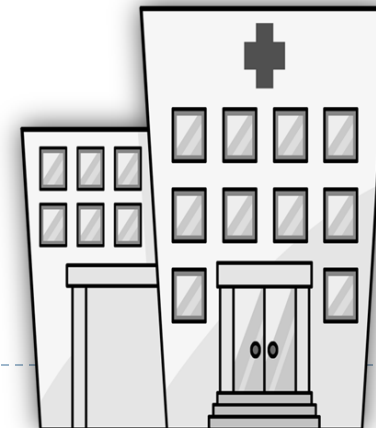
<p>Lower than 7</p> <p>7–11</p> <p>12–14</p> <p>15–20</p> <p>Higher than 20</p>	<p>Low: estimated 1 in 100 will develop disease</p> <p>Slightly elevated: estimated 1 in 25 will develop disease</p> <p>Moderate: estimated 1 in 6 will develop disease</p> <p>High: estimated 1 in 3 will develop disease</p> <p>Very high: estimated 1 in 2 will develop disease</p>
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Please turn over

Test designed by Professor Jaakko Tuomi, Department of Public Health, University of Helsinki, and James Lindstate, MHS, National Public Health Institute.



**Primary Care Centers**






Finnish Diabetes Association

### TYPE 2 DIABETES RISK ASSESSMENT FORM

Circle the right alternative and add up your points.

- Age  
0 p. Under 45 years  
2 p. 45–54 years  
3 p. 55–64 years  
4 p. Over 64 years
- 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>
- Waist circumference measured below the ribs (usually at the level of the navel)  

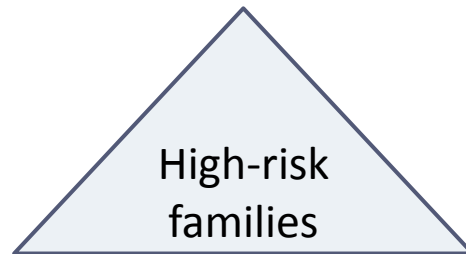
MEN	WOMEN
0 p. Less than 94 cm	Less than 80 cm
3 p. 94–102 cm	80–88 cm
4 p. More than 102 cm	More than 88 cm


- 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
- How often do you eat vegetables, fruit or berries?  
0 p. Every day  
1 p. Not every day
- Have you ever taken medication for high blood pressure on regular basis?  
0 p. No  
2 p. Yes
- 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
- 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

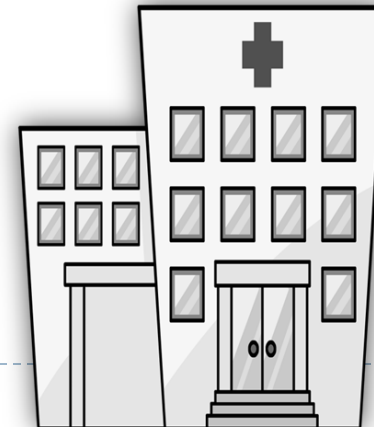
**Total Risk Score**  
 The risk of developing type 2 diabetes within 10 years is

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



Primary Care Centers



## All Families

### Children

- BMI
- Eating Habits
- Physical activity

• N= 12,000

### Parents

- FINDRISC
- Eating Habits
- Physical Activity

• N= 12,000

## High-risk Families

### Children

- + Accelerometers/  
pedometers

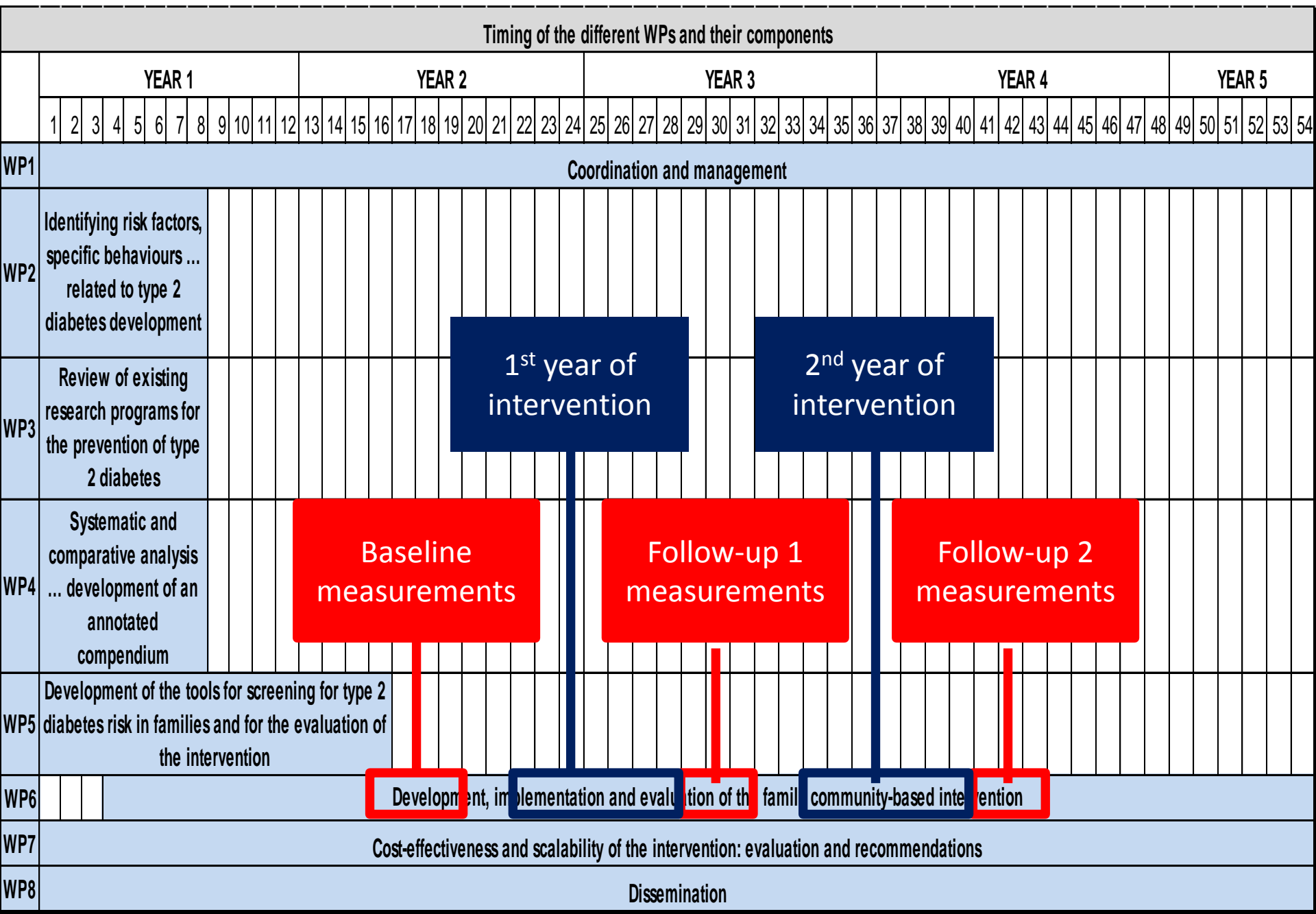
• N= 2,000

### Parents

- + BMI & WC
- + Blood pressure
- + Blood samples
- + Accelerometers/  
pedometers

• N= 2,000

# Feel4Diabetes project: Timeplan



# Harokopio University Athens

## Department of Nutrition & Dietetics

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More information regarding the ToyBox-study: [www.toybox-study.eu](http://www.toybox-study.eu)

More information regarding the Feel4Diabetes-study: [manios.feel4diabetes@hua.gr](mailto:manios.feel4diabetes@hua.gr)

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