EConDA
Economics of Chronic Diseases
www.econdaproject.eu
Funding from the European Union in the framework of the Health Programme

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Main aims of the EConDA project

- **Development** of a combined *epidemiological and economic model* to analyse the *cost–effectiveness* of interventions which aim to reduce *chronic diseases*.

- **Assess** the *economic impact* of these interventions in **8 European countries**: Bulgaria, Finland, Greece, Lithuania, The Netherlands, Poland, Portugal and The United Kingdom.

- **Development** and release of a *tool* for policy makers to test the interventions on a *cohort population*.
Modelling methodology

Risk data

Population data

Disease data

Health economic data

Intervention scenarios

BMI

UKHF Microsimulation© programme

MODULE 1

Input datasets

Software programmes

Output datasets

Output data
Obesity projections – in 8 European countries

Greece
UK
Portugal
Lithuania
Poland
Bulgaria
Netherlands
Finland
Cost of intervention (direct and indirect)

Discount rate

Cost of disease by stage

Prevention / screening

management

treatment

Risk factor

Stage 1

Stage …

Stage N

CVD / Death

Outputs: prevalence, incidence, QALY, DALY, total health care cost, indirect cost, ICER

Proxy data (NL, UK) general cost-of-illness study, as the RIVM has performed for The Netherlands since 2003
Definition:
A programme that aims to reduce a person's energy intake and help them to be more physically active by changing their behaviour (NICE, 2013).

A MCLI must include the following components:
- Diet
- Physical activity
- Behavioural therapy (for example, counselling, goal setting, action planning, barrier identification and problem solving, self-monitoring of behaviour, feedback)
## MCLI - assumptions

<table>
<thead>
<tr>
<th>Country</th>
<th>Reduction in BMI*</th>
<th>% BMI lost regained after 5 years</th>
<th>Cost of intervention per patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>0.6</td>
<td>100</td>
<td>175 Euros</td>
</tr>
<tr>
<td>UK</td>
<td>0.7</td>
<td>100</td>
<td>£91.87</td>
</tr>
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<td>Finland</td>
<td>1.6</td>
<td>100</td>
<td>110 Euros (Proxy)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.1</td>
<td>100</td>
<td>110 Euros (Proxy)</td>
</tr>
<tr>
<td>Portugal</td>
<td>2.2</td>
<td>100</td>
<td>110 Euros</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Greece Proxy</td>
<td>Greece Proxy</td>
<td>Greece Proxy</td>
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<td>Greece Proxy</td>
<td>Greece Proxy</td>
<td>Greece Proxy</td>
</tr>
</tbody>
</table>

* Absolute units of BMI; reduction in intervention group at 12 months for UK, Finland, Netherlands and Portugal and at 3 months for Greece
Results for MCLI in the Netherlands

[Bar chart showing cumulative incidence cases avoided from 2015 per 100,000 of population in 2050 for CHD, Hypertension, Stroke, Pre-diabetes, and Diabetes.

Legend:
- MCLI (annual, with regain) rel to baseline
- MCLI (annual, with no regain) rel to baseline]
Results for MCLI in the Netherlands
EConDA tool
Future work: Uncertainty
Future work: Input data

- **Diseases:**
  - Inclusion of new multistage diseases such as dementia
  - Transforming some of the existing diseases as multistage diseases such as cancers.

- **Risk factors:**
  - Previous work has modelled salt, tobacco and alcohol consumption and physical activity.
Future work: Multirisk

- Extending the model to account for multiple risk factors
WP4 of the Joint Action on Nutrition and Physical Activity project
- Forecast trends of childhood obesity rates.
- Modelling the lifetime costs of childhood obesity in six EU countries.
  - The countries are Croatia, Greece, Italy, Northern Ireland, Portugal, Romania, Republic of Ireland and Slovenia.

Modelling childhood in Ireland in collaboration with Professor Kevin Balanda, University College Cork
Acknowledgements

- This presentation arises from the project EConDA which has received funding from the European Union in the framework of the Health Programme

- EConDA Team

- UK Health Forum Modelling Team
**Flow Diagram of the impact fiscal policy measures applied to SSBs has on health outcomes.**
*Source: Adapted from Briggs et al, 2012*

**Phase 1**

1. **Price of SSBs (9/litre)**
   - Estimated using *Living Cost and Food Survey, 2012*

2. **New price of SSBs (9/litre)**
   - Estimated using *National Diet and Nutrition Survey, 2008-11 & price elasticity values*

3. **Change in total daily energy consumption (kJ/day)**

4. **Change in body mass index (kg/m²/year)**
   - Estimated using *HSE data, 2012*

**Phase 2**

1. **Effect on overweight and obesity**
   - Microsimulation model
   - Based on dynamic population & BMI population projections

2. **Effect on diseases of interest**
<table>
<thead>
<tr>
<th>Country</th>
<th>Mean reduction in BMI (kg/m²)</th>
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</thead>
<tbody>
<tr>
<td>Bulgaria</td>
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<tr>
<td>Finland</td>
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<td>UK</td>
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Results for SSB in the UK

Cumulative incidence cases avoided from 2015 per 100,000 of population

2050