I.F. Briefing 1

The I.Family Study – Overview and Key Findings

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Worldwide, nutrition-related diseases have become a major health concern, reportedly causing a loss of over 56 million years of healthy life of European citizens in the year 2000.[1] So it is vital that policy-makers and healthcare professionals target their resources as effectively as possible to help families achieve healthier lives.

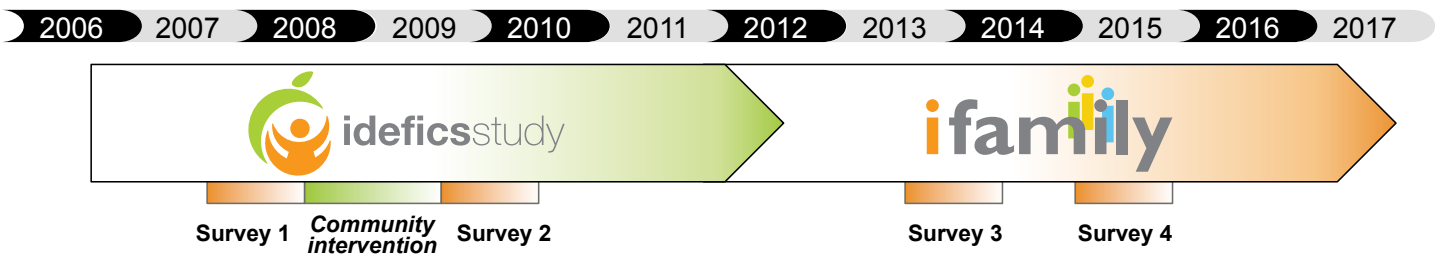
The I.Family study is a major international research project on health, food and lifestyles among European families. Over the past decade, we have examined children's development, looking for ways to improve young people's health and tackle problems such as obesity. The project has involved 17 consortium partners in 12 different countries and a unique cohort of children in eight countries – the largest group of European children ever studied.

I.Family continues work in the previous IDEFICS study, which worked with children aged 2–10 years from Belgium, Cyprus, Estonia, Germany, Hungary, Italy, Spain and Sweden. I.Family followed these children as they moved from childhood into adolescence. We have studied biological, behavioural, social and environmental factors that influence diet and health.

In 2007-8, the IDEFICS Study examined some 16,228 children (**survey 1**). It then re-examined 13,596 of those children two years later (**survey 2**). Between the two surveys we undertook a **community-based intervention** in each country – half of the children were involved in this, to test the interventions' effects (see **I.F. Briefing 2**).

I.Family then re-assessed 9,617 of these children, now between the ages of 7 and 17 years, plus members of their families (**survey 3**). These children still depend on their immediate families but are becoming more independent. Most recently, we undertook in-depth examinations of contrasting groups of children (**survey 4**) – specifically, children who had shown different weight trajectories in the previous surveys.

By tracking children's development across these transitional years and by examining the family environment in depth – including siblings as well as parents – I.Family has studied how families, friends and environments influence health and behaviour.[2]



Timeline of the IDEFICS and I.Family studies

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement No 266044

The I.Family study's findings

At our final conference and in the other I.F. briefings, experts from the study will present some of our most important findings. Here are some key headlines:

General

- Rates of overweight/obesity vary widely between European regions – from around 40% of children aged between two and ten in southern Italy to less than 10% in Belgium.
- Girls are more likely to be overweight/obese compared with boys.
- Children from disadvantaged families, i.e. those with a lower social position or a migrant background, are more often overweight or obese than children from more advantaged groups. As shown on the next page, this social divide increases as children get older.
- European children eat too much energy-dense food.
- Unhealthy diets are far more common in children from poorer and less-educated families.
- Findings suggest there is a link between shorter sleep duration and higher weight, particularly in primary school children.

Physical activity and the built environment

- Less than a third of children meet physical activity guidelines of 60 minutes of physical activity per day. The proportion varies from as low as 2% in Cyprus to 34% of boys in Belgium.
- Well-designed public open spaces and safe and well-connected facilities are key to increasing physical activity. Open spaces are more important to younger children, while walking/cycling routes matter more for adolescents.

Media consumption

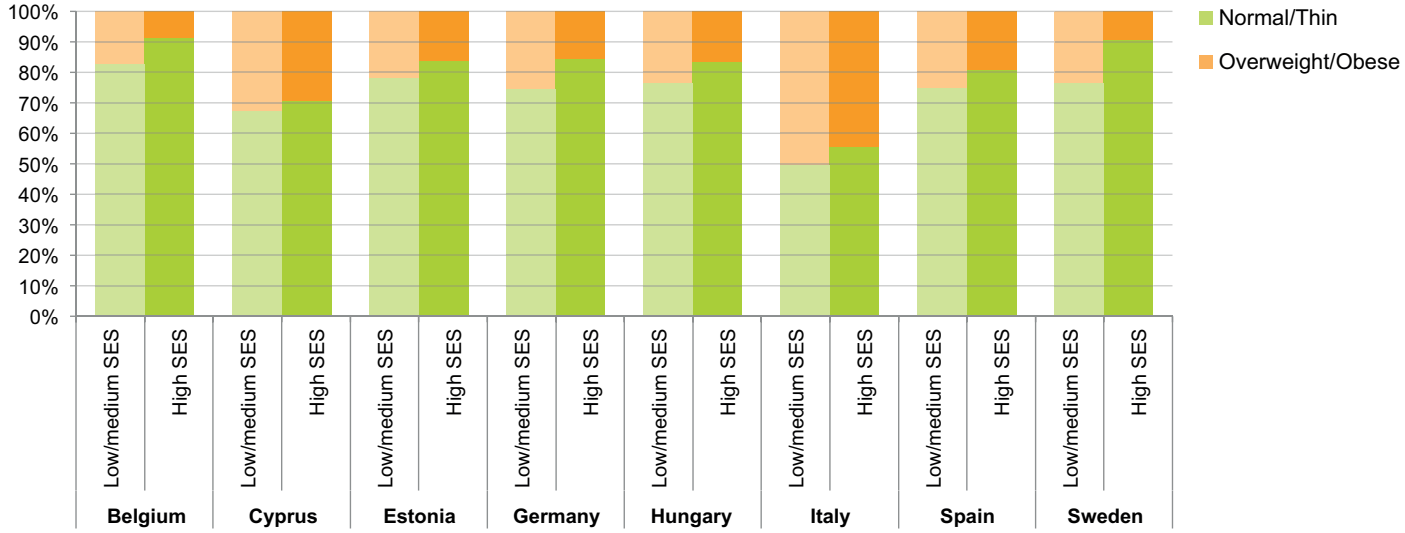
- Children are much more likely to eat energy-dense foods, i.e. foods high in fat and sugar, and to consume sugar sweetened beverages after being exposed to advertising promoting them.
- Children exposed to commercial TV are more likely to consume soft drinks, regardless of their parents' norms or the daily duration of TV-viewing.
- Frequently asking for products advertised on TV by children increases their preference for fatty foods and their likelihood of being overweight**.**
- Greater time spent watching TV and using a computer is negatively associated with children's well-being.
- Watching TV during meals, having a TV in the children's bedroom and watching TV for more than 1 hour per day are all associated with being overweight/obese.

Influence of family and friends

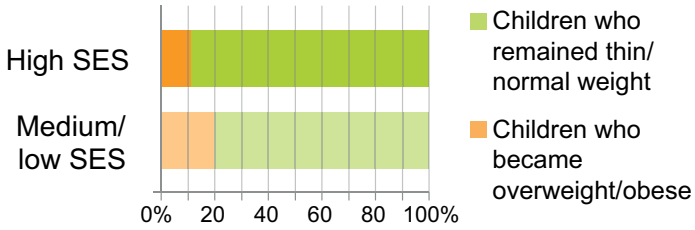
- Family members are similar to each other in their weight status and body composition, risk factors for disease and what they eat. Mothers tend to be more like their children than fathers.
- Parents' perception of their child's weight is influenced by how much other children around them weigh.
- The body weights of children and teenagers are related to those of their peers. Teenagers are particularly likely to eat more unhealthy foods if their friends do and are more likely to be active if their friends are.

Socio-economic status has a major effect on rates of overweight and obesity

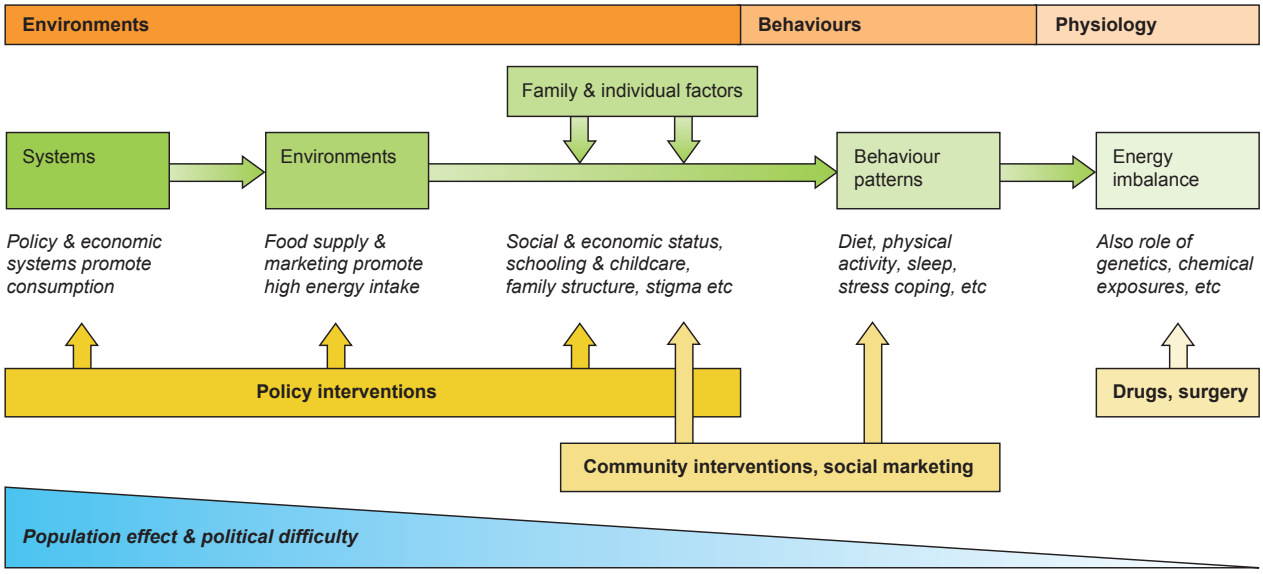
The chart below compares children in our European study regions. It shows how the percentage of overweight/obese children differs between families of lower and higher socio-economic status. (Here, we use parents' education level to gauge this.)



Tracking children as they grow up shows this effect gets stronger. The chart on the right shows what happens to children who were thin or normal weight at **survey 1**. Six years later, in **survey 3**, we see a major difference in how many children have become overweight or obese (orange bars). In families of medium or low socio-economic status (SES), nearly twice as many have, as compared with higher SES families.



Environments shape children's and families' diets and behaviour – to improve health, policy needs to address systemic factors and obesogenic environments[3]



I.Family worked with eight child cohorts and communities in:

- Strovolos, Cyprus
- Ghent, Belgium
- Tallin, Estonia
- Bremen, Germany
- Pécs, Hungary
- Avellino, Italy
- Zaragoza, Spain
- Gothenburg, Sweden

Our thanks to all the children, families, schools and communities who took part!

Applying different forms of expertise to provide practical insights

The I.Family study has drawn on a wide range of scientific disciplines to build an integrated picture, examining:

- epidemiology
- dietary behaviours
- biological and neuro-behavioural susceptibility factors
- metabolic health
- genetic factors and gene expression patterns
- physical activity and the built environment
- the family and its environment
- sleep duration and quality
- the influence of friends and peer groups during adolescence
- media consumption and its effects
- economic and policy aspects of food systems

Rates of obesity and overweight remain at an unprecedented level among European children. Our research shows just how few European children actually meet guidelines for healthy diets, physical activity rates and sleep.[4]

We hope that I.Family's findings will inform future obesity research, support policy-makers and healthcare professionals in deciding where they can most effectively target resources, and help families and individuals enjoy longer, healthier lives.

For more information please visit our website at www.ifamilystudy.eu

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1 *Food and Health in Europe: A New Basis for Action*. World Health Organization Regional Publications: European Series 96, 2004: 7.

2 Ahrens et al. 2016. Cohort Profile: The Transition from Childhood to Adolescence in European Children – How I.Family Extends the IDEFICS Cohort. *International Journal of Epidemiology* [Epub ahead of print] http://ije.oxfordjournals.org/content/early/2016/12/31/ije.dyw317.full.

3 Diagram adapted from Swinburn et al. 2011. The Global Obesity Pandemic: Shaped by Global Drivers and Local Environments. *Lancet* 378 (9793): 804–14.

4 Kovács et al. 2014. Adherence to the Obesity-Related Lifestyle Intervention Targets in the IDEFICS Study. *International Journal of Obesity* 38: S144–51.