

occupation, number of children). In children of non-overweight mothers, sedentary behaviour was related to the child's age, socio-economic characteristics of the family and physical activity. However, children of overweight mothers had very few characteristics related to sedentary behaviour (i.e. no association was found with the child's characteristics and only a weak association with familial characteristics).

Conclusions: Correlates of sedentary behaviour in 7–9-year-old children vary according to maternal overweight. In contrast with children of non-overweight mothers, children of overweight mothers showed relatively homogeneous sedentary behaviour. Maternal status must therefore be taken into account when developing strategies to prevent sedentary lifestyles in children.

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18 – Ethical evaluations of childhood obesity interventions: equity and social justice

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Introduction: Questions about equity are an important aspect of ethical evaluations of childhood obesity interventions. This presentation identifies three equity concerns about such interventions and considers how these concerns can be integrated in their evaluation.

Methods: This presentation will draw on relevant empirical examples and public health ethics literature.

Results/conclusion: Since, in many industrialized countries, (childhood) obesity is more common among disadvantaged groups, interventions that reach these groups could reduce social inequalities in health. However, these interventions also raise equity-based concerns. First, experience with public health initiatives suggests that affluent groups often benefit more from such interventions than other groups; thus, such interventions may exacerbate, rather than reduce, health inequalities. Ethical evaluations must therefore identify rele-

vant disadvantaged groups and assess the degrees to which advantaged and disadvantaged groups have benefited from the intervention. Second, some anti-obesity strategies may impose harms or burdens on children or parents, e.g., by stigmatising parents and/or children. From an equity perspective, we must avoid a clustering of such burdens among the disadvantaged. Importantly, this analysis may have to consider harms in aspects of well-being other than health. Parents' and children's views on interventions help us identify relevant burdens. Finally, interventions may involve trade-offs between different aspects of equity. First, there may be trade-offs between equity gains along different dimensions, e.g., when health improvements can be affected by imposing burdens in other domains. Second, interventions may impose burdens on parents to bring about benefits for their children, leading to trade-offs between equity gains among children *v.* parents.

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19 – Prospective longitudinal study of childhood risk factors in the development of obesity – the STEPS study

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Introduction: STEPS is a longitudinal cohort study involving a systematic follow-up of children and their families from pregnancy to adulthood. It aims to produce comprehensive information about the interplay of health-related, psychological, social, economical and educational factors in childhood development. One part of the STEPS study is focusing at the childhood risk factors in the development of obesity.

Method: The study children (*n* 1818) have been born between March 2008 and March 2010. The data is collected using a variety of different methods, including questionnaires, health records and biological samples. The outcome measures comprise family socio-economic status and health history as well as physical activity and dietary habits. Weight, height, waist circumference and body composition of children and from both parents will be measured once a year.

Biological samples (blood and cheek-swabs) will be taken from children and parents for obesity and taste gene testing.

Results: The first stage of the follow-up will cover early childhood development from the prenatal period until the age of 3 years. The ongoing analysis will study how mothers weight gain during pregnancy affects child's weight and whether the environmental and genetic influences in development of obesity can be separated. The effect of genetic variation in bitter taste receptor on child feeding, eating patterns and weight gain will also be examined.

Conclusions: The research aims not only at gaining information about the correlations between different factors affecting childhood obesity, but also at producing results having more practical applications for use of childhood obesity prevention in children and families.

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20 – Economics of obesity: nutrition and physical activities substitution effect

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Introduction: Scientific evidence has demonstrated that child obesity depends on education and economic status of parents, and geographical location. Differently from the majority of published studies, we explain obesity in terms of a rigorous economic model suitable to design a science-based health policy scheme. The model is based on a neoclassical approach, and analyses the obesity problem in terms of a set of nutritional and physical activity choices.

Method: We propose a two-step methodology of economic choice modelling. In the first step, we suppose a utility model, where people choose the most efficient combination between calorie intake and energy consumption. In the second step, we estimate the cross-elasticity between the utility of nutrition and that of physical activity, given the observed levels of BMI. A case study referred on a population of 898 students (age 11–19 years) in the South of Italy is presented.

Results: The estimation of the cross-elasticity between and across different types of foods and physical activity, allows the comparison between different social groups. Students belonging to lower income groups show higher preference towards high calorie foods, with respect to healthy food. Similarly, students belonging to parents with higher education, show higher preference towards physical activity, in respect to food consumption.

Conclusions: The estimation of the cross-elasticity is valuable information to public policy aimed at the reduction of obesity. Diversified policy measures may be targeted to specific social groups, in order to increase the effectiveness of the policy and to reduce social inequalities.

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21 – Fluid consumption data extract from a French national survey: INCA2

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Nutritional recommendations are mainly based on dietary surveys of population: this is the case for intake recommendation as well. In order to make consistent recommendation on a European scale, the European Food and Safety Agency

(EFSA) has very recently published a scientific opinion, in which it defines adequate intake of water as 2.0l/d for females and 2.5l/d for males, from fluids and food moisture. Considering that food moisture contains 20% of water on