



**hbosc**  
HEALTH BEHAVIOUR IN  
SCHOOL-AGED CHILDREN  
WORLD HEALTH ORGANIZATION  
COLLABORATIVE CROSS-NATIONAL STUDY



# Dietary habits in childhood: what's trending?

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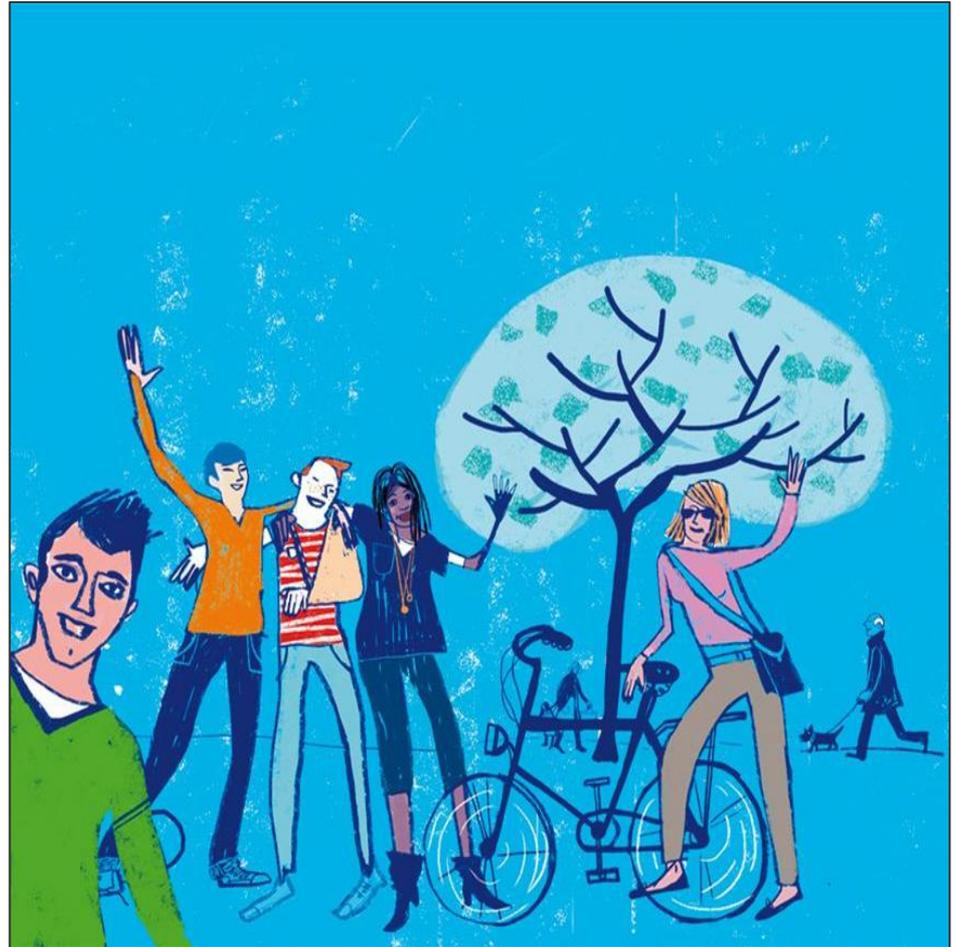


NUI Galway  
OÉ Gaillimh

# Presentation outline



- HBSC
- Role of nutrition
- Fruit and Vegetables
- Soft drinks
- Breakfast
- What can we do?





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CALENDAR:**

**2013/14 International  
Report Launch  
15 March 2016  
Brussels**

HBSC is an international alliance of over 400 adolescent health experts based in 44 countries who collaborate to develop and execute the HBSC survey.

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Every 4 years, the HBSC network collects data on 11, 13 and 15 year olds' health and well-being, social environments and health behaviours.

Data are collected through school-based questionnaires; minimum of 1,500 students of each age group per country. The 2013-2014 international dataset includes 219,810 students.

To date, more than 1 million young people have participated in this survey.

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The findings from HBSC are used at both a national and international level to:

- gain new insight into young people's health and well-being
- inform policy and practice to improve young people's lives

# Conceptual framework



- Healthy diets save lives
- Unhealthy eating can lead to CVD, obesity, diabetes and some forms of cancers – the leading cause of death and disease in WHO European region
- Variety, balance and moderation is key to healthy diet
- Food - for optimal health, fighting illness, preventing disease and the treatment of specific conditions

# Why child and adolescent nutrition?



- Good nutrition is important for growth and development
- In general young people do not suffer from serious diet-related diseases but can have poor nutritional status
- Dietary habits may track into adulthood
  - Emphasis placed on optimising dietary habits during youth
- Many health problems in adulthood have their genesis in the childhood and adolescent years
  - Establishing healthy habits early in life is important

# Nutrition through childhood



Nutrition plays a role at every life stage

- Prenatal – folic acid during pregnancy
- Infants – breastfeeding and weaning (Vitamin D)
- Pre-school – establishing habits, healthy family approach
- Schoolchildren – nutrient dense diet (fish, snacks, breakfast)
- Adolescence – nutrient dense diet (healthy weight, physically active, iron, calcium)

# Factors influencing food intake



- Diet and obesity is strongly determined by individual, social, cultural and economic factors and physical/built environment
- Individual or intrapersonal influences (e.g., psychosocial, biological);
- Social environmental or interpersonal (e.g., family and peers);
- Physical environment or community settings (e.g., schools, fast food outlets, convenience stores);
- Macrosystem or societal (e.g., mass media, marketing and advertising, social and cultural norms)

# Youth dietary habits



- Assessing dietary habits is challenging
  - Especially across countries
- Fruit and vegetables are high priority for most countries
  - Diets high in fruit and vegetables associated with decreased risk of NCDs
- Non-diet soft drinks and sweets (candy/chocolate) are also of interest in context of obesity, dietary quality and dental caries
- Breakfast consumption is associated with better diet quality and with healthy body weight

# Frequency of consumption

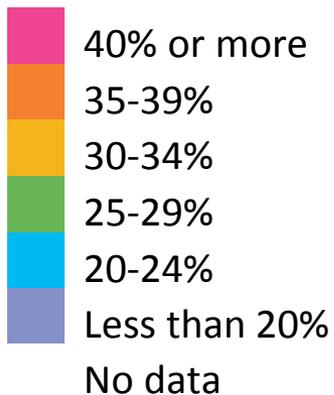


- How many days a week do you usually eat or drink...?
  - Fruits
  - Vegetables
  - Soft drinks
- Response options:
  - never
  - less than once a week
  - once a week
  - 2-4 days a week
  - 5-6 days a week
  - once a day, every day
  - every day, more than once
- Response options were recoded into daily versus less than daily

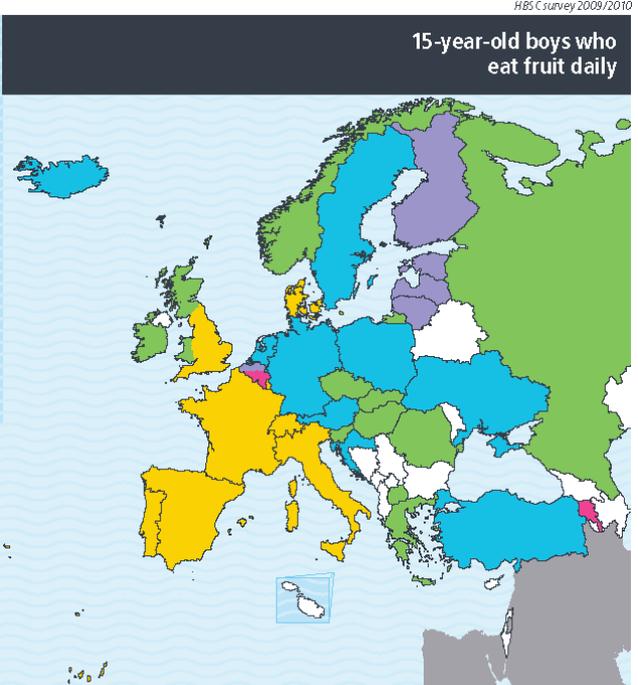
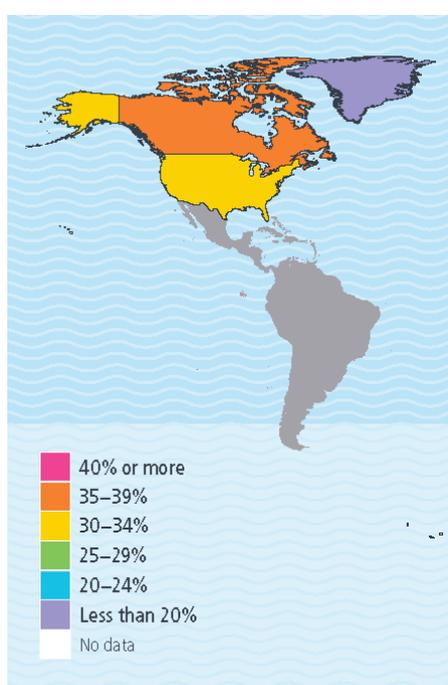
# Fruit and vegetable targets



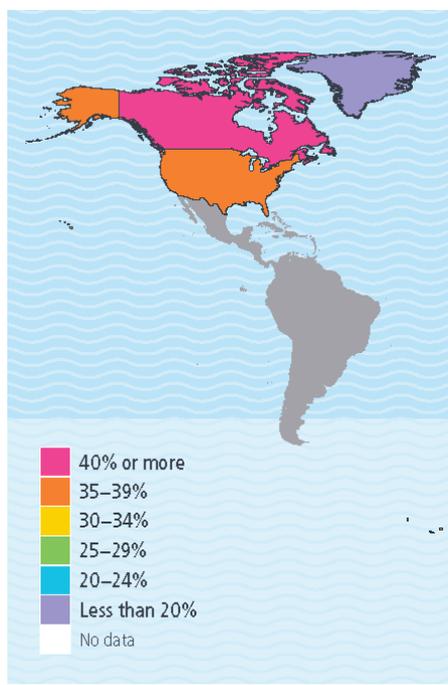
- The WHO population goal is at least 400g of fruit and vegetables daily
- National recommendations are either close to or above this target (e.g., Spain, Ireland)
- Nationally – policies and interventions at home, school and community settings to increase fruit and vegetables
- Are adolescents meeting fruit and vegetable targets?



**31% of 15 year olds consume fruit daily**



Note: HBSC teams provided disaggregated data for Belgium and the United Kingdom; these data appear in the map above.



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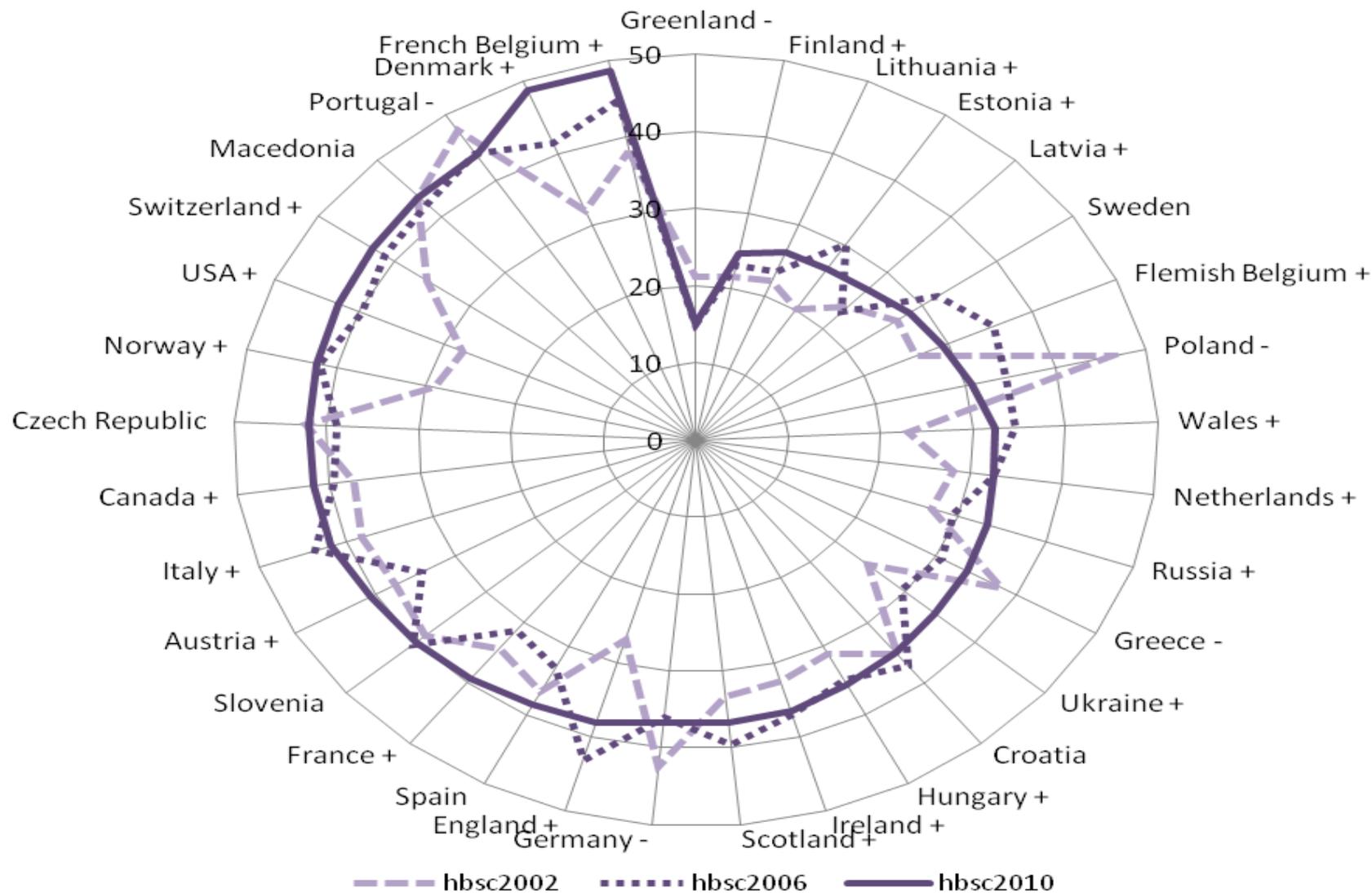
# Trends in Fruit and Vegetables



- To examine trends in fruit and vegetable intake
  - cross-nationally
  - nationally representative samples of adolescents
  - standardised questionnaires
  
- HBSC 2002, 2006, 2010
  
- 488,951 11, 13, 15-year olds from 33 countries or regions

- Multilevel logistic regression analyses were conducted for each country separately and pooled for the total sample
- Additional analyses were run by gender and age
- MLwin version 2.25 was used to perform the three-level analyses (adolescents nested within schools nested within countries).

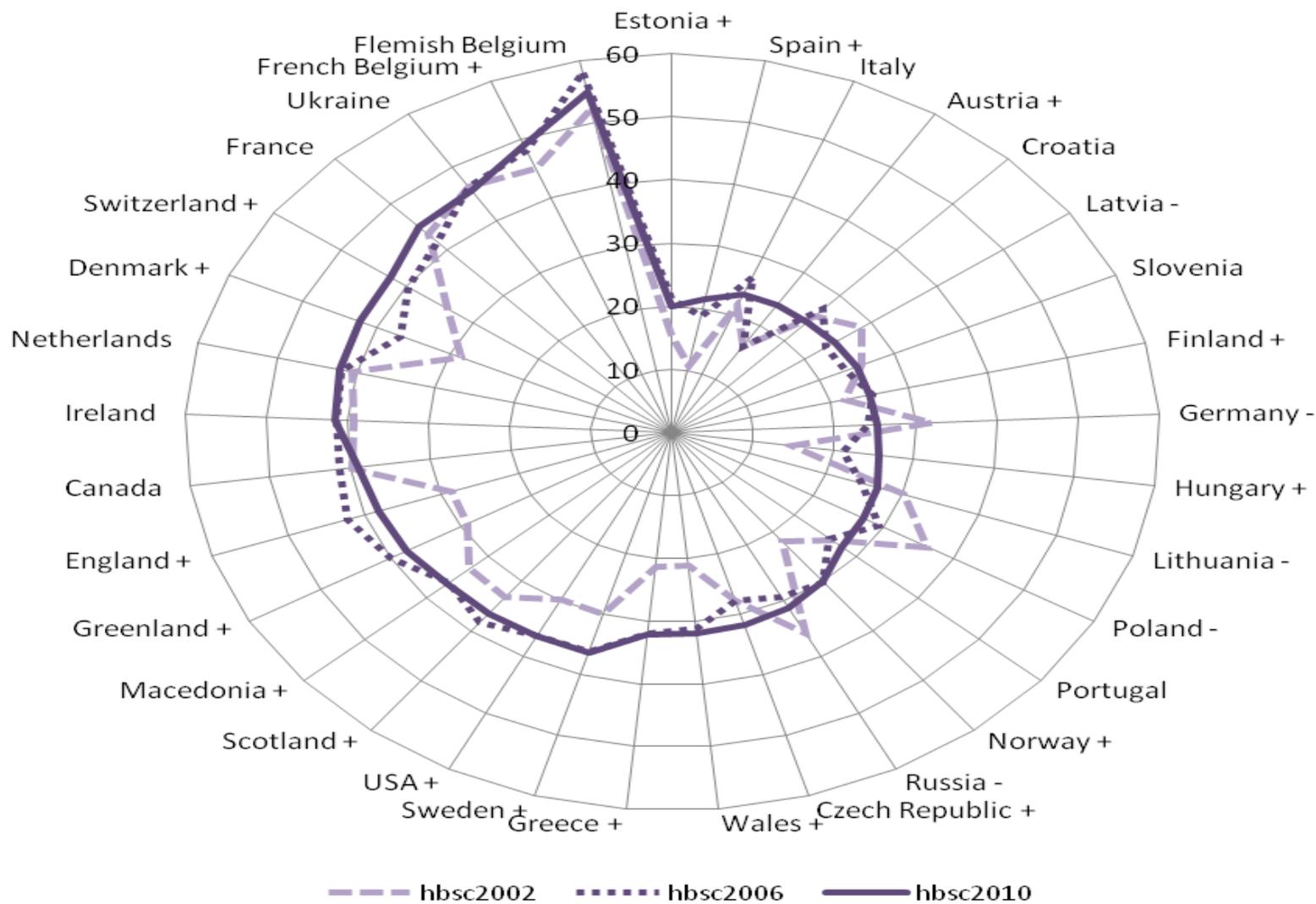
# DAILY FRUIT



2010 - Greenland: 15%

2010 - Denmark, Belgium (French): 49%

# Daily Vegetables



2010 - Estonia: 20%

2010 - Belgium (French): 55%

- Large differences in daily fruit and vegetable consumption between countries
- A significant time trend 2002 to 2010
  - increase in daily fruit (*OR=1.22 [99% CI: 1.18-1.25]*)
  - increase in daily vegetable (*OR=1.20 (99% CI: 1.17-1.22)*)
- The increase was mainly observed between 2002 and 2006

# Country comparisons - fruit



- Significant ↑ in fruit from 2002 to 2010 in two thirds of the countries
- Most pronounced ↑ in fruit consumption (OR >1.6)
  - Denmark, England, Norway, Ukraine, US and Wales
- Significant ↓ in fruit consumption in 5 countries
  - Germany, Greenland, Greece, Poland & Portugal
- No significant differences in 6 countries
  - Czech Republic, Spain, Croatia, Macedonia, Sweden & Slovenia

# Country comparisons - vegetables



- Significant ↑ in vegetable intake from 2002 to 2010 in 18 countries
- The most pronounced ↑ in vegetable consumption
  - Spain, Denmark, Hungary, England, Wales, Greece & Austria (OR >1.6)
- A significant ↓ in vegetable consumption was found in 5 countries
  - Germany, Lithuania, Latvia, Poland & Russia
- No significant differences were found for 10 countries
  - Belgium-Flanders, Canada, France, Croatia, Ireland, Italy, the Netherlands, Portugal, Slovenia & Ukraine

# Gender and Age

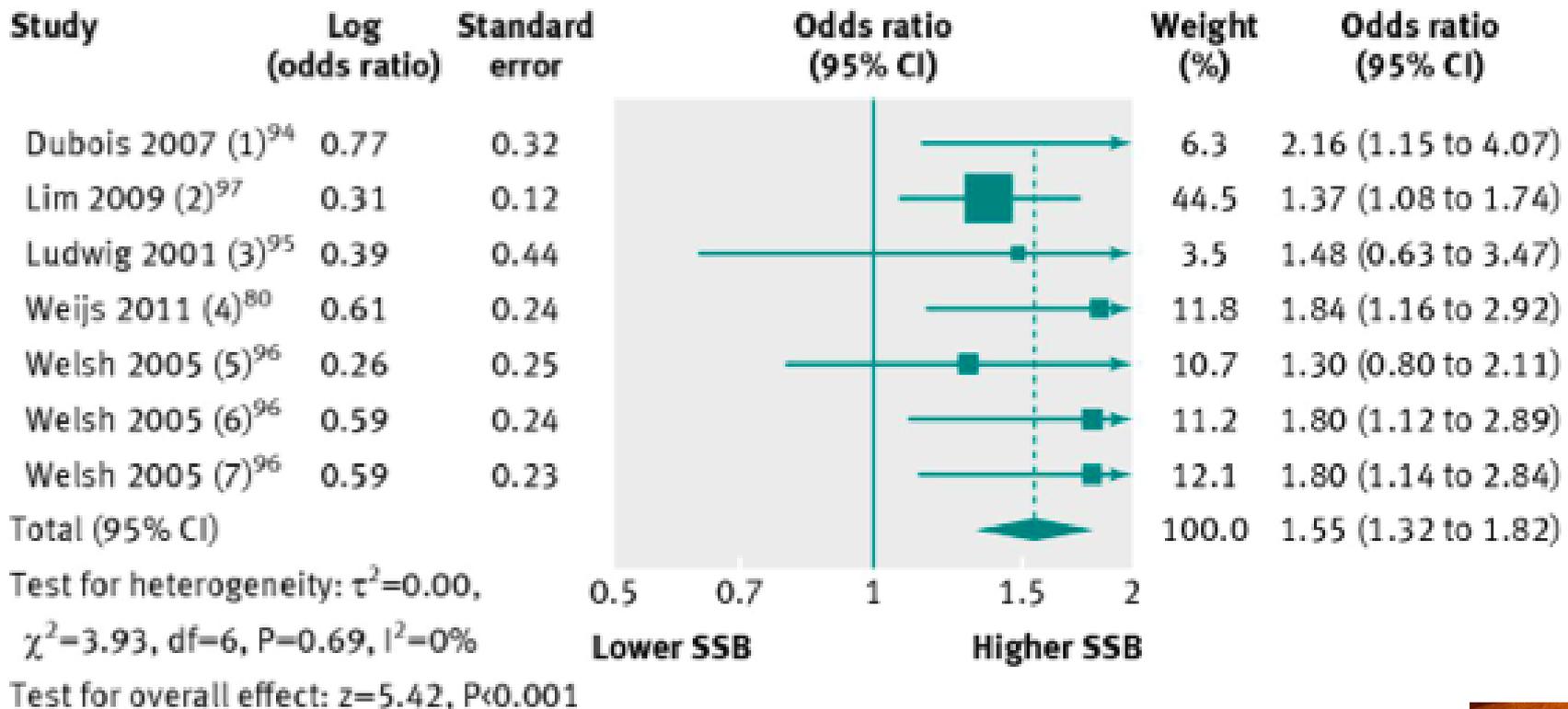


- In general, girls were more likely to consume fruit and vegetables than boys
- Increases in daily fruit and vegetable consumption from 2002 to 2010 were significant for boys as well as for girls
- 15 year olds were less likely to consume daily fruit and vegetables than 13 year olds
- 13 year olds were less likely to consume daily fruit and vegetables than 11 year olds

- Overall a positive trend in fruit and vegetable consumption was observed between 2002 and 2010
- Mainly driven by a significant increase between 2002 and 2006 and plateauing thereafter
- May reflect the success of national policies and initiatives implemented in the early 2000's;
  - ❖ educational messages
  - ❖ subsidised fruit and vegetables
  - ❖ increased fruit and vegetables at schools (e.g., Norway and Denmark)

- Large proportions of adolescents do not eat fruit and vegetables on a daily basis
- Need for a continued focus on promotion of fruit and vegetable consumption
- A review of fruit and vegetable policies and initiatives across countries needed
- Additional strategies to increase fruit and vegetables among adolescents are needed.

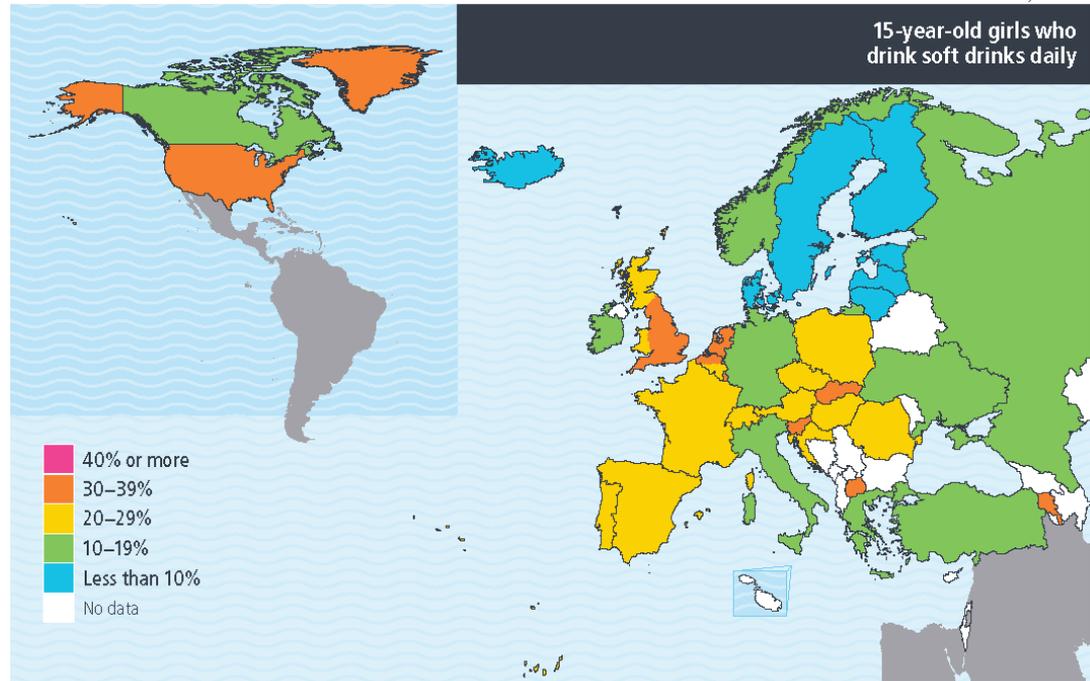
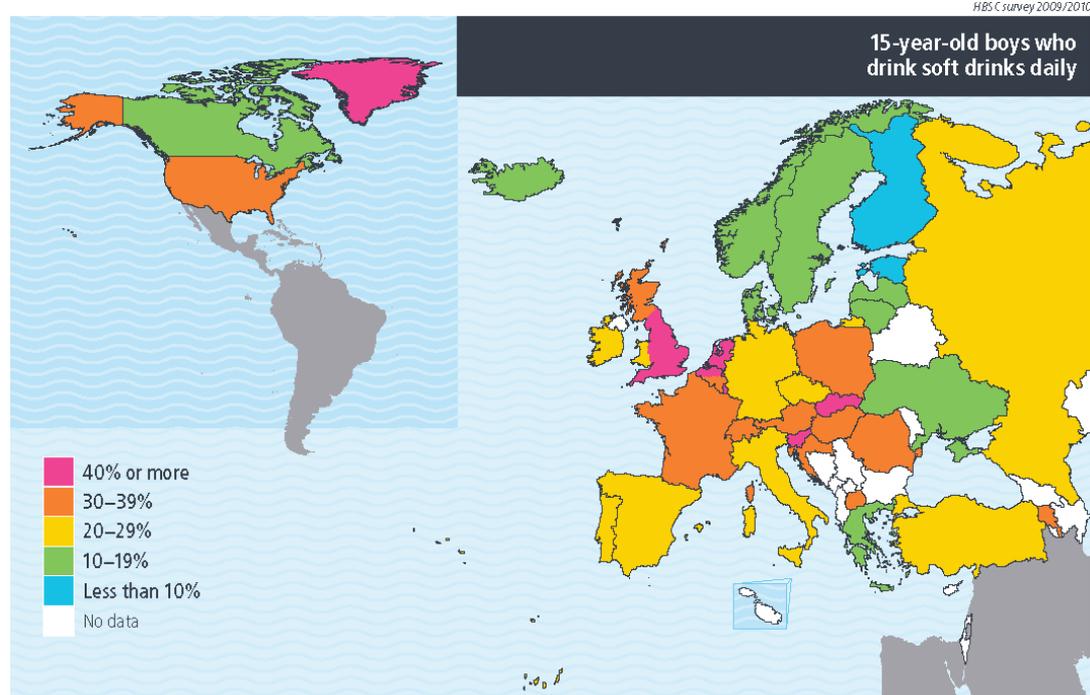
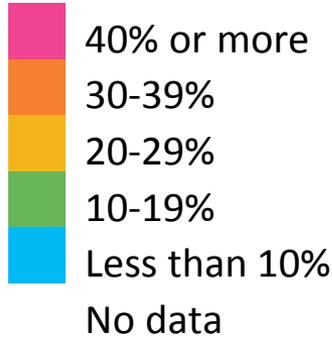
# Associations between free sugar intake and measures of body fatness in children (Te Morenga et al., 2012)



**WHO recommends < 5% total calories/day from sugar**



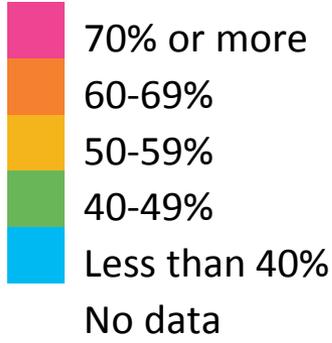
**25% of 15 year olds consume soft drinks daily**



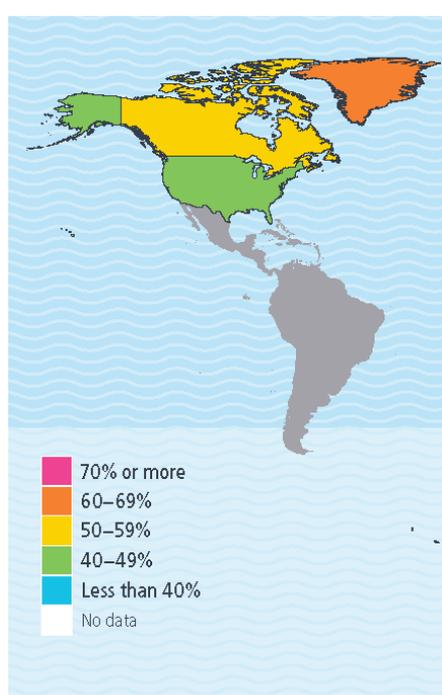
# Breakfast



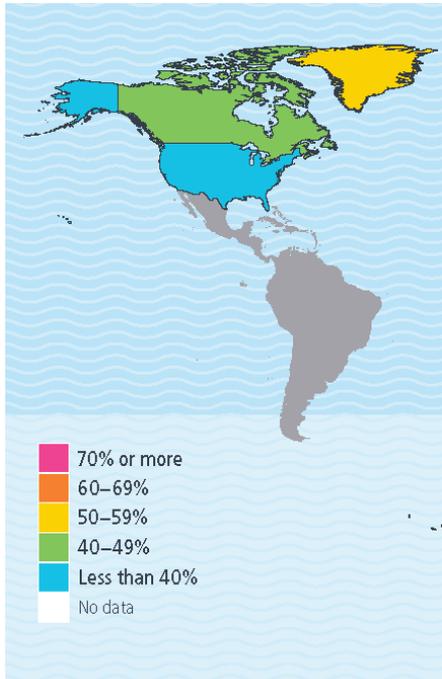
- Regular breakfast consumption is associated with better quality diet, including less frequent use of soft drinks and greater intake of fruit and vegetables
- Overweight is generally lower in those who consume breakfast regularly
- Skipping breakfast is common among adolescents and is associated with risk behaviours
- HBSC: How many days in a week and in a weekend do you have breakfast? (more than a glass of milk or fruit juice)



**55% of 15 year olds eat breakfast every school day**



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HBSC Survey 2009/2010



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HBSC Survey 2009/2010

# Breakfast (Vereecken et al., 2009)



- To investigate associations of daily breakfast consumption (DBC) with demographic and lifestyle factors in 41 countries
- DBC varied from 33% (Greek girls) to 75% (Portuguese boys)
- In most countries, DBC was higher in boys, younger adolescents, those with higher family affluence and those living in two-parent families
- DBC was positively associated with healthy lifestyle behaviours and negatively with unhealthy lifestyle behaviours
- DBC can serve as an indicator to identify children at risk for unhealthy lifestyle behaviours

- The diet and eating habits of young people is not optimal
- Prevalence of obesity - a key public health concern
- Creating supportive environments is key - at home, in schools and in clubs/youth organisations

# What can we do?



- Health Promotion focus - to enable people to increase control over and improve their health
- Address determinants of health and health inequalities
- Create an environment so that the healthy option is the easy choice
- Settings approach - such as workplaces/schools/pre-schools through which action can be taken to enable healthy choices



# What can we do as parents/citizens?



- Family meals / food rules – regular meal times, engage family in cooking/shopping
- School food – improve health index of food in schools (including vending)
- Eating out – environment/planning regulations, calorie labelling, portion size, reformulation of food

# What can we do as professionals?



## Promote

- awareness of the role of diet and of obesity
- healthy lifestyle practices
- healthy eating and
- active lifestyles
- early detection
- early intervention
- regular monitoring
- parent and child interventions – best outcome

# HEALTHY DIETS SAVE LIVES

Unhealthy eating leads to conditions such as cardiovascular diseases, obesity, diabetes and some types of cancer, which are the leading causes of death and disease in the WHO European Region.



## What are the main concerns for the 53 countries in the Region?

WHO RECOMMENDATION		CURRENT SITUATION
WHO recommends <b>less than 5 g</b> per day	<b>SALT</b> 	<b>0 countries</b> meet this recommendation
WHO recommends maximum <b>10% of total calories</b> consumed per day	<b>SATURATED FAT</b> 	<b>5 countries</b> (estimated) meet this recommendation
WHO suggests, ideally, less than <b>5% of total calories</b> consumed per day	<b>SUGAR</b> 	In <b>24 countries</b> , 25% of 15-year-old boys consume sugary drinks daily
WHO recommends a BMI (body mass index) <b>between 18.5–25</b>	<b>OBESITY</b> 	In <b>46 countries</b> , over half of the population is pre-obese or obese (BMI > 25)

## What can be done?

- Advance salt-reduction initiatives
- Eliminate *trans* fats from food supply
- Promote exclusive breastfeeding during first 6 months
- Strengthen policies for healthy school food
- Restrict food marketing to children
- Promote easily visible product labelling
- Provide nutrition counselling in primary care
- Provide support for obesity management



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HBSC is a resource for the pediatric community, work with us. We have unique expertise and knowledge on the social determinants of health for this age group.

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We must increase our awareness of and integrate young people's ability to examine their lives into our practice in order to be more effective.

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Cross-sectorial collaboration and cross-fertilisation events such as this one can increase our ability to understand and improve young people's lives.

# THANK YOU

