The school food environment
– are we making the healthy choice the easy choice?

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**A designated WHO Collaborating Centre
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Determinants of obesity

- Up to 25% of primary school children overweight and 19% teenagers (IUNA, 2005, 2008, 2012; Layte & McCrory, 2009; Heinen et al., 2014)

- Children's weight related to social class – even at age 3yrs (Williams et al., 2013)

- A large proportion of children consume energy-dense, nutrient-poor foods & drinks and not enough fruit & vegetables (HBSC 2007, 2012; IUNA 2005; 2008)

- Obesity is strongly determined by individual, social, cultural and economic factors and the *physical/built environment*
  - *Availability, proximity, choice*

(Morland et al 2002; Layte et al., 2011; Day et al 2011; Timperio et al 2008)

Health Promotion

- To enable people to increase control over and improve their health

- Address determinants of health and health inequalities

    – Create an environment so that the default option is the easy choice

    – Schools are one setting through which action can be taken to enable healthy choices

Evidence base

- Surge in literature since 2011 on school retail food environments

- Mostly cross-sectional studies & most focused in N. America

- Area level indicators are most common

- GIS preferred method to assess exposure

- Outcomes: Body weight, diet, purchases

- Evidence is equivocal with some evidence for effect on body weight (Williams et al 2014).

School food environment

- *External school food environment*
  - The built environment on food choice/obesity
  - Planning regulations (Nov 2011, April 2014….)

- *Internal school food environment*
  - Health Promoting Schools
  - Vending machines (April 2015)
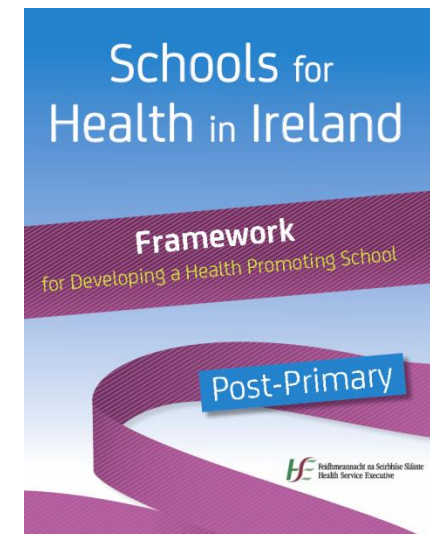
Aim

- To characterise the food environment in post-primary schools
  - Focus on schools involved in the 2010 HBSC survey in Ireland (n=63)

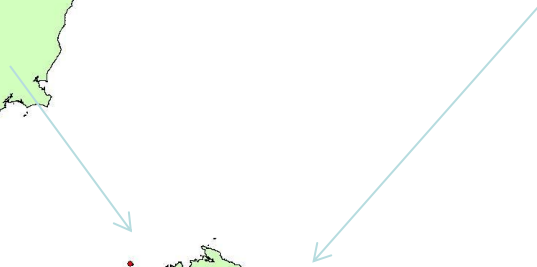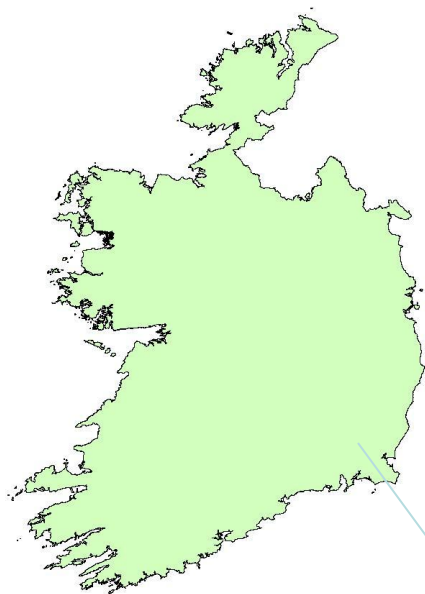# Mapping Food Environment

- Geographic information system (GIS)

- Geo-coded HBSC post-primary schools
  - *GeoDirectory*

- 1km circular buffers

- Food businesses were mapped – *Fast food outlets, local shops, restaurants…*

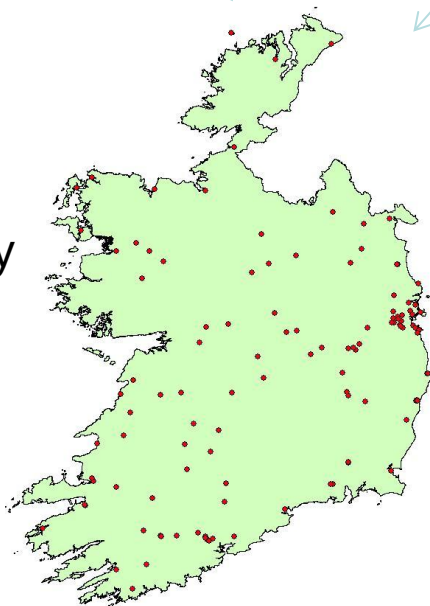- Data validation: Google Street View & reliability checks

ArcGIS 10

HBSC Post-primary Schools

School characteristics

- Urban 61.9%   Rural 38.1%

- DEIS 20.6%   Non DEIS 79.4%

- Girls 17.5%   Boys 22.2%   Mixed 60.3%

External food environment – 1km

Mean values of food retail businesses within 1km of Irish schools (n=63)		Urban/rural status		
	Mean	Rural	Urban	P value
Coffee shops and sandwich bars	3.89	1.21	5.54	0.000
Restaurants	3.65	1.33	5.08	0.004
Asian and other 'ethnic' Restaurants	2.60	0.79	3.72	0.000
Fast Food outlets	4.03	1.08	5.85	0.000
Supermarkets	1.95	0.83	2.64	0.000
Local Shops	6.71	3.92	8.44	0.001
Fruit and Vegetable shops	0.73	0.13	1.10	0.000

External food environment by gender – 1km

Mean values of food retail businesses within 1km of Irish schools (n=63)				
	School gender			
	Girls	Boys	Mixed	P value
Coffee shops and sandwich bars	4.82	6.07	2.82	0.028
Restaurants	3.73	7.86	2.08	0.001
Asian and other 'ethnic' Restaurants	4.00	3.86	1.74	0.025
Fast Food outlets	4.91	6.57	2.84	0.088
Supermarkets	3.09	2.43	1.45	0.000
Local Shops	8.09	10.21	5.03	0.003
Fruit and Vegetable shops	1.09	1.36	0.39	0.007

Young People's perceived school food environments

- Qualitative study to explore young people's perception of their school food environment

- 6 post-primary schools recruited
  - 2 classes per school (1 younger/1 older, aged 12 -18)

- 95 students involved (37% Boys, 63% Girls)

- One class period ~40 mins
  - Mapping exercise
  - Group discussion with topic guide

Perceived food environment

- The number/quantity of food outlets close to their school

- What food environments they use

- Quality of food outlets within walking distance

- Barriers to accessing food outlets of their choice

- Food purchases

- A need for change or maintain status quo?

- Topics discussed: Price, time, taste, no brand loyalty, social aspect, access at various times, use of various outlets – petrol stations, pubs, discount stores, Chinese restaurants etc.

Summary

- No published study has explored objective and perceived exposure to food outlets

- Food retailers cluster around schools
  - 75% of post-primary schools had 1+ fast food restaurants within 1 km
  - 29.7% had 5+ fast food outlets within 1km of schools

- Boys schools & urban schools – greater proportion of food businesses

- These food outlets provide ample food purchasing opportunities

- Qualitative work to provide greater understanding of youth & school food environments

Open discussion...

- Variety of food retail outlets surrounding schools
  - Are these supportive environments for young people?
  - Are planning regulations the way forward?
  - Are school lunch policies required?
  - Are interventions necessary? e.g. partner with store owners/local shops – price promotions, availability of healthy snacks, beverages, single-servings, product placement.....

- Enabling healthy choices is challenging
  - Community involvement
  - Internal school food environment
  - Engage youth

Future work

- Children's journeys through food environment before, during and after school
  - Purchasing behaviour
  - When/where food eaten (outcome measure)
- Audit local stores & other food retailers
  - Categorising food retailers..
- Combining qualitative and quantitative measures of food access
- Home/School environments

Questions?

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Thank you