

DEVELOPING OBESITY INDICATORS

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Developing obesity indicators: Data sources

	PREVALENCE		ENERGY INTAKE/EXPENDITURE		HEALTH	
	Adults	Children	Adults	Children	Adults	Children
SURVEYS						
Scottish Health Survey	✓	✓	✓	✓	✓	
Health Behaviours School-aged Children		✓		✓		
Scottish Household Survey			✓			
Integrated Household Survey			✓			
Growing up in Scotland		✓		✓		✓
ROUTINE SOURCES						
Quality Outcomes Framework	✓					
Child Health Surveillance		✓				
Scottish Morbidity Record					✓	✓

Developing obesity indicators: Data sources

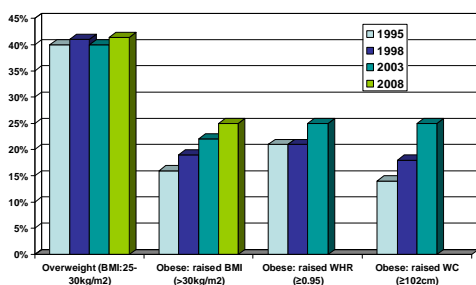
Scottish Health Survey

- 1995, 1998, 2003, 2008, sample size in 2008 (approx 4000 adults),
- continuous model from 2008 (- 2011)
- measured height and weight data, information on general health, smoking, drinking, fruit and vegetable consumption, eating habits, blood pressure measurements, blood and saliva samples
- gender, age, deprivation..... local area data i.e. NHS Board (but not until 2012)
- non-response bias

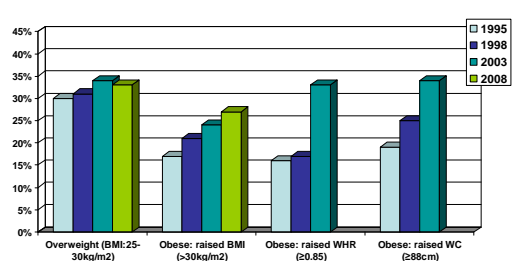
Developing obesity indicators: Scottish Health Survey

Prevalence: Body Mass index, Waist circumference, Waist Hip Ratio

Prevalence of overweight and obesity (measured by BMI, WHR, WC) in Scotland, 1995 to 2008: men aged 16-64



Prevalence of overweight and obesity (measured by BMI, WHR, WC) in Scotland, 1995 to 2008: women aged 16-64



Developing obesity indicators: Scottish Health Survey

- Prevalence:** Body Mass index, Waist circumference, Waist Hip Ratio
- Energy expenditure** participation for at least 15 minutes at a time in last week (1998, 2003, 2008)
Heavy Housework Heavy Manual/Gardening/ DIY
Walking Sport
Sedentary behaviour Physical activity at work
- From 2009, measure based on 10 minutes baseline from 2008
- Energy intake** aggregate measure of 5 portions or more (2003, 2008)
food and vegetable consumption by type
protein, starch, fat and fibre (DINE questionnaire)

Developing obesity indicators: data sources (adults)

Quality Outcomes Framework:

- GP based obesity register started in 2006, (BMI in 16+ yrs)
- Not age adjusted, reliant on practice compliance, does not capture non-registered and non-attending patients
- national prevalence of obesity: (2007; 7.0%), (2008; 7.3%), 2008/09 (6.9p%) - compared to prevalence of 25% in SHeS

Scottish Household Survey:

- annual, approx sample size 20 000
- travel diary, " respondents main mode of travel"
- trend data 1999 to 2006 – new measure from 2007 onwards
- national (can be disaggregated)

Developing obesity indicators: data sources (adults)

Integrated Household Survey:

- Food and living module (formerly Food and Expenditure Survey)
- 'household' and 'eating out' expenditure on range of food and drink
- measure progress against food and nutrient dietary targets
e.g. highest intake of saturated fatty acids in UK, as % of total energy at 15% recommended 11%
- small Scottish sample (data aggregated over 4 yrs, sample n= 1499), national level only

National Diet and Nutrition Survey (NDNS):

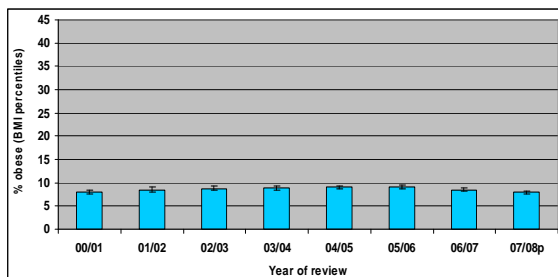
- UK survey, 7 day weighted food records
- sample size in Scotland, n= 123 in 2001

Developing obesity indicators: data sources (children)

Child Health Surveillance Programme (CHSP)

- School routine health review, nurse measurement of children 4-6 yrs old, BMI measure
- By gender, age, SIMD (4-6 yr olds) for 2000/01 to 2007/08
- Local geography: - participating NHS Boards and related local authorities and community health partnerships
- 10 participating NHS boards, 52% of all p1 children in Scotland, approx 27 000 in 2007/08
(Greater Glasgow, Highland, Orkney, Shetland do not participate)

Percentage of school aged children (4-6 yrs) receiving a review who are obese (>=95th centile), by year group, 2000/01 –2007/08p, Scotland



Developing obesity indicators: data sources (children)

Scottish Health Survey

- population sample (2 children each household plus child boost sample) – in 2008 1750 children
- by gender, age-group (2-6, 7-11, 12-15 yrs) for 1998, 2003, 2008
- BMI, fruit and vegetable consumption and eating habits, and physical activity levels
- In 2008, <50% provided height and weight measurements

Schools Adolescent Lifestyle and Substance Use Survey (SALSUS)

- school based survey, every 4 years (2002, 2006, approx 23,000)
- physical activity and eating habits
- by age (S2 and S4), gender and NHS Board

National obesity indicators: data sources (children)

Health Behaviours of School aged Children (HBSC-WHO)

- school based survey of 11,13 & 15 yr olds from 1990 (every 4 yrs), sample size approx 6400 in 2006
- BMI, fruit and vegetable intake, eating habits, physical activity levels
- gender and age breakdown, national level only
- self reported height and weight

Growing up in Scotland (GUS)

- following the lives of 2 'cohorts' of children across Scotland (n= 8000 enrolled between 2005-2006)
- 5,000 babies (~10 months) born between June 2004-May2005
3,000 toddlers (~34 months) born between June 2002- May 2003
- BMI, physical and sedentary activities, food and nutrition

Developing obesity indicators: Health

Scottish Morbidity Record (SMR1) : number of patients with obesity

number of patients with morbid obesity undergoing surgery

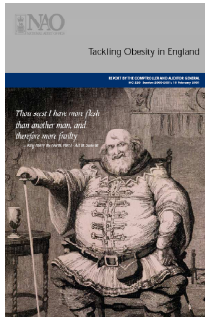
	2002	2003	2004	2005 ^p
Number of Patients with Obesity	52	46	69	41
Number of Patients with Morbid Obesity	16	20	49	27

GROS:

number of people dying from 'obesity'

Obesity deaths	1996	1997	1998	1999	2000	2001	2002	2003	2004
Underlying	24	19	22	17	21	27	35	33	22
Any position	100	99	111	91	107	119	140	147	139

Developing obesity indicators: Health



Strength of the association between obesity and selected disease types

Estimated increased risk for the obese of developing associated diseases, taken from international studies

Disease	Relative risk - women	Relative risk - men
Type 2 Diabetes *	12.7	5.2
Hypertension	4.2	2.3
Myocardial Infarction	3.2	1.5
Cancer of the Colon	2.7	3.0
Angina	1.8	1.3
Chill Shoulder Diseases	1.6	1.3
Ovarian Cancer	1.7	
Osteoarthritis	1.4	1.3
Stroke	1.3	1.3

* Non-health dependent diabetes mellitus (NCDM)

Note: The BMI range for the obese and non-obese groups used to estimate relative risk varies between studies, which limits the comparability of these data.

Source: National Audit Office (2006) based on literature review (Appendix 2)

National obesity indicators

- Gaps in obesity information –
 - Local area data
 - Ethnicity
 - Trend data
 - Validation of research tools
 - BMI and vs. WC, WHR
 - combining BMI and WC to provide a better indication of increased risk of obesity related ill-health (e.g. NICE guidelines)

National obesity indicators: conclusion

- Gaps in obesity information (cont)
 - specific gaps e.g.
 - physical activity, more on trends on fitness
 - environment (green spaces, access for physical activities)
 - improved dietary module
 - sodium intake in the population.
 - information on NME sugar intakes in children
 - obesity co-morbidities
 - national dataset for obesity surveillance
 - prevalence indicators e.g. height, weight, age, gender BMI, waist circumference
 - predictor indicators e.g. deprivation, ethnic group
 - intervention indicators e.g. physical activity levels, diet, smoking (Wilkinson et al 2007)