



TOOL D2 Obesity prevalence ready-reckoner

TOOL
D2

For:	Commissioners in primary care trusts (PCTs)
About:	This tool is a ready-reckoner which can be used to estimate the number of adults (aged 16 and above) or the number of children aged 1-15 years within a primary care trust who are obese or overweight.
Purpose:	To provide an understanding of the scale of the obesity problem in your PCT.
Use:	<ul style="list-style-type: none"> • Can be used for understanding the problem in your PCT – case for funding. • Can be used for evaluation and monitoring purposes. The data can be used as a baseline when calculating the success of interventions using performance indicators.
Resource:	An electronic version of the <i>Obesity prevalence ready-reckoner</i> , which can be completed online, can be found at www.heartforum.org.uk or www.fph.org.uk

Estimating the prevalence of obesity and central obesity

The ready-reckoner can be used to estimate:

- the number of adults aged 16 and over who are obese – measured by Body Mass Index (BMI) of more than 30kg/m².
- the number of adults aged 16 and over with central obesity as measured by a raised waist circumference. A raised waist circumference has been taken to be 102cm (40 inches) or more in men and 88cm (35 inches) or more in women. These levels have been used to identify people at risk of the metabolic syndrome, a disorder characterised by increased risk of developing diabetes and cardiovascular disease. Central obesity, as measured by waist circumference, is reported to be more highly correlated with metabolic risk factors (high levels of triglycerides and low HDL cholesterol) than is elevated BMI.¹²
- the number of children aged 1-15 years who are obese using the UK National BMI Percentile Classification as recommended by the National Institute for Health and Clinical Excellence (NICE) and the Department of Health.

How to use the ready-reckoner

- 1 In cells A1 to A7 and B1 to B7, enter the actual numbers of residents in each age group, based on latest population estimates for your area.
- 2 Calculate the other cell values according to the formulae.

Note:

The ready-reckoner uses national data and does not take into account local factors such as ethnicity, deprivation or other factors that might affect overweight and obesity prevalence.

Obesity prevalence ready-reckoner: adults aged 16 and over

		A	B	C	D	E	F
		PCT population (Enter actual numbers)		Estimate of number of people who are obese (BMI greater than 30kg/m ²)		Estimate of number of people who have a raised waist circumference (Male 102cm or above. Female 88cm or above)	
	Age	Male	Female	Male	Female	Male	Female
1	16-24	Enter actual number	Enter actual number	A1 x 0.09	B1 x 0.12	A1 x 0.10	B1 x 0.17
2	25-34	Enter actual number	Enter actual number	A2 x 0.21	B2 x 0.18	A2 x 0.21	B2 x 0.30
3	35-44	Enter actual number	Enter actual number	A3 x 0.25	B3 x 0.24	A3 x 0.30	B3 x 0.36
4	45-54	Enter actual number	Enter actual number	A4 x 0.28	B4 x 0.27	A4 x 0.38	B4 x 0.45
5	55-64	Enter actual number	Enter actual number	A5 x 0.33	B5 x 0.30	A5 x 0.46	B5 x 0.50
6	65-74	Enter actual number	Enter actual number	A6 x 0.31	B6 x 0.35	A6 x 0.51	B6 x 0.60
7	75+	Enter actual number	Enter actual number	A7 x 0.18	B7 x 0.27	A7 x 0.41	B7 x 0.57
8	Sub-total	Sum of A1-A7	Sum of B1-B7	Sum of C1-C7	Sum of D1-D7	Sum of E1-E7	Sum of F1-F7
9	Total	Sum of A8 and B8		Sum of C8 and D8		Sum of E8-F8	

Source: The formulae for both obesity and waist circumference are based on the Health Survey for England 2006.¹⁰

Example – Southwark Primary Care Trust: adults aged 16 and over

The following is an example of how to use the ready-reckoner, based on 2001 census figures for Southwark Primary Care Trust, London.

		A	B	C	D	E	F
		Southwark PCT population		Estimate of number of people who are obese (BMI greater than 30kg/m ²)		Estimate of number of people who have a raised waist circumference (Male 102cm or above. Female 88cm or above)	
	Age	Male	Female	Male	Female	Male	Female
1	16-24	17,812	18,011	1,603	2,161	1,781	3,062
2	25-34	25,894	26,865	5,438	4,836	5,438	8,060
3	35-44	21,501	20,998	5,375	5,040	6,450	7,559
4	45-54	11,960	12,478	3,349	3,369	4,545	5,615
5	55-64	8,137	8,831	2,685	2,649	3,743	4,416
6	65-74	6,421	7,213	1,991	2,525	3,275	4,328
7	75+	4,286	7,434	771	2,007	1,757	4,237
8	Sub-total	96,011	101,830	21,212	22,587	26,989	37,277
9	Total	197,841		43,799		64,266	

Obesity prevalence ready-reckoner: children aged 1-15 years

		A	B	C	D
		PCT population (Enter actual numbers)		Estimate of number of children who are obese (UK National BMI Percentile Classification*)	
	Age	Male	Female	Male	Female
1	1	Enter actual number	Enter actual number	$A1 \times 0.173$	$B1 \times 0.160$
2	2	Enter actual number	Enter actual number	$A2 \times 0.174$	$B2 \times 0.170$
3	3	Enter actual number	Enter actual number	$A3 \times 0.171$	$B3 \times 0.166$
4	4	Enter actual number	Enter actual number	$A4 \times 0.165$	$B4 \times 0.162$
5	5	Enter actual number	Enter actual number	$A5 \times 0.166$	$B5 \times 0.166$
6	6	Enter actual number	Enter actual number	$A6 \times 0.166$	$B6 \times 0.163$
7	7	Enter actual number	Enter actual number	$A7 \times 0.163$	$B7 \times 0.169$
8	8	Enter actual number	Enter actual number	$A8 \times 0.171$	$B8 \times 0.176$
9	9	Enter actual number	Enter actual number	$A9 \times 0.180$	$B9 \times 0.181$
10	10	Enter actual number	Enter actual number	$A10 \times 0.183$	$B10 \times 0.187$
11	11	Enter actual number	Enter actual number	$A11 \times 0.193$	$B11 \times 0.195$
12	12	Enter actual number	Enter actual number	$A12 \times 0.192$	$B12 \times 0.205$
13	13	Enter actual number	Enter actual number	$A13 \times 0.208$	$B13 \times 0.211$
14	14	Enter actual number	Enter actual number	$A14 \times 0.206$	$B14 \times 0.220$
15	15	Enter actual number	Enter actual number	$A15 \times 0.216$	$B15 \times 0.225$
16	Sub-total	Sum of A1-A15	Sum of B1-B15	Sum of C1-C15	Sum of D1-D15
17	Total	Sum of A16 and B16		Sum of C16 and D16	

Source: The formulae for obesity are based on the Health Survey for England 2006.¹¹

* The UK National BMI Percentile Classification defines obesity as a BMI of more than the 95th centile, and overweight as a BMI of more than the 85th centile of the UK 1990 reference chart for age and sex. (See Tool E4 in section E.)

Estimating the prevalence of obesity and central obesity among adults in ethnic groups

To model for ethnicity, using the results from the ready-reckoner as a base, apply the ethnicity breakdown for each age/gender group, and for each cell apply the following adjustment factors (derived from Table 1 on page 12) to calculate the prevalence of obesity and central obesity by age/gender/ethnicity. The resulting prevalence estimates can be summed whichever way you choose. These adjustment factors represent the national prevalence of obesity and central obesity in adults (aged 16 and over) by ethnic group compared to the general population (= 1.0).

Ethnic group	Obesity		Central obesity	
	Men	Women	Men	Women
Black Caribbean	1.11	1.38	0.71	1.15
Black African	0.75	1.66	0.61	1.29
Indian	0.61	0.87	0.65	0.93
Pakistani	0.67	1.21	0.97	1.17
Bangladeshi	0.26	0.74	0.39	1.05
Chinese	0.26	0.33	0.26	0.39

Estimating the prevalence of overweight among adults

A modified version of the ready-reckoner can be used to estimate the number of overweight people – those with a BMI more than 25kg/m² – using the data on prevalence of overweight in different age groups from the Health Survey for England 2006. To estimate the prevalence of overweight for ethnic groups, follow the same procedure as described above. Use Table 1 on page 12 to calculate the adjustment factors.

Primary care organisation (PCO) level model-based estimate of adult obesity

Another way of assessing local prevalence of adult (aged 16 and over) obesity is using model-based estimates produced by the NHS Information Centre for Health and Social Care. These estimates are calculated using pooled 2003-05 Health Survey for England (HSE) data. However, because statistical modelling was used, prevalence data should be applied with caution.¹⁴⁷

Note:

Statistical modelling was used to produce the PCO-level model-based estimates because the sample size of national surveys is too small at local area level to provide reliable direct estimates. The model-based estimate for a particular local area is the expected prevalence for that area based on its population characteristics (as measured by the census/administrative data) and as such does not represent an estimate of the actual prevalence for the local area. Confidence intervals are provided in order to make the margin of error around the estimates clear.

To view the PCO-level model-based estimates for adult obesity, go to www.ic.nhs.uk