

Kent Joint Strategic Needs Assessment (Kent JSNA)

Kent 'Healthy Weight' JSNA Chapter Summary Update '2014/15

Contact: Val.Miller@kent.gov.uk

Website: www.kpho.org.uk





Kent Adult Obesity JSNA Chapter Update 2014

Introduction

Obesity results from an imbalance between energy intake and energy expenditure. Many factors can influence this, including lifestyle, genetics, medical conditions, and medication.

The Foresight report presented an obesity system map with energy balance at its centre. Around this, over 100 variables directly or indirectly influence energy balance.

Degrees of overweight and obesity are classified according to body mass index (BMI), calculated by dividing a person's weight in kilograms by the square of their height in metres:

Healthy Weight — BMI of 18.5–24.9 kg/m2 Overweight — BMI of 25–29.9 kg/m2 Obesity I — BMI of 30–34.9 kg/m2 Obesity II — BMI of 35–39.9 kg/m2 Obesity III — BMI of greater than or equal to 40 kg/m2

The use of lower thresholds (23kg/m2 to indicate increased risk and 27.5 kg/m2 to indicate high risk) to trigger action to reduce the risk of conditions such as type 2 diabetes, has been recommended for Black African, African-Caribbean and Asian (South Asian and Chinese) groups.

National context

The prevalence of obesity is increasing; in the UK 26% of all men and women are obese (BMI 30 kg/m2 or more) and 68% of men and 58% of women are overweight or obese (BMI 25 kg/m2 or more). The percentage of adults in England who have excess weight (overweight and obesity combined) is 63.8%

Local picture

In Kent the excess weight rate is 64.6%. This translates into 771,476 people across Kent aged 16 and above. Obesity tends to track into adulthood, so obese children are more likely to become obese adults.

Predictive Modelling of Obesity

- The National Audit Office (2001) predicted that by 2020 37% of men and 34% of women will be obese.
- Foresight modelling (2010) indicates that 60% of adult men and 50% of adult women will be obese by 2050.
- Modelling undertaken by the UK Health Forum (2014) predicts that by 2034 50% of 50-79 year old men and 70-79 year old women will be obese.
- The Foresight Report (2007) estimates that by 2050 the cost of treating it's co-morbidities in the UK will reach £49.9billion.



Kent & Medway

Public Health

Table 1: Relative risk* of disease relative to the non-obese population					
	men	women			
Type 2 Diabetes	5.2	12.7			
Hypertension	2.6	4.2			
Myocardial Infarction	1.5	3.2			
Cancer of the colon	3.0	2.7			
Angina	1.8	1.8			
Gall bladder diseases	1.8	1.8			
Ovarian cancer	-	1.8			
Osteo-arthritis	1.9	1.4			
Stroke	1.3	1.3			
National Audit Office 2001					

*Relative risk is a measure of the **risk** of a certain event happening in one group compared to the **risk** of the same event happening in another group.

Wang et al (2011) predicted that in 20 years' time obesity unchecked would result in additional 544,000-668,000 cases of diabetes, 331,000-461,000-461,000 cases of coronary heart disease and between 87,000-130,000 additional cases of cancer.

A comprehensive review of 57 international prospective studies (Lancet 2009) found that body mass index (BMI) is a strong predictor of mortality among adults. Overall, moderate obesity (BMI 30-35 kg/m2) was found to reduce life expectancy by an average of three years, while morbid obesity (BMI 40-50 kg/ kg/m2) reduces life expectancy by 8-10 years. This 8-10 year loss of life is equivalent to the effects of lifelong smoking.

Key Issues and Gaps

There is a need for a whole system response to obesity, which includes transport, the built environment, housing, leisure, licensing and a range of other key drivers, whose potential to influence local policy has not been tapped.

NHS England has published its Five Year Forward View (October 2014) which put prevention at the forefront of the plan. This backs hard-hitting action on obesity and other major health risks. It specifically mentions the responsibilities of employers, so a greater concentration on addressing obesity in workplaces will be necessary, particularly health and social care organisations who employ large numbers of staff. New NICE guidance (PH53) on lifestyle weight management services has highlighted some recommendations that are particularly relevant across Kent

- a The need for an integrated approach, linking in and sharing data with other health improvement providers.
- b The provision of a complete and accessible pathway which should be promoted to health and social care professionals and the public. An issue particularly for Kent is dealing with high demand for specialist weight management services (known as Tier 3) which are the gateway to bariatric surgery. Agreement across the health economy will be needed to maintain the pathway for all who are eligible.
- c Provision of training and continuing professional development on lifestyle weight management, specifically the training of GPs and other health professionals to identify weight issues, to accurately record weight and to





provide on-going support. This should include addressing professional's issues with their own weight, tailoring programmes to individual's own needs, reviewing progress and exploring reasons for relapse.

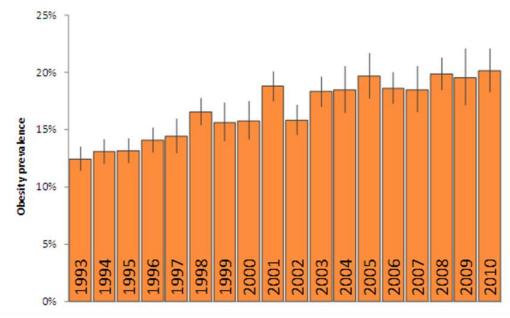
- d The health benefits of losing 5-10% of baseline weight are highlighted, but accepting that lifestyle weight management programmes typically result in a 3% weight loss, and stressing that even losing a relatively small amount of weight is beneficial if the loss is maintained. The guidance stresses the importance of maintenance following an intervention.
- e Adequate provision should be made for disadvantaged groups such as those on a low income and uptake by these groups should be closely monitored.

Maternal obesity

Evidence for weight management advice and interventions for women trying to get pregnant, at first contact and after pregnancy has been summarised by the National Obesity Observatory (Now Public Health England). Currently there is little and unequal provision of services for maternal obesity across Kent.

Obesity rates are rising in women of childbearing years as shown in figure 1 below.

Figure 1: Prevalence of obesity (with 95% confidence intervals) in females aged 16-44 years during the period 1993-2010



Trends in obesity for females aged 16-44

Source: Health Survey for England 1993-2010

Adult obesity: BMI ≥30kg/m2

Who's at Risk and Why?

Although there are people in all population groups who are overweight or obese, obesity is related to social disadvantage (Marmot Review).



Kent & Medway

Public Health

In women, obesity prevalence increases with greater levels of deprivation, regardless of the measure used. For men, only occupation-based and qualification-based measures show differences in obesity rates by levels of deprivation. (Public Health England)

For both men and women, obesity prevalence decreases with increasing levels of educational attainment. Around 30% of men and 33% of women with no qualifications are obese compared to 21% of men and 17% of women with a degree or equivalent (Health and Social Care Information Centre 2010).

People from the following ethnic groups are at an equivalent risk of diabetes, other health conditions or mortality at a lower BMI than the white European population:

- a South Asian people are immigrants and descendants from Bangladesh, Bhutan, India, Indian-Caribbean (immigrants of South Asian family origin), Maldives, Nepal, Pakistan and Sri Lanka.
- b African-Caribbean/black Caribbean people are immigrants and descendants from the Caribbean islands (people of black Caribbean family origin may also be described as African-American).
- c Black African people are immigrants and descendants from African nations. In some cases, they may also be described as sub-Saharan African or African-American.
- d 'Other minority ethnic groups' includes people of Chinese, Middle-Eastern and mixed family origin, as follows:
 - Chinese people are immigrants and descendants from China, Taiwan, Singapore and Hong Kong.
 - Middle-Eastern people are immigrants and descendants from Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates and Yemen.
 - people of mixed family origin have parents of 2 or more different ethnic groups.

(NICE PH46 July 2013)

Women who are obese are estimated to be around 13 times more likely to develop type 2 diabetes and four times more likely to develop hypertension than women who are not obese. Men who are obese are estimated to be around five times more likely to develop type 2 diabetes and 2.5 times more likely to develop hypertension than men who are not obese (Health and Social Care Information Centre 2011), (National Audit Office 2001). People who are obese may also experience mental health problems as a result of stigma and bullying or discrimination in the workplace (Puhl and Heuer 2009).



Kent & Medway

Public Health

The Level of Need in the Population

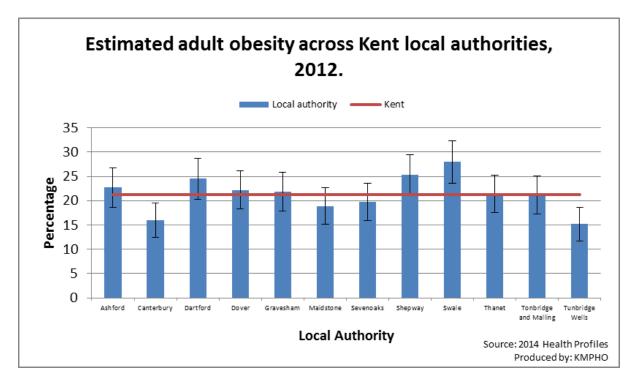


Figure 2: Adult Obesity in Kent Local Authorities (2012)

Swale Shepway and Dartford have the highest levels of adult obesity in Kent. Swale is above the national average and Canterbury and Tunbridge Wells are below the national average.

In Kent 757,146 people aged 16 and above are carrying excess weight. By locality this is approximately the following numbers of people:

Ashford	61,128	Canterbury	77,128
Dartford	51,352	Dover	58,652
Gravesham	53,642	Maidstone	80,582
Sevenoaks	57,143	Shepway	56,457
Swale	74,110	Thanet	71,164
Tonbridge & Malling	61,264	Tunbridge Wells	55,248

Source: Obese prevalence, APHO 2011; overweight prevalence, NHS Information Centre, Health Survey for England, 2011; Population, ONS mid-year estimates, 2012 Note: overweight prevalence not available at LA level and the England prevalence was applied to LA population

Current Services in Relation to Need

Most schemes provided in Kent and elsewhere that impact on obesity, attract more women than men and although more women are severely obese, the prevalence of overweight and obesity is higher in men. The mean age of people accessing interventions is about 50.



Kent & Medway

Public Health

People from ethnic groups, particularly women from a black and Pakistani origin and those with disabilities, including learning disabilities, who are at greater risk of obesity, are not accessing services in proportion to need. There is evidence that providers take services to local sub-groups for example the Nepalese and Sikh populations, groups of people with learning disabilities and men in prisons but this needs to be more closely monitored. Most programmes provide services in urban and rural areas and areas of high deprivation.

Providers of services have recently used the Health and Wellbeing Impact Assessment Tool (HIWIA) and this has identified to a number of providers that programmes should be more targeted to address health inequalities within their healthy weight services. Applying the HIWIA to all aspects of the service should be a requirement for any Kent provider. A quota of participants from specific subgroups in performance indicators is suggested in recent commissioning guidance for Tier 2 Weight Management services. It should be a requirement of commissioners that they require that providers make reasonable adjustments for people with special needs.

Projected Service Use and Outcomes in Three-Five Years and Five-10 Years

In 2006 Sir Derek Wanless warned that unless obesity is tackled, the future of the NHS is in the balance. These warnings are still being repeated today as future projections do not indicate any flattening out of the current rising obesity trend in adults.

Projections signal a clear decline in the prevalence of healthy weight accompanied by significant increases in the prevalence of obesity and severe obesity. For women there is also a projected rise in obesity and severe obesity but to a lesser extent than for men. This is the opposite of the current situation where severe obesity is more common in women than in men. (PHE)

The NAO (2001) predicted that by 2020 37% of men and 34% of women will be obese; this is only five years away. Currently the national prevalence is 26%. If this is correct this represents about a 20% increase over five years. We know already that we are not meeting the needs of all groups in Kent and that the need for our specialist weight management services is at least double the capacity that has been commissioned, with about a fifth of these patients proceeding to bariatric surgery.



Kent & Medway

Public Health

Table 2: Bariatric Admissions by Clinical Commissioning Group 2006/7-2013/4

CCG	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
NHS Ashford CCG		4	5	12	16	16	14	
NHS Canterbury & Coastal CCG	supressed		10	11	19	38	18	2
NHS Dartford, Gravesham & Swanley CCG	5	16	13	27	34	46	46	4
NHS South Kent Coast CCG	supressed	6	6	34	30	34	27	1
NHS Swale CCG	supressed	6	8	11	23	23	21	1
NHS Thanet CCG		9	10	18	22	26	24	1
NHS West Kent	4	13	21	38	48	56	70	4
Where the primary diagnosis was obesity (ICD-10 periods: 2006/07 to 2008/09 inclusive G28*, G27.2-G27.9, G3 2009/10 to 2013/14 inclusive G27.1-G27.9, G28*, G3	0.1-G30.4, G30.8- G3	30.9, G31*, G	32* <i>,</i> G33.0-G	33.3, G33.5-(G33.9, G38.7	, G38.8, G48.	1, G48.2, G7:	1.6.

In 2013-14 the upward trend reverses, whilst it is too early to be certain of the effect of the Tier 3 service commissioned from April 2013, it does suggest that a number of patients when given a choice prefer non-surgical interventions to surgery.

As more people become obese the number of people requiring specialist surgical and non-surgical services will increase significantly. This is particularly the case now that NICE has recommended (CG 189 November 2014) that all people newly diagnosed with diabetes (defined as in the last 10 years) should be considered for surgical intervention. The evidence base for this is that in the region of 60% of people with diabetes who have bariatric surgery go into remission with their disease which improves their health outcomes and is cost effective.

With an increase in obesity there will also be an impact on the need for dietetic services. Currently (December 2014) there is an approximate six to eight week waiting time for dietetics for obese patients in the former Eastern Coastal Kent (service provided by Kent Community Healthy Trust). Maidstone and Tunbridge Wells NHS Trust only accepts Level 3 & 4 diabetic patients where obesity is a comorbidity, there are no community services. Dartford and Gravesham NHS Trust provides acute and community services within their weight management pathway.

Foresight provided some predictions of costs to PCTs.

Table 3: Costs of Overweight and Obesity predicted in Kent PCTs

	Costs of overweight and obesity (£m)	Cost of obesity (£m)
	2015	2015
West Kent PCT	177.6	103.3
Eastern Coastal Kent PCT	224	130.2
Kent TOTAL	401.6	233.5

Foresight 2007

Evidence of What Works

NICE has published guidance for community based weight management services (see above) which states that although a 5-10% reduction in body weight is the gold



standard, interventions that achieve more modest weight loss which is sustained are beneficial.

Effective commissioned weight management services should include multicomponent interventions which focus on diet and physical activity together, with behaviour change strategies.

Interventions should be tailored to the individual and provide on-going support, including where possible a motivational interviewing approach. The physical activity component of interventions should focus on activities that fit easily into people's everyday lives and should aim to improve people's belief in their ability to change.

To maintain and improve health it is recommended that an adult undertakes 150 minutes of moderate physical activity over two days or more and in bursts of 10 minutes or longer or 75 minutes of vigorous activity over the same time frame.

The dietary component should include dietary modification, targeted advice, family involvement and goal setting. Dietary changes should be individualised, tailored to food preferences and allow for flexible approaches to reducing calorie intake, moving in the long-term to a balanced diet.

Behavioural interventions for adults should include strategies tailored to the needs of the individual. Both behaviour therapy and cognitive behaviour therapy have been found to be effective. Interventions may include promotional, awareness-raising activities

There should be on-going monitoring of patients and provision of support and care. Well designed and evidence-based interventions are likely to be applicable to most population groups. However, some population groups may require specific tailored interventions, in which case adjustments should be made. Examples of these specific groups are: women during and after pregnancy; menopausal women; people stopping smoking; 'pre-diabetes'; black and minority ethnic groups; low income groups and the disabled.

Outcome measures should include:

- reduction in BMI, weight loss targets should be related to starting weight
- interventions should stress that physical activity is important even if participants do not lose weight, because of the other health benefits physical activity can bring
- people should be encouraged to improve their diet even if they do not lose weight, because there are significant other health benefits
- monitoring of primary reason for referral to healthy weight pathway.

Additional NOO recommendations for all programmes:

- they should be evaluated
- they should align with government healthy living messages
- they should be enjoyable and easy to access





Further Cochrane reviews have also been published since the publication of NOO guidance. Wieland et al (2012) assessed the effects of interactive computer-based interventions for weight loss or weight maintenance in overweight or obese people. They concluded that compared to no intervention or minimal interventions (pamphlets, usual care), interactive computer-based interventions are an effective intervention for weight loss and weight maintenance. Compared to in-person interventions, interactive computer-based interventions result in smaller weight losses and lower levels of weight maintenance. The amount of additional weight loss, however, is relatively small and of brief duration, making the clinical significance of these differences unclear.

Foresight and the recent McKinsey Global Institute economic report (2014) state, there is no single solution that creates sufficient impact to reverse obesity, hence only a comprehensive, systemic programme of multiple interventions is likely to be effective.

McKinsey identifies the highest impact interventions as portion control, reformulation, availability of high calorie food and beverages and weight management programmes. Whilst they see education and personal responsibility are critical, they highlight that it is not enough – restructuring the context that shapes physical activity and nutritional behaviour is needed.

They believe that capturing the full potential impact will require a public-private partnership between government, employers, educators, retailers, restaurants, and food and beverage manufacturers and feel an understanding of how to align incentives and build co-operation is critical to success.

Their view that anything should be tried regardless of whether there is the evidence base should be treated cautiously, in this time of scant resources.

NICE guidance (PH53) on lifestyle weight management services is summarised above under Key Issues and Gaps.

User Views

A consultation questionnaire was designed to ask the adult public about their own circumstances and their views on what interventions should be provided to help people stay a healthy weight. It was posted on the Kent County Council website in standard and easy read formats. An e-mail was sent to a broad range of partners for promotion, for which 602 responses were received, over the sample size required.

The majority of responses were from women and from people over 46. Of the respondents, 10% were from BME groups and 11% considered themselves disabled, most wanted to lose more than a stone in weight. Nearly 50% said they wanted to feel better about themselves, over 40% said they wanted to live healthier lifestyles, were concerned about their health or wanted to change how they looked. The majority were already taking action. 33% were confident of their ability to change, 25% said they struggled to keep maintain weight loss and 22% said they'd like some help. Job responsibilities and cost were cited as the main barriers.

Kent & Medway

Public Health

An equal number of people preferred one-to-one and group sessions. The majority (40%) said they would need most support moving more. Most (over 35%) said they would prefer the service to be near to home, 15% said they would like to visit a leisure centre, 14% wanted on-line support, about 12% said they would like a service offered in their GP surgery and 6% would use a pharmacy, about 2% would prefer a home visit. Telephone support was least popular.

What do you think are the most important things that will help people to lose weight?	Strongly Agree	Agree	Strongly Disagree	Disagree	Don't Know
Access to local leisure facilities eg leisure centres, swimming pools, gyms	49.5% (290)	41.3% (242)	1.5% (9)	6.1% (36)	1.3% (8)
Being able to cycle or walk near to where to you live	53.5% (312)	40.6% (237)		4.6% (27)	
Having advice on healthy eating	52% (302)	44.4% (258)		2.4% (14)	0.8% (5)
Taking part in sport	28.9% (165)	47.8% (273)	2.6% (15)	15.6% (89)	4.9% (28)
Attending a weight loss class	27.3% (156)	49.1% (280)	1.9% (11)	16.3% (93)	6.4% (37)
Having one to one meetings with an advisor	27.4% (156)	51.6% (294)		11.7% (67)	8.4% (48)
Available and affordable fresh fruit and vegetables	64.4% (373)	31.2% (181)		3.2% (19)	

The responses were similar across gender, age and white and other ethnic groups, except more men than women disagreed that taking part in sport was important.

Table 5: Consultation responses: most important services

How important do think the following services are?	Strongly Agree	Agree	Strongly Disagree	Disagree	Don't Know
Healthy walks scheme (local walks led mainly by volunteers)	43.3% (254)	44.1% (259)	0.8% (5)	6.6% (39)	4.9% (29)
Food champions (helping people with healthy eating)	34.4% (199)	46.9% (271)	1.2% (7)	7.7% (45)	9.5% (55)
Health trainers	31.5% (181)	47.8% (274)	1.9% (11)	8.9% (51)	9.7% (56)





Weight loss	43.5% (252)	45.9% (266)	0.8% (5)	4.1 % (24)	5.5% (32)
Classes that help pregnant women to be a healthy weight	27.3% (154)	48.2% (272)	1.06% (6)	5.4% (31)	17.9% (101)
Exercise classes that GP asks you to go to	28.4% (163)	50.6% (290)	1.5% (9)	9.9% (57)	9.4 (54)

The results were similar across gender, age and white and other ethnic groups, but people who preferred not to be identified disagreed more than most that health trainers were important. There were a higher proportion of don't knows for the question on pregnant women than for any other question, especially among men.

Table 6: Consultation responses how would you like to be communicated to

How would you prefer to find out about what is available in your area?	Strongly Agree	Agree	Strongly Disagree	Disagree	Don't Know	No Response
Kent wide website with all services advertised	43.1% (260)	38.3% (231)	0.9% (6)	5.9% (36)	5.3% (32)	6.1% (37)
Kent-wide website that has details of weight loss classes, healthy eating and ways you can be more active	42.5% (256)	40.3% (243)	1.4% (9)	4.4% (27)	4.4% (27)	6.6% (40)
A page on the Kent County Website	23.9% (144)	39.7% (239)	3.3% (20)	15.1% (91)	8.3% (50)	9.6% (58)
Written information leaflets, posters at GPs, libraries etc.	40% (241)	40.3% (243)	1.8% (11)	8.3% (50)	3.1% (19)	6.3% (38)
Being told by your GP, pharmacist or other health or social professionals	34.3% (207)	42.8% (258)	2.1% (13)	9.3% (56)	4.3% (26)	6.9% (42)

There is a higher majority of respondents who selected, preferred not to respond, to the above questions compared to responses received for the questions in tables 5 and 6. Again, out of the majority of respondents who answered the above questions many either strongly agreed or disagreed.



Unmet Needs and Service Gaps

As discussed above there is a need to ensure that services are provided for groups that may not have the access to activities, for example women during and after pregnancy; menopausal women; those stopping smoking; 'pre-diabetes'; black and minority ethnic groups; low income groups and the disabled.

We know that there are gaps related to appropriate physical activity opportunities for specific groups of people for example people with disabilities and morbidly obese people. A managed physical activity programme may fill this gap. From the consultation we know that what people wanted most was support to move more.

We know from consultation with the public that there is a need for flexible programmes run in the communities outside of nine to five hours, with consideration given to whether there is a need for single sex groups. A GP supported group of men with a BMI of 35 and above meet regularly for support; they have enjoyed attending the groups with their peers, supported by health professionals. This group have reported that when they attend weight management programmes they can often be the only man in the group.

We know that there is not the capacity currently in our specialist weight management service and consideration needs to be given to how this might be commissioned in future as the need for this service is well demonstrated and the service is acceptable to professionals and the public.

Dietetic resource and interventions to address maternal obesity should be consistently available in all areas of Kent. The responses to the consultation suggest that the risks of maternal obesity to mother and baby are less well understood than other risks.

There is a need to provide training and on-going CPD for frontline workers who have access to the population to 'make every contact count'. The capacity for addressing obesity at scale could be achieved by empowering front-line workers and giving them the confidence and skills to engage with their patients and clients. Creating local champions in workplaces and other settings would contribute to a whole systems model.

There is a need to mobilise the organised efforts of society as a whole systems approach.

Recommendations for Commissioning

- a Provide training and on-going CPD to a range of professional and nonprofessional staff at scale (Make Every Contact Count programme/Public Health)
- Provide a multi-component supportive and flexible offer of support to promote uptake of physical activity interventions and decrease physical inactivity (Public Health Commissioning Intentions)
- c Provide specific well designed services to groups such as women during and after pregnancy; menopausal women; those stopping smoking; 'pre-diabetes';

Kent & Medway

Public Health

black and minority ethnic groups; low income groups; disabled. (Clinical Commissioning Groups/Public Health)

- d Engage with the whole systems to ensure that the adult pathway works and has the capacity to meet the needs of people who require specialist dietetic and weight management services.(Clinical Commissioning Groups/NHS England/Public Health)
- e Engage with the whole system to share data on individuals with the aim of supporting them to achieve and maintain weight loss (All commissioners/providers)
- f Engage with the whole system to improve communication about support that is available across Kent. (Consider commissioning central portal as part of Public Health Commissioning Intentions)
- g Provide a strategic framework with an overarching Kent-wide group, accountable at the highest level to provide governance. (Kent County Council Lead)

Recommendations for Needs Assessment Work

Needs assessment is being undertaken and may identify areas for further work.

Key contacts

Val Miller, Public Health Specialist, val.miller@kent.gov.uk



Kent & Medway

Public Health

References

Boylan S, Louie JC, Gill TP et al (2012) Consumer response to healthy eating, physical activity and weight-related recommendations: A systematic review. Obesity Reviews 13:606-17.

Brown M, Byatt T, Marsh T, McPherson K (2010) A prediction of Obesity Trends for Adults and their associated diseases: Analysis from the Health Survey for England 1993 – 2007. Report. London; National Heart Forum

Cecchini M, Sassi F, Lauer JA, Lee YY, Guajardo-Barron V, Chisholm D. (2010) 'Tackling of unhealthy diets, physical inactivity, and obesity: health effects and costeffectiveness' in Lancet 2010; 376(9754): 1775-1784.

Department of Health (2011) Healthy Lives, Healthy People: A call to action on obesity in England. Available at:

https://www.gov.uk/government/publications/healthy-lives-healthy-people-a-call-toaction-on-obesity-in-england

Department of Health (2013) Policy: reducing obesity and improving diet. Available at: https://www.gov.uk/government/policies/reducing-obesity-and-improving-diet Dodds R, Sawers C, Thompson F, Manyika J, Woetzel J, McKenna S, Spatharou A, (2014) Overcoming Obesity: An initial economic analysis. McKinsey Global Institute Foresight (2007) Tackling obesities: future choices. Available at:

http://www.bis.gov.uk/assets/foresight/docs/obesity/17.pdf

Jeffrey RW (2012) 'Financial incentives and weight control' in Preventive Medicine Nov;55 Suppl:S61-7.

Kavanagh, J, Stansfield, C and Thomas, J (2009) Incentives to improve smoking, physical activity, dietary and weight management behaviours: a scoping review of the research evidence. London: Eppi-Centre.

National Audit Office (2001). Report. Tackling obesity in England. Report by the comptroller and auditor general HC220 Session 2000- 2001: 15 Feb 2001 National Obesity Observatory (2009) Standard Evaluation Framework for weight management interventions. Available at:

http://www.noo.org.uk/uploads/doc721_2_noo_SEF_March_09.pdf

National Obesity Observatory (2010) Treating adult obesity though lifestyle change interventions: a briefing paper for commissioners. Available at:

http://www.noo.org.uk/uploads/doc/vid_5189_Adult_weight_management_Final_220 210.pdf

NHS England (2014) Five Year Forward View. Available at: http://www.england.nhs.uk/2014/08/15/5yfv/

NICE (2006) CG43: Obesity: Guidance on the prevention, identification, assessment and management of overweight and obesity in adults. London: NICE; 2006. Available at: http://guidance.nice.org.uk/CG43/NICEGuidance/pdf/English

NICE (2010a) PH27 Weight management before, during and after pregnancy: guidance Available at: <u>http://guidance.nice.org.uk/PH27/Guidance/pdf/English</u> NICE (2010) PH25 prevention of cardiovascular disease: guidance. Available at: <u>http://www.nice.org.uk/nicemedia/live/13024/49273/49273.pdf</u>

NICE (2011) PH35 Preventing type 2 diabetes - population and community interventions: guidance. Available at:

http://www.nice.org.uk/nicemedia/live/13472/54345/54345.pdf

NICE. (2012) Clinical Knowledge Summaries: Obesity. Available at: <u>http://cks.nice.org.uk/obesity#!topicsummary</u>



NICE (2012) PH42: Obesity: working with local communities. Available at: <u>http://guidance.nice.org.uk/PH42</u>

NICE (2013) PH46: Assessing body mass index and waist circumference thresholds for intervening to prevent ill health and premature death among adults from black, Asian and other minority ethnic groups in the UK.

http://www.nice.org.uk/nicemedia/live/14201/64332/64332.pdf

NICE (2013) LGB9: Preventing obesity and helping people to manage their weight. Available at: <u>http://publications.nice.org.uk/preventing-obesity-and-helping-people-to-manage-their-weight-lgb9</u>

NICE (2014) PH49: Behaviour Change: individual approaches. Available at: <u>http://guidance.nice.org.uk/PH49</u>

NICE (2014) PH 53: Managing overweight and obesity in adults-lifestyle weight management programmes. Available at: <u>http://www.nice.org.uk/guidance/ph53</u> NICE (2014) CG189: Obesity: identification, assessment and management of overweight and obesity in children, young people and adults. Available at: <u>http://www.nice.org.uk/guidance/CG189</u>

Public Health England (2014) Obesity data factsheet. Available at:

Puhttp://www.noo.org.uk/securefiles/141125_1244//AdultWeight_Aug2014_v2.pdf Paul-Ebhohimhen V, Avenell A. (2008) Systematic review of the use of financial incentives in treatments for obesity and overweight. Obesity Reviews Jul; 9(4):355-67.

Relton, C, Strong, M and Li, J (2011) 'The 'Pounds for Pounds' weight loss financial incentive scheme: an evaluation of a pilot in NHS Eastern and Coastal Kent' in Journal of Public Health 33(4): 536-542.

Prospective Studies Collaboration. Body-mass index and cause-specific mortality in 900 000 adults: collaborative analyses of 57 prospective studies. Lancet 2009; 373: 1083–96. Available at:

http://www.noo.org.uk/uploads/doc/vid_7199_Obesity_and_life_expectancy.pdf SIGN (2012) 115: Management of Obesity. Available at http://www.sign.ac.uk/pdf/sign115.pdf

Tuah NAA, Amiel C, Qureshi S, Car J, Kaur B, Majeed A. Transtheoretical model for dietary and physical exercise modification in weight loss management for overweight and obese adults. Cochrane Database of Systematic Reviews 2011, Issue 10. Art. No.: CD008066. DOI: 10.1002/14651858.CD008066.pub2.

UK Health Forum Risk factor based modelling for Public Health England, July 2014 Available at: <u>http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf</u>

Wang YC, McPherson K, Marsh T, Gortmaker SL, Brown M (2011). Research paper. 'Health and economic burden of the projected obesity trends in the USA and the UK'. Lancet, vol 378: pp 815-25

Wieland LS, Falzon L, Sciamanna CN, Trudeau KJ, Brodney Folse S, Schwartz JE, Davidson KW. Interactive computer-based interventions for weight loss or weight maintenance in overweight or obese people. Cochrane Database of Systematic Reviews 2012, Issue 8. Art. No.: CD007675.



Kent & Medway

Public Health