

# PUBLIC HEALTH GUIDANCE

## SCOPE

### 1 Guidance title

Dietary interventions and physical activity interventions for weight management in pregnancy

#### 1.1 *Short title*

Weight management in pregnancy

### 2 Background

- a) The National Institute for Health and Clinical Excellence (NICE) has been asked by the Department of Health (DH) to develop guidance on public health interventions for weight management in pregnancy.
- b) NICE public health guidance supports the preventive aspects of relevant national service frameworks (NSFs), where they exist. If it is published after an NSF has been issued, the guidance effectively updates it. Specifically, in this case, the guidance will support the NSF on children, young people and maternity services (DH 2004a).
- c) This guidance will support a number of related policy documents including:
  - 'Choosing a better diet: a food and health action plan' (DH 2005a)
  - 'Choosing activity: a physical activity action plan' (DH 2005b)
  - 'Choosing health: making healthier choices easier' (DH 2004b)
  - 'Healthy weight, healthy lives: a cross-government strategy for England' (Cross Government Obesity Unit 2008)
  - 'Maternity matters' (DH 2007)

- 'Saving mothers' lives' (Confidential Enquiry into Maternal and Child Health 2007)
  - 'Tackling obesities: future choices' (Government Office for Science 2007)
  - 'Teenage parents next steps' (Department for Children, Schools and Families 2007).
- d) This guidance will provide recommendations for good practice, based on the best available evidence of effectiveness, including cost effectiveness. It is aimed at professionals, commissioners and managers with public health as part of their remit, working within the NHS, local authorities and the wider public, private, voluntary and community sectors. It is particularly aimed at: GPs, obstetricians, midwives and all those working in antenatal services. It will also be of interest to pregnant women and those planning a pregnancy as well as their partners, families and other members of the public.
- e) The guidance will complement NICE guidance on antenatal care, intrapartum care and postnatal care; diabetes in pregnancy, maternal and child nutrition, behaviour change, methods to increase physical activity, physical activity and the environment, and obesity. For further details, see section 6.

This guidance will be developed using the NICE public health intervention process.

### 3 The need for guidance

- a) Fifty percent of women of childbearing age are either overweight (that is, they have a body mass index [BMI] of 25.0–29.9kg/m<sup>2</sup>) or obese (that is, they have a BMI greater than or equal to 30.0kg/m<sup>2</sup>). At the start of pregnancy, 18% of women are obese (The Information Centre 2008). Maternal obesity is related to socioeconomic deprivation and other inequalities within minority ethnic groups (Heslehurst et al. 2007).
- b) Pregnant women who are overweight or obese and their babies face an increased risk of complications during pregnancy and childbirth. For the mother, these risks include: impaired glucose tolerance and gestational diabetes, miscarriage, pre-eclampsia, thromboembolism and death. In addition, she is more likely to have an instrumental delivery or caesarean section. The baby faces a higher risk of macrosomia, congenital anomaly, obesity (in later life) and fetal death (Ramachenderan et al. 2008).
- c) A major report found that over half of mothers who died during pregnancy, childbirth (or within 42 days of childbirth) were either overweight or obese. It concluded that pregnant women with a BMI greater than 30kg/m<sup>2</sup> are more likely to die than those with a BMI less than 30kg/m<sup>2</sup> (Confidential Enquiry into Maternal and Child Health 2007).
- d) UK recommendations on what constitutes appropriate weight gain during pregnancy vary from 7–15kg but there is no national, evidence-based guidance. The American Institute of Medicine (IOM) recommends that women with a pre-pregnancy BMI greater than 30kg/m<sup>2</sup> should gain around 7kg. It also recommends that women with a pre-pregnancy BMI between 19.8 and 26kg/m<sup>2</sup> should gain between 11.5 and 16kg (IOM 1990). Recent studies show that 20–40% of pregnant women in the US and Europe are gaining more weight than is recommended (Cedergren 2006).

Women who gain weight within the IOM ranges are more likely to have better maternal and infant outcomes than those who gain more or less weight (Viswanathan et al. 2008). Among obese women, those who do not gain more than 7kg during pregnancy have fewer complications (Cedergren 2006).

- e) Women in the UK are not given information about the risks of obesity in pregnancy– or the importance of weight management – during pregnancy. Pregnant women are advised to eat a variety of foods. They are also advised not to try to diet while pregnant and to talk to their GP or midwife if they are concerned about their weight (Food Standards Agency 2008).
- f) The Royal College of Obstetricians and Gynaecologists and the American College of Obstetricians and Gynecologists (Artal and O’Toole 2003) recommend 30 minutes or more moderate physical activity per day for pregnant women. Women who were not physically active before pregnancy are advised to plan a safe exercise programme with their GP. About 30% of women of child-bearing age achieve the nationally recommended minimum level of activity (30 minutes of moderately-intense physical activity on 5 or more days a week [DH 2004b]) (The Information Centre 2008).

## **4 The guidance**

Public health guidance will be developed according to NICE processes and methods. For details see section 5.

This document defines exactly what this guidance will (and will not) examine, and what the guidance developers will consider. The scope is based on a referral from the DH (see appendix A).

### **4.1 *Who is the focus?***

#### **4.1.1 Groups that will be covered**

The guidance will cover:

- pregnant women expecting a single baby
- women seeking preconception advice
- women actively planning a pregnancy.

There will be a particular focus on women who are overweight (that is, who have a BMI greater than or equal to 25.0) or obese (with a BMI greater than or equal to 30.0).

#### **4.1.2 Groups that will not be covered**

- Women who have been diagnosed with (and are receiving treatment for) diabetes.
- Pregnant women expecting more than one baby (for example, twins or triplets).
- Pregnant women who are underweight (that is, who have a BMI less than 18.5 kg/m<sup>2</sup>).

## **4.2 Activities**

### **4.2.1 Activities/measures that will be covered**

Dietary interventions and physical activity interventions. These interventions may be aimed at individuals, families, communities or the whole population and may include:

- assessment and monitoring of weight gain
- antenatal weight management in primary and secondary care and non-NHS settings (for example, children's centres)
- slimming clubs and other community interventions
- the use of magazines, promotional literature and other mass-media interventions
- benefits or incentives (for example, the provision of food vouchers).

For cost effectiveness analysis, interventions to manage the mother's weight will, where appropriate, be measured in terms of cost per quality-adjusted life year (QALY). The QALY gain will refer to the mother, but QALY gains in

relation to the baby may also be considered. In both cases the analysis will take an NHS and personal social services perspective.

#### **4.2.2 Activities/measures that will not be covered**

- a) Clinical interventions for pregnant women (such as surgery or drug treatment).
- b) Complementary therapies, treatments or practices (for example, hypnotherapy or acupuncture).

#### **4.3 Key questions and outcomes**

Below are the overarching questions that will be addressed along with the outcomes that would be considered as evidence of effectiveness.

##### **Questions:**

- What type of dietary interventions are most effective and cost effective for weight management in pregnancy? Do they have any adverse effects?
- What types of physical activity interventions are most effective and cost effective for weight management in pregnancy? Do they have any adverse effects?
- What are the most effective and cost-effective ways of measuring and monitoring weight gain in pregnancy? Are there any adverse effects?
- What are the views, perceptions and beliefs of health professionals, pregnant women, their partners and families about diet, physical activity and weight management in pregnancy?

##### **Expected outcomes:**

Primary outcomes may include changes in body weight, body mass index, mid-arm circumference and skin-fold thickness.

Secondary outcomes may include:

- Changes in dietary intake (and quality of maternal diet) and levels of physical activity.

- For the mother during pregnancy and childbirth: glucose control and insulin resistance, gestational diabetes, pre-eclampsia, thromboembolism, haemorrhage, mode of delivery at birth, measures of maternal psychological wellbeing, depression and self-esteem, initiation and duration of breastfeeding and death.
- For the infant: hypoglycaemia, birth weight, macrosomia, neural tube defects and infant birth trauma. Longer-term health outcomes: postnatal weight loss, childhood obesity.
- Access to, attendance, and use of appropriate health and support services.

#### **4.4 Status of this document**

This is the final scope, incorporating comments from a 4-week consultation which included a stakeholder meeting on 8 October 2008.

## **5 Further information**

The public health guidance development process and methods are described in 'Methods for development of NICE public health guidance' (NICE 2006) available at [www.nice.org.uk/phmethods](http://www.nice.org.uk/phmethods) and 'The public health guidance development process: An overview for stakeholders, including public health practitioners, policy makers and the public' (NICE 2006) available at [www.nice.org.uk/phprocess](http://www.nice.org.uk/phprocess)

## **6 Related NICE guidance**

### ***Published***

Antenatal care: routine care for the healthy pregnant woman. NICE clinical guideline 62 (2008). Available from [www.nice.org.uk/CG62](http://www.nice.org.uk/CG62)

Antenatal and postnatal mental health: clinical management and service guidance. NICE clinical guideline 45 (2007). Available from [www.nice.org.uk/CG45](http://www.nice.org.uk/CG45)

Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period. NICE clinical guideline 63 (2008). Available from [www.nice.org.uk/CG63](http://www.nice.org.uk/CG63)

Maternal and child nutrition. NICE public health guidance 11 (2008). Available from [www.nice.org.uk/PH11](http://www.nice.org.uk/PH11)

Physical activity and the environment. NICE public health guidance 8 (2008). Available from [www.nice.org.uk/PH8](http://www.nice.org.uk/PH8)

Behaviour change. NICE public health guidance 6 (2007). Available from [www.nice.org.uk/PH6](http://www.nice.org.uk/PH6)

Intrapartum care: care of healthy women and their babies during childbirth. NICE clinical guideline 55 (2007). Available from [www.nice.org.uk/CG55](http://www.nice.org.uk/CG55)

Four commonly used methods to increase physical activity. NICE public health guidance 2 (2006). Available from [www.nice.org.uk/PH2](http://www.nice.org.uk/PH2)

Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43 (2006). Available from [www.nice.org.uk/CG43](http://www.nice.org.uk/CG43)

Postnatal care: routine postnatal care of women and their babies. NICE clinical guideline 37 (2006). Available from [www.nice.org.uk/CG37](http://www.nice.org.uk/CG37)

### ***Under development***

The prevention of venous thromboembolism in all hospital patients. NICE clinical guideline (due September 2009).

Hypertension in pregnancy: the management of hypertensive disorders during pregnancy. NICE clinical guideline (due February 2010).

Care of pregnant women with complex social factors. NICE clinical guideline (due June 2010).

Effective weight management following childbirth. NICE public health guidance (due July 2010)

## **Appendix A Referral from the Department of Health**

The Department of Health asked NICE to:

‘Produce intervention guidance for general practitioners, midwives and the antenatal services on the prevention of excessive weight gain in pregnancy.’

## Appendix B Potential considerations

It is anticipated that the Public Health Interventions Advisory Committee (PHIAC) will consider the following issues:

- The action that those responsible for the health and care of pregnant women should take, at what level, how often and for how long.
- The effectiveness and cost effectiveness of different interventions and activities, delivered in different ways (for example, one-to-one, in groups or aimed at whole communities) and in different settings.
- Whether the effectiveness and cost effectiveness of an intervention varies according to:
  - the status of the person delivering it
  - its frequency, duration and intensity
  - where it takes place.
- Whether interventions are transferable to other settings.
- Whether there are any adverse effects.
- How accessible and acceptable different interventions and approaches are to pregnant women, women planning a pregnancy, their partners and families.
- The needs of specific subgroups, in particular, women:
  - from black and minority ethnic groups
  - from traveller communities
  - who are refugees and asylum seekers
  - who are prisoners
  - who are under 18
  - with a learning, physical or sensory disability
  - with communication difficulties.
- The impact the guidance may have on health inequalities and the extent to which it promotes equality and diversity.

- Evidence from practice.
- The barriers and opportunities for implementing the guidance, as perceived by practitioners, pregnant women and those planning a pregnancy.

## Appendix C References

Artal R, O'Toole M (2003) Guidelines of the American College of Obstetricians and Gynecologists for exercise during pregnancy and the postpartum period. *British Journal of Sports Medicine* 37: 6–12.

Cedergren M (2006) Effects of gestational weight gain and body mass index on obstetric outcome in Sweden. *International Journal of Gynecology and Obstetrics* 93 (3): 269–74.

Confidential Enquiry into Maternal and Child Health (2007) Saving mothers' lives: reviewing maternal deaths to make motherhood safer. The seventh report of the confidential enquiries into maternal deaths in the United Kingdom. London: Confidential Enquiry into Maternal and Child Health.

Cross Government Obesity Unit (2008) Healthy weight, healthy lives: a cross-government strategy for England. London: Department of Health.

Department for Children, Schools and Families (2007) Teenage parents next steps: guidance for local authorities and primary care trusts. London: Department for Children, Schools and Families.

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Department of Health (2005b) Choosing activity: a physical activity action plan. London: Department of Health.

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Food Standards Agency (2008) When you're pregnant [online]. Available from [www.eatwell.gov.uk/agesandstages/pregnancy/whenyrpregnant/?lang=en#cat218295](http://www.eatwell.gov.uk/agesandstages/pregnancy/whenyrpregnant/?lang=en#cat218295)

Government Office for Science (2007) Tackling obesities: future choices – modelling future trends in obesity and their impact on health. London: Department of Innovation, Universities and Skills.

Heslehurst N, Ellis LJ, Simpson H et al. (2007) Trends in maternal obesity incidence rate, demographic predictors, and health inequalities in 36,821 women over a 15 year period. *British Journal of Obstetrics and Gynaecology* 114: 187–194.

Institute of Medicine (1990) Nutrition during pregnancy, weight gain and nutrient supplements. Washington DC: National Academy Press.

Ramachenderan J, Bradford J, McLean M (2008) Maternal obesity and pregnancy complications: a review. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 48: 228–235.

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Viswanathan M, Siega-Riz AM, Moos MK et al. (2008) Outcomes of maternal weight gain, Evidence report/technology assessment 168. Rockville USA: Agency for Healthcare Research and Quality.