Obesity

Whom should we target for diabetes prevention?

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With the rising prevalence of obesity and type 2 diabetes in the UK, and data from major clinical trials showing that the onset of diabetes can be prevented or substantially delayed in many individuals by lifestyle changes and modest weight loss, the question arises: at whom should a diabetes prevention policy be targeted in the real world?

Burke et al addressed this important issue in a study on the impact of weight loss on diabetes risk at different levels of body mass index (BMI) in the San Antonio Heart Study population. The key message is that the most effective way to reduce the incidence of diabetes in the population is not to focus on treating established obesity, but rather to prevent individuals of normal weight from becoming overweight, especially in the presence of a family history of diabetes.

This has two practical implications. First, while opportunistic screening for diabetes in high risk groups (e.g. obese, family history of diabetes or high-risk ethnic groups) is clearly important and needs to be taken more seriously in the UK, it is time that these groups were targeted more proactively with education on the risks of diabetes and ways to reduce these risks. Both primary and secondary care can play a role in this.

Secondly, Burke and colleagues' prediction that prevention of a one unit rise in BMI in the entire population would reduce diabetes incidence by about 13% should make you sit up and pay attention. In just the 8 years from 1993 to 2001, the Health Survey for England observed an increase in the average adult BMI of about one BMI unit. This guarantees brisk business in the diabetes clinic for many years to come, and underlines the paramount need for a population strategy to control obesity, and hence type 2 diabetes.

AMERICAN JOURNAL OF OBSTETRICS & GYNECOLOGY

Obesity and adverse pregnancy outcome

Readability	✓ ✓ ✓ ✓ ✓
Applicability to practice	✓ ✓ ✓ ✓ ✓
WOW! factor	✓ ✓ ✓

1 Obesity is associated with infertility and adverse pregnancy outcome. It is unclear whether maternal glucose levels affect this relationship.

2 This study investigated the relationship between pregnancy outcomes and prepregnancy overweight or obesity in 2459 women with a normal glucose tolerance test.

3 There was a significantly higher incidence of hypertensive complications, caesarean section, induction of labour and macrosomia in obese women compared with women of normal weight.

4 Rates of shoulder dystocia, preterm delivery and infant mortality (other than macrosomia) were not significantly associated with maternal BMI.

5 Obesity and overweight are associated with adverse pregnancy outcomes, and this effect is independent of maternal glucose levels.

6 Traditionally, obstetric surveillance has focused on obese women with glucose intolerance. However, efforts should also be targeted at obese women with a normal glucose tolerance as they represent a high-risk group.

Jensen DM, Damm P, Sørensen B et al (2003) Pregnancy outcome and prepregnancy body mass index in 2459 glucose-tolerant Danish women. *American Journal of Obstetrics and Gynecology* **189**: 239–44

DIABETES CARE

Preventing type 2 diabetes at the population level

Readability	✓ ✓ ✓
Applicability to practice	✓ ✓ ✓ ✓
WOW! factor	✓ ✓ ✓ ✓ ✓

1 The most effective method of reducing the incidence of type 2 diabetes may be to try to prevent individuals from becoming obese.

2 The aim of this study was to determine what effect prevention of weight gain would have on the incidence of type 2 diabetes.

3 Data were collected from the San Antonio Heart Study (3301 Mexican Americans and 1857 non-Hispanic white men and non-pregnant women).

4 Preventing normal individuals from becoming overweight would result in a 62% and 74% reduction in the incidence of type 2 diabetes in Mexican Americans and non-Hispanic whites, respectively.

5 Prevention of Mexican American individuals increasing from obese to very obese would result in a 25% reduction in the incidence of type 2 diabetes, whereas prevention of the change from overweight to obese would lead to a reduction of 47%.

6 Preventing the entire population from gaining, on average, one BMI unit would result in a reduction in type 2 diabetes incidence of 12.4% and 13.0% in Mexican Americans and non-Hispanic whites, respectively.

7 Attention should be focused on the prevention of weight gain in individuals of normal weight and those who are overweight in order to reduce the incidence of type 2 diabetes.

Burke JP, Leibson C, Williams K (2003) A population perspective on diabetes prevention *Diabetes Care* **26(7)**: 1999–2004

'A high waist circumference was a risk factor for CHD in men, and this effect was independent of BMI.'

OBESITY RESEARCH

Waist circumference best predicts CHD

Readability	✓ ✓ ✓ ✓
Applicability to practice	✓ ✓ ✓ ✓
WOW! factor	✓ ✓ ✓

1 It is well-known that both general and central adipositities are risk factors for coronary heart disease (CHD) in middle-aged men and women.

2 This study looked at the role of obesity and waist circumference and body mass index (BMI) measurements as risk factors for 15-year incidence of CHD in the elderly. Data were collected over a 15-year period from 1597 adults free from CHD at age 70 (baseline).

3 There was a significant inverse association between smokers and waist circumference and BMI quartiles in men and women.

4 In men only, there was a significant positive trend in the prevalence of diabetes across waist circumference and BMI quartiles.

5 A high waist circumference was a risk factor for CHD in men, and this effect was independent of BMI.

6 Waist circumference as an indicator of both central and general obesity was a stronger predictor of CHD than BMI in elderly men.

Dey DK, Lissner L (2003) Obesity in 70-year-old subjects as a risk factor for 15-year coronary heart disease incidence. *Obesity Research* **11**(7): 817–27

ARCHIVES OF PEDIATRICS & ADOLESCENT MEDICINE

Prevalence of the metabolic syndrome in adolescents

Readability	✓ ✓ ✓
Applicability to practice	✓ ✓ ✓ ✓
WOW! factor	✓ ✓ ✓

1 Although the metabolic syndrome is known to impose a substantial overweight adolescents had the syndrome.

2 Data from the Third National Health and Nutrition Examination Survey (1988–94) in the US were analysed. This included 2430 individuals aged between 12 and 19 years.

3 Overall prevalence of metabolic syndrome was 4.2%, and 30% of

4 On the basis of population-weighted estimates, approximately 910 000 US adolescents have the metabolic syndrome.

5 Intensive therapy needs to be targeted at these individuals to prevent the development of type 2 diabetes.

Cook S, Weitzman M, Auinger P (2003) Prevalence of a metabolic syndrome phenotype in adolescents. *Archives of Pediatrics and Adolescent Medicine* **157**: 821–7

OBESITY REVIEWS

IASO consensus statement

Readability	✓ ✓ ✓
Applicability to practice	✓ ✓ ✓ ✓ ✓
WOW! factor	✓ ✓ ✓

1 It is clear that a decline in levels of physical activity contributes to the development of obesity.

2 However, the level of physical activity required to regulate body weight has not yet been determined.

3 The question of how much physical activity is enough to prevent unhealthy weight gain was discussed at the first Stock conference. The outcome of this meeting was a consensus statement.

4 According to the statement, the current physical activity guideline of 30 minutes of moderate activity every day is of importance to limit the incidence of coronary heart disease and diabetes.

5 The statement says that this is unlikely to be sufficient for many individuals.

6 It is suggested that political action is imperative to effect the physical and social environmental changes to enable physical activity.

Saris WHM, Blair SN, van Baak MA (2003) How much physical activity is enough to prevent unhealthy weight gain? Outcome of the IASO 1st Stock conference and consensus statement *Obesity Reviews* **4**: 101–14

NEW ENGLAND JOURNAL OF MEDICINE

Low-carbohydrate versus low-fat diet in severe obesity

Readability	✓ ✓ ✓
Applicability to practice	✓ ✓ ✓
WOW! factor	✓ ✓ ✓

1 The relative efficacies of low fat and low carbohydrate diets for weight loss are not known, and there is concern that a low carbohydrate diet might have adverse effects on risk factors for atherosclerosis.

2 A total of 132 adults were randomly assigned to either a low-carbohydrate diet or a low-fat diet. Participants received teaching sessions and sample menus and recipes.

3 Of the 79 people who completed the 6-month study, those on the low-carbohydrate diet lost more weight than those on the low-fat diet and had greater decreases in triglyceride levels.

4 Severely obese people with a high prevalence of diabetes or the metabolic syndrome lost more weight on a carbohydrate-restricted diet than on a calorie and fat-restricted diet, with a relative improvement in insulin sensitivity and triglyceride levels.

5 It is unclear whether these benefits would extend beyond 6 months.

Samaha FF, Iqbal N, Seshadri P (2003) A low-carbohydrate as compared with a low-fat diet in severe obesity. *N EJM* **348**: 2074–81

'Political action is imperative to effect the physical and social environmental changes to enable physical activity.'