Preventing type 2 diabetes: population and community interventions

This quick reference guide presents the recommendations made in ‘Preventing type 2 diabetes: population and community-level interventions in high-risk groups and the general population’. The guidance is for commissioners, managers and practitioners with public health as part of their remit working within the NHS, local authorities, the national and local public health service and the wider public, private, voluntary and community sectors. It is also for national policy makers, caterers, food manufacturers and retailers.

The guidance is particularly aimed at: directors of public health, public health commissioners and all those working in national and local public health services. This includes: GPs, practice nurses, dietitians, public health nutritionists and other health professionals, as well as those involved in delivering physical activity interventions, community engagement teams and community leaders. It may also be of interest to members of the public.

The guidance complements, but does not replace, NICE guidance on: behaviour change, cardiovascular disease, community engagement, diabetes in pregnancy, management of type 2 diabetes, maternal and child nutrition, obesity, physical activity and weight management before, during and after pregnancy (see related NICE guidance, page 23 for a list of publications).
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Definitions

Type 2 diabetes

Diabetes is a group of disorders with a number of common features characterised by raised blood glucose. In England the four commonest types of diabetes are:

- type 1 diabetes
- type 2 diabetes
- secondary diabetes (from pancreatic damage, hepatic cirrhosis, endocrinological disease/therapy, or anti-viral/anti-psychotic therapy)
- gestational diabetes (diabetes of pregnancy).

The underlying disorder for type 2 diabetes is usually insulin insensitivity combined with a failure of pancreatic insulin secretion to compensate for increased glucose levels. The insulin insensitivity is usually evidenced by excess body weight or obesity, and exacerbated by over-eating and inactivity. It is commonly associated with raised blood pressure and a disturbance of blood lipid levels. The insulin deficiency is progressive over time, leading to a need for lifestyle change often combined with blood glucose lowering therapy.

Type 2 diabetes is diagnosed in adults who are not pregnant by a glycated haemoglobin (HbA1c) level of 6.5% (48 mmol/mol) or above. A type 2 diabetes diagnosis can also be made by:

- random venous plasma glucose concentration the same or greater than 11.1 mmol/l; or
- fasting venous plasma glucose concentration the same or greater than 7.0 mmol/l; or
- 2-hour venous plasma glucose concentration the same or greater than 11.1 mmol/l 2 hours after 75 g anhydrous glucose in an oral glucose tolerance test (OGTT).

In patients without symptoms, the test must be repeated to confirm the diagnosis using World Health Organization criteria.

Factors which influence someone’s risk of type 2 diabetes include: weight, waist circumference, age, physical activity and whether or not they have a previous history of gestational diabetes or a family history of type 2 diabetes.

In addition to these individual risk factors, people from certain communities and population groups are particularly at risk. This includes people of South Asian, African-Caribbean, black African and Chinese descent and those from lower socioeconomic groups.

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1 This is an edited extract from ‘Type 2 diabetes’ (2006) NICE clinical guideline 66.
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Definitions

The following table defines a healthy weight in relation to height using the body mass index (BMI). BMI is calculated from the weight in kg divided by the height in metres squared. The table also defines what it means to be overweight and different degrees of obesity.

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy weight</td>
<td>18.5–24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25–29.9</td>
</tr>
<tr>
<td>Obesity I</td>
<td>30–34.9</td>
</tr>
<tr>
<td>Obesity II</td>
<td>35–39.9</td>
</tr>
<tr>
<td>Obesity III</td>
<td>40 or more</td>
</tr>
</tbody>
</table>

Being overweight or obese is the main contributing factor for type 2 diabetes. In addition, having a large waist circumference increases the risk of developing type 2 diabetes:

- **Men** are at high risk if they have a waist circumference of 94–102 cm (37–40 inches). They are at very high risk if it is more than 102 cm.
- **Women** are at high risk if they have a waist circumference of 80–88 cm (31.5–35 inches). They are at very high risk if it is more than 88 cm.

The above classification may not apply to some population groups, as noted in NICE’s obesity guidance. For example, although some South Asian adults or older people may have a BMI lower than the overweight classification, they may still be at greater risk of developing conditions and diseases associated with being overweight or obese.

Types of intervention

In this guidance, early intervention to prevent type 2 diabetes is considered as part of an integrated package of local measures to promote health and prevent a range of non-communicable diseases (including cardiovascular disease and some cancers).

The guidance also recommends national action to address the adverse environmental factors driving the increasing prevalence of type 2 diabetes.

Lifestyle interventions aimed at changing an individual’s diet and increasing the amount of physical activity they do can halve the number with impaired glucose tolerance who go on to develop type 2 diabetes. However, the greatest impact on the levels – and associated costs – of type 2 diabetes is likely to be achieved by addressing these behavioural risk factors in whole communities and populations.

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4 This is an extract from ‘Obesity’ (2006) NICE clinical guideline 43.
Guiding principles

Type 2 diabetes shares common risk factors with other non-communicable diseases including cardiovascular disease and some cancers. This means that recommendations made in previously published NICE guidance can also help prevent it. Specifically, the following published statements underpin many of the recommendations made here.

Supporting behaviour change

Changing people’s health-related behaviour involves:

- Helping them to understand the short, medium and longer-term consequences of health-related behaviour.
- Helping them to feel positive about the benefits and value of health-enhancing behaviours and changing their behaviours.
- Recognising how people’s social contexts and relationships may affect their behaviour.
- Helping people plan changes in terms of easy sustainable steps over time.
- Identifying and planning for situations that might undermine the changes people are trying to make, and planning explicit ‘if–then’ coping strategies to maintain changes in behaviour.

Achieving and maintaining a healthy weight

Everyone should aim to maintain or achieve a healthy weight, to improve their health and reduce the risk of diseases associated with overweight and obesity, such as type 2 diabetes. People should follow the strategies listed below. These may make it easier to maintain a healthy weight by balancing ‘calories in’ (from food and drink) and ‘calories out’ (from being physically active):

- base meals on starchy foods such as potatoes, bread, rice and pasta, choosing wholegrain where possible
- eat fibre-rich foods such as oats, beans, peas, lentils, grains, seeds, fruit, vegetables, wholegrain bread and brown rice and pasta
- eat at least five portions of a variety of fruit and vegetables each day, in place of foods higher in fat and calories
- adopt a low-fat diet
- avoid increasing fat or calorie intake

This is an edited extract from ‘Behaviour change’ (2007). NICE public health guidance 6. It should be read in conjunction with those recommendations.

The first eleven bullet points in this list are adapted from a recommendation in ‘Obesity’ (2006). NICE clinical guideline 43. The last bullet point is adapted from a recommendation in ‘Physical activity in the workplace’ (2008). NICE public health guidance 13.
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Guiding principles

- consume as little as possible of fried food; drinks and confectionery high in added sugars (such as cakes, pastries and sugar-sweetened drinks); and other food high in fat and sugar (such as some take-away and fast foods)
- minimise calorie intake from alcohol
- watch the portion size of meals and snacks, and how often they are eating throughout the day
- eat breakfast
- make activities they enjoy, such as walking, cycling, swimming, aerobics and gardening, a routine part of life and build other activity into their daily routine – for example, by taking the stairs instead of the lift or taking a walk at lunchtime
- minimise sedentary activities, such as sitting for long periods watching television, at a computer or playing video games
- use physically active forms of travel such as walking and cycling.

Effective weight-loss programmes

Effective weight-loss programmes should:

- address the reasons why someone might find it difficult to lose weight
- be tailored to individual needs and choices
- be sensitive to the person’s weight concerns
- be based on a balanced, healthy diet
- encourage regular physical activity
- expect people to lose no more than 0.5–1 kg (1–2 lb) a week
- identify and address barriers to change.

Physical activity

The national recommendations are:

- To achieve general health benefits: accumulate at least 30 minutes of at least moderate-intensity physical activity on 5 or more days of the week.
- To lose weight: most people may need to do 45–60 minutes of moderate-intensity activity a day, particularly if they do not reduce their energy intake.
- People who have been obese and have lost weight may need to do 60–90 minutes of activity a day to avoid regaining weight.

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9 This is adapted from a recommendation in ‘Obesity’ (2006). NICE clinical guideline 43.
Cultural appropriateness

Culturally appropriate interventions take account of the community’s cultural or religious beliefs and language and literacy skills\(^\text{11}\) by:

- Using community resources to improve awareness of, and increase access to, interventions. For example, they involve community organisations and leaders early on in the development stage, use media, plan events or make use of festivals specific to black and ethnic minority groups.

- Understanding the target community and the messages that resonate with them.

- Identifying and addressing barriers to access and participation, for example, by keeping costs low to ensure affordability, and by taking account of different working patterns and education levels.

- Developing communication strategies which are sensitive to language use and information requirements. For example, they involve staff who can speak the languages used by the community. In addition, they may provide information in different languages and for varying levels of literacy (for example, by using colour-coded visual aids and the spoken rather than the written word).

- Taking account of cultural or religious values, for example, the need for separate physical activity sessions for men and women, or in relation to body image, or beliefs and practices about hospitality and food. They also take account of religious and cultural practices that may mean certain times of the year, days of the week, settings, or timings are not suitable for community events or interventions. In addition, they provide opportunities to discuss how interventions would work in the context of people’s lives.

- Considering how closely aligned people are to their ethnic group or religion and whether they are exposed to influences from both the mainstream and their community in relation to diet and physical activity.


Recommendations

Who's health will benefit?
Adults (aged between 18 and 74), in particular, those from:
- black and minority ethnic groups
- lower socioeconomic groups.

Recommendation 1
Integrating national strategy on non-communicable diseases

Who should take action?
- Commissioners and providers of national public health services working in partnership with:
  - government departments
  - the commercial sector
  - local commissioners and providers of public health services
  - the voluntary sector, not-for-profit and non-governmental organisations.

What action could they take?
- When developing national strategy to target non-communicable diseases with a major link to diet, physical activity and obesity (for example, type 2 diabetes, cardiovascular disease, certain cancers), consider:
  - integrating the strategy with other relevant national actions to prevent related non-communicable diseases
  - addressing the key risk factors (for example, being overweight or obese, a sedentary lifestyle and an unhealthy diet)
  - highlighting the contribution that partners in national and local government, industry, healthcare and the voluntary sector can make by working together to reduce the risk of non-communicable diseases for the population as a whole
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- taking account of variations in different population subgroups (for example, by ethnicity, age or gender)
- linking to targets and outcomes for reducing the key risk factors for type 2 diabetes and other non-communicable diseases.

- Encourage local, regional and national monitoring of the risk factors for diabetes and other non-communicable diseases. Also encourage monitoring of age-specific incidence rates for type 2 diabetes and other non-communicable diseases.

- Encourage local and national decision makers to assess the potential health impact of all new policies on the key risk factors for type 2 diabetes and other non-communicable diseases. Ensure they support any national prevention strategy.

- Clearly signpost national and regional resources, including toolkits and evaluation guides, that will help local services reduce the incidence of type 2 diabetes and other non-communicable diseases.

- Work with national and local commercial partners to encourage and support joint working with local public health teams to meet the national targets.

Recommendation 2
Local joint strategic needs assessments

Who should take action?

- Commissioners and providers of local public health services in partnership with other local authority departments including:
  - adult social care
  - education
  - environmental health
  - planning
  - public transport.

What action should they take?

- Use national and local tools and data from public health data collection agencies, public health reports, the census, indices of deprivation and other sources of high quality data to:
  - identify local communities at high risk of developing type 2 diabetes
  - assess their knowledge, awareness, attitudes and beliefs about the risk factors
  - assess their specific cultural, language and literacy needs.

- Identify successful local interventions and note any gaps in service provision.

- Identify local resources and existing community groups that could help promote healthy eating, physical activity and weight management, particularly within local communities at high risk of developing type 2 diabetes.

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Recommendation 3
Developing a local strategy

Who should take action?

- Commissioners and providers of local public health services in partnership with other local authority departments including:
  - adult social care
  - education
  - environmental health
  - planning
  - public transport.

What action should they take?

- Develop an integrated plan for local activities and programmes aimed at preventing type 2 diabetes and related non-communicable diseases (including cardiovascular disease). This should be based on the joint strategic needs assessment and relevant national strategy, targets and outcomes\(^\text{14}\).
- Those developing strategic plans should consult widely with local health professionals working closely with communities at high risk of developing type 2 diabetes.
- The plan should aim to increase physical activity levels and improve people’s diet and weight management by:
  - identifying and assessing the effectiveness and cost effectiveness of existing local interventions
  - making recommendations for future investment and disinvestment
  - including action to raise awareness of type 2 diabetes and the risk factors for diabetes and other non-communicable diseases
  - creating local environments that encourage people to be more physically active and to adopt a healthier diet (for example, by ensuring local shops stock good quality, affordable fruit and vegetables)
  - targeting specific communities at high risk of developing type 2 diabetes, including people of South Asian, African-Caribbean or black African family origin, and those from lower socioeconomic groups
  - including interventions for individuals who are deemed at particular risk (based on clear criteria about the level of absolute risk that would trigger this provision)\(^\text{15}\).
- Ensure local outcomes and conclusions from the strategic plan are integrated into the local commissioning strategy.

\(^\text{15}\) The second piece of NICE guidance will consider interventions aimed at preventing type 2 diabetes among individuals at high risk.
Recommendation 4
Interventions for communities at high risk of type 2 diabetes

Who should take action?
- Commissioners and providers of local public health services in partnership with:
  - other local authority departments including: children’s services, education, environmental health, leisure, planning, public transport, social housing and social services
  - the NHS including: GPs, practice and community nurses, dietitians, public health nutritionists, doctors and nurses working in acute and emergency care, and occupational therapists
  - the voluntary sector, not-for-profit and non-governmental organisations (include community leaders and trained lay workers).

What action should they take?
- Work in partnership to develop cost-effective physical activity, dietary and weight management interventions. Interventions should take into account the religious beliefs, cultural practices, age and gender, language and literacy of black, minority ethnic and lower socioeconomic groups. (Interventions costing up to £10 per head would need to achieve an average weight loss of about 0.25 kg per head to be cost effective. Those costing up to £100 per head would need to achieve an average weight loss of about 1 kg per head.)
- Identify success criteria in the early stages of development to ensure interventions can be properly evaluated.
- Identify any skills gaps and train or recruit staff to fill the gaps.
- Identify and address barriers to participation. This includes developing communication strategies that are sensitive to the target audience’s language and information requirements.
- Use community resources to improve awareness of the key messages and to increase accessibility to the interventions. For example, involve community organisations and leaders at the development stage and use media, plan events or attend festivals specifically aimed at black and minority ethnic communities and lower socioeconomic groups. Also involve existing community and social groups or clubs, such as toddler groups, pubs, social clubs and local sports clubs.
- Where they exist, use community links, outreach projects and lay or peer workers (from black and minority ethnic communities and from lower socioeconomic groups) to deliver interventions.
- Where necessary, train lay and peer workers in how to plan, design and deliver community-based health promotion activities. Training should be based on proven training models and evaluation techniques. It should give participants the chance to practice their new skills in the community. It should also encourage them to pass on their knowledge to their peers.
- Lay and peer workers and health professionals should identify and encourage ‘community champions’ (for example, religious and community leaders) to promote healthy eating and physical activity.
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- Encourage lay and peer workers to get other members of their community involved.\(^{16}\)
- Ensure lay and peer workers are part of a wider team led by health professionals. They should be involved in the planning, design and delivery of credible and culturally appropriate messages.\(^{16}\) This includes helping people to develop the practical skills they need to adopt a healthier lifestyle. For example, they should be able to run nutrition education sessions (theory and practice) or physical activity sessions. Management and supervision of these activities should be provided by the health professionals leading these teams.
- Commission culturally appropriate and financially accessible weight management programmes either from the NHS or non-NHS providers, based on the guiding principles for effective weight-loss programmes. These should be provided in community settings in areas where populations at high risk of type 2 diabetes live. (For example, they could be provided in religious venues or community and social clubs.)
- Ensure the systems or initiatives used to assess someone from a high-risk community are culturally appropriate.\(^{17}\)
- Ensure identification and assessment systems or initiatives are linked to effective services and interventions for individuals deemed to be at high risk.\(^{17}\)

**Recommendation 5**

**Conveying messages to the whole population**

**Who should take action?**

- Commissioners and providers of national public health services working in partnership with:
  - other government departments allied to health
  - local commissioners and providers of public health services
  - the commercial sector
  - national voluntary sector, not-for-profit and non-governmental organisations.

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\(^{16}\) This is an edited extract from a recommendation that appears in ‘Community engagement’ (2008). NICE public health guidance 9.

\(^{17}\) The second piece of NICE guidance will consider interventions aimed at preventing type 2 diabetes among individuals at high risk.
What action should they take?

- Ensure healthier lifestyle messages to prevent non-communicable diseases (including type 2 diabetes, cardiovascular disease and some cancers) are consistent, clear and culturally appropriate. Ensure they are integrated within other health promotion campaigns or interventions.

- Address any misconceptions about the risk of diabetes and other non-communicable diseases that can act as barriers to change. This includes the belief that illness is inevitable (fatalism) and misconceptions about what constitutes a healthy weight. Also address any stigma surrounding the conditions.

- Ensure any national media (for example, television and online social media) used to convey messages or information is culturally appropriate for the target audience.

- Identify and make use of existing campaign materials, messages and resources, including those from other countries, where appropriate. Messages and materials should:
  - highlight the need to reduce the amount of time spent being sedentary
  - highlight the importance of being physically active, adopting a healthy diet and being a healthy weight
  - increase awareness of healthier food choices, and the calorie content and nutritional value of standard-portion size meals and drinks.

Recommendation 6
Conveying messages to the local population

Who should take action?

- Commissioners and providers of local public health services in partnership with:
  - other local authority departments including education and leisure
  - the NHS including: GPs, practice and community nurses, dietitians, public health nutritionists, doctors and nurses working in acute and emergency care, and occupational therapists
  - the voluntary sector, not-for-profit and non-governmental organisations (including community leaders).

What action should they take?

- Work with local practitioners, role models and peers to tailor national messages for the local community about preventing type 2 diabetes and other non-communicable diseases (such as cardiovascular disease and some cancers).

- Ensure healthier lifestyle messages are consistent, clear and culturally appropriate. Ensure they are integrated within other local health promotion campaigns or interventions. Provide details of the local support services available.
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• Address any misconceptions in the local community about the risk of diabetes and other non-communicable diseases that could act as a barrier to change. This includes the belief that illness is inevitable (fatalism) and any misconceptions about what constitutes a healthy weight. Also address any stigma surrounding these conditions.

• Ensure messages and information are disseminated locally to groups at higher risk of type 2 diabetes than the general population, including black and minority ethnic and lower socioeconomic groups. Use local newspapers, online social media and local radio channels targeted at these groups. Also make use of local shops and businesses, community workers and groups, social establishments, educational institutions, workplaces, places of worship and local health care establishments, for example, hospitals.

• Offer communities support to improve their diet and physical activity levels, and ensure they are aware of the importance of both.

Recommendation 7
Promoting a healthy diet: national action

Who should take action?

• Commissioners and providers of national public health services working in partnership with:
  – other government departments
  – the commercial sector
  – the voluntary sector, not-for-profit and non-governmental organisations
  – local commissioners and providers of public health services.

What action could they take?

• Identify and work with a range of commercial partners to promote the provision of healthier food choices. For example:
  – Work with food manufacturers to improve the composition of prepared foods, where needed, to decrease calories, saturated fat and salt content. Encourage manufacturers to achieve any nationally agreed reformulation targets.
  – Work with caterers across the industry to help them reduce the amount of calories, saturated fat and salt in recipes and to use healthier cooking methods. They should also ensure healthier options are an integral part of all menus.
  – Work with food retailers to develop pricing structures that favour healthier food and drink choices.
– Work with food retailers to ensure a range of portion sizes are available and that they are priced accordingly. This is particularly important for energy-dense foods and drinks.

– Work with food manufacturers, caterers and retailers to provide clear, non-ambiguous and consistent nutrition information. This includes prominent displays of calorie content on the front of packaging and the use of clear signage for unpackaged food and drink. If calorie content is not known, consider indicating healthier options, such as food prepared using healthier ingredients or cooking methods.

– Support the development of home-cooking resources that give information on nutritional content (for example, web-based recipe sites). Offer practical advice on preparing healthier meals, including the ingredients and cooking methods to use.

• Monitor the population’s diet to determine the success of national-level interventions.

• Assess the health impact of all initiatives and interventions aimed at encouraging people to have a healthier diet.

Recommendation 8
Promoting a healthy diet: local action

Who should take action?

• Commissioners and providers of local public health services in partnership with:
  – other local authority departments including: environmental health, education, leisure, social services, planning and public transport
  – the NHS including: dietitians and public health nutritionists
  – voluntary sector, not-for-profit and non-governmental organisations (include community leaders and trained lay workers)
  – local food retailers and caterers
  – large and medium-sized employers.
What action should they take?

- Make people aware of their eligibility for welfare benefits and wider schemes that will supplement the family’s food budget and improve their eating patterns. This includes free school meals, free school fruit and Healthy Start food vouchers.
- Provide information on how to produce healthier meals and snacks on a budget.
- Work with local food retailers, caterers and workplaces to encourage local provision of affordable fruit and vegetables and other food and drinks that can contribute to a healthy, balanced diet.
- Provide nutrition education sessions (theory and practice) at times to suit people with children (or provide a crèche) or to fit with working hours. Sessions should take place in acceptable, accessible venues such as children’s centres.
- Use existing planning mechanisms (for example, national planning guides or toolkits) to increase the opportunities available for local people to adopt a healthy, balanced diet. For example, ensure:
  - food retailers that provide a wide range of healthier products at reasonable cost are readily accessible locally, either on foot or via public transport
  - planning policies consider healthier eating when reviewing applications for new food outlets.
- Encourage local retailers to use incentives (such as promotional offers) to promote healthier food and drink options. The aim should be to make the healthier choice the easiest and relatively cheaper choice. The retailers targeted may include regional and national supermarkets and convenience store chains, as well as street markets and small independent shops.
- Encourage local caterers to include details in menus on the calorie content of meals to help consumers make an informed choice. If the nutritional value of recipes is not known, they should consider listing ingredients and describing the cooking methods used.
- Ensure local authorities and NHS organisations develop internal policies to help prevent employees from being overweight or obese. Encourage local employers to develop similar policies. This is in line with existing NICE guidance and (in England) the local obesity strategy. For example, organisations could promote healthier food and drink choices in staff restaurants, hospitality suites, vending machines and shops by using posters, pricing and the positioning of products.
Recommendation 9
Promoting physical activity: national action

Who should take action?

- Commissioners and providers of national public health services working in partnership with:
  - other government departments
  - organisations with a remit for town planning
  - organisations with a remit for increasing physical activity levels
  - commissioners and providers of local public health services
  - the voluntary sector, not-for-profit and non-governmental organisations.

What action could they take?

- Ensure the benefits of physical activity – and the national recommendations for physical activity – are made clear to encourage people to be more physically active.
- Support a shift in the population towards being more physically active by encouraging even small changes.
- Use planning regulations to maximise the opportunities available to be physically active.
- Encourage the use of national and local planning guidance to ensure physical activity is a primary objective of transport policy, and when designing new buildings and the wider built environment.
- Monitor the population’s overall physical activity levels to determine the success of national interventions. Assess the health impact of all initiatives and interventions to encourage physical activity.

Recommendation 10
Promoting physical activity: local action

Who should take action?

- Commissioners and providers of local public health services in partnership with:
  - other local authority departments including: planning, regeneration, public transport, leisure, sports and parks
  - schools with community recreation facilities (for example, as part of the extended schools programme)
  - the NHS including: GPs, practice and community nurses, community pharmacists and occupational therapists
  - voluntary sector, not-for-profit and non-governmental organisations (include community leaders and trained lay workers)
  - the fitness industry
  - large and medium-sized employers.
What action should they take?

- Ensure local planning departments use existing mechanisms (for example, national planning guides) to:
  - prioritise the need for people (including those whose mobility is impaired) to be physically active as a routine part of their daily life (for example, when developing the local infrastructure and when dealing with planning applications for new developments)
  - provide open or green spaces to give people local opportunities for walking and cycling
  - make sure local facilities and services are easily and safely accessible on foot, by bicycle and by other modes of transport involving physical activity (they should consider providing safe cycling routes and secure parking facilities for bikes)
  - provide for physical activities in safe locations that are accessible locally either on foot or via public transport
  - encourage people to be physically active inside buildings, for example, by using the internal infrastructure of buildings to encourage people to take the stairs rather than the lift\textsuperscript{18}.
- Enable and encourage people to achieve the national recommended levels of physical activity by including activities such as walking, cycling or climbing stairs as part of their everyday life.
- Assess the type of physical activity opportunities needed locally and at what times and where. Consider social norms, family practices and any fears people may have about the safety of areas where physical activities take place (this includes fears about how safe it is to travel there and back).
- Map physical activity opportunities against local needs and address any gaps in provision.
- Ensure commissioned leisure services are affordable and acceptable to those at high risk of developing type 2 diabetes. This means providing affordable childcare facilities. It also means public transport links should be affordable and the environment should be culturally acceptable. For example, local authorities should consider the appropriateness of any videos and music played. They should also consider providing single-gender facilities, exercise classes, swimming sessions and walking groups – for both men and women.
- Provide information on local, affordable, practical and culturally acceptable opportunities to be more active. If cultural issues affect people’s ability to participate, work with them to identify activities which may be acceptable. (This may include, for example, single-gender exercise and dance classes, or swimming sessions with same-gender lifeguards.)

\textsuperscript{18} This is an edited extract from a recommendation that appears in ‘Physical activity and the environment’ (2008). NICE public health guidance 8.
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• Encourage local employers to develop policies to encourage employees to be more physically active, for example, by using healthier modes of transport to and from work. Walking and cycling can be encouraged by providing showers and secure cycle parking. Signposting and improved decor could encourage employees to use the stairs rather than the lift. In addition, people could be encouraged to be active in lunch breaks and at other times through organised walks and subsidies for local leisure facilities. Flexible working policies and incentives that promote physical activity in the workplace should be considered.

• Ensure the basic training for professional fitness instructors covers: the role of physical activity in improving people’s health, how to get marginalised groups involved and cultural issues that may prevent them from participating.

Recommendation 11
Training those involved in promoting healthy lifestyles

Who should take action?

• Commissioners and providers of national and local public health services in partnership with:
  – royal colleges and professional associations, further and higher education training institutions, and other organisations responsible for competencies and continuing professional development programmes for health professionals
  – other local authority departments including education and leisure services
  – voluntary sector, not-for-profit and non-governmental practitioners
  – the commercial sector.

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20 For further guidance on developing programmes and policies to encourage and support employees to be more physically active, see ‘Promoting physical activity in the workplace’ (NICE public health guidance 13).
What action should they take?

- Ensure training programmes for those responsible for, or involved in, promoting a healthy lifestyle cover:
  - diversity, including cultural, religious and economic issues, delivering health promotion interventions in a non-judgemental way, and meeting age, gender, language and literacy needs
  - how to identify communities at increased risk of developing type 2 diabetes
  - strategies for changing behaviour (for those devising health promotion interventions)
  - how to provide advice on healthy eating, physical activity and weight management in relation to the prevention of type 2 diabetes and related non-communicable diseases
  - how to challenge stigma and dispel myths around type 2 diabetes.

- Ensure those responsible for, or involved in, promoting healthy lifestyle choices are given time and support to develop and maintain the skills described above.

- Monitor health professionals’ knowledge and awareness of how to encourage people to adopt a healthy lifestyle. Use, for example, personal development plans and annual reviews. Ensure they keep their knowledge and practical skills up-to-date.

- Ensure training programmes for all health professionals (including undergraduate, continuing professional development and, where appropriate, post-graduate training):
  - incorporate the knowledge and skills needed to ensure health promotion interventions are culturally sensitive
  - cover nutrition, physical activity and weight management in relation to the prevention of type 2 diabetes
  - are focused, structured and based on proven models and evaluation techniques
  - offer opportunities to practice new skills in the community
  - encourage the sharing of knowledge among colleagues
  - provide up-to-date information on topics such as nutrition advice and physical activity (information should be updated regularly).
Glossary

**Body mass index**
Body mass index (BMI) is commonly used to measure whether or not adults are a healthy weight or underweight, overweight or obese. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m²).

**Community**
A group of people who have common characteristics. Communities can be defined by location, race, ethnicity, age, occupation, a shared interest (such as using the same service), a shared belief (such as religion or faith) or other common bonds. A community can also be defined as a group of individuals living within the same geographical location (such as a hostel, a street, a ward, town or region).

**Community champions**
Community champions are inspirational figures, community entrepreneurs, mentors or leaders who ‘champion’ the priorities and needs of their communities and help them build on their existing skills. They drive forward community activities and pass on their expertise to others. They also provide support, for example, through mentoring, helping people to get appropriate training and by helping to manage small projects.

**Diabetes**
Diabetes is caused when there is too much glucose in the blood and the body cannot use it as ‘fuel’ because the pancreas does not produce any or sufficient insulin to help it to enter the body’s cells. Alternatively, the problems may be caused because the insulin produced may not work properly (‘insulin resistance’). Also see ‘glucose’ and ‘insulin’.

**Glucose**
Glucose comes from digesting carbohydrate and is also produced by the liver. Carbohydrate comes from many different kinds of food and drink, including starchy foods such as bread, potatoes and chapatis; fruit; some dairy products; sugar and other sweet foods.

**HbA₁c**
Glycated haemoglobin (HbA₁c) forms when red cells are exposed to glucose in the plasma. The HbA₁c test reflects average plasma glucose over the previous eight to 12 weeks. Unlike the oral glucose tolerance test, an HbA₁c test can be performed at any time of the day and does not require any special preparation such as fasting.

HbA₁c is a continuous risk factor for type 2 diabetes. This means there is no fixed point when people are or are not at risk. The World Health Organization recommends a level of 6.5% (48 mmol/mol) for HbA₁c as the cut-off point for diagnosing type 2 diabetes in non-pregnant adults.

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Impaired glucose tolerance
See definition below of ‘pre-diabetes’.

Insulin
Insulin is the hormone produced by the pancreas that allows glucose to enter the body's cells, where it is used as fuel for energy. It is vital for life\(^{22}\).

Lay or community workers
People recruited from the local community or subgroup of the population to assist in the delivery of an intervention to a group of people who they identify with and are knowledgeable about. They might be peers or from the wider community but they are not professional health or public health workers.

Oral glucose tolerance test
An oral glucose tolerance test involves measuring the blood glucose level after fasting, and then 2 hours after drinking a standard 75 g glucose drink. Fasting is defined as no calorie intake for at least 8 hours. More than one test on separate days is required for diagnosis in the absence of hyperglycaemic symptoms.

Physical activity
The full range of human movement, from competitive sport and exercise to active hobbies, walking, cycling and the other physical activities involved in daily living.

Pre-diabetes
Where used in this guidance, the term pre-diabetes refers to raised (but not diabetic) blood glucose levels (also known as non-diabetic hyperglycaemia, impaired glucose regulation). It indicates the presence of impaired fasting glucose and/or impaired glucose tolerance. People with pre-diabetes are at increased risk of getting type 2 diabetes. They are also at increased risk of a range of other conditions including cardiovascular disease.

Socioeconomic group
A person’s socioeconomic group is defined by a combination of their occupation, income level and education level. There is a strong relationship between socioeconomic group and health, with people from lower socioeconomic groups generally experiencing poorer health than those from higher socioeconomic groups.

Type 2 diabetes
Type 2 diabetes (previously termed non-insulin dependent diabetes) results from reduced tissue sensitivity to insulin (insulin resistance) and/or reduced insulin production.

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Implementation tools
NICE has developed tools to help organisations put this guidance into practice. For details see our website at www.nice.org.uk/guidance/PH35

Further information
You can download the following from www.nice.org.uk/guidance/PH35
- A quick reference guide (this document) for professionals and the public.
- The guidance – the recommendations, details of how they were developed and evidence statements.
- Details of all the evidence that was considered and other background information.

For printed copies of the quick reference guide, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk and quote N2539. The NICE website has a screen reader service called Browsealoud which allows you to listen to our guidance. Click on the Browsealoud logo on the NICE website to use this service.

Related NICE guidance
For more information about NICE guidance that has been issued or is in development, see www.nice.org.uk

Published

• Diabetes (type 1 and 2) – inhaled insulin. NICE technology appraisal guidance 113 (2006). Available from www.nice.org.uk/guidance/TA113


Under development
• Preventing the progression of pre-diabetes to type 2 diabetes in adults. NICE public health guidance (publication expected May 2012).

Updating the recommendations
This guidance will be reviewed 3 years after publication to determine whether all or part of it should be updated. Information on the progress of any update will be posted at www.nice.org.uk/guidance/PH35

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