National Institute for Health and Care Excellence

Centre for Public Health Excellence

Review decision: March 2014

Consideration of an update of the public health guidance on 'Prevention of cardiovascular disease' (PH25)

1 Background information

Guidance issue date: June 2010

3 year review: January 2014

2 Process for updating guidance

Public health guidance is reviewed 3 years after publication to determine whether all or part of it should be updated.

The process for updating NICE public health guidance is as follows:

- NICE convenes an expert group to consider whether any new evidence or significant changes in policy and practice would be likely to lead to substantively different recommendations. The expert group consists of selected members (including co-optees) of the original committee that developed the guidance, key experts in the area, and representatives of relevant government departments. The Expert Group may receive a review of the evidence produced by the Evidence updates team.

- NICE consults with stakeholders on its proposal for updating the guidance (this review consultation document).

- NICE may amend its proposal, in light of feedback from stakeholder consultation.

- NICE determines where any guidance update fits within its work programme, alongside other priorities.

In this case the assessment of the evidence produced for the expert group for this guidance was informed by the production and assessment of evidence for an Evidence Update.

Evidence Updates are produced by NICE and currently published on NICE's Evidence Search website, a service that enables access to authoritative clinical and non-clinical evidence and best practice through a web based portal, and managed by NICE. Evidence Updates highlight new evidence relating to published accredited guidance, where that evidence supports current guidance, or where new evidence is identified that may be of interest to practitioners . They are based on the scope of the particular guidance they relate to, and provide a commentary on a selection of new articles published since the guidance was issued. They do not replace full guidance.

More information on the process and methods used to produce evidence updates can be found here[1]. The Evidence Update on preventing cardiovascular disease will be published alongside the final review decision for this guidance.

3 Consideration of the evidence and practice

The expert group discussed published and ongoing research of relevance to the current recommendations, informed by literature searches (see below). They also discussed changes to policy, legislation and organisations that might affect the recommendations.

Literature searches, selection and appraisal

The literature was searched to identify studies and reviews relevant to the scope. Searches were conducted of the following databases, covering the dates June 2008 (the end of the search period of NICE public health guidance 25) to June 2013:

[1] http://www.evidence.nhs.uk/nhs-evidence-content/evidence-updates

- ASSIA (Applied Social Science Index and Abstracts)
- CDSR (Cochrane Database of Systematic Reviews)
- CENTRAL (Cochrane Central Register of Controlled Trials)
- CINAHL (Cumulative Index to Nursing and Allied Health Literature)
- DARE (Database of Abstracts of Reviews of Effects)
- EconLit (American Economic Association electronic bibliography)
- EMBASE (Excerpta Medica database)
- HMIC (Health Management Information Consortium) database
- HTA (Health Technology Assessment) database
- MEDLINE (Medical Literature Analysis and Retrieval System Online)
- MEDLINE In-Process
- NHS EED (Economic Evaluation Database)
- PsycINFO

Full details are available in the Evidence Update [link}
The chair of the expert group (see appendix 2) prioritised papers from this shortlist which resulted in a final set of 37 papers for consideration and discussion by the expert group. An additional 3 papers were circulated after the meeting. The criteria for prioritising papers can be viewed in Appendix 3. These papers were critically appraised by the NICE team (following CPH methods[2] for appraisal of qualitative and quantitative studies), All references identified through the searches can be viewed in Appendix 1.

The original inclusion criteria, methods and considerations used in developing PH25 can be accessed through the full guidance document[3]

The final set of papers was discussed by the expert group at their meeting on the 9th September 2013, and their feedback has informed the proposed review decision and is summarised below.

[2] http://www.nice.org.uk/aboutnice/howwework/developingnicepublichealthguidance/publichealthguidanceprocessandmethodguides/public_health_guidance_process_and_method_guides.jsp
[3] http://publications.nice.org.uk/prevention-of-cardiovascular-disease-ph25

Of the 37 papers, 20 were identified by the panel at the meeting as containing new evidence particularly relevant to the guidance, and their findings and implications were discussed in detail. 17 papers were rejected as being unsuitable for either because they were either out of scope or of poor methodological quality. In addition to these papers, 3 studies were circulated after the meeting, giving a total of 23 records included in the Evidence Update.

Further details on all of the included papers will be provided in the forthcoming Evidence Update, due for publication in January 2014.

The expert group was asked to discuss the included papers in relation to the current recommendations and guidance, and advise NICE on the need to update the guidance in light of the following questions:

- *Is there significant new evidence that would change the existing recommendations?*
- *Is there significant new evidence that could inform new recommendations?*
- *Are the recommendations still relevant and useful?*
- *Could the recommendation be amended to improve implementation?*
- *Will changes in policy or practice affect the recommendations?*

The chair of the expert group summarised discussion at the end of the meeting and concluded the advice from the panel.

Please note that the new pieces of public health guidance in development referred to below are listed in section 5, along with other related published NICE guidance.

Advice from the expert panel: Policy context

The expert group discussed the prioritised papers and noted that these represent a small subgroup of the potentially relevant material.

They noted that while consideration of the smaller set of papers is appropriate for an evidence review and to guide the decision about a possible update of the guidance any possible guidance process should consider the full range of relevant material.

The expert group felt that the focus on diet was appropriate for the review, given the pace of change in this topic, and this should be reflected in the proposals relating to updating.

The discussions identified three key areas that the group felt should be addressed in an update of the guidance. Firstly, although not directly reflected in the material reviewed, the group emphasised that the recommendations relating to subnational delivery of interventions was based on responsibilities, structures and frameworks that have changed significantly since publication. As a result, recommendations 13 – 24 would need to be revisited to ensure that they reflect current structures.

Evidence relating to salt, saturated, unsaturated fats and trans fats, the role of sugar and overall dietary balance has accumulated further since publication. The group felt this included evidence that emphasised the speed and significance of the impact of approaches. As a result, they felt that it was appropriate to recommend updating the guidance to reconsider approaches to dietary fats, sugar and salt. Overall, the material would be likely to allow further refinement of the recommendations and the addition of specific detail.

In particular, the expert group noted the implications of new evidence on the possible speed and reach of national policy and legislative approaches. This includes the importance of both a population approach, including legislative interventions, and a focus on higher risk groups. As a result, they felt it appropriate that these aspects are considered in a future update.

4 Stakeholder consultation

The review proposal was put out for stakeholder consultation from 17 January – 31 January 2014. Responses were received from 21 stakeholder groups. Organisations responding included the Department of Health, Public Health England, 4 Royal Colleges (2 Colleges – the Royal College of Nursing and the Royal College of Paediatrics and Child Health) and organisations with interests in particular aspects of cardiovascular disease.

Overall, there was general support for the suggestion to update the recommendations relating to salt, fats and sugar. In particular, the role of sterols and stanols in those at higher risk was emphasized by several respondents. Two organizations expressed some concern that there may be new evidence to challenge the benefits of salt reduction to 3g/day.

Other areas suggested for consideration in an updated guidance included air pollution, smoking, alcohol, obesity, the role of breastfeeding and early life experiences and mental health as a factor influencing lifestyles.

Two organisations suggested that insufficient attention had been paid in the original guidance to the needs of Lesbian, Gay and Transgender people.

A small number of respondents directly addressed the suggestion that legislative and national policy approaches should be updated at a later date. The Department of Health noted that NICE public health guidance was of most value when it focuses on advising local services. In their view any updating of the guidance should exclude national public policy and legislation. The British Cardiovascular Society said that they ‘would welcome specific recommendations for national legislation on public health issues arising from this review which can then be benchmarked in subsequent updates’, noting that such approaches had been successful in tobacco control but were absent

in other areas such as food and transport. CASH (Consensus action on salt and health) noted that targets for salt reduction had not been set.

5 Implementation and post publication feedback

Cardiovascular disease includes a number of conditions such as ischaemic heart disease (heart attack and angina) and stroke. Around 13.9% of men and 13.4% of women report having been diagnosed with cardiovascular disease, and it accounts for 29% of all deaths in England and Wales. Prevalence of CVD increases with age, varying from 3.3% of men and 4.8% of women aged 16-24 to 53.8% and 31.1% respectively aged 85 and over. Prevalence also varies with measures of deprivation. For instance, in least deprived areas prevalence is 6% for men and 3% of women compared to 11% and 7% respectively in the most deprived.

Further information is available in the Health Survey for England 2011

The NICE implementation programme notes that it has not been able to identify any routinely collected data in order to determine the uptake of this guidance.

Overall, responses received by the implementation team from stakeholders relating to the original guidance were receptive to recommendations on regional delivery (13 – 18) and indicated that they would overlap with some work already underway in this area for example, the Change 4 life programme.

Challenges for implementation included:

- The difficulty of measuring the effectiveness of regional CVD prevention initiatives and programmes
- Indicators, and the need for direction on how programme and commissioning leads can consistently monitor success
- How best to identify and agree programme coordinating leads and funding streams when initiatives may be delivered over localities wider than PCT/LA regions

- Identifying leads with responsibility for implementing the recommendations
- How best to monitor delivery, and who could provide a monitoring role to ensure the recommendations are effectively put into practice.

One stakeholder noted that the recommendations in the published guidance were too broad to be able to answer a single yes or no answer about their implementation (e.g. public sector food provision - cannot say that all food offered in all venues on all occasions meets the recommendations) - but that they were useful in prompting them to go on and ask more questions.

6 Related NICE guidance

The following NICE guidance is related to PH25:

Related NICE guidance in development:

- Excess winter deaths NICE public health guidance. Publication expected January 2015
- Exercise referral schemes NICE public health guidance. Publication expected September 2014
- Overweight and obese adults – lifestyle weight management NICE public health guidance. Publication expected May 2014
- Smoking cessation in secondary care – acute, maternity and mental health services NICE public health guidance. Publication expected November 2013
- Overweight and obese children and young people – lifestyle weight management services NICE public health guidance. Publication expected October 2013
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Related published NICE guidance:

- Tobacco - harm-reduction approaches to smoking (2013) NICE public health guidance. Available from www.nice.org.uk/guidance/PH45
- Physical activity: Brief advice for adults in primary care (2013). Available from www.nice.org.uk/guidance/PH44
- Obesity – working with local communities (2012). Available from www.nice.org.uk/guidance/PH42

- Walking and cycling (2012). Available from www.nice.org.uk/guidance/PH41
- Smokeless tobacco cessation (2012). Available from www.nice.org.uk/guidance/PH39
- Quitting smoking in pregnancy and childbirth (2010). Available from www.nice.org.uk/guidance/PH26
- Alcohol-use disorders: preventing harmful drinking. NICE public health guidance 24 (2010). Available from www.nice.org.uk/guidance/PH24
- Promoting physical activity for children and young people. NICE public health guidance 17 (2009). Available from www.nice.org.uk/guidance/PH17
- Cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease. NICE clinical guideline 67 (2008). Available from www.nice.org.uk/guidance/CG67
- Identifying and supporting people most at risk of dying prematurely. NICE public health guidance 15 (2008). Available from www.nice.org.uk/guidance/PH15
- Preventing the uptake of smoking by children and young people. NICE public health guidance 14 (2008). Available from www.nice.org.uk/guidance/PH14
- Promoting physical activity in the workplace. NICE public health guidance 13 (2008). Available from www.nice.org.uk/guidance/PH13
- Maternal and child nutrition. NICE public health guidance 11 (2008). Available from www.nice.org.uk/guidance/PH11
- Smoking cessation services. NICE public health guidance 10 (2008). Available from www.nice.org.uk/guidance/PH10

- Community engagement. NICE public health guidance 9 (2008). Available from www.nice.org.uk/guidance/PH9

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

- Behaviour change. NICE public health guidance 6 (2007). Available from www.nice.org.uk/guidance/PH6

- Workplace interventions to promote smoking cessation. NICE public health guidance 5 (2007). Available from www.nice.org.uk/guidance/PH5

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

- Brief interventions and referral for smoking cessation in primary care and other settings. NICE public health guidance 1 (2006). Available from www.nice.org.uk/guidance/PH1

- Obesity: 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/guidance/CG43

- Hypertension: management of hypertension in adults in primary care. NICE clinical guideline 34 (2006). Available from www.nice.org.uk/guidance/CG34

Related NICE pathways

- Smoking prevention and cessation Last updated September 2012
- Diabetes Last updated June 2013
- Hypertension Last updated September 2013
- Obesity: working with local communities Last updated November 2012
- Physical activity Last updated June 2013
- Smoking Last updated August 2013
- Walking and cycling Last updated June 2013

7 Equality and diversity considerations

There has been no evidence to indicate that the guidance does not comply with anti-discrimination and equalities legislation.

8 Conclusion

In conclusion, new evidence suggests ways in which recommendations might be updated. No new evidence has been identified which suggests any of the existing recommendations should be reversed. The evidence strengthens and supports the current guidance.
There have been significant changes to the policy context since the original guidance was published, and new evidence is available that could add to the recommendations.

The expert group felt that (i) updating the guidance to take account of the new policy and structural landscape was necessary. In addition, they felt (ii) that new evidence meant that recommendations relating to salt, fats and sugar should be updated. They also felt (iii) that evidence relating to legislative and national policy approaches to preventing cardiovascular disease should be considered. This is a potentially large scope and it is proposed therefore to deal with (i) and (ii) first and (iii) at a later date.

9 Review Decision

The guidance should be updated in light of new evidence and changes to the sub-national structures of delivery.

Centre for Public Health, March 2014

References not included in Appendix 1

NHS Evidence (2012) Evidence Updates: Interim process and methods statement. NICE http://www.evidence.nhs.uk/nhs-evidence-content/evidence-updates/evidence-updates-interim-process-and-methods-statement-july-2012.pdf

NICE (2012) Methods for the development of NICE public health guidance: Third edition. http://publications.nice.org.uk/methods-for-the-development-of-nice-public-health-guidance-third-edition-pmg4

Appendix 1: Studies / papers included for discussion by the panel.

Studies included in the Evidence Update

Angell SY, Cobb LK, Curtis CJ et al. (2012) Change in trans fatty acid content of fast-food purchases associated with New York City's restaurant regulation: a pre-post study. Annals of Internal Medicine 157: 81–6

Barton P, Andronis L, Briggs A et al. (2011) Effectiveness and cost effectiveness of cardiovascular disease prevention in whole populations: modelling study. BMJ 343: d4044

Bibbins-Domingo K, Chertow GM, Coxson PG et al. (2010) Projected effect of dietary salt reductions on future cardiovascular disease. New England Journal of Medicine 362:590–9

Buckland G, Gonzalez CA, Agudo A et al. (2009) Adherence to the Mediterranean diet and risk of coronary heart disease in the Spanish EPIC cohort study. American Journal of Epidemiology 170: 1518–29

Buckland G, Mayen AL, Agudo A et al. (2012) Olive oil intake and mortality within the Spanish population (EPIC-Spain). American Journal of Clinical Nutrition 96:142–9

Chiuve SE, Rexrode KM, Spiegelman D et al. (2008) Primary prevention of stroke by healthy lifestyle. Circulation 118: 947–54

Cobiac LJ, Magnus A, Lim S et al. (2012) Which interventions offer best value for money in primary prevention of cardiovascular disease? PLoS One 7: e41842

Cohen L, Curhan G, Forman J (2012) Association of sweetened beverage intake with incident hypertension. Journal of General Internal Medicine 27: 1127–34

Downs SM, Thow AM & Leeder SR. *The effectiveness of policies for reducing dietary trans fat: a systematic review of the evidence*. Bull World Health Organ 2013;91:262–269H

Dryden R, Williams B, McCowan C et al. (2012) What do we know about who does and does not attend general health checks? Findings from a narrative scoping review. BMC Public Health 12: 723

Duffey KJ, Gordon-Larsen P, Shikany JM et al. (2010) Food price and diet and health outcomes: 20 years of the CARDIA Study. Archives of Internal Medicine 170: 420-6

Ebrahim S, Taylor F, Ward K et al. (2011) Multiple risk factor interventions for primary prevention of coronary heart disease. Cochrane Database of Systematic Reviews issue 1: CD001561

Estruch R, Ros E, Salas-Salvado J et al. (2013) Primary prevention of cardiovascular disease with a Mediterranean diet. New England Journal of Medicine 368: 1279–90

Gase LN, Kuo T, Dunet D et al. (2011) Estimating the potential health impact and costs of implementing a local policy for food procurement to reduce the consumption of sodium in the county of Los Angeles. American Journal of Public Health 101: 1501–7

Gyles CL, Carlberg JG, Gustafson J et al. (2010) Economic valuation of the potential health benefits from foods enriched with plant sterols in Canada. Food and Nutrition Research 54: 5113

Harris J, Felix L, Miners A et al. (2011) Adaptive e-learning to improve dietary behaviour: a systematic review and cost-effectiveness analysis. Health Technology Assessment 15: 37

Krogsbøll LT, Jørgensen KJ, Grønhøj Larsen C, Gøtzsche PC. *General health checks in adults for reducing morbidity and mortality from disease*. Cochrane Database of Systematic Reviews 2012, Issue 10. Art. No.: CD009009.

Lloyd-Williams F, O'Flaherty M, Mwatsama M et al. (2008) Estimating the cardiovascular mortality burden attributable to the European Common Agricultural Policy on dietary saturated fats. Bulletin of the World Health Organization 86: 535–41

Mozaffarian D, Micha R, Wallace S (2010) Effects on coronary heart disease of increasing polyunsaturated fat in place of saturated fat: a systematic review and meta-analysis of randomized controlled trials. PLoS Medicine 7: e1000252

O'Flaherty M, Flores-Mateo G, Nnoaham K et al. (2012) Potential cardiovascular mortality reductions with stricter food policies in the United Kingdom of Great Britain and Northern Ireland. Bulletin of the World Health Organization 90: 522–31

Shankar B, Brambila-Macias J, Traill B et al. (2013) An evaluation of the UK Food Standards Agency's salt campaign. Health Economics 22: 243–50

Toft U, Kristoffersen L, Ladelund S et al. (2008) The impact of a population-based multi-factorial lifestyle intervention on changes in long-term dietary habits: the Inter99 study. Preventive Medicine 47: 378–83

Waters E, de Silva-Sanigorski A, Hall BJ, Brown T, Campbell KJ, Gao Y, Armstrong R, Prosser L, Summerbell CD. *Interventions for preventing obesity in children*. Cochrane Database of Systematic Reviews 2011, Issue 12. Art. No.: CD001871.

Wendel-Vos GC, Dutman AE, Verschuren WM et al. (2009) Lifestyle factors of a five-year community-intervention program: the Hartslag Limburg intervention. American Journal of Preventive Medicine 37: 50–6

Studies not included in Evidence Update

Arcand J, Mendoza J, Qi Y et al. (2013) Results of a national survey examining Canadians' concern, actions, barriers, and support for dietary sodium reduction interventions. Canadian Journal of Cardiology 29: 628–31

Bonaccio M; Di CA; Costanzo S ;De LF; Olivieri M; Donati MB; de GG; Iacoviello L; Bonanni A; Mass media information and adherence to Mediterranean diet: results from the Moli-sani study

Boone-Heinonen J; Gordon-Larsen P; Kiefe CI; Shikany JM; Lewis CE; Popkin BM; Fast food restaurants and food stores: longitudinal associations with diet in young to middle-aged adults: the CARDIA study

Cobiac LJ;Vos T;Veerman JL; Cost-effectiveness of interventions to promote fruit and vegetable consumption.

Crouch R;Wilson A;Newbury J; A systematic review of the effectiveness of primary health education or intervention programs in improving rural women's knowledge of heart disease risk factors and changing lifestyle behaviours.

Dallongeville J, Dauchet L, de Mouzon O et al. (2011) Increasing fruit and vegetable consumption: a cost-effectiveness analysis of public policies. European Journal of Public Health 21: 69–73

Fleming P;Godwin M; Lifestyle interventions in primary care: systematic review of randomized controlled trials.

Forster M;Veerman JL;Barendregt JJ;Vos T; Cost-effectiveness of diet and exercise interventions to reduce overweight and obesity

Grimes CA; Riddell LJ; Nowson CA; Consumer knowledge and attitudes to salt intake and labelled salt information.

Hollar D;Messiah SE;Lopez-Mitnik G;Hollar TL;Almon M;Agatston AS; Healthier options for public schoolchildren program improves weight and blood pressure in 6- to 13-year-olds

Hopper I; Billah B; Skiba M; Krum H; Prevention of diabetes and reduction in major cardiovascular events in studies of subjects with prediabetes: meta-analysis of randomised controlled trials.

Jorgensen T;Capewell S;Prescott E;Allender S;Sans S;Zdrojewski T;de BD;De SJ;Franco OH;Logstrup S;Volpe M;Malyutina S;Marques-Vidal P;Reiner Z;Tell GS;Verschuren WM;Vanuzzo D;(on behalf of the PEP section of the EACPR); Population-level changes to promote cardiovascular health

Mozaffarian D;Afshin A;Benowitz NL;Bittner V;Daniels SR;Franch HA;Jacobs DR;Kraus WE;Kris-Etherton PM;Krummel DA;Popkin BM;Whitsel LP;Zakai NA;American Heart Association Population approaches to improve diet, physical activity, and smoking habits: a scientific statement from the American Heart Association

Ollberding NJ; Wolf RL; Contento I; Food label use and its relation to dietary intake among US adults

Stender S; Astrup A; Dyerberg J; A trans European Union difference in the decline in trans fatty acids in popular foods: a market basket investigation

Vyth EL; Hendriksen MA; Roodenburg AJ; Steenhuis IH; van Raaij JM; Verhagen H; Brug J; Seidell JC; Consuming a diet complying with front-of-pack label criteria may reduce cholesterol levels: a modeling study

Appendix 2: Expert panel members and advisors

Chair of the expert panel:

Professor Klim McPherson – Chair

Visiting Professor of Public Health Epidemiology, Nuffield Department of Obstetrics and Gynaecology, and Emeritus Fellow of New College, University of Oxford

Expert panel members:

Ms Pamela Ashton

Community Member

Professor Simon Capewell

Chair of Clinical Epidemiology, University of Liverpool

Professor Martin Caraher

Professor of Food and Health Policy, City University London

Dr Charles Foster

Senior Research Fellow, British Heart Foundation Health Promotion Research Group, University of Oxford

Dr Paramjit Gill

Reader in Primary Care, University of Birmingham

Mr Robin Ireland

Chief Executive, Heart of Mersey (Health Equalities Group)

Mr Paul Lincoln

Chief Executive Officer, UK Health Forum

Ms Suzannah Power

Community Member

Professor Sian Robinson

Professor of Nutritional Epidemiology, Medical Research Council Lifecourse Epidemiology Unit, University of Southampton

Professor Francesco Cappuccio

Chair of Cardiovascular Medicine and Epidemiology, University of Warwick Medical School

Professor Madeleine Murtagh

Reader, Applied Social Science in Public Health and Social Care, Medical and Social Care Education, University of Leicester

Dr Kiran Patel

Consultant Cardiologist and Honorary Senior Lecturer in Cardiovascular Medicine, University of Birmingham, Sandwell and West Birmingham NHS Trust

Professor Margaret Thorogood

Professor of Epidemiology, University of Warwick

Ms Valerie Woodward

Senior Lecturer, University of Wolverhampton

Advisors (policy leads):

Sanjay Gupta

Senior Scientific Advisor, Health and Wellbeing Directorate, Public Health England

Nick Doyle

Clinical and Public Health Policy Analyst, NICE

Appendix 3: Criteria for prioritising articles for consideration by the expert group

Evidence is prioritised by the Chair on the basis of its potential impact on, or support of, current knowledge in at least one of the following categories, or by other criteria identified in the scope:

- Health or social care practice: potential impact on clinical, public health or social care guidance, including increased understanding of the experiences of patients or service users.
- Services: potential impact on service organisation, delivery or commissioning.
- Resources: potential impact on resource use or the need for investment or disinvestment.
- Understanding: furthers the general understanding of disease aetiology, progression or management.