

The NHS Health Checks programme: A better alternative

J Med Screen
2016, Vol. 23(2) 57–58
© The Author(s) 2016
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0969141315621772
msc.sagepub.com



The NHS Health Checks public health programme aims ‘to prevent heart disease, stroke, diabetes and kidney disease, and raise awareness of dementia both across the population and within high risk and vulnerable groups’ by inviting everyone in England aged 40–74 without known cardiovascular disease, diabetes, or a number of other conditions for a health check every five years, at an estimated annual cost of £450 million in 2015.^{1,2} The Health Checks literature avoids calling the programme medical screening, but this is misrepresentation, and should not exempt the Health Checks programme from being evaluated as medical screening. The programme is, in fact, a collection of screening tests. It does not adequately define the disorders being screened for, and none of the tests, as described, meet the requirements of a worthwhile screening test.^{2,3} The Health Checks programme does not set out the screening performance of each element in screening for the disorders insofar as they are defined and fails to quantify the preventive effects. Describing the programme as ‘a free midlife MOT’⁴ is misleading, because it creates the false impression that a problem identified can be immediately fixed, and it ignores the false-positives and false-negatives inherent in medical screening.

Implicit in the Health Checks programme is a presumption that the early detection of a disease is automatically a benefit, which is not the case. There is an unwarranted implication in the programme that screening for kidney disease using serum creatinine is worthwhile and that screening for diabetes in people with high blood pressure using a fasting blood sugar or glycated haemoglobin (HbA1c) is useful in reducing the complications of diabetes, such as diabetic retinopathy. Without evidence of benefit in relation to outcomes, offering such screening as a public service should be deferred. It is also of concern that the programme recommends ‘raising awareness’ of dementia. For a condition without a remedy, such a recommendation is, at best, of questionable value.

Screening for cardiovascular disease in Health Checks involves computing a person’s 10-year risk of developing cardiovascular disease using the QRISK algorithm, by performing blood tests and a limited physical examination, asking questions including ethnic origin, and using postcode to assess socioeconomic status. Needless activity and cost are put into determining cardiovascular disease risk as precisely as possible. A person’s initial risk is not what they need to know in screening and can be misunderstood.⁵ It is the benefit arising from screening that needs to be specified, not the entry risk. The relevant

information is the chance that they will benefit as a result of screening and preventive medication and if they do, how many years of life they will be expected to gain without a cardiovascular disease event. The Health Checks programme fails to specify the best preventive medication. A statin is recommended to screen positive individuals regardless of their cholesterol level, but blood pressure lowering medication is only recommended if the blood pressure is high. This is inconsistent. Reducing blood pressure, whatever the starting level, reduces risk in the same way that reducing LDL cholesterol also reduces risk whatever the starting level.⁶ The programme thus involves undergoing an unnecessarily complex screening assessment followed by partial treatment in individuals who are screen positive.

The fact that the Health Checks programme is unlikely to be very effective⁷ does not mean that a properly designed screening programme for future heart attacks and strokes would be ineffective. There is good evidence that this would be worthwhile. Lowering blood pressure and LDL cholesterol reduces the incidence of heart attacks and strokes and preventive medication can safely lower these two causal risk factors.^{6,8} A simple, inexpensive and effective screening policy based on a person’s age alone could be used to identify increased risk.⁹ Age is the single strongest predictor of a future heart attack or stroke other than already having had one. With a screening test based on age alone, there is no screening barrier because age-screening can be performed without interaction with the person screened; compliance is 100%. Any non-participation arises only from invitees not taking up the offer of preventive medication. Using an age cut-off of 50 would detect over 90% of the people who, in the absence of preventive medication, would experience a first heart attack or stroke.^{10,11} Among those aged 50 and over, one in three would directly benefit from preventive medication and on average they would gain eight years of life without a first heart attack or stroke.¹¹ The preventive medication is highly effective, very safe and cost-effective.^{10,12,13} Selecting individuals for preventive medication on the basis of age removes the cost and workload associated with performing the QRISK[®]2 assessments. The recommended risk cut-off for preventive medication has been reduced in current clinical guidelines^{14,15} and, as has been pointed out, ‘beyond a certain age, such a large proportion of the population would be included that estimation of risk levels becomes redundant’.¹⁶ Thus, complex multi-factor screening methods reduce to a simple age-based screening approach.

The NHS Health Checks programme should be reviewed, and deconstructed into its separate parts, each of which should then be evaluated as individual screening programmes. Some parts could be abandoned altogether. For those parts of the programme where there are uncertain health benefits, appropriate research needs to be carried out to fill the gaps in knowledge. For other parts, such as screening for cardiovascular disease, the Health Checks approach should be replaced with a simple screening policy based on age alone, and effective preventive medication, for which there is sufficient evidence on efficacy, safety and cost to be introduced in pilot programmes.

Declaration of conflicting interests

Nicholas Wald jointly holds European, Canadian and US patents for a combination pill for the prevention of cardiovascular disease.

References

- Keogh E, Waterall J, Thompson K, et al. *NHS health check best practise guidance*. London: Public Health England, 2015.
- Capewell S, McCartney M, et al. Invited debate: NHS Health Checks – a naked emperor? *J Public Health* 2015; 37: 187–92.
- Wald N and Law M. Medical screening. In: Warrell D, Cox T, Firth J. (eds) *Oxford textbook of medicine*. 1.5 ed. Oxford: Oxford University Press, 2010.
- NHS Health Check 2015, www.nhs.uk/Conditions/nhs-health-check/Pages/NHS-Health-Check.aspx (accessed 16 October 2015).
- Riley R, Coghill N, Montgomery A, et al. Experiences of patients and health-care professionals of NHS cardiovascular health checks: A qualitative study. *J Public Health*. Epub ahead of print 25 September 2015. DOI: 10.1093/pubmed/fdv121.
- Law MR, Morris JK, Wald NJ. Use of blood pressure lowering drugs in the prevention of cardiovascular disease: meta-analysis of 147 randomised trials in the context of expectations from prospective epidemiological studies. *BMJ* 2009; 338: b1665.
- Gotzsche PC, Jørgensen K, Krogsboll LT. General health checks don't work. *BMJ* 2014; 348: g3680.
- Law MR, Wald NJ, Rudnicka AR. Quantifying effect of statins on low density lipoprotein cholesterol, ischaemic heart disease, and stroke: Systematic review and meta-analysis. *BMJ* 2003; 326: 1423.
- Simmonds MC and Wald NJ. Screening for cardiovascular disease: Concerns with a Norwegian proposal. *J Med Screen* 2011; 18: 165–6.
- Wald NJ and Morris JK. Quantifying the health benefits of chronic disease prevention: A fresh approach using cardiovascular disease as an example. *Eur J Epidemiol* 2014; 29: 605–12.
- Wald NJ, Simmonds M, Morris JK. Screening for future cardiovascular disease using age alone compared with multiple risk factors and age. *PLoS One* 2011; 6: e18742.
- Desai N. A cardiovascular polypill. In: Garber S, Gates SM, Keeler EB, et al. (eds.) *Redirecting innovation in U.S. health care: options to decrease spending and increase value: case studies*. Santa Monica, CA: RAND Health, 2014:308.
- Vos T, Carter R, Barendregt J, et al. *Assessing cost-effectiveness in prevention (ACE-Prevention): final report*. Brisbane: University of Queensland, Brisbane/Melbourne: Deakin University, Melbourne, 2010.
- Stone NJ, Robinson JG, Lichtenstein AH, et al. 2013 ACC/AHA Guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 2014; 63: 2889–2934.
- National Institute for Health and Care Excellence. Cardiovascular disease: Risk assessment and reduction, including lipid modification. Available at: www.nice.org.uk/guidance/cg181 (accessed 18 July 2014).
- Boon N, Boyle R, et al. JBS3 Board. Joint British Societies' consensus recommendations for the prevention of cardiovascular disease (JBS3). *Heart* 2014; 100: ii1–ii67.

Michiel Luteijn and Nicholas J Wald

Wolfson Institute of Preventive Medicine, Barts and the London School of Medicine and Dentistry, Queen Mary University London, UK

Email: n.j.wald@qmul.ac.uk