



Public Health
England

Protecting and improving the nation's health

Executive summary

Changing risk behaviours and promoting cognitive health in older adults

An evidence-based resource for local authorities and commissioners

Prepared by the Cambridge Institute of Public Health, University of Cambridge



About Public Health England

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Key recommendations

Evidence from three wide-scope systematic reviews supports commissioning of interventions across a range of health behaviours for older adults.

There is evidence that changes in health behaviour in older age can have beneficial effects on cognitive function in the short term although no intervention studies to date have reported longer term impact on the prevention or delay of dementia onset. Importantly, most studies are under-powered to adequately measure changes in cognitive measures. To strengthen the evidence base, development and implementation of interventions should incorporate evaluation to monitor outcomes and determine cost effectiveness.

Efforts should focus on developing and implementing guidance, policies and interventions to reduce smoking and alcohol consumption across the population, including in older adults. Little robust evidence was found for the effect of interventions targeting smoking or drinking behaviour in older age on cognitive health. However, improvements in these behaviours are beneficial for a range of health outcomes and should be supported by tailored interventions.

In the absence of evidence on the minimum level of physical activity that is effective for maintaining brain health and increasing participation in PA, public health messages should be aimed at promoting acceptable levels of PA above normal daily activities in older adults.

Programmes can be designed to be inter-related. For example, physical activity programmes can also be opportunities to socialise or be mentally active.

Information in this report about components of effective interventions, and barriers and facilitators to the uptake or maintenance of healthy behaviours can be used to design tailored, evidence-based programmes for older adults.

Consideration should be given to the best ways to engage older adults in changing health behaviour, as behaviours can be more entrenched.

Future research needs sufficiently powered, well-designed studies with longer-term follow-up to determine the effect of interventions on maintenance of healthy behaviours and on prevention or delay of cognitive decline and dementia. Further studies on cost-effectiveness and disadvantaged and minority groups are needed.

Executive summary

The overall aim of this resource is to ensure that everybody has the opportunity to live as well as possible as they age, including the opportunities to make informed choices about their lifestyle and wellbeing and to receive support from appropriately developed services.

To help commissioners and providers focus their resources and efforts to promote healthy behaviours and cognitive health in older age, this report presents tailored summaries of the scientific evidence for three complementary questions:

- what individual-level interventions targeting unhealthy behaviours in people in older age (55+ years) are effective for the primary prevention or delay of cognitive decline or dementia?
- what individual-level interventions in people in older age (55+ years) are effective for increasing the uptake and maintenance of healthy behaviours?
- what issues (barriers and facilitators) prevent or limit or help and motivate the uptake and maintenance of healthy behaviours in people in older age (55+ years)?

This resource is intended for local authority and clinical commissioning groups to provide a steer as to what types of interventions they should focus on to help the uptake and maintenance of healthy behaviours and promote cognitive health among older adults living in the community. It is also intended for providers of lifestyle behaviour change programmes to support the development of evidence-informed prevention packages for older adults. It is produced in a way that makes it accessible to managers and practitioners with public health as part of their remit, working in the public, private and third sector.

The key findings below are summarised by health behaviour (or combination of behaviours) as presented in the main report.

Multi-component

Promoting healthy lifestyles across the population and motivating people to take steps to improve their health through action on behavioural risk factors is a critical step towards reducing the risk of dementia. Interest in multi-domain/multi-component interventions has increased recently and several trials are ongoing or had not yet published findings when the searches for these reviews were conducted.

Nevertheless, there is preliminary evidence that complex, multi-component interventions targeting

three or more healthy behaviours or 'healthy ageing' programmes (or interventions targeted at improving both diet and exercise or both cognitive training and exercise) could have beneficial effects on maintaining or improving cognitive function in older adults. However, much of the evidence is limited by study design issues such as small sample sizes and incomplete reporting of factors that may bias the findings.

There is little evidence available to compare the effect of multi-component interventions with single domain interventions. There is currently no evidence relating to the longer term impact on prevention or delay of dementia, although studies are ongoing that will report these outcomes in the future. Finally, disadvantaged and minority groups have been understudied so little evidence is available to guide interventions in these subgroups of older adults.

Implementation of multicomponent interventions should come with built-in evaluation to monitor outcomes and strengthen the evidence base and assess cost-effectiveness for these interventions.

Alcohol

Drinking excessive amounts of alcohol is a risk factor for dementia. Efforts should focus on developing and implementing guidance, policies and interventions to reduce alcohol consumption across the population. For older adults, the effect of interventions to promote healthy drinking behaviour has been understudied. As such, little is known of the effect of these interventions on alcohol consumption and cognitive/dementia outcomes in the general older adult population.

Interventions targeted at changing alcohol consumption in older adults at risk (those who screened positive for at-risk, heavy or hazardous drinking) could lead to a reduction in drinking in follow-ups of up to one year. Evidence for the longer-term effect of these interventions on alcohol consumption is not available.

Simple interventions or the fact of performing an assessment may have a positive effect on alcohol behaviour in older adults at risk. However, more intensive interventions, including personalised feedback reports, are likely to be more effective at changing their alcohol behaviour. In contrast, multicomponent interventions targeting a range of health behaviours may not be effective in reducing alcohol consumption in older adults.

There is little evidence about the cost-effectiveness of alcohol programmes for older adults and little evidence to guide interventions in disadvantaged and minority subgroups.

Drinking in some older adults is strongly linked to social engagement and enjoyment of life and there is scepticism about the health risks of alcohol. However, drinking can also be linked to difficulties such as social isolation, stress, illness, or bereavement. Emphasis on the experience of older adults to drink wisely in a positive, controlled way could be a facilitator. Public health messages may need to consider the impact on social engagement in light of potential benefits of social participation for cognitive health.

Smoking

Smoking is one of the biggest behavioural risk factors for dementia. Efforts should focus on developing and implementing guidance, policies and interventions to reduce smoking across the population.

To date, the effect of smoking cessation interventions on cognitive/dementia outcomes has been understudied. Interventions or components for which there is some evidence of effectiveness on smoking behaviour in older adults include telephone counselling quitlines, individual counselling, tailored self-help materials, with extended support such as counselling, telephone, computer mailed support – with or without nicotine replacement therapy (NRT).

All interventions examined, even minimal ones, had some beneficial effects on smoking behaviour. However, longer, more intensive interventions with extended support and follow-up and interventions delivered by physicians could be more effective for older adults. Extended cognitive behavioural treatments (with or without NRT) can help maintain stable abstinence rates. Interventions using materials and information specifically tailored for older adults had greater impact than non-tailored materials.

Studies are needed to assess the cost-effectiveness of smoking cessation interventions for older adults. Also, disadvantaged and minority groups have been understudied so little evidence is available to guide interventions in these subgroups of older adults.

The majority of intervention studies were conducted in hospital outpatient settings, but there is evidence that hospital-based smoking cessation interventions were not viewed favourably by older adults because of their disease focus.

Older adults with a long-standing smoking history can be difficult to engage in attempts to quit. Providing a range of interventions that address barriers and facilitators may be more effective across the board.

Diet

Eating a poor diet high in saturated fat, sugar and salt is a risk factor for dementia. Supporting people to eat healthily across the population is a concrete step towards reducing that risk. For older adults there is limited preliminary evidence that dietary interventions can have positive effects on cognition. This is based on a small number of studies with small sample sizes and incomplete reporting of factors that may bias the findings.

Evidence indicates intervention can be effective in improving diet, particularly for increasing fruit and vegetable intakes. There is some evidence that beneficial outcomes could be maintained in the mid to long term (one-year plus). A range of types of dietary intervention may be effective, including community diet and nutrition education sessions, home education sessions, self-help manuals with additional support, hand-held computer delivery. Fruit tasting sessions in community-based groups, peer-led community food clubs, nutrition newsletters were shown not to work.

Dietary interventions delivered in the retirement transition can be effective and sustainable in the long term. Components of dietary interventions that may produce improved outcomes include: more participant contact, barrier identification/problem solving, planning social support, goal-setting, use of follow-up prompts, feedback on performance.

As for other risk behaviours, studies are needed to assess the cost-effectiveness of diet and nutritional interventions for older adults. And little evidence is available to guide interventions in disadvantaged and minority subgroups of older adults.

Physical activity

A lack of regular physical activity along with a sedentary lifestyle increases the risk of dementia. Encouraging, enabling and supporting everyone to build physical activity into their daily lives is a concrete step towards reducing that risk. For older adults, there is evidence that physical activity can have beneficial effects on maintaining or improving cognitive function, yet evidence on how much activity is required to produce this effect is lacking.

There is strong evidence to suggest that individual or group-based physical activity interventions can lead to increased uptake of physical activity in older adults. However, little evidence is available on long-term effectiveness (>2 years). Evidence suggests that interventions might not be effective in the very short term but may be in the longer term (9 to > 12 months); multi-modal interventions helped by behavioural cognitive techniques were useful for increasing physical activity uptake at 12 months among those at risk of chronic conditions, such as impaired glucose intolerance, hypertension and obesity. Short duration exercise could be effective for increasing physical activity uptake in the frail older population. Interventions delivered via general

practices are effective for increasing short term uptake of physical activity. To maintain long-term participation in physical activity, individualised interventions modelled using behavioural theories are more likely to change behaviour.

When designing interventions aimed at increasing physical activity in older adults, considering barriers and facilitators to behaviour change is critical. In the absence of evidence on the minimum level of physical activity that is effective for maintaining brain health and increasing participation in physical activity, public health messages should be aimed at promoting acceptable levels of physical activity above normal daily activities in older adults.

Cognitive stimulation

Encouraging people to be socially active and mentally stimulated is one of the building blocks of a comprehensive approach to promote a healthier lifestyle and reduce the risk of dementia.

There is evidence that cognitive training interventions in older adults can have beneficial effects on cognitive function in healthy participants. Less evidence is available for people with mild cognitive impairment, although there is some evidence of beneficial effects. However, much of the evidence is limited by study design limitations such as small sample sizes and incomplete reporting of factors that may affect risk of bias. There is currently little evidence relating to the long-term impact of these interventions on prevention or delay of dementia. There is some evidence that cognitive training may have a similar magnitude of effect to physical activity interventions.

Overall, a wide range of types of cognitive training have been examined, but there is little evidence about which interventions or components are most effective. There is some evidence that: home-based computerised cognitive training programmes are less effective than group based computerised cognitive training. There is no additional benefit of cognitive training sessions more than three times a week compared with three times a week or less. Sessions less than 30 minutes are less effective. Cognitive training programmes should comprise at least ten intervention sessions and include a longer term follow-up or booster.

There is evidence that computerised cognitive training appears to have equivalent benefits to other cognitive training and may be more feasible and enjoyable to implement.

Social

Addressing loneliness and encouraging people to be socially active are important building blocks of a comprehensive approach to promote a healthy lifestyle and reduce the risk of dementia. For older adults, there is limited preliminary evidence that interventions to promote social engagement and activity can have beneficial effects on cognition. Again, this is based on a small number of

There is no evidence relating to the long-term impact on prevention or delay of dementia.

While the available evidence is limited, there is some evidence that interventions involving group participation in educational, social activity or support programmes can reduce social isolation in older adults; interventions to increase social roles (e.g. volunteering) can be effective; there is also evidence that using web-based technologies can improve social support and social networks. However, evidence suggests that older adults sometimes did not understand the purpose of social networking sites and have concerns about privacy, protection of personal and inappropriate content.

Evidence for minority and disadvantaged groups is lacking, as is evidence of the cost-effectiveness of these interventions.

Leisure activity

There is preliminary evidence that leisure activities can have beneficial effects on cognition in older adults. However, this is based on a small number of studies with small sample sizes. There is no evidence relating to the longer-term impact of these interventions on prevention or delay of dementia.

Activities that have been examined that may have beneficial effects on cognition include cognitively stimulating leisure activities such as reading, playing games or reading music; learning to play an instrument; daily completion of a crossword; productive or receptive engagement and volunteering (eg in schools). All interventions were conducted in community settings.

Limitations of the evidence

- there is evidence that changes in health behaviour in older age can have beneficial effects on cognitive function in the short term. However, few studies to date have reported longer term impact to prevent or delay the onset of dementia. The evidence overall is limited by study design limitations such as small sample sizes and inadequate reporting of factors that may affect risk of bias. Importantly, most of the studies conducted to date are under-powered to adequately measure changes in cognitive measures
- cognitive outcomes were measured using objective tests but measures of uptake of health behaviour were self-reported in most cases. The latter may be subject to reporting bias as people may under- or over-report their behaviour

Gaps in the evidence

- there is a lack of studies to date with sufficient longer-term follow-up to determine the effect of health behaviour interventions in older age on prevention or delay of dementia. Some ongoing multi-component studies intend to report these outcomes
- there is insufficient evidence available comparing one type of intervention with another or multi-component versus single component interventions
- there is a lack of studies in disadvantaged and minority groups
- few studies report cost-effectiveness of interventions
- for most health behaviours there is insufficient evidence to determine how much behaviour change is needed for optimal cognitive health