



Reducing the risk of chronic disease in older adults

*A summary report to support
obesity prevention planning in NSW*

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October 2012

Suggested Citation: Hector D, Espinel P, King L. *Reducing the risk of chronic disease in older adults: A summary report to support obesity prevention planning in NSW*. Sydney; Physical Activity Nutrition & Obesity Research Group, 2012

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The Physical Activity Nutrition & Obesity Research Group (PANORG) at Sydney University undertakes policy relevant research to promote physical activity, nutrition and obesity prevention. It is funded by the NSW Ministry of Health.

1 Introduction and background

This document is a summary of the information contained within a full report ¹ detailing the research evidence on the rationale, determinants and effective intervention approaches to reduce the prevalence of obesity and chronic disease among community-dwelling older adults, aged 55-74 years. It is designed specifically to contribute to the planning of programs and interventions for obesity and chronic disease prevention in NSW, Australia.

The full report applies a health promotion planning framework. It:

- Provides a synthesis of evidence about opportunities for promoting the health of older people through reducing obesity and the risk of chronic disease
- Examines the available epidemiological evidence on the weight status and obesity-related chronic disease risk profile of older adults in NSW, thereby presenting a rationale for addressing obesity and chronic disease risk
- Considers the behaviours contributing to weight status in this age group and the wide range of factors contributing to associated lifestyle behaviours
- Presents a structured planning framework to identify potential points for intervention based on analysis of contributing factors
- Examines the evidence around the effectiveness of potential interventions, considering the strengths, limitations and gaps within the evidence base
- Proposes a portfolio of evidence-based and promising intervention approaches for the reduction of obesity and related chronic disease risk.

2 Why older adults are an important target group for prevention strategies

2.1 Population ageing and health and economic burden

Australia's population is ageing dramatically and this is creating unprecedented challenges for health and social policy and services. In NSW the proportion of people aged 65 years and older is projected to increase by 22% to nearly 2 million people in 2031 and by 26% in 2051.

Chronic diseases related to unhealthy diet, physical inactivity, sedentarism, and unhealthy weight are highly prevalent among older adults. The prevalence of chronic disease and related risk increases with age. On average, Australian adults aged ≥ 60 years have more than two chronic disease risk factors and a high proportion of older adults suffer from several chronic conditions. Chronic diseases and associated risk factors comprise the major health problems older people experience, and they account for the majority of premature deaths, morbidity, health burden, and health costs. Prevalence of obesity is high, around 33%, among 55-74 year olds in NSW, and is increasing.

The combination of an ageing population and an unhealthy lifestyle is contributing to an increasing burden of disease and disability. The burden of disease as measured by economic and

¹ Espinel PT, King L, Hector D. *Obesity and chronic disease prevention among older adults (55 - 74 years): An evidence overview and framework to inform policy and practice*. Sydney; Physical Activity Nutrition & Obesity Research Group, 2012 - To be available online in early 2013.

health indicators increases with age until around age 75 years. In Australia, adults aged 65-74 years comprised 6.8% of the population and experienced 16.3% of the total disease burden in 2003. Cancer and cardiovascular disease account for over half of the total burden of disease and injury in this age group. The burden of disease, particularly diabetes – primarily as a consequence of high prevalence of obesity – will increase. The total health and residential aged care expenditure is projected to increase from \$85 billion in 2003 to \$246 billion in 2033, largely due to the ageing of the population, and the projected higher rates of diabetes and musculoskeletal disorders. Population ageing is also likely to significantly increase the burden associated with dementia, with the number of Australians aged 45 years and over living with dementia expected to triple to 650,000 by 2051. Lifestyle factors including level of physical activity and body mass index influence the prevalence of dementia.

2.2 Older adults as an at-risk population group

Life-stage changes impact older adults' health directly or indirectly through their effect on the underlying behaviours contributing to disease. Obesity and low physical activity in postmenopausal women contribute to the increased risk of metabolic syndrome, diabetes, cardiovascular disease, low cardiorespiratory fitness and all-cause mortality. Retirement is a major life change that can affect diet, activity, and sedentary behaviours. Older adults are often involved as carers, providing care for grandchildren, a partner or elderly family member. While this may reduce time for self-care, such as exercising, engaging in hobbies and socialising, it may be rewarding and lead to activity and social connections. These life stages may provide a window of opportunity to engage middle-aged and older people in being more active, reducing sitting time and eating healthily.

Normal ageing is associated with an increase in body fat and declines in lean muscle mass. Increases in body fatness associated with ageing are largely due to increases in intra-abdominal fat mass. A decline in lean muscle mass – 'sarcopenia' – also occurs with ageing and accounts for the decreases in basal metabolic rate and muscle strength, hence decreased energy requirements, of older adults. Sarcopenic obesity is becoming common among the older population and is associated with mobility disability and functional impairment. Abdominal obesity is a particular indicator of chronic disease risk.

Older adults often have poor nutrition in terms of low consumption of fruits and vegetables, and snacking is common. Around one-third to a half of older adults in NSW do not consume the recommended serves of fruit per day. Vegetables intake is much lower, with only around 10% of older men and 17% of women consuming the recommended 5 serves or more per day. Snacking is common; however consumption of fast food and soft drinks is low.

Nutritional requirements are influenced by the anthropometric changes that occur with age, and also the reduced absorption or synthesis and accelerated loss of certain nutrients. Key nutrients of concern in older adults include protein, vitamin B-12, folate, zinc, calcium and vitamin D. As ageing progresses factors affecting food consumption include reduced appetite, reduced energy requirements, dysphagia, poor dentition and sensory losses such as taste and smell.

Having adequate financial resources does not guarantee that food can be easily accessed or is readily available. Factors associated with food insecurity in older adults include poor health, multiple chronic health conditions, non-couple households or living alone, limited mobility, limited

financial resources, and a lack of social support or living in rural areas which may reduce access to healthy foods. Access to culturally-appropriate foods can be a problem for some groups. Around 13% of community-dwelling persons aged 50+ have some level of food insecurity.

While physical activity often increases following retirement, levels then start to decline with age. Older women tend to be less physically active than older men, and older adults living in disadvantaged areas are less likely to meet physical activity recommendations compared to those living in more advantaged areas.

Being physically active in older age has significant cardiovascular and metabolic health benefits, and also helps to control weight and combat chronic disease. Aerobic and strength-based physical activities, as well as balance and flexibility, are required for optimal health. Endurance and strength training activities can be used to prevent congestive heart failure, depression, diabetes, osteoporosis and other conditions affecting older people; progressive resistance training can slow and even reverse age and disease-related loss of muscle mass and function; activities involving balance/flexibility can improve stability and reduce risk of falls. Aerobic activities, e.g. walking, are beneficial and have an overall protective health effect.

The prevalence of sedentary behaviour seems to be increasing among older adults in Australia, particularly among men. TV watching and other sedentary activities are common among the older age group. The amount of time spent in sedentary activities per day has important metabolic consequences that may influence specific biomarkers of obesity, cardiovascular and other chronic diseases, regardless of physical activity level. More TV viewing and sitting leads to poorer health; but also poorer health is associated with higher TV viewing and sitting.

The local neighbourhood environment has a significant impact on the health and functioning of older adults. Older adults tend to spend more time than younger adults close to home and in their local neighbourhoods; due to a combination of physical/mobility and mental decline associated with age, a reduction in social networks and social support, and increasing fragility. A supportive physical environment is important for active ageing.

Interpersonal relations and social networks are a central component for healthy ageing. Social support is strongly correlated with a healthy diet, physical activity, good mental health and overall wellbeing. Additionally, positive community attitudes to older people and the ageing process have the potential to influence the level of involvement of older people in society, and are fundamental to social inclusion and social cohesion. This is particularly important as older adults have increased likelihood of living alone. Living alone increases the risk of eating irregularly, unless opportunities to socialise and share meals are available.

3 Behavioural changes to prevent obesity and related chronic disease in older adults

Efforts to prevent overweight, obesity and related chronic diseases among the older population should focus on supporting and promoting healthy behaviours and supporting physical and social environments. A small set of behavioural factors, underpinned by socioeconomic determinants of health, is responsible for most of the chronic diseases; conversely more healthy behavioural patterns can exert protective effects, specifically aerobic and strength-based physical activity,

reduced sitting time and a nutritious diet. Weight status is influenced by these behaviours and acts as an intermediate risk factor for various chronic diseases. Desirable lifestyle behaviour changes that are relevant to older adults are listed in Table 1. These behaviours are, in turn, influenced by everyday settings and environments, as discussed in section 4 below.

Table 1 Desirable lifestyle behaviour changes in older adults for the prevention of obesity and chronic disease

Behaviour	Desired change
Nutrition	<p>Increase:</p> <ul style="list-style-type: none"> • Fruit and (particularly) vegetables intake • Protein intake • Foods rich in vitamin B12, folate, zinc and calcium • Replace saturated fats with healthier fats • Healthier meal options when dining out • Sun exposure (vitamin D) <p>Decrease:</p> <ul style="list-style-type: none"> • Snacking (particularly sweet foods (cakes and biscuits)) • Consumption of energy-dense, nutrient-poor foods • Consumption of soft drinks
Physical Activity	<p>Regularly incorporate a mix of:</p> <ul style="list-style-type: none"> • Strength (resistance) exercises AND • Aerobic activity (low to moderate intensity) AND • Flexibility and balance exercises <p>Increase:</p> <ul style="list-style-type: none"> • Walking • Incidental activity throughout the day • Participation in sports/activities
Sedentary Behaviour	<p>Reduce:</p> <ul style="list-style-type: none"> • Sitting time / long periods of sitting • TV viewing

Obesity is a particular risk factor for chronic disease. It is important to note bi-directionality in the relationship between weight status and health lifestyle behaviours. Being obese or having abdominal or sarcopenic obesity can affect access to a healthy diet and/or participation in physical activity (largely due to functional impairment); and unhealthy lifestyle behaviours can lead to an unhealthy Body Mass Index (BMI), abdominal obesity or sarcopenic obesity.

In terms of weight, the focus should be on the prevention of weight gain rather than weight loss in older adults. The focus of lifestyle interventions among 55-74 year olds should be primarily on preventing weight gain and improving physical function (and quality of life), rather than focusing on weight loss. However, there is scope for weight loss to improve health outcomes among the overweight and obese 55-65 year old population, and obese people aged 65-75 year olds, if they have existing chronic disease or other chronic disease risk factors and/or they are functionally impaired.

4 Underlying physical and social factors affecting weight and chronic disease in older adults

There is a wide range of underlying factors which influence older people's capacity to undertake physical activity, limit sedentary time, eat healthily and maintain a healthy weight. These factors need to be accounted for when designing lifestyle and chronic disease prevention programs, as they provide intervention points

Figure 1 presents a conceptual framework describing the relationships between physical, social and environmental factors contributing to a higher risk of unhealthy lifestyle behaviours. The framework proposes three types of underlying factors: individual-level, community-level and societal-level factors (see Table 2) and these indicate important intervention points.

Health services, urban design, social policy, neighbourhood environments and community services can all operate in ways which potentially redress and reduce chronic disease risks through supporting individuals to make healthier lifestyle choices. Community and society level interactions can result in changes to policies, services and environments, and these can in turn influence and support individual behaviours.

Society-level factors affecting maintenance of a healthy lifestyle include the built infrastructure and services, health system, social policy, cultural perceptions and norms towards older persons. Community-level factors include interpersonal relations, social networks, and the local physical environment, as well as services and facilities. Individual factors that may impact on the success of interventions in this age group include self-efficacy, knowledge and beliefs, perceived health benefits, and health literacy.

While biological, early life, home and socio-demographic factors are largely non-modifiable, their effects can be ameliorated to some degree by targeting of interventions to create supportive community and physical environments as well as providing services to groups most affected.

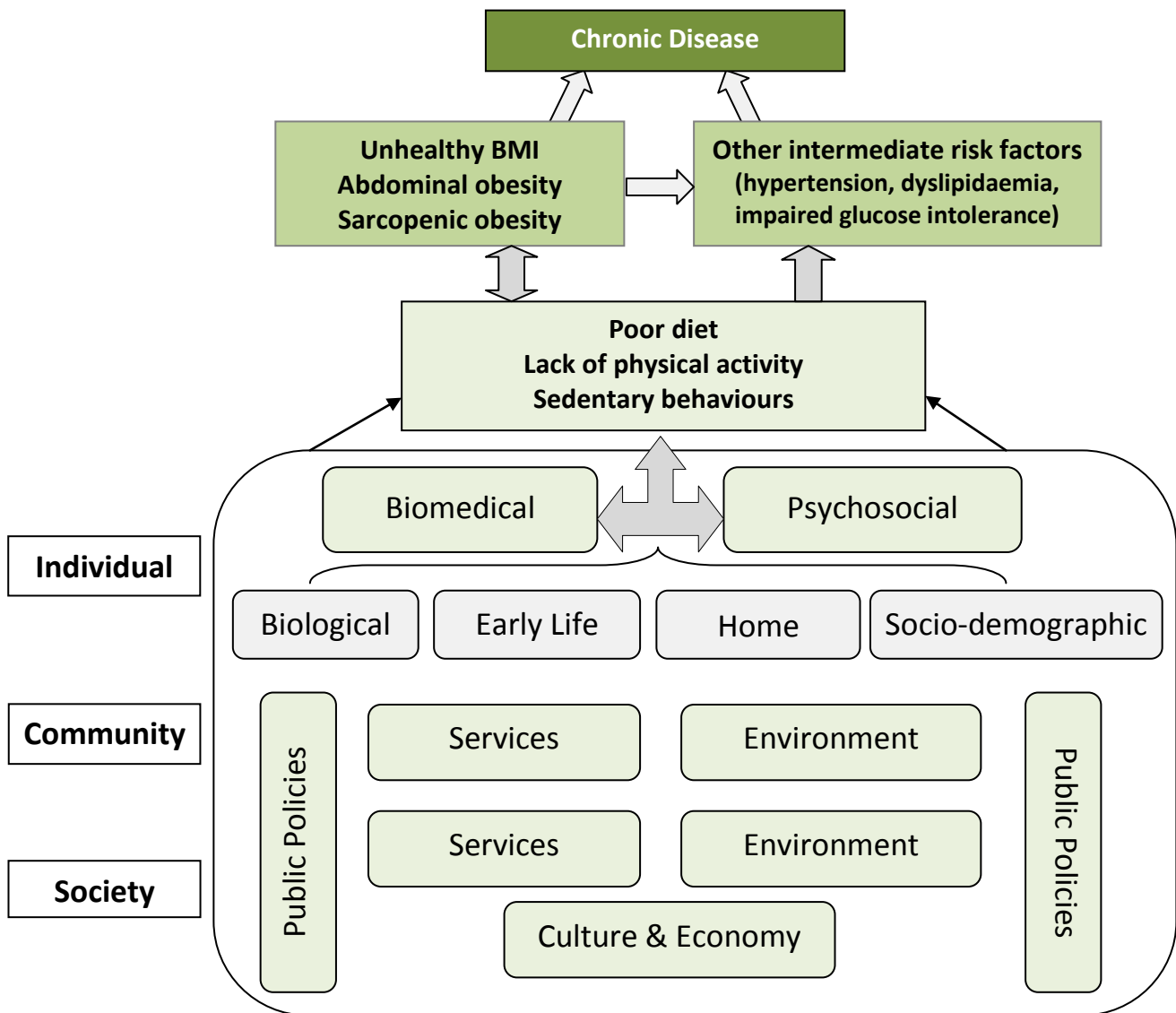


Figure 1 Framework of factors contributing to chronic disease in adults aged 55-74 years

Table 2 Factors contributing to increased risk of unhealthy lifestyle behaviours, obesity and chronic disease risk in older people

INDIVIDUAL	
<p>Biomedical</p> <ul style="list-style-type: none"> • Ill-health • Mental health issues (i.e. depression, dementia) • Menopause • Loss of cognition • Disability • Functional limitations • Poor appetite and digestibility issues 	<p>Cognitive and Psychosocial</p> <ul style="list-style-type: none"> • Low health awareness/literacy/knowledge of nutrition/Physical Activity/Sedentary Behaviour benefits/risks • Food/physical activity attitudes and beliefs • Low confidence and self-efficacy (e.g. food preparation, physical activities, fear of falls and injury/previous fall or injury) • Resistance to change; focus on routine; lack of motivation • Loss of sense of accomplishment and identity • Lack of family support/interaction • Lack of friends (social isolation)
<p>Home living environment</p> <ul style="list-style-type: none"> • Living alone • Caring for a family member (parent, partner, grandchildren) • Limited/no access to private transport • Lack of housing security (renting) • Poor cooking and food preparation facilities • No garden • No dog ownership • Increased leisure time* 	<p>Socio-demographic</p> <ul style="list-style-type: none"> • Low education level • Low disposable income • Living in rural or remote areas • Sedentary occupation • Non-sedentary pre-retirement occupation • Change in employment status (recently retired/early retirement)
<p>Biological</p> <ul style="list-style-type: none"> • Gender* • Genetics/family history of chronic disease/ethnicity/race/Aboriginal status • Cultural background* 	<p>Early life</p> <ul style="list-style-type: none"> • Poor foetal development • Slow or retarded growth in infancy • Childhood nutrition and physical activity home environment • Abuse and neglect during childhood
COMMUNITY (neighbourhood/workplaces)	
<p>Services</p> <ul style="list-style-type: none"> • Limited community networks • Costs of community activities • Lack of recreation and exercise services/ facilities • Limited access to local services/facilities • Low availability of public transport • Low accessibility to public transport 	<p>Environment</p> <ul style="list-style-type: none"> • Lack of supermarket(s) within walking distance • Low availability of affordable, healthy food outlets • Low neighbourhood walkability • Unsafe neighbourhood (real or perceived) • Low residential density (of older adults)
SOCIETY	
<p>Services</p> <ul style="list-style-type: none"> • Lack of health services to support lifestyle behaviour modification • Low availability of and accessibility to allied health professionals • Lack of health check at retirement 	<p>Culture and economy</p> <ul style="list-style-type: none"> • Negative cultural perceptions and norms towards older persons • Lack of workplace flexibility • Limitation of social welfare and related systems • Limitation of health insurance systems
<p>Environment</p> <ul style="list-style-type: none"> • Lack of built infrastructure and services specifically designed for older people 	

* Direction of association varies

5 Review of effectiveness of Interventions for preventing obesity and chronic disease risk in older adults

Having identified those factors amenable to intervention and potential points for intervention, this project has reviewed evidence on the effectiveness of interventions. Table 3 summarises the scope and extent of the evidence base in relation to the various levels of intervention (as determined from a comprehensive review of the literature).

Table 3 Scope of the evidence (PA – physical activity)

Level of intervention	Effective intervention approaches	¹ Promising intervention approaches	² Gaps in the evidence
Individual	Provision of brief advice and moderate intensity lifestyle (particularly PA) counselling by GPs and other health professionals (face-to-face (individual or group), telephone based, internet-based) Nutrition education	Lifestyle counselling and weight management programs via community pharmacists	Impact of falls prevention programs on total PA Interventions to reduce sedentary behaviours, including TV time Interventions targeting eating and dietary behaviours Promotion of gardening and incidental PA
Community	PA group programs Peer-led PA programs Nutrition education	Home delivery of fruit and vegetables* 'Walkability' and changes to physical environment Volunteer programs as a way to an active lifestyle	Cooking and nutrition skills Community gardens Healthy food in local clubs Impact of community transport on healthy food accessibility/ consumption
Society	Social marketing	Policies to ensure access to appropriate health services Health assessments around retirement	Workplace interventions targeted to 55+ year olds Better information on urban design and transport for older adults

¹ Promising interventions are those for which evidence is accumulating or for which there is a strong rationale for action and/or parallel evidence

² Gap areas are those which determinants research indicates are likely to be useful areas in which to intervene but for which there is currently little research evidence of effectiveness/few interventions

* Can act against physical activity

There is a substantial body of evidence for some approaches, suggesting they will be effective at the population level. However, some of these effective approaches will still require tailoring to local situations as there are limitations in the available evidence regarding the applicability, feasibility and potential reach when implemented in the NSW context. We have identified other approaches that are underpinned by evidence, but where the evidence is less abundant although where efficacy studies imply promise, where there is a strong rationale for intervening in a particular area, and/or where there is parallel evidence from research on a similar health issue.

5.1 Effective Intervention Approaches

At the individual level:

Provision of brief advice and moderate intensity lifestyle and chronic disease prevention programs delivered via primary care (e.g. GPs, nurses or other allied health practitioners, such as dietitians)

- Effective modes of delivery include brief face-to-face counselling involving motivational interviewing, and telephone, internet or computer-based programs. Increased self-efficacy, goal setting and self-monitoring are the specific components shown to be effective in supporting weight loss and physical activity among adults 50 years and older.
- Interactive technology is an expanding area of research and is showing promise in terms of providing exercise programs and dietary guidance.
- Many individual interventions can be delivered to patients in an opportunistic way while they receive other nursing care. Nutrition education (sometimes as part of a complex intervention) can positively influence diet, improve physical function and reduce depression.
- There are barriers to the provision of lifestyle advice and programs in the General Practice setting.

At the community level:

Nutritional education interventions run by community health professionals

- Nutrition messages should be limited in number, simple, targeted, practical, and reinforced. The use of incentives, regular contact with health professionals, and the inclusion of hands-on activities are important intervention components. Other characteristics of successful nutrition counselling interventions include group learning sessions, peer support and scheduled follow-up meetings.

Community programs promoting physical activity and exercise training

- Individually-tailored, intense, high impact exercise programs that include professional advice and guidance with at least 6 weeks continued support can encourage adults in the general community to be more physically active in the short- to mid-term.
- A wide variety of PA programs have been shown to be effective among older adults. Apart from walking, aerobics, and strength training, alternative types of PA such as water-based exercises, yoga, tai chi and dancing, have been shown to be effective in improving older adults' physical function and well-being.
- PA interventions aimed at improving the self-perception of exercise self-efficacy can positively affect the ability to initiate and maintain PA behaviour. Additionally, programs that include some behavioural techniques (goal-setting, self-monitoring, prompting, feedback) and have a community extension or connection are more likely to result in sustained increases in activity. Peer-led programs in the community can provide an important social and emotional support influence to help inactive individuals participate and engage in PA.

At the society level:

Social marketing including mass media campaigns

- There have been few evaluated media campaigns targeting older adults. Selected social marketing campaigns (printed and TV) targeting this age group have been shown to be effective in increasing knowledge about the health benefits of PA and in promoting PA participation. In particular, community-wide walking campaigns targeting older adults have been successful. The potential for promoting longer-term behaviour changes are unknown.

5.2 Promising Approaches

At the individual level:

Use of community pharmacists in weight management

- Community pharmacists could play a role in the primary health care system and may have an opportunity to be involved in lifestyle and weight management counselling; their involvement has been shown to be effective. This approach, however, is likely to be cost-effective only in rural and regional areas.

At the community level:

Programs to increase accessibility to fruits and vegetables

- Fruit and vegetable home deliveries and mobile services may help to increase fruit and vegetable intake, but these may be relevant only to older adults who are socioeconomically disadvantaged or have a physical limitation that restricts them from shopping for food. Older adults generally like to shop for their food and this has other benefits such as decreasing social isolation and increasing PA.

Increase neighbourhood walkability

- A large body of evidence indicates a strong link between neighbourhood walkability and other aspects of the physical environment and older people's physical activity levels. The relationships are complex and measurement issues have prevented conclusive evidence on what particular changes are conducive to activity among older adults. However, there is evidence that such changes are necessary and can even be sufficient to improve physical activity levels in this target group. Further research is necessary to build on the growing evidence in this area.

Use of peer supporters

- There is considerable scope for using volunteers and trained lay supporters to implement a wide range of community interventions to promote healthy behaviours in older people.

At the society level:

Planned health assessments

- There is some indication that the 45-49 year old health check consultation can be associated with short term improvement in diet and physical activity behaviours, especially in those individuals at high risk. There is therefore a rationale for similar planned health assessments for older adults who are likely to exhibit more risk factors, although barriers within the GP setting may influence uptake. The retirement transition may provide an opportunity to conduct a health check as people are making other lifestyle changes.

Accessibility to healthier choices

- There is limited evidence, especially among older adults, about the impact of interventions such as menu labelling and front-of-pack labelling in supporting healthy dietary behaviours. Evaluation of recent government policy will inform this evidence base.

5.3 Gaps in Intervention Research

There are a large number of gap areas in the scope and extent of research into approaches to reduce obesity and chronic disease risk among older people. Several of the prominent gaps are indicated below.

Extension of falls prevention programs – Falls-prevention programs have generally not been linked to, or aimed at, increased total PA. More research is needed to expand these programs to increase overall PA while retaining falls prevention benefits.

Sedentary behaviours – There is almost no evidence relating to interventions to reduce sedentary behaviour among older adults and this is an important gap. Increasing public awareness of alternatives to TV watching could help to diminish the potential for associated negative health effects in older adults and is therefore an issue to target in social marketing to older adults. Similarly, there is almost no evidence (one social marketing campaign) on promoting incidental day-to-day PA, and/or gardening, among older adults.

Improving dietary behaviours – At the community level, there is very limited research about improving dietary behaviours. Only one program was found to specifically target skills in food preparation and food safety among older adults. Similarly, there is limited evidence about access to community gardens and their impacts – although the rationale for encouraging and supporting community gardens among older persons is considerable. Research into the promotion of healthier foods in local clubs, ensuring sustainability, is also required.

Land use mix, walkability and park design – Specific design aspects of land use relating to walker friendliness for the older adult requiring further research include: connectivity and street networks, mixed land use and local destinations, housing density, open and public space, public transport accessibility, walking trails, aesthetics and safety.

Public and community transport – There are few evaluation studies examining the impact of community and public transport options on improving access to healthy food and social connectedness.

Workplace interventions – At the society level, there are emerging policies regarding flexible working arrangements for people close to retirement; but there are no workplace interventions specifically targeting 55+ year olds.

Lifestyle clinics – As adherence to a healthy diet, reduced sedentary time and participation in physical activity is protective of a range of chronic diseases; the implementation of ‘lifestyle clinics’ to which primary care practitioners can refer older adults who have a range of morbidities, including diabetes, cardiac rehabilitation, and obesity, could be a cost-effective way to deliver lifestyle programs. This would involve investment in infrastructure and workforce but could have extensive reach, if implemented alongside appropriate referral systems, and long-term gains across a large sector of the older population.

6 Recommended approaches for prevention and management of obesity and chronic disease in older adults in NSW

Programs will require adaptation and tailoring

Although some approaches are recognised as effective, intervention implementation requires consideration of specific issues for different target populations and settings; that is, additional planning to ensure maximum reach, participation and adherence to programs to maximise outcomes may be required.

Older adults are not a homogeneous population, and within the age range of 55-74 years, people are experiencing different life stages and circumstances that need to be taken into consideration when planning and implementing a portfolio of programs. Additionally, programs should be specifically tailored and implemented to reach older people in rural and remote areas, socioeconomically disadvantaged, older Indigenous Australians, older people from culturally and linguistically diverse backgrounds, and people ageing with a longstanding disability, all of whom experience additional social and economic barriers..

Table 4 provides a summary of recommended approaches for action for the prevention and management of obesity and chronic disease in community-dwelling older adults aged 55-74 years living in NSW. These recommendations are based on our comprehensive review of the current policy and practice context, the determinants, and the research evidence on intervention effectiveness. They come from evidence that points to its effectiveness, as well as those approaches which are promising, either because there is a strong rationale or there is emerging evidence of effectiveness.

Ideally a portfolio of interventions includes a mix of universal and targeted programs, and of innovative intervention, as well as programs known to be effective.

Table 4 Recommended approaches for action for the prevention and management of obesity and chronic disease in community-dwelling older adults (aged 55-74 years) living in NSW

Domain	Recommended/Promising approaches
Health sector	<p>Provide and promote routine health checks for people aged over 55 years</p> <p>Include assessment of weight and lifestyle behaviours as part of regular GP visits; Implement telephone, internet-based, and face-to-face, moderate-intensity lifestyle/chronic disease prevention programs (individual and group based) via the primary health care setting; provide brief lifestyle advice by primary health care providers (i.e. GPs, practice nurses, dietitians) to at risk older people</p> <p>Implement more specialised, high intensity lifestyle programs for people at higher risk or with existing obesity-related chronic diseases</p> <p>Provide an integrated approach for chronic disease prevention and management – consider setting up <i>'lifestyle clinics'</i></p> <p>Develop clinical pathways and protocols for weight management services for older people; including specialised referral pathways</p> <p>Encourage GPs to utilise current MBS items to refer older people to appropriate physical activity² and dietetic services</p> <p>Continue promotion and implementation of the NSW <i>Get Healthy Information and Coaching Service</i>; consider including a specific module for late-middle aged and older adults</p> <p>Use community pharmacists to provide lifestyle and chronic disease prevention programs in rural and regional areas</p> <p>Consider ways in which existing health financing systems could facilitate people with established risks to use self-management approaches to improve their health</p> <p>Include adult waist circumference as an indicator in the NSW Population Health Survey (with different cut-offs for older adults)</p>

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² A mix of aerobic, strength-based and flexibility exercises is important for optimal health outcomes of older people

Domain	Recommended/Promising approaches
Community programs	<p>Workforce development for community-based staff to provide consistent information and advice for PA/nutrition</p> <p>Provide, publicise and support the implementation of community-based PA programs² for older people; include a peer support component wherever feasible</p> <p>Adapt exercise sessions designed for falls prevention to reach a wider target group; include a broader range of activities¹ while retaining falls prevention benefits</p> <p>Train accredited fitness leaders to conduct appropriate PA programs for older people¹</p> <p>Implement and advertise low-cost active living programs such as gardening, therapeutic dance programs, exercise programs, and walking programs, for older adults of many ages and abilities</p> <p>Develop, implement and advertise communal kitchens, food co-ops, community gardens and community cooking groups</p> <p>Develop and implement programs promoting healthy menu options in clubs and other food services popular with older people</p> <p>Develop and implement healthy catering guidelines amongst agencies and services working with older people</p> <p>Continue to promote volunteerism among older people</p> <p>Promote peer advocacy, peer education, peer support, self-help groups and mutual aid approaches as a central part of an effective program</p> <p>Encourage dog owners to walk their dogs</p>

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Domain	Recommended/Promising approaches
Information and Communication	<p>Promote the health benefits of physical activity² and reduced sedentary behaviour (and health risks of low PA/sitting) to older people specifically</p> <p>Develop and conduct a series of social marketing campaigns segmented for different target groups across the older population: 45 to 55 years, 55-64 years, 65+ years</p> <p>Recognise the diversity of older people’s experiences of health and ageing, when providing health information</p> <p>Deliver information and education for the families of older adults, health professionals, other service providers and community members more generally about the needs of older adults, risk factors they experience, and programs available</p> <p>Disseminate information about nutrition and PA guidelines, and healthy weight/waist circumference, for older people</p> <p>Use volunteer and community networks to communicate health information to older people</p>
Urban development, housing and transport services	<p>Strengthen implementation of existing planning guidelines for residential areas to ensure good access to services and facilities</p> <p>Design parks and community recreational facilities appropriate for older adults’ participation</p> <p>Design housing for optimal functioning of older people</p> <p>Increase availability and accessibility of public and community transport services, ensuring collaboration between industry, communities and local government</p>

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Domain	Recommended/Promising approaches
Research and Evaluation	<p>Develop a strategic body of research on a range of community initiatives targeting older adults</p> <p>Evaluate effectiveness, reach, and implementation barriers of community programs</p> <p>Investigate ways to increase participation and sustain community interventions</p> <p>Evaluate programs promoting healthy menu options in food services/outlets popular among older adults</p> <p>Investigate ways to broaden falls prevention programs to increase total level of PA</p> <p>Investigate sedentary behaviour patterns of older adults and identify social marketing strategies to promote PA and reduce sitting/TV watching among older people</p> <p>Investigate snacking in older adults and ways of reducing snacking and increasing vegetables consumption</p> <p>Evaluate existing planning guidelines for residential areas (e.g. healthy urban checklist items relevant to older persons)</p> <p>Evaluate feasibility and implications of implementing a health check around retirement age</p> <p>Investigate an integrated approach to the prevention and management of obesity and chronic disease in primary care</p> <p>Provide segmented analysis of health-related topics (weight status/waist circumference, nutrition, physical activity, sedentary behaviours) by age and gender in ongoing population health monitoring, and in the evaluation of programs and interventions</p> <p>Make use of existing databases, such as the <i>45 & Up Study</i>, to explore older persons health-related behaviours and contributing factors to obesity and chronic disease in this age group</p>