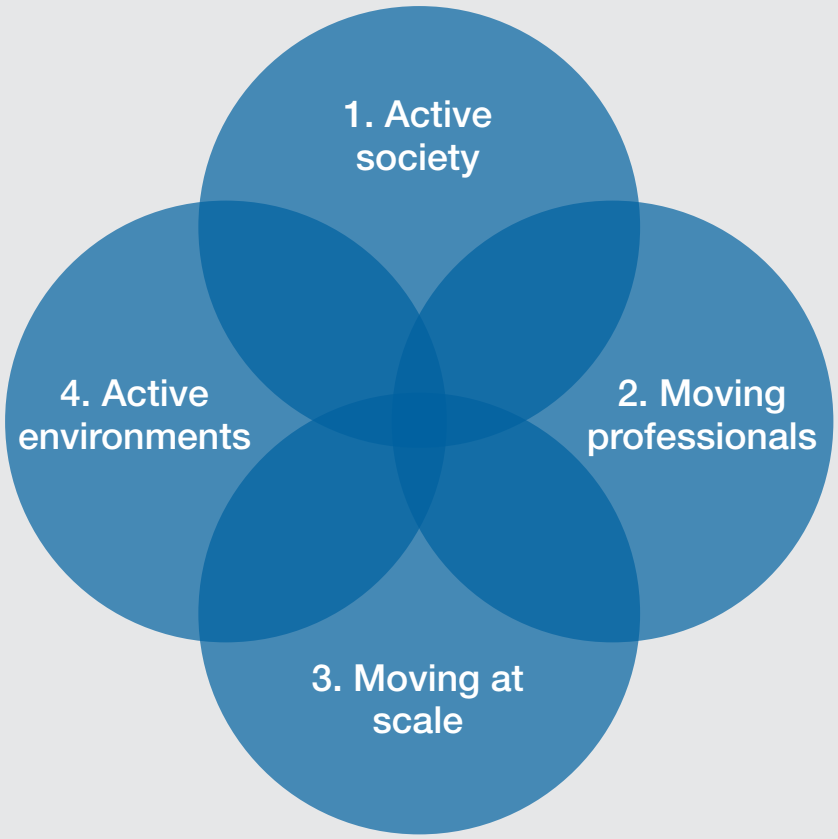
Public Health England

Protecting and improving the nation's health

Everybody active, every day

What works – the evidence



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About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through advocacy, partnerships, world-class science, knowledge and intelligence, and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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1. Inactivity

The toll it is taking on our health

Around one in two women and a third of men in England are damaging their health as a result of a lack of physical activity.[1] It's an unsustainable situation, and one that is costing the UK an estimated £7.4bn a year.[2,3]

There is broad recognition of the scale of the challenge. Moving society to the point where everyday activity is the norm will take a large-scale, sustained effort at every level, particularly of the public health system.

We know from the experience of countries like Finland and the Netherlands that if change is to be real and lasting we need to embed physical activity into the fabric of daily life, and to think long-term. We also need to involve all sectors in driving that change. Building upon what we know works, we can make being active every day the easy, cost-effective and 'normal' choice for every community in England.

To develop this overview, Public Health England (PHE) has drawn on the evidence base and published National Institute of Health and Clinical Excellence (NICE) guidance. More than 1,000 individuals have helped through regional events, online contributions and a series of topic-specific roundtables. We have consolidated the evidence in this document.

In some cases, work is already underway. Much of the evidence has informed the All-Party Commission on Physical Activity[4] and the government's Olympic and Paralympic legacy approach, Moving More, Living More,[5] as well as the Department of Health's Public Health Responsibility Deal.[6]

PHE wants to drive a step change in improving the public's health. We have identified seven priority areas that are most in need of improvement. We will pursue these priorities in a way that allows us to tackle the behaviour that increases the risk of poor mental and physical health, and to reduce health inequalities.[7] Tackling physical inactivity is critical to delivering many of those priorities (eg, dementia, obesity and giving every child the best start in life); it will therefore feature prominently in our work programme.

There are a wide range of opportunities for organisations to move forward at pace. Time lines for impact vary from months to years, but every action we take today will deliver benefits for generations to come, through the reduced burden and cost of preventable death and disease, and improved quality of life.

We have grouped opportunities for action into four domains: active society, moving professionals, active environments and moving at scale. We have prioritised actions with the strongest evidence base and most potential for implementation within the current climate.

"Building upon what we know works, we can make being active every day the easy, cost-effective and 'normal' choice for every community in England

These actions run across the life course, to support local and national government and their partners to achieve the population-level shifts required to get everybody active, every day.

Many of these actions are existing policy; others are in the evidence-based guidance from NICE. All could yield a real population-level return on investment – if implemented at scale. It's important that we monitor cost-benefits, and PHE will also work with partners to improve evaluation systems.

PHE's regions and centres will provide support. We will also continue to develop cost-effective and practical resources and tools, and develop a regional programme of networking and learning events.

2. Building on the evidence

This document sets out the evidence base for what works to get people active at a population-scale. Most of the interventions highlighted have been shown to be effective and achievable. Unfortunately in some areas we lack evidence that these interventions can be implemented successfully at scale. That doesn't mean they can't be: it's simply that for some interventions limited data is available.

Where possible, we highlight the potential both of 'direct' interventions (eg, referring people to 'led' walks), as well as those that focus on the wider determinants of health (eg, improving the environment to make walking and cycling easy and safe).

The evidence supports inter-sectoral approaches at a number of different levels.[9] We have identified key options for action at each level of the public health system which could, if implemented at scale, achieve the shift we need to improve both individual and population health and wellbeing.

3. The chief medical officer's guidelines on physical activity[8]

For early years (under fives)

1. Physical activity should be encouraged from birth, particularly through floor-based play and water-based activities in safe environments.
2. Children of pre-school age who are capable of walking unaided should be physically active daily for at least 180 minutes (three hours), spread throughout the day.
3. All under fives should minimise the amount of time spent being sedentary (being restrained or sitting) for extended periods (except time spent sleeping).

These guidelines are relevant to all children under five, irrespective of gender, race or socio-economic status, but should be interpreted with consideration for individual physical and mental capabilities.

For children and young people (five to 18 years):

1. All children and young people should engage in moderate to vigorous intensity physical activity for at least 60 minutes and up to several hours every day.
2. Vigorous intensity activities, including those that strengthen muscle and bone, should be incorporated at least three days a week.
3. All children and young people should minimise the amount of time spent being sedentary (sitting) for extended periods.

Based on the evidence, the guidelines can be applied to disabled children and young people, emphasising that they need to be adjusted for each individual based on that person's exercise capacity and any special health issues or risks.

For adults:

1. Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of ten minutes or more – one way to approach this is to do 30 minutes on at least five days a week.
2. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
3. Adults should also undertake physical activity to improve muscle strength on at least two days a week.
4. All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Based on the evidence, the guidelines can be applied to disabled adults, emphasising that they need to be adjusted for each individual, based on that person's exercise capacity and any special health or risk issues.

> "Most of the interventions highlighted have been shown to be effective and achievable

For older adults (65-plus years):

1. Older adults who participate in any amount of physical activity gain some health benefits, including maintenance of good physical and cognitive function. Some physical activity is better than none, and more physical activity provides greater health benefits.
2. Older adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of ten minutes or more – one way to approach this is to do 30 minutes on at least five days a week.
3. For those who are already regularly active at moderate intensity, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous activity.
4. Older adults should also undertake physical activity to improve muscle strength on at least two days a week.
5. Older adults at risk of falls should incorporate physical activity to improve balance and coordination on at least two days a week.
6. All older adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Based on the evidence, the guidelines can be applied to disabled older adults emphasising that they need to be adjusted for each individual based on that person's exercise capacity and any special health or risk issues.

4. The evidence for implementation

This section sets out the evidence in the context of settings and life stages.

Implementation across settings

The physical environment

"Although individuals need to be informed and motivated to adopt physical activity, the public health priority should be to ensure that environments are safe and supportive of health and wellbeing." Evidence-based intervention in physical activity: lessons from around the world. Heath GW et al., 2012[9]

NICE guidance on physical activity and the environment[10] emphasises that local authorities prioritise the creation and maintenance of environments that encourage people to be active. Doing this can bring added benefits, such as reduced traffic congestion, the revitalisation of local shops and services and increased community cohesion and social interaction.

Features of the built environment that have an impact on physical activity include:[11]

- location, density and mix of land use
- street layout and connectivity
- physical access to public services, employment, local fresh food
- safety and security
- open and green space
- affordable and energy-efficient housing
- air quality and noise
- resilience to extreme weather events
- community interaction
- transport

Road transport contributes to a number of health hazards and health inequalities, including air pollution, noise and injuries, particularly in urban areas. Disadvantaged areas tend to have a higher density of roads and traffic, and are therefore disproportionately affected by such problems.

Pedestrians, cyclists, and users of other modes of transport that involve physical activity need the highest priority when developing or maintaining streets and roads. This can mean re-allocation of road space to support walking and cycling; restricting motor vehicle access; introducing road-user charging and traffic-calming schemes; and creating create safe routes to schools.[10] Improving or adding green spaces and tree cover improves air quality as well as making spaces feel more welcoming.[12] Such changes have prompted substantial shifts from car transport to walking and cycling.[13]

Town and transport planners are therefore key, and we hope they will work closely with public health professionals at a strategic level. Issues include providing walking-friendly street layouts, with better access to seating and toilets, both important for older people and people with disabilities; high-density developments; locating shops and other facilities within walking and cycling distance. Small-scale improvements can also encourage movement, such as good street lighting or improved road crossings.[9]

"People are more likely to be active if it is seen as 'normal', and if their friends and peers are also active

NICE also emphasises the importance of public open spaces in encouraging physical activity.[14] Access to open and green space – parks, gardens, tree-lined streets, communal squares and allotments – is important for quality of life and for the sustainability of towns and cities.[15] People who have close access to green space live longer than those without it, even adjusting for social class, employment and smoking.[15] Having the open space to exercise also alleviates stress and depression and has been shown to aid mental health.[16,17] At a neighbourhood level, trees and vegetation improve residents' health, wellbeing and social safety.[18,19]

Public green space needs to be maintained to a high standard, be safe, attractive and welcoming and be accessible on foot, bicycle and public transport.[10] Some authorities have experimented with 'gyms without walls', 'trim trails' and other outdoor exercise facilities. Resources such as existing schools and leisure facilities, including playing fields, should be available to communities, especially children and young people before, during and after the school day and especially during school holidays.

Building design can encourage movement through and around the building, as well as between sites. NICE recommends that campus sites such as hospitals and universities encourage active travel between sites by creating pleasant and accessible routes for walking and cycling.[10] Schools need active school playgrounds; safe routes to school; and high quality, safe bicycle parking.[14] Similarly, workplaces can introduce practical measures such as showers for cyclists. There is strong evidence for the effectiveness of interventions to increase stair use.[21]

Much of this is not about new investment; it's about maximizing the potential of the many assets we already have in parks, leisure facilities, community halls, and workspaces, and thinking differently about the way we commission and plan public sector services in the short and long term.

The social environment

People are more likely to be active if it is seen as 'normal', and if their friends and peers are also active.[22] Large, community-wide campaigns have been effective in increasing physical activity, but only when supported by local level community activities.[9]

Site-specific communications can work well, at key community sites such as workplaces, churches, centres for older people, or schools and community centres. The strongest evidence for this impact comes from signs placed to encourage stair use instead of escalators:[10] simple signs near the lifts can point out that two minutes of stair-climbing each day could burn enough calories to eliminate the weight an average adult gains each year.[23] This principle can be tried in other settings. One creative example of motivation from Sweden involved painting a 'piano' keyboard onto stairs at an underground subway station at Odenplan. They found that people took the stairs 66% more than the escalator when it was made much more fun to do it.[24]

NICE guidance on young people and physical activity considered the effectiveness of social marketing in promoting physical activity to young people.[25] Social marketing and new technology has a lot of potential with this group in particular, but the area is so new that it is not yet well-evaluated. Examples include putting people with similar physical activity goals together via social media sites, or use of GPS-enabled 'apps' to track walking and other activities to share.[26]

"The social element behind physical activity aids enjoyment

Community-wide interventions

The main challenge when promoting physical activity is encouraging population-level behaviour change. Achieving small shifts in behaviour across whole communities could give more significant public health benefits than increasing activity among small, targeted groups. NICE is in the process of reviewing its guidance on community engagement[27] and it is considered within their existing guidance and pathways.[28]

Increasing social support for physical activity within communities, specific neighbourhoods, and worksites can effectively promote physical activity.[9] These can include town or city-wide programmes, in which successful marketing is strongly reinforced by community-level action. For example, free community classes such as fitness/aerobics and health walks in public places (parks, community centres, worksites) or fun activity sessions for children and young people. These are particularly good for underserved populations such as women, older adults and lower socioeconomic groups.[9]

Recent UK initiatives have shown the effectiveness of town-wide cycling and walking programmes.[29] NICE recommends promoting cycling for transport and recreational purposes, linked to existing national and local initiatives.[30] These should include provision of information, including maps and route signage along with initiatives such as fun rides; recreational and sponsored group rides; school sports promotions; and links with cycle sports events and cycle hire schemes.[31,32]

Walking should also be encouraged at community level. For example through linking supportive infrastructure (ie, footpaths and pedestrianised areas) to community-level walking programmes, promotions and events, such as mass participation walking groups, community challenges and 'walkathons' or group led walks.[30]

UK-based community-wide physical activity programmes, such as the healthy towns programme[33] and local exercise action pilots[34] can be hugely successful, but achieving population-level change requires extending beyond those who are already motivated to reach the wider community.

Group interventions

Evidence suggests that the social element behind physical activity aids enjoyment and that social support encourages sustained behaviour change.[35]

NICE recommends that inactive adults be encouraged to take up walking programmes.[30] These should link to existing national and local walking

initiatives such as walking for health.[36] They should address safety, cultural and disability issues and offer a variety of routes, paces and distances at different times of the day. They should be led by suitably trained walk leaders (paid or voluntary) and aimed at people who are currently inactive.

Successful facilitated group activities include guided bike rides for people with little or no experience of cycling, such as Sky Ride Local[37] and the parkrun running community.[38] Many local authorities also offer sport and leisure opportunities specifically targeted at people new to sport and activity, especially children and young people.

Social media offers a range of opportunities for groups of people with similar physical activity goals or interests, although effectiveness studies are currently limited.[39]

One-to-one interventions

There is strong evidence for the effectiveness of counselling and brief advice in primary care to increase an individual's physical activity.[40] NICE recommends that primary care practitioners identify those who are inactive; deliver programmes of brief advice including follow-up; incorporate brief advice in commissioning; and implement systems to support brief advice. Any programme developed to deliver advice, encouragement or support to individuals should be based on best practice for psychological interventions. Techniques should include monitoring, feedback and support.[41]

It is important to note that identifying patients and delivering advice is quite different to referring people directly to exercise facilities. Everyone benefits from exercise, but when dealing one-to-one we have to work with the individual, not just prescribe to them. NICE guidance recommends only funding exercise referral schemes for people who are sedentary or inactive and have existing health conditions or other factors.[42]

Pedometers can work well to stimulate physical activity,[9,43] with NICE recommending their use with a package of support including feedback, support and monitoring.[30] Pedometer phone apps are increasing in popularity, as are apps designed to tell people when they have stayed still for too long.

Local authorities can also develop programmes of personalised travel plans. These aim to encourage people to change their travel habits by providing them with detailed information of possible alternatives. They involve identifying people who wish to make changes; providing them with information; and supporting them in making changes.[30]

Individual approaches can also be implemented in specific settings, such as the workplace, with office-based screening and advice with telephone follow-up/community support. Whatever approach, evidence shows that co-creation – designing services with the help of those who use them – is most effective.

NICE guidance suggests long-term follow-up for at least six months following any intervention.[41]

Implementation across the life course

Starting well

At the ages of five to 15 years only 21% of boys and 16% of girls currently meet the CMO's guidelines. The proportion of girls meeting the guidelines decreases from 23% in those aged five to seven years to only 8% when aged 13-15 years.[1]

A child active from an early age establishes good habits for life, and being active should begin in babyhood.[44] Research suggests that campaigns to improve children's health should be directed to whole families[45] and for under-fives the focus is on active play rather than formal activity.[8] Physical activity is a vital part of the physical and mental development of children, and helps them to achieve their potential and to be 'school ready'.

The school setting is extremely important when it comes to children's opportunities to be active.[46] Evidence exists to support the 'whole school approach', including physical education, classroom activities, after-school sports, and promoting active travel to and from school.[47] Specific interventions in school supported by the evidence include: capacity building and staff training; increasing the number or quality of physical education classes; adjustment of interventions to target specific populations; increased activity at break times; changes in curriculum, equipment and materials provision. Additionally, walk to school programmes and cycling promotions can encourage increases active travel to and from school.[48]

The after-school period is a critical time when many children sit still for too long, watching films, playing computer games, browsing the internet or messaging on phones. Parents have an important role in encouraging their children to be more active, especially during evening, weekends and holidays.[49] A general guideline for all children of 'two hours max' total screen time can be helpful to ensure that children achieve the recommended amount of physical activity each day.[50]

Community and youth clubs that offer physical extracurricular activities help children and young people get active in an enjoyable and supportive environment. Improving access to safe and appropriate play spaces, including green space, is vital to enable more children to play outdoors. Since the 1970s the distance children venture from their home has declined by 90%.[51]

Support and encouragement to get active is particularly important as children and young people progress through key transition periods. There is some evidence to suggest that transition periods between stages in education and through to employment may result in reduced physical activity. Seventy per cent of 16-24 year olds cite transitions in life as the reason they gave up sports.[52]

"Support and encouragement to get active is particularly important as children and young people progress through key transition periods

Living well

Promoting physical activity to adults is relatively challenging. We need to do more to look into wider physical and social settings, perhaps via housing associations, social centres, supermarkets, mosques and churches.
With 70% of the adult population in employment, there is already strong evidence that workplace physical activity programmes are effective.[53] These can include flexible working policies and incentive schemes; policies to encourage employees to walk or cycle; information; ongoing advice and support or confidential, independent health checks focused on physical activity, administered by a suitably qualified practitioner.

Adults can be encouraged to be active alongside their children.[14] The voluntary and private sectors have done this very effectively – one example is the various campaigns of the Wild Network partnership, which includes the National Trust, RSPB and Play England.[54] The most successful marketing keeps the target audience in mind, especially if there are specific cultural, religious or social issues that may influence attitudes to physical activity.

Ageing well

The number of people aged 60 and over is currently 20% of the population. This will rise to 24% by 2030, and in the next 20 years, the number of over 80s will treble.

As people age, it can be argued that activity is more, not less important.[55,56,57] Retirement can be stimulus to increase activity and try new hobbies. The good news is that it is never too late to adopt a more physically active lifestyle. There is strong evidence that the benefits of physical activity apply even to older adults who have previously been inactive.[8]

The NICE guidance on physical activity for older people is limited, although the adult guidance can be adapted. There is evidence that physical activity can tackle the growing problem of social isolation, as well as giving health benefits.[58] Targeted and tailored individual interventions are most likely to be successful with older people, as they address specific needs and concerns.[59]

5. Research gaps

There are gaps in the evidence. PHE is producing a report to help bridge the gap, 'Physical activity: promising practice'. Areas where further research is needed include:

- increased research into the long term impacts of physical activity interventions, including built environment interventions, at individual, group and population level
- evaluation of interventions to establish sustained behaviour change targeted at specific key groups (eg, adolescents, people with long-term mental health conditions)
- cost-effectiveness studies which reflect cost-benefits for health, social care and other societal impacts such as educational attainment, productivity and sickness absence
- large-scale population evaluation of built environment and transport infrastructure interventions
- insight studies into different communities to address inequalities
- how best to support those with long-term mental health conditions to sustain exercise and activity
- the effectiveness of new technologies (eg, social media) in changing behaviours over longer terms
- indicators of physical activity in children and young people

While acknowledging these gaps, it is not a case for inaction. Enough guidance and research already exists to make both the business and the health case clear. It also isn't a suggestion that what people are doing now is wrong – especially the thousands of volunteers working with individuals and communities within their own time. We now need to use evidence to improve the way we use our resources.

6. Options for action

Every action we take today will deliver benefits for generations to come.

We have grouped what we see as opportunities for action using four domains: active society, moving professionals, active environments and moving at scale.

In essence local areas should be taking five steps to support change:

1. Teach every child to enjoy, value and have the skills to be active every day.
2. Create safe and attractive environments where everyone can walk or cycle, regardless of age or disability.
3. Make 'every contact count' for professionals and volunteers to encourage active lives.
4. Lead by example in every public sector workspace.
5. Evaluate and share the findings so we learning more about what works.

In this document we've highlighted those actions which we feel have the most potential and the strongest evidence base. This section is aimed primarily at national and local government; schools; the transport, leisure and sports providers, community and voluntary leaders and organisations; employers and health and social care professionals. These priority options run across the life course and equality groupings.

Active society: creating a social movement

We need a cultural turnaround in attitudes to physical activity. The international experience of countries like Finland is that there is no quick fix: we need long-term promotion of physical activity over decades. The shared vision is to get everybody active every day, driving a radical shift in the take-up of physical activity on a national scale.

National government

- continue at pace the cross-government and cross-party commitments and leadership established in Moving More, Living More and All Party Commission recommendations to embed physical activity in all relevant policies[60]
- work with schools, Ofsted[61] and their partners to ensure full implementation of the new National Curriculum, so that no child leaves school[62] without the core skills to be competent in a broad range of physical activities and understand and apply the long-term health benefits of physical activity[14]
- lead by example, mobilising the breadth of the civil service and local government workforce to be advocates for physical activity, and support them to be active in their own lives

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- provide effective, evidence-based social marketing campaigns,[14] such as Change4Life, to promote physical activity across the life course, and support tailoring of these campaigns at local level and in specific settings such as businesses and institutions

- develop and maintain a coherent national picture of physical inactivity and activity in England to monitor progress
- work through our strategic partners programme to support capacity building in the third sector and minority community leadership on physical activity

Local government

- lead local leadership and action to increase physical activity and reduce inactivity through health and wellbeing boards, ensuring that physical activity is included in joint strategic needs assessments and joint health and wellbeing strategies, with connections to local spatial and neighbourhood plans, transport plans community sports and physical activity plans, clinical commissioning group strategic plan and economic regeneration plans[14]
- work with local enterprise partnerships and local chambers of commerce to integrate physical activity through active travel and workplace health into every level of economic growth and infrastructure planning
- implement the national standards for the workplace wellbeing charter,[63] and support local businesses to take part and work towards excellence, particularly supporting action to increase physical activity in workplaces
- commission leisure services ensure that are insight-led and designed with users
- incorporate provisions for inclusion, addressing inactive people and training into provider contracts
- ensure commissioners have a long-term strategic plan for physical activity

NHS commissioners

- inspire local action by NHS staff by showing national leadership on physical activity and emphasising the potential return on investment for individuals and at a population level for being active every day
- integrate the ambition to increase physical activity through clinical commissioning pathways into the NHS strategic plan and delivery action plans
- demonstrate local leadership through clinical commissioning groups to activate networks of professionals to promote physical activity in clinical care, such as supporting local physical activity champions in primary and secondary care

NHS providers

- integrate physical activity into clinical assessment and techniques such as motivational interviewing into holistic care and support for all patients
- support local physical activity champions in clinical settings to help energise the environment and signpost support and activity opportunities for patients and staff
- integrate active lifestyle messages into every service, so every contact counts[64]

Sport and leisure organisations

- programming should target and engage inactive people
- engage users in design of locally-embedded physical activity programmes

- deliver services that support inclusive opportunities for physical activity (eg, inclusion fitness initiative-accredited gyms, equity statements)

Educational settings (early years to higher education)

- consistently promote the benefits of healthy lifestyles across the curriculum at primary,[65] secondary[66] and higher education levels, and benefits of group activities
- promote campaigns for cycling and walking to school, college or university[14]
- engage local community groups and organisations to maximise imaginative use of school, college or university facilities such as playing fields, gyms, dance halls and swimming pools

Businesses and employers

- lead by example in implementing evidence-based interventions to promote physical activity in the workplace, including workplace-based NHS Health Checks, to improve staff health and wellbeing, and encourage walking and cycling to work,[30] and other forms of active travel and physical activity in the workplace

Voluntary and community organisations

- take community leadership on promoting physical activity, especially in ethnic minority, faith and disabled communities and organisations
- promote understanding of physical activity in an integrated way with mainstream messaging. The leadership shown by Breakthrough Breast Cancer[67] and Macmillan[68] is a good model in promoting physical activity to reduce cancer risk

Moving professionals: using networks

We already have the ideal information network; the hundreds of thousands of professionals and volunteers who work directly with the public every day and the push for 'making every contact count'.[69] Their understanding of the need to become active every day is key to getting the nation moving.

All sectors and disciplines can play a role, not just those who already work in health. Professionals in spatial planning, social care, psychology, sport and leisure, the media, trades unions, education and business can help us bring about radical change.

National government

- encourage learning and development opportunities across the civil service to increase the understanding of physical activity and its relationship to policy development for improving health, social and economic population outcomes
- build on existing national knowledge sharing hubs, such as the local sustainable transport fund hub, to support local action to increase physical activity and reduce inactivity

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- work with partners to build the capacity and enthusiasm of educators as

part of the wider public health workforce by promoting effective practice and signposting the tools and resources to help promote physical activity
- support wider understanding of the role and impact of physical activity through our publications and develop targeted learning and development tools for specific groups of professionals
- work through partners such as the medical royal colleges, trade unions, chartered institutes and royal societies to prompt post-graduate training and development to increase understanding about physical activity and create the skills to support individuals becoming more active

Local government

- improve competency and skills of health and social care staff to support older people,[70] including integration of key skills around physical activity for older adults[30]
- commission training programmes for staff to promote increased physical activity[14] in early years
- integrate physical activity into local workforce development programmes and training for staff

NHS commissioners

- require training of provider staff on the role of physical activity in the care pathway and opportunities for maximising patient care through its use
- incorporate a requirement for brief interventions training in physical activity provider contracts

NHS providers

- ensure all health and social care staff are trained and assessed for their competence in brief interventions[40] and motivational interviewing techniques[71] for lifestyle modification, eg, physical activity and mental wellbeing
- create an environment that values 'making every contact count'

Sport and leisure organisations

- support project managers, coaches and volunteers with training and guidance on integration of behaviour change
- ensure volunteering opportunities and jobs provide skills development and career prospects
- develop a making every contact count approach that integrates active living into all aspects of business

Educational settings (early years to higher education)

- schools and teacher training bodies to train education staff to understand the link between health and wellbeing and educational attainment,[72,73] and ensure they have the skills to deliver the personal, health and social education (including physical activity)[74] curriculum effectively, identifying pupils who may need additional support
- universities working with partners to integrate understanding of the potential role of physical activity across the undergraduate curriculum, from healthcare to planning and engineering

- medical royal colleges, chartered associations, professional bodies and other professional accrediting bodies to integrate understanding of, and skills to support, physical activity into the post-graduate training offer to support professionals as they develop in their careers
- review the training needs of transport professionals in order to ensure a consistently high standard of provision of walking and cycling infrastructure on the strategic and local road network

Businesses and employers

- provide learning and development, volunteering and skills development opportunities for staff at all levels to develop their physical literacy and integrate physical activity into their daily lives
- support staff volunteering in community physical activity projects, for example as community sports coaches
- sports and leisure providers ensure that all staff have comprehensive diversity training and where appropriate additional training to facilitate activity for people with disabilities and impairments

Voluntary and community oganisations

- integrate prevention messages into the training of volunteers and staff, so every contact counts
- support training and development for community and faith leaders to energise and activate their communities to be active every day - at all ages
- utilise existing support available for volunteer physical activity facilitators, such as the walking for health initiative[75] or upcoming research on the active, connected, engaged neighbourhoods (ACE)[76]

Active environments: creating the right spaces

Local authorities have a new responsibility to link local health policy with other policy strands such as planning, transport infrastructure and housing. This gives them the opportunity to create new networks of expertise, and design physical activity in from the ground up. New partnerships – eg, with architects and urban planners working directly with professionals in health and leisure – will find new ways to reverse the downward trends in activity levels.

There is a clear link between land use and public health. Although many surveys show it's the quality, not just the quantity of public parks and spaces that make people want to walk more, there is evidence that just having access to green and open spaces matters.

National government

- ensure that planning transport and housing policies support strong, vibrant and healthy communities that prioritise physical activity and active travel[77]
- government to accelerate a modal shift in transport[78] from cars to walking,[30] cycling and public transport[80] by evaluating the case to introduce an active travel bill for England. Examine the need for a legal requirement for local authorities to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling, as with the Active Travel (Wales) Act

- integrate active travel planning in national capital investment strategies and delivery plans. Plan in supporting facilities such as secure cycle storage, showers and drying facilities as core requirements[81]

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- provide evidence about different dimensions of health and the built environment, and tools to inform local good practice
- work with the chief medical officer and national government to develop the scientific evidence of the health and social benefits of green infrastructure and active travel on air quality and climate change mitigation
- support better frameworks for evaluation of infrastructure and built environment interventions to help develop the evidence base
- develop capacity within the local public health workforce and those in spatial planning, housing, and transport planning, to maximise the impact of health and wellbeing from their work, eg, through secondments and joint training[82,83]

Local government

- align the local plan[84] and the health and wellbeing strategy informed by the JSNA[85] and plans being developed by local enterprise partnerships, which should make public health a priority in their strategic planning and investment choices[83] to deliver healthy environments
- develop coordinated, cross-sector approaches and interventions to promote walking, cycling, active transport[86] and active play,[14] including the choice of sites for new developments for example, housing, education and health care settings,[10] for all ages,[30,87,88,89] through effective use of the local plan[89] and other instruments such as the door-to-door strategy,[90] local growth fund and local sustainable transport fund
- deliver multi-component sport, leisure, and outdoor based on insight/co-creation work that are attractive and appropriate to the whole community (including children, young people and older people) to contribute to their opportunities to be physically active[14,91]
- use regulatory and statutory frameworks such as the local plan, licensing and assessments to design healthy, inclusive (eg, age[92] and disability-friendly) environments that promote social interaction, physical activity,[93,94] and a general feeling of safety and security[95]

NHS commissioners

- integrate a requirement for active travel plans into pre-qualifying questionnaire stage of procurement
- in capital investment strategies and delivery plans integrate active travel planning and the promotion of physical activity as a core requirement

NHS providers

- NHS providers and local authorities to put active transport plans in place for all settings and consistently implement schemes to help staff, patients and visitors to maximise active travel[30]
- NHS providers to look to provide other opportunities for physical activity in everyday activity, such as activating stairwells and promoting activity through corporate challenges, sports leagues, fun runs, etc

Sport and leisure providers

- implement active travel plans for all staff and customers
- identify and address barriers that prohibit equality groups from accessing services (eg, geographic, physical, economic)

Educational settings (early years to higher education)

- design playgrounds to enhance physical activity[10]
- in schools and higher education capital investment strategies and delivery plans integrate active travel planning and the supporting facilities such as changing accommodation, secure cycle storage, showers and drying facilities as core requirements[96,97]
- support cycle training for children to keep them safe on the road

Businesses and employers

- increase physical activity opportunities in the working day through support for active travel, or for evidence based workplace approaches
- participate in the public health responsibility deal and workplace wellbeing charter to learn good practice and share it with others
- take part in the national cycle to work scheme and support adults to take up cycling classes and opportunities to increase their safety on the road

Voluntary and community organisations

- have active travel plans and policies[30] for staff, volunteers and users
- increase physical activity opportunities for staff and volunteers in the working day, through support for active travel, or for evidence-based workplace approaches

Moving at scale: making us active everyday

We need a revolution in physical activity and health. In partnership with local and national government, professionals in schools, the health sector, transportation, the sports, leisure and voluntary sectors can all be energized to achieve this common goal. We just need to light the touch paper.

Evidence shows that positive change needs to happen at every level. It needs to be measurable, permanent and consistent. It needs hardwiring into our national culture and consciousness.

Local health and wellbeing boards know their local community and the assets they can build on to implement this guidance and make it a reality. There is ample guidance available.

Much of this is not about new investment; it's about maximizing use of the many assets we already have – and incorporating the need to increase physical activity into all long-term planning.

National government

- DH to work in partnership across government[98] to increase the existing effort to prevent dementia and other non-communicable diseases by increasing physical activity and reducing inactivity
- support the further development of the business case and return

on investment evidence across economic, health, social care and education portfolios at a local level, to support effective allocation of resources in both urban and rural settings

PHE

- work with NICE and other national partners to promote evidence-based interventions to reduce inequalities and improve health, social and wellbeing outcomes across the life course which focus on active and healthy lifestyles
- work with funding bodies such as Sport England and the Arts Council, to increase the evidence base and our understanding of how participation translates into everyday activity across the life course
- provide advice and tools to support effective commissioning of health interventions and behaviour change interventions, including diet and weight management, physical activity, and the NHS Health Check[99] programme
- work with NHS England to optimise the public health impact of healthcare in all institutional settings, such as prisons; that improve population health outcomes

Local government

- embed the physical activity standard evaluation framework into the commissioning of any physical activity intervention and align with DH's 'Let's get moving' report[100]
- support education and early years settings[14] with implementing NICE guidance and recommendations on physical activity for children and young people, and similarly with wider services to support active older people[101,102]
- implement integrated behaviour change programmes,[41] which influence behavioural change at population level to increase healthy lifestyles, promote wellbeing and reduce the burden of disease. This should include measures to help prevent cognitive decline in later life[103]
- work with NHS commissioners to ensure that the physical activity risk assessment in clinical care pathways leads to appropriate interventions for those receiving the NHS Health Check and for those on the chronic disease registers[40]

NHS commissioners

- ensure pathways are in place to support healthy weight and diet for children and young people, and promote physical activity to children and young people[14]
- use community pharmacies to support people at every age to lead healthy lifestyles via opportunistic advice on topics including physical activity[104]
- commission services that integrate prevention, mental wellbeing,[105] lifestyle modification,[106,107.108,109] and that address or signpost to support on the social determinants of health as part of all clinical care pathways, eg, physical activity throughout the care pathway for cancer,[110] integrated wellness services[111] and social prescribing[112]
- embed the physical activity standard evaluation framework into the commissioning of any physical activity intervention

NHS providers

- integrate health advice into every health and social care contact and in all care pathways – from pharmacists and physiotherapists to dental nurses and care assistants – including information on support for physical activity[113,114]
- using NICE guidance on behaviour change[115] and processes and training to make every contact count[116] for use with children and young people

Sport and leisure providers

- establish robust systems to evaluate projects that assess pre and post-project physical activity as well as participation and wider outcomes (using the standard evaluation framework)

Educational settings (schools to higher education)

- promote understanding and dissemination of the evidence base and through higher education support the development of the new and emerging evidence base

Businesses and employers

- lead by example, being advocates for physical activity in the workplace to support staff to be active in their own lives and create ambitious business travel standards that promote active travel

Voluntary and community organisations

- lead by example, being advocates for the evidence base for physical activity in the workplace to support staff and volunteers to be active in their own lives

7. PHE actions to support implementation

Recognising the importance of physical activity to individual, community and national health and wellbeing, and the need to support the public health system, PHE is working on resources that will support local and national action. These include:

- topic overviews – a set of in-depth summaries of evidence to support action on challenging issues. The first set will include: older people; children and young people; disability; ethnicity; gender; lesbian, gay, bisexual and transgender people; and active places
- overview of online tools – summary of online tools to make the case for investment in the promotion of physical activity and/or prevention of obesity, with guidance on which tool to use in which situation
- toolkits for elected representatives – guidance for members of parliament and local elected members to support them undertaking their unique role in local leadership
- promising practice report – summary of the national process that received 958 submissions of promising practice on increasing physical activity in local communities which were reviewed by an academic panel against the Nesta standards of evidence[117]
- BMJ e-learning resources – a suite of free, CPD-accredited modules covering motivational interviewing (including physical activity) techniques and nine modules on physical activity and health covering the science and specific clinical conditions, including diabetes, depression and cancer
- review of return on investment evidence – a definitive summary of the economic benefits of investing in physical activity, not only in terms of health but of the wider social benefits (eg, social care, regeneration, travel and transport, business and economic productivity, crime and education)
- developing the academic-practitioner interface – a mapping of the academic landscape for physical activity forms the basis for ongoing work
- embedding in clinical pathways – work with the National Centre for Sports and Exercise Medicine on implementing into clinical care pathways in acute settings
- health professional education – PHE will be working with professional bodies and leaders (eg, royal colleges, Health Education England, allied health professionals networks) to develop expertise and leadership among health professionals

References

1. Health and Social Care Information Centre (2013). Health Survey for England 2012. Volume 1: Chapter 2 – Physical activity in adults. Health and Social Care Information Centre: Leeds.
2. Scarborough P, Bhatnagar P, Wickramasinghe KK, Allender S, Foster C, Rayner M (2011) The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs. Journal of Public Health 33 (4): 527-535.
3. Ossa D and Hutton J (2002) The economic burden of physical inactivity in England. London: MEDTAP International.
4. All Party Commission on Physical Activity (2014) Tackling physical inactivity – a coordinated approach.
5. Cabinet Office (2014) Moving More, Living More: The Physical Activity Olympic and Paralympic Legacy for the Nation. London: The Stationery Office
6. Department of Health Public Health Responsibility Deal. responsibilitydeal.dh.gov.uk/ (accessed 10 Oct 2014).
7. PHE (2014) From evidence into action: opportunities to protect and improve the nation's health. PHE's priorities.
8. DH (2011) Start Active, Stay Active: A report on physical activity from the four home countries' Chief Medical Officers. London: The Stationery Office
9. Heath GW, Parra DC, Sarmiento OL, Andersen LB, Owen N, Goenka S, Montes F, Brownson RC (2012) Evidence-based intervention in physical activity: lessons from around the world. The Lancet 380: 272-81
10. NICE (2008) Physical activity and the environment: NICE public health guidance 8.
11. Faculty of Public Health (2012) Built environment and physical activity. A position statement.
12. Department of Environment, Food and Rural Affairs (2011) The natural choice: securing the value of nature. London: The Stationery Office.
13. de Nazelle A, Nieuwenhuijsen MJ, Antó JM, et al. (2011) Improving health through policies that promote active travel: a review of evidence to support integrated health impact assessment. Environ International 37: 766–77.
14. NICE (2009) Promoting physical activity for children and young people. NICE public health guidance 17.
15. Mitchell R, Popham F (2008) Effect of exposure to natural environment on health inequalities: an observational population study. The Lancet 372: 1655-1660.
16. van den Berg, A.E., Hartig, T. & Staats, H. (2007) Preference for nature in urbanised societies: Stress, restoration and the pursuit of sustainability. Journal of Social Issues, 63, 79–96.
17. Chiesura, A. (2004) The role of urban parks for the sustainable city. Landscape and Urban Planning, 68, 129–138.
18. Green Space Scotland (2008) Transforming Urban Spaces: the links between green spaces and health - a critical literature review.
19. GO Science, Foresight (2008) The Effect of the Physical Environment on Mental Wellbeing.
20. Cohen D, Marsh T, Williamson S, Golinelli D, McKenzie TL (2012) Impact and Cost-Effectiveness of Family Fitness Zones: A Natural Experiment in Urban Public Parks. Health Place 18(1): 39–45.
21. Soler RE, Leeks KD, Buchanan LR, Brownson RC, Heath GW, Hopkins DH (2010) Task Force on Community Preventive Services. Point-of-decision prompts to increase stair use. A systematic review update. American Journal of Preventative Medicine 38: S292-300.
22. Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW (2012) Correlates of physical activity: why are some people physically active and others not? The Lancet 380: 258 - 271
23. New York City Department of Health and Mental Hygiene (2008) City officials unveil new icon to inspire New Yorkers to take the stairs for better health and a greener NYC. http://www.nyc.gov/html/doh/html/pr2008/pr033-08.shtml
24. Volkswagen Group Sverige (2009) Fun theory. http://www.thefuntheory.com/piano-staircase
25. NICE (2009) Promoting physical activity for children and young people. NICE public health guidance 17.
26. Vandelanotte C, Kirwan M, Rebar A, Alley S, Short C, Fallon L, Buzza G, Schoeppe S, Maher C, Duncan MJ (2014) Examining the use of evidence-based and social media supported tools in freely accessible physical activity intervention websites. International Journal of Behavioural Nutrition and Physical Activity 11:105.
27. NICE (2008) Community engagement. NICE public health guidance 9.
28. NICE (2014) Community engagement: approaches.
29. Ogilvie D, Egan M, Hamilton V, Petticrew M (2004) Promoting walking and cycling as an alternative to using cars: systematic review. British Medical Journal 329:763
30. NICE (2012) Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation

NICE public health guidance 41.
31. Goodman et al. (2014) New Walking and Cycling Routes and Increased Physical Activity: One- and 2-Year Findings From the UK iConnect Study. American Journal of Public Health 108:34-48
32. Goodman et al. (2013) Effectiveness and equity impacts of town-wide cycling initiatives in England: A longitudinal, controlled natural experimental study. Social Science & Medicine 97:228-37
33. Sautkina E, Goodwin D, Jones A, Ogilvie D, Petticrew M, White M, Cummins S (2014) Lost in translation? Theory, policy and practice in systems-based environmental approaches to obesity prevention in the Healthy Towns programme in England. Health Place 25;29C:60-66.
34. Pringle A, Gilson N, McKenna J, Cooke C (2009) An evaluation of the Local Exercise Action Pilots and impact on moderate physical activity. Health Education Journal 68: 179-185
35. NICE (2007) Behaviour change: the principles for effective interventions. Public Health Guidance 6.
36. Natural England (2010) What impact did Walking for Health have on the physical activity levels of participants?
37. British Cycling (2011) Sky ride local 2010 evaluation report.
38. Stevinson C,Hickson M (2013) Exploring the public health potential of a mass community participation event. Journal of Public Health 36(2): 268–274
39. Williams G, Hamm M P, Shulhan J, Vandermeer B, Hartling L (2014) Social media interventions for diet and exercise behaviours: a systematic review and meta-analysis of randomised controlled trials. British Medical Journal Open 4:2
40. NICE (2013) Physical activity: brief advice for adults in primary care NICE public health guidance 44.
41. NICE (2014) Behaviour change: individual approaches. NICE public health guidance 49.
42. NICE (2014) Exercise referral schemes to promote physical activity. NICE public health guidance 54.
43. Kang M, Marshall SJ, Barreira TV, Lee J-O (2009) Effect of Pedometer-Based Physical Activity Interventions: A Meta-Analysis. Research Quarterly for Exercise and Sport 80: 648–655
44. PHE (in press) Start active; playactive. Promoting physical activity through play in early years.
45. Hesketh, et al. (2014) Activity Levels in Mothers and Their Preschool Children. Pediatrics 2013-3153
46. Kriemler et al. (2011) Effect of school-based interventions on physical activity and fitness in children and adolescents: a review of reviews and systematic update. British journal of Sports Medicine 45:923-930
47. Heath GW, Parra DC, Sarmiento OL, Andersen LB, Owen N, Goenka S, Montes F, Brownson RC; Lancet Physical Activity Series Working Group (2012) Evidence-based intervention in physical activity: lessons from around the world. The Lancet 380(9838):272-81.
48. NICE (2009) Promoting physical activity for children and young people. NICE public health guidance 17.
49. Atkin AJ, Gorely T, Biddle SJ, Cavill N, Foster C (2011) Interventions to promote physical activity in young people conducted in the hours immediately after school: a systematic review. International Journal of Behavioural Medicine 18(3):176-87
50. PHE (2013) How healthy behaviour supports children's wellbeing.
51. Gaster S (1991) 'Urban Children's Access to Their Neighbourhoods: Changes Over Three Generations', quoted in Louv R (2005) Last Child in the Woods, p.123.
52. Sport England (2013) How we play – the habits of community sport.
53. Cavill N, Coffey M, Parker M, Dugdill L (2014) Best Practice in Promoting Employee Health and Wellbeing in the City of London. Technical Report. City of London Corporation.
54. RSPB (2013) Connecting with nature. Finding out how connected to nature the UK's children are.
55. WHO (2004) What are the main risk factors for falls among older people and what are the most effective interventions to prevent these falls? Copenhagen: WHO Regional Office for Europe
56. Snowden M, Steinman L, Mochan K, Grodstein F, Prohaska TR, Thurman DJ, et al. (2011) Effect of exercise on cognitive performance in community-dwelling older adults: review of intervention trials and recommendations for public health practice and research. Journal of the American Geriatrics Society, 59(4) p. 704-16.
57. Larson EB, Wang L, Bowen JD, McCormick WC, Teri L, Crane P, et al. (2006) Exercise is associated with reduced risk for incident dementia among persons 65 years of age and older. Annals of Internal Medicine 144: 73-81.
58. Windle, G. et al. (2008) Public health interventions to promote mental well-being in people aged 65 and over: systematic review of effectiveness and cost-effectiveness, Bangor: Institute of Medical and Social Care Research.
59. Hobbs, N., Godfrey, A., Lara, J., Errington, L., Meyer, T.D. Rochester, L., Sniehotta FF (2013) Are behavioural Interventions effective in increasing physical activity at 12-36 months in adults aged 55 – 7- years? A systematic review and meta-analysis. BMC Medicine 11; 75

60. Cabinet Office (2014) Moving More, Living More: The Physical Activity Olympic and Paralympic Legacy for the Nation.
61. Langford R, Bonell CP, Jones HE, Pouliou T, Murphy SM, Waters E, Komro KA, Gibbs LF, Magnus D, Campbell R (2014) The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement. Cochrane Database of Systematic Reviews Issue 4.
62. Department for Education (2013) Physical Education programmes of study: key stages 1 and 2. National Curriculum in England.
63. Liverpool City Council (2014) The Workplace Wellbeing Charter.
64. NHS Midlands and East (2012) An Implementation Guide and Toolkit for Making Every Contact Count: Using every opportunity to achieve health and wellbeing.
65. Department for Education (2013) Physical Education programmes of study: key stages 1 and 2. National Curriculum in England.
66. Department for Education (2013) Physical Education programmes of study: key stages 3 and 4. National Curriculum in England.
67. Breakthrough Breast Cancer. Physical Activity. http://www.breakthrough.org.uk/about-breast-cancer/breast-cancer-risk-factors/physical-activity (accessed 10 Oct 2014).
68. Macmillan Cancer. Physical activity and cancer. http://www.macmillan.org.uk/Cancerinformation/Livingwithandaftercancer/Physicalactivity/Physicalactivity.aspx (accessed 10 Oct 2014)
69. NHS England (2014) An Implementation Guide and Toolkit for Making Every Contact Count: Using every opportunity to achieve health and wellbeing. London: NHS England.
70. Howat C, Lawrie M (2010) Healthcare workforce skills and competencies for an ageing society. London: Age UK.
71. PHE has commissioned BMJ Learning to develop a motivational interviewing skills module for launch in October 2014
72. Bonell C, Humphrey N, Fletcher A, Moore L, Anderson R, Campbell R (2014) Why schools should promote students' health and wellbeing. British Medical Journal 348: g3078.
73. Parsonage M, Khan L, Saunders A (2014) Building a better future: The lifetime costs of childhood behavioural problems and the benefits of early intervention. London: Centre for Mental Health
74. Department for Education (2013) Statutory Guidance: National curriculum in England: physical education programmes of study.
75. Macmillan Cancer Support, Ramblers (2013) Walking Works: how walking can help everyone lead longer, healthier and happier lives.
76. Research Councils UK. Project ACE: Active, Connected and Engaged Neighbourhoods. http://gtr.rcuk.ac.uk/project/97204AAD-A5EA-4145-AE53-5205C60B9F84 (accessed 10 Oct 2014)
77. PHE (2013) Healthy people, healthy places briefing. Obesity and the environment: increasing physical activity and active travel.
78. Morrison D, Petticrew M, Thomson H (2003) What are the most effective ways of improving population health through transport interventions? Evidence from systematic reviews. Journal of Epidemiology & Community Health 57:327-333
79. Pucher J, Buehler R (2008) Making Cycling Irresistible: Lessons from The Netherlands, Denmark and Germany. Transport Reviews 28: 495–528
80. Ogilvie D, Egan M, Hamilton V, Petticrew M (2004) Promoting walking and cycling as an alternative to using cars: systematic review. British Medical Journal 329:763-6
81. NICE (2008) Promoting physical activity in the workplace. NICE public health guidance 13.
82. Department of Health (2014) Healthy lives, healthy people: update on the public health workforce strategy.
83. Ross A, Chang M (2013) Planning healthier places: Report from the Reuniting Health with Planning project. London: Town and Country Planning Association.
84. DCLG (2013) National Planning Policy Framework for England and planning practice guidance.
85. Tomlinson P, Hewitt S, Blackshaw N (2013) Joining up health and planning: how Joint Strategic Needs Assessment (JSNA) can inform health and wellbeing strategies and spatial planning. Perspectives in Public Health 133(5): 254-262
86. NICE (2014) Evidence Update: Physical activity and the environment. Report number: 57.
87. DCLG Planning practice guidance. (accessed 25 June 2014).
88. NICE (2010) Preventing unintentional road injuries among under-15s road design: full guidance. NICE public health guidance 31.

89. NICE (2010) Strategies to prevent unintentional injuries among the under-15s: guidance. NICE public health guidance 29.
90. Department for Transport (2013) Door to door strategy. https://www.gov.uk/government/publications/door-to-door-strategy (accessed 10 Oct 2014).
91. Department of Health (2013) Chief Medical Officer's annual report 2012: Our children deserve better: Prevention pays.
92. WHO (2007) Ageing and Life-Course. Checklist of essential features of age-friendly cities. Geneva: World Health Organization.
93. Nygaard I, Girts T, Fultz N, Kinchen K, Pohl G, Sternfeld B (2005) Is urinary incontinence a barrier to exercise in women? Obstetrics & Gynecology 106(2): 307-14.
94. Jancey JM, Clarke A, Howat PA, Lee AH, Shilton T, Fisher J (2007) A physical activity program to mobilize older people: A practical and sustainable approach. The Gerontologist 48(2): 251-57.
95. Phillips J (2010) Older people's use of unfamiliar space: Implications for urban design and spatial policy. Swansea: Swansea University
96. Department for Education (2013) Standards for [secondary] School Premises.
97. Department for Education, Education Funding Agency (2014) Area Guidelines for Mainstream Schools Building Bulletin 103.
98. Department of Health. The Dementia Challenge. http://dementiachallenge.dh.gov.uk/ (accessed 10 Oct 2014).
99. Department of Health. Public Health England, NHS Improving Quality, Local Government Association. NHS Health Check. http://www.healthcheck.nhs.uk/ (accessed 25 June 2014).
100. Department of Health. Resources for commissioning Let's Get Moving interventions. https://www.gov.uk/government/publications/let-s-get-moving-revised-commissioning-guidance (accessed 01 July 2014).
101. British Heart Foundation National Centre for Physical Activity. Physical activity guidelines for older adults. http://www.bhfactive.org.uk/olderadultsguidelines/index.html (accessed 27 June 2014).
102. NICE (2008) Occupational therapy and physical activity interventions to promote the mental wellbeing of older people in primary care and residential care: This guidance was previously entitled 'Mental wellbeing and older people'. NICE public health guidance 16.
103. Erickson KI, Weinstein AM, Lopez OL (2012) Physical activity, brain plasticity, and Alzheimer's disease. Archives of Medical Research 43(8): 615-21.
104. Local Government Association (2013) Community pharmacy: Local government's new public health role. London: LGA
105. NICE (2013) QS50 Mental wellbeing of older people in care homes.
106. NICE (2013) CG43 Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children.
107. DH (2013) Developing a specification for lifestyle weight management services Best practice guidance for tier 2 services.
108. PHE has commissioned the RCGP to produce an e-learning module to support primary care professionals discuss weight management which is due to launch in October 2014.
109. PHE has commissioned BMJ Learning to develop an e-learning module on physical activity integration across the care pathway due for publication in October 2014
110. Macmillan Cancer Support. Physical activity. www.macmillan.org.uk/Aboutus/Healthandsocialcareprofessionals/Macmillansprogrammesandservices/Physicalactivity.aspx (accessed 26 June 2014).
111. Stevenson, N (2011) From illness to wellness: Achieving efficiencies and improving outcomes. London: NHS Confederation.
112. Cawston P (2011) Social prescribing in very deprived areas. The British Journal of General Practice 61(586): 350.
113. PHE has commissioned BMJ Learning to develop an e-learning module on physical activity integration across the care pathway due for publication in October 2014
114. NICE (2014) Managing overweight and obesity in adults lifestyle weight management services. NICE public health guidance 53.
115. NICE (2007) Behaviour change: the principles for effective interventions. NICE public health guidance 6.
116. Payne K (2011) Shared learning database: Making every contact count: implementing NICE behaviour change guidance.
117. Puttick R, Ludlow J (2013) Standards of Evidence: An approach that balances the need for evidence with innovation. London: Nesta.