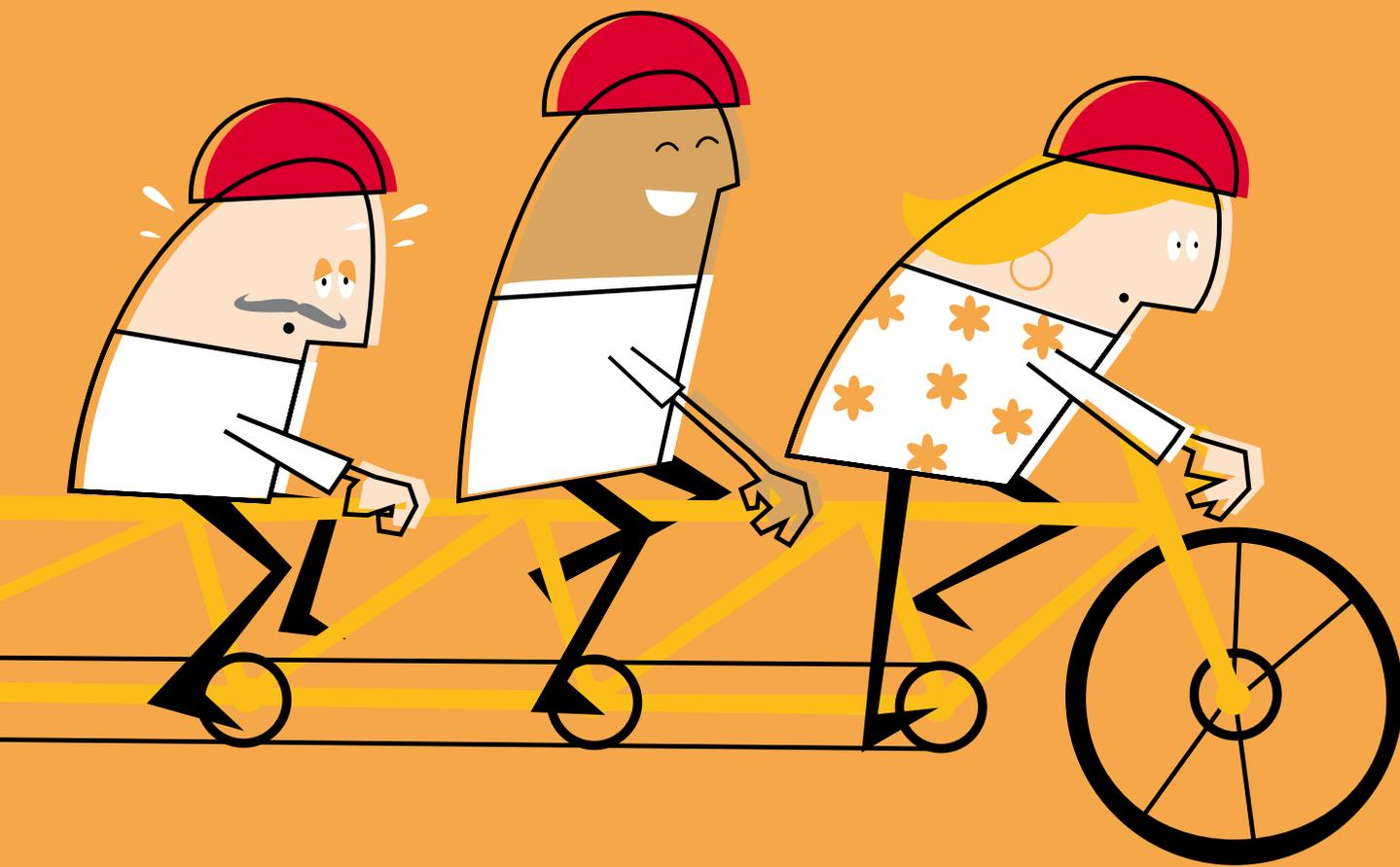


ENERGISING

A GUIDE
TO PROMOTING
PHYSICAL ACTIVITY
IN PRIMARY CARE

LIVES



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KEY FACTS

- Adults should accumulate at least 30 minutes of moderate-intensity activity on five days of the week; children should accumulate at least one hour of moderate-intensity activity daily. This is the minimum recommended level – in the simplest terms, being ‘physically active’ is defined as meeting this recommended level.
- The majority of Scots do not meet the **minimum** recommended levels of physical activity: 67% of women and 56% of men aged 16–74 years are not active enough for their health¹; 26% of boys and 37% of girls are not active enough for their health.
- ‘Moderate’ activity, such as brisk walking, noticeably increases the heart rate to the level at which the pulse can be felt and brings a feeling of increased warmth; ‘vigorous’ activity, such as jogging, causes rapid breathing and a substantial increase in heart rate. Although regular vigorous physical activity confers

maximum cardiovascular benefit, this level is likely to be unattainable and unsustainable for the majority of the population, and therefore encouraging moderate activity will be the priority. For most people, the easiest and most acceptable forms of physical activity are those that can be incorporated into everyday life.

- Only one in three adults living in Scotland is aware of the recommended level of physical activity.
- Physical inactivity contributes to a broad range of chronic diseases, such as coronary heart disease, stroke, diabetes and some cancers.
- Regular physical activity can have a high preventative and therapeutic effect on up to 20 chronic diseases or disorders. The greatest health benefits occur when the least active people become moderately active.

- In Scotland, 97% of the population are registered with a GP practice and 88% of patients will have visited their local GP team at least once during the past year. In addition, around one in every ten people in Scotland visits a community pharmacy every day. The primary care setting is therefore uniquely placed to raise public awareness of the key messages around physical activity.

¹ These figures are drawn from the *Scottish Health Survey* 2003. The *Scottish Health Survey* will run continuously from 2008 with national data available annually after 2009. Data at the health board level will be available for most boards from 2012.

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HOW TO USE THIS RESOURCE

Physical inactivity has been recognised as a significant risk factor for many chronic diseases. Yet, in Scotland, 6 out of 10 men and 7 out of 10 women are inactive and putting their health at risk because they do not recognise its importance or relevance to their lives.

The challenge to primary care staff across Scotland is to make physical activity a higher priority in the promotion of a person's health and wellbeing.

Doctors, nurses and pharmacy staff can all play a key role in helping patients to understand the value of physical activity for their health and providing access to information, motivation and advice about what patients can do.

This guide has been put together for primary care staff and other health professionals (including GPs, practice nurses, health visitors, community pharmacists, dieticians, and podiatrists)² to provide the evidence base for promoting physical activity and to recommend the key messages that should be communicated to patients. A large number of patients will see a range of primary care practitioners in the course of any single day and therefore the latter will have the opportunity to initiate conversations about physical activity. We hope that this guide will give you the information and support you need to do this.

This resource provides guidance on how to offer routine advice and encouragement to patients around physical activity. It does not cover the more extended, individually-focused interventions to identify and modify those factors that influence activity levels. Further guidelines on these will be published separately when evaluation of current UK and Scottish programmes have been completed.

PART ONE identifies the benefits of physical activity and supports the view that promoting physical activity is a 'good buy'.

PART TWO summarises the current guidelines around recommended levels of physical activity for the following life stages: children over three years, young people, adults and older adults.³

PART THREE explains why the primary care setting is particularly critical in raising public awareness of the key messages around physical activity. It also attempts to support practitioners by translating these recommendations into practical advice for patients.

Finally, in **PART FOUR**, details are provided for other sources of professional or patient support, including where to go for information on local opportunities to be physically active.

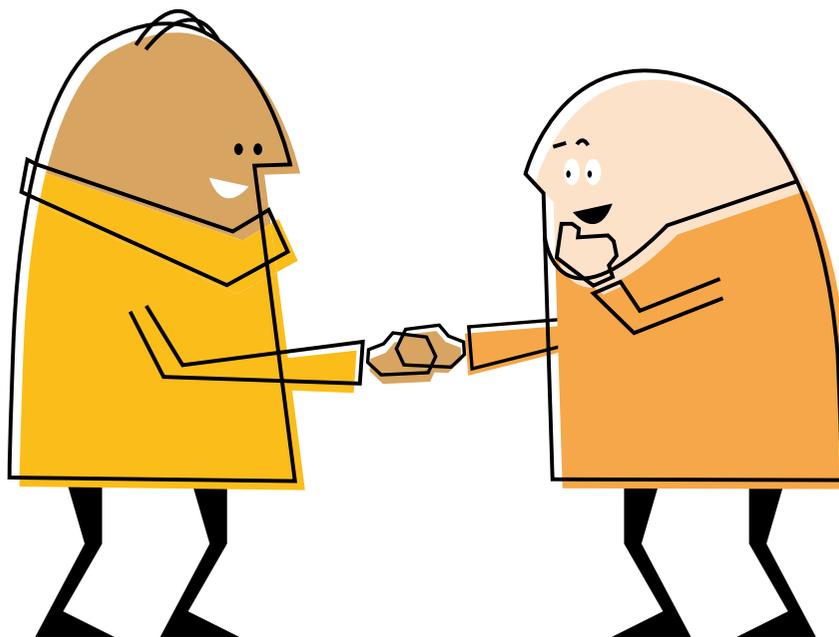
² Hereafter, the collective term for these different professional groups will be 'primary care practitioners'.

³ Note that this guidance focuses on individuals who have no serious physical limitations that might inhibit progress towards a more active lifestyle.

ENGAGING WITH PATIENTS OR CLIENTS

Primary care professionals were involved in the development of this guide, and the message from them was clear. In the lived reality of the primary care setting, time is always at a premium. A distinction therefore needs to be made between what can realistically be achieved within different time-length scenarios, ranging from a very brief exchange of less than 30 seconds to slightly longer (but probably still less than two minutes). Beyond two minutes, it is assumed that there will be an opportunity for more in-depth tailored advice and goal setting.

The key messages that frontline staff should aim to get across to patients are summarised on the next page. Even in a brief exchange with patients, there might be an opportunity to supplement these messages with useful tips about getting started and providing leaflets or information about local opportunities to be active (see Part Four). By engaging with patients in this way, primary care practitioners will be 'sowing the seed' for subsequent health-related behaviour change.



WHAT YOU SHOULD SAY TO YOUR PATIENT – IF YOU HAVE LESS THAN 30 SECONDS

- In order to benefit your health, make you feel better and maintain your body weight, you should do regular physical activity and try not to sit for long periods of time.

- You should do at least 30 minutes of moderate-intensity physical activity, above usual activity at work or home, on at least five days of the week. If you are already overweight or obese, then you should aim to do between 60 and 90 minutes on five days of the week. This can be achieved in shorter bouts of 10 or 15 minutes throughout the day.

- Walking is an easy way to get started. This should be at a brisk pace; enough to make you feel warmer and breathe more deeply but without any discomfort. Slowly increase the length of each session and then think about trying other activities; include some stretching and resistance exercises (these can be performed at home and need not involve any special clothing or equipment).

- You are more likely to remain physically active if you find an activity that you enjoy and that can be fitted into your everyday life.

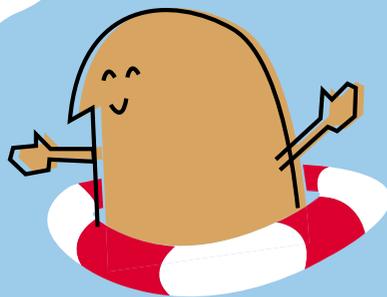




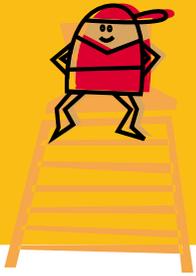
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PART 1 WHY PROMOTING PHYSICAL ACTIVITY MATTERS



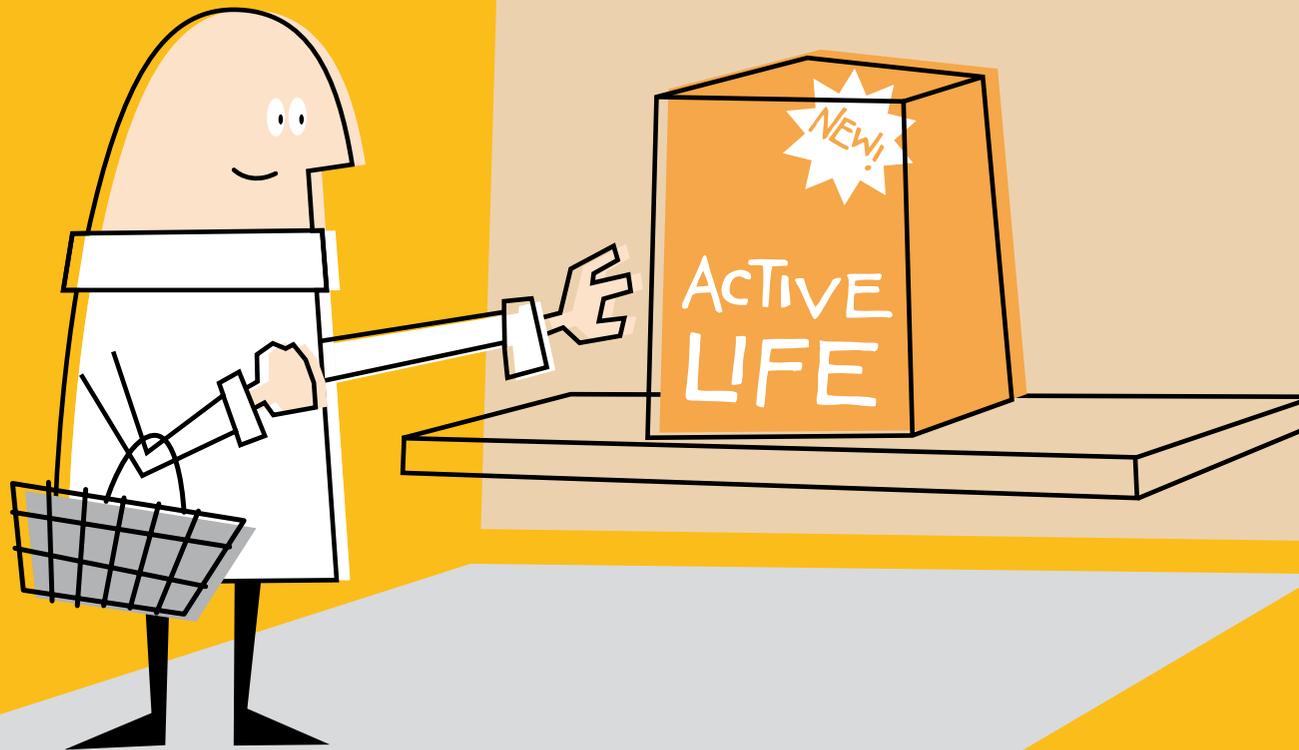
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WHY PROMOTING PHYSICAL ACTIVITY MATTERS

*Let's Make Scotland More Active (2003)*⁴ is the national physical activity strategy and it provides the rationale and impetus for encouraging more people in Scotland to adopt more active lifestyles.



BEST BUY IN HEALTH

As a nation, Scotland is inactive, unfit and increasingly overweight or obese. The health of two-thirds of the Scottish adult population is at risk because they are not sufficiently active to benefit their health⁵. The effects of inactive lifestyles are serious and associated with disease, disability and poor mental health. Notably, physical inactivity is one of the most common modifiable risk factors for coronary heart disease and accounts for over one-third of deaths from the disease.⁶

There is compelling evidence to support the view that regular physical activity can have a beneficial effect on up to 20 chronic diseases or disorders.⁷

This breadth of action, combined with the current prevalence of inactivity in Scotland, makes the encouragement of active lifestyles a critical element of any public health strategy – in short, promoting physical activity can be viewed as a ‘best buy’.

Let's Make Scotland More Active acknowledges the considerable preventative and therapeutic potential of physical activity to reduce the burden of ill health. The national strategy sets out its positive vision for Scotland:

‘People in Scotland will enjoy the benefits of having a physically active life.’

To achieve this vision, there is a need for all primary care practitioners to work together to promote more physical activity in more people’s lives.

The national strategy recognises that the prevalence of inactivity cannot be changed overnight. The target is that, by 2022, 50% of adults and 80% of children will meet the recommended levels of physical activity. This is an ambitious goal requiring a reversal of current trends and a 1% increase in physical activity levels year on year. Research indicates that the greatest health gains will be achieved by targeting those who are currently inactive.

THE HEALTH BENEFITS OF BEING ACTIVE

Being physically active is essential for good health. Whilst physical activity constitutes an effective therapy for many conditions, the strongest effects are seen in prevention.

Increasing physical activity decreases the risk of:

- **Cardiovascular disease (CVD)**

Although death rates have been falling in the last twenty years, CVD continues to be a major cause of mortality and morbidity in Scotland. In 2005, coronary heart disease and stroke accounted for 18.5% and 10.4% of all deaths.⁸ Inactive people have almost double the risk of having a heart attack than their active contemporaries.⁹ Estimates have shown that 37% of CHD deaths can be attributed to physical inactivity. This compares to 19% of CHD deaths attributable to smoking.¹⁰ Several large-scale studies

have documented a dose-response relation between physical activity and risk of CVD and premature mortality in men and women.¹¹

- **Obesity**

Low levels of physical activity in Scotland are a significant factor in the dramatic increase in prevalence of obesity. Scotland has one of the highest levels of obesity amongst Organisation for Economic Co-operation and Development countries, second only to the USA, reaching 22% in men and 24% in women in 2003.¹²

- **Type 2 diabetes**

There are 172,789 people in Scotland diagnosed with diabetes,¹³ representing 3.4% of the total population, although this probably understates the case as it is thought that many cases of diabetes remain undiagnosed. Physically active people have a 33–50% lower risk of developing type 2 diabetes than inactive people. The greater the amount of exercise taken, the lower the risk of developing the disorder. Moderate to high levels of physical fitness appear to reduce the risk of all-cause mortality in patients with type 2 diabetes.¹⁴

“ The health effects of an inactive life are serious. Inactivity accounts for over a third of deaths from heart disease and threatens the progress made in this area over many years. Added to this is the disease, disability and poor mental health that comes from growing levels of obesity and a lack of physical strength. Physical inactivity has been called the ‘silent killer of our time’. ”

Let's Make Scotland More Active.

- **Osteoporosis**

Physical activity as a way to prevent osteoporosis is based on evidence that it can regulate bone maintenance and stimulate bone formation, including the accumulation of minerals.¹⁵ Physical activity in later life may delay the progression of osteoporosis, as it slows down the rate at which bone mineral density is reduced; however, it cannot reverse advanced bone loss. In addition to the benefit to bone health, physical activity also strengthens muscles and improves balance, thereby reducing the overall risk of falls and fractures.

- **Breast and colo-rectal cancer**

Physical activity is associated with a reduction in overall risk of cancer.¹⁶ The most active individuals have on average a 40–50% lower risk of developing colon cancer than the least active individuals.¹⁷ Women with higher levels of physical activity

have a 30% lower risk of breast cancer than the least active.¹⁸ Physical activity is also associated with a reduced risk of breast cancer in post-menopausal women. The higher the level of physical activity, the lower the risk of breast cancer.

- **Mild anxiety and depression**

Physical activity has the capacity not only to add years to life, but also to bring life to years through reduced risk of mental disorders, improved quality of life and psychological wellbeing.¹⁹

- **Memory loss and dementia**

Physical activity is associated with a reduced risk of developing problems of cognitive impairment in older adults and may have the potential to prevent, delay or slow down the progression of dementia.²⁰

- **Age-related deterioration in functional capacity**

Regular physical activity is particularly important for older people for the maintenance of mobility and independent living.



OTHER BENEFITS OF BEING ACTIVE

It is now widely accepted that health is more than the absence of disease, and that it is a positive concept emphasising social and personal resources, as well as physical capacities. We know that people who are active feel better and are able to deal with life's stresses and strains and have a better sense of wellbeing. If we think of our health as the capacity to have a life well-lived, then physical activity is a critical component. When people move from being sedentary to being more active on a regular basis, they report a very positive message – they speak of being more energised, feeling more dynamic and having more vitality. Their mood is improved, they feel less anxious and their sleep is improved.

These positive responses lie at the heart of a strong positive and motivational message – insofar as regular physical activity generates a resource for daily living that can be nurtured and renewed. The benefits of being active extend beyond those of individual health and wellbeing. The promotion of physical activity can play an important role in the inequalities agenda.

Targeting relatively inactive groups, such as black and ethnic minorities, people with disabilities and people living in disadvantaged communities, can significantly reduce the health inequality gap in Scotland. On a societal level, increasing opportunities for being active can play an important role in community cohesion and connectivity, community and rural regeneration, and a reduction in antisocial behaviour.

Promoting physical activity addresses a wide range of agendas:

- Prevention of ill health
 - It reduces the risk of developing specific conditions and of becoming overweight or obese.
 - It reduces the risk of developing complications of immobility.
 - It delays functional decline and onset of dependency.
- Therapeutic intervention
 - It has a beneficial effect on many chronic diseases or disorders.
 - It can be a resource to energise daily living.
 - It can restore physical capacity and improve employability.
- Focus for wider social benefits
 - It can be used as a tool to regenerate communities and rural areas.
 - It can foster community cohesion and connectivity.
 - It can help address anti-social behaviour.

The evidence around the benefits of moderate physical activity is robust and compelling. Those who are active enjoy greater life expectancy, with reduced risks of CHD, stroke, hypertension, type 2 diabetes, colo-rectal cancer and osteoporosis, and a consequent reduction in incidents of fractured hips and vertebrae.

The benefits of regular physical activity to an individual's mental health and wellbeing should not be underestimated. Furthermore, active living also positively contributes to social cohesion.



WHY PROMOTING PHYSICAL ACTIVITY MATTERS



4 Scottish Executive, *Let's Make Scotland More Active*, 2003.

5 Scottish Executive, *Scottish Health Survey*, 2003.

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7 Department of Health, *At least five a week. Evidence on the impact of physical activity and its relationship to health*. A report from the Chief Medical Officer, London, 2004.

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12 ScotPHO, *Obesity in Scotland*, An epidemiology briefing 2007.

13 www.scotpho.org.uk/home/Healthwellbeinganddisease/Diabetes/diabetes_keypoints.asp (accessed 12 February 2008).

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18 Ibid.

19 Taylor A.H. 'Physical activity, anxiety, and stress: A review' in Biddle SJH, Fox KR, Boutcher SH. *Physical activity and psychological wellbeing*. London, 2000: 10-45.

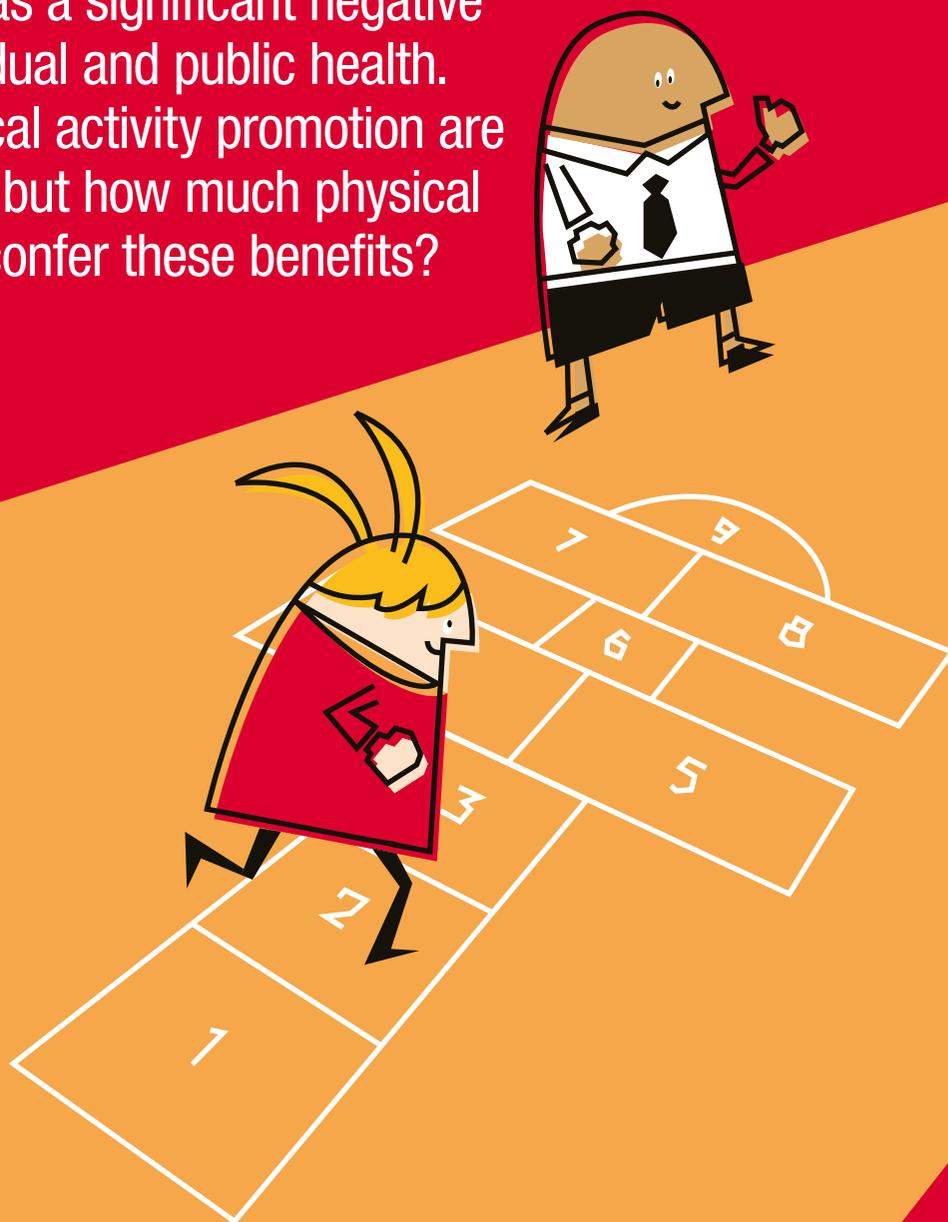
20 Boutcher SH. 'Cognitive performance, fitness and ageing' in Biddle SJH, Fox KR, Boutcher SH. *Physical activity and psychological wellbeing*. London, 2000: 10-45.

PART 2 GUIDELINES AND RECOMMENDATIONS



GUIDELINES AND RECOMMENDATIONS

The evidence clearly demonstrates that an inactive lifestyle has a significant negative impact on both individual and public health. The benefits of physical activity promotion are therefore substantial, but how much physical activity is needed to confer these benefits?



CHILDREN AND YOUNG PEOPLE

The following advice on physical activity and other very similar recommendations have been established by various bodies through rigorous processes of review and discussion. The most authoritative and widely accepted of these are detailed below and are segmented into different age groups: children and young people, adults and older adults.

Activity recommendations for individual diseases fall beyond the remit of this resource, although practitioners will be directed towards the relevant SIGN (Scottish Intercollegiate Guidelines Network) guidelines. However, reference is made to specific recommendations relating to overweight and obese patients when these differ from those relating to healthy-weight patients.

It is important for the primary care team to be aware of the most authoritative guidelines currently available so that they can advise parents and carers on how much physical activity is necessary for the health and wellbeing of their children.

Young people

Children and young people very rarely have lifestyle-related diseases, such as high blood pressure, diabetes, osteoporosis or CVD, so the normal markers of morbidity and mortality are not evident. Nevertheless, children and adolescents can present with high levels of a range of risk factors for diseases, for example obesity, raised blood pressure, low bone mineral density and adverse lipid profiles. This is very important as there is growing evidence that the determinants of adult diseases are laid down early in life and, in this sense, childhood and adolescence could be said to form the early phases of accumulated exposure to risk factors throughout the life course.

There is a strong justification for encouraging young people to be physically active. The main reasons are:

- healthy growth and development of the musculo-skeletal system, which can reduce the later risk of osteoporosis
- energy balance for the maintenance of healthy weight
- opportunity for social interaction, achievement and mental wellbeing; those who have a positive experience of physical activity are more likely to continue into adulthood.

Let's Make Scotland More Active endorses the recommendation that children and young people should participate in physical activity of at least moderate intensity on most days of the week. One hour per day is the minimum needed to provide direct health benefits, learn and practise a wide range of activities, and live actively as a habit.

“ All children and young people, including those with disabilities, should take part in at least one hour a day of physical activity, which should include physical education, play, sports, exercise, dance, outdoor activities, active travel and support to be active in their daily tasks at home, school and in the community. ”

Let's Make Scotland More Active.

GUIDELINES AND RECOMMENDATIONS

*At Least Five a Week*²¹ goes further and recommends that, at least twice a week, some of these activities should help to improve bone health (weight-bearing exercises) and enhance and maintain muscular strength and flexibility.

Pre-school Children (3-5 years)

The best available advice for children in early years is drawn from the work of the US-based Early Childhood Physical Activity Task Force²², which highlighted the significance of regular physical activity in early childhood education.

Guideline 1:
Preschool children should accumulate at least 60 minutes of structured physical activity daily.

Guideline 2:
Preschool children should engage in at least 60 minutes and up to several hours daily of

unstructured physical activity, and should not be sedentary for more than 60 minutes at a time except when sleeping.

Guideline 3:
Preschool children should develop movement skills that are building blocks for more complex movement tasks.

Guideline 4:
Preschool children should have indoor and outdoor areas that meet or exceed recommended safety standards for performing major-muscle activities.

Guideline 5:
Individuals responsible for the wellbeing of preschool children should be aware of the importance of physical activity and facilitate the child's movement skills.



Families play an important role in a child's physical activity, and all parents therefore should have support to gain the necessary skills and confidence to take an active role in helping their children enjoy an active life. Play@home fosters the development of good parenting skills and introduces positive attitudes to physical activity from birth. This programme will be rolled out in Scotland from 2008; for further information contact the national Play@home coordinator irene.miller@nhs.net

For preschool children it is argued that basic movement skills, such as running, jumping, throwing and kicking, do not simply emerge as a child grows older but result from an interaction between hereditary potential and movement experience. These behaviours are also clearly influenced by the environment. For instance, a child who does not have access to stairs may be delayed in stair climbing and a child who is discouraged from bouncing and chasing balls may lag behind in hand-eye coordination.

Pre-adolescence (6-12 years)

More recently, the National Association for Sport and Physical Education²³ provided detailed guidance for primary school aged children.

Guideline 1:

Children should accumulate at least 60 minutes and up to several hours of age-appropriate physical activity on all, or most days, of the week. This daily accumulation should include moderate and vigorous physical activity with the majority of the time being spent in activity that is intermittent in nature.

Guideline 2:

Children should participate in several bouts of physical activity lasting 15 minutes or more each day.

Guideline 3:

Children should participate each day in a variety of age-appropriate physical activities designed to achieve optimal health, wellness, fitness and performance benefits.

Guideline 4:

Extended periods (periods of two hours or more) of inactivity are discouraged for children, especially during the daytime hours.

The suggestion therefore is that within the 60 minutes of daily physical activity, young people need to engage in longer periods of physical activity and there should be every opportunity for some periods of intensive activity. A reduction in extended periods of sitting should be encouraged.

The most authoritative guidelines for obesity in children and young people can be found in SIGN guidelines No. 69²⁴ There is increasing evidence that physical inactivity, particularly increased TV viewing, is a risk factor for the development of obesity in children and adolescents.

The guidelines suggest that weight maintenance and/or weight loss can be achieved only by sustained lifestyle changes such as: (i) increasing habitual physical activity to a minimum of 60 minutes of moderate-to-vigorous physical activity per day and (ii) reducing physical inactivity (e.g. watching TV and playing computer games) to less than two hours per day on average or the equivalent of 14 hours per week.

ADULTS

The American College of Sports Medicine (ACSM) first published guidelines in 1995, which were subsequently accepted worldwide. In a more recent report,²⁵ the expert panel updated the 1995 recommendations on the types and amounts of physical activity needed by healthy adults to improve and maintain health. Although fundamentally unchanged, the updated recommendations serve to clarify and amplify the 1995 document.

These guidelines represent minimal requirements for people who want to enhance their health and are applicable to healthy adults aged between 18 and 65 years. They stipulate that adults should undertake a combination of aerobic and muscle-strengthening physical activities:

Aerobic physical activity

- moderate intensity for a minimum of 30 minutes on five days each week or
- vigorous intensity for a minimum of 20 minutes on three days each week or
- combination of moderate and vigorous activity. For example, a person can meet the recommendation by walking briskly for 30 minutes twice during the week and then jogging for 20 minutes on two other days.

Muscle-strengthening physical activity

To promote and maintain good health and physical independence, the following activities should be undertaken on a minimum of two days each week:

- Eight to ten exercises performed on two or more non-consecutive days each week, using the major muscle groups. To maximise strength development, a resistance (weight) should be used that allows 8–12 repetitions of each exercise, resulting in volitional fatigue. Muscle-strengthening activities include a progressive weight-training programme, weight-bearing callisthenics, stair climbing and similar resistance exercises that use the major muscle groups.

These recommended levels of activity can be achieved either by doing all the daily activity in one session or through several shorter bouts of activity of a minimum of 10 minutes or more, accumulated throughout the day.



Moderate or Vigorous?

Moderate-intensity activity is equivalent to a brisk walk that noticeably accelerates the heart rate – in the range of 3.0–6.0 METs*.

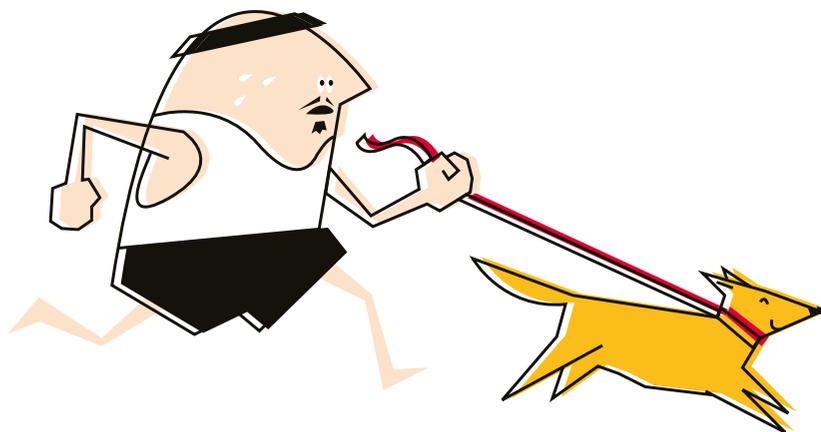
Vigorous-intensity activity is exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate – more than 6.0 METs.

*MET stands for ‘metabolic equivalent’.

1 MET represents a person’s metabolic rate (rate of energy expenditure) when at rest. MET values are assigned to activities to denote their intensity and are given in multiples of resting metabolic rate. For example, walking elicits an intensity of 3-6 METS, depending on how brisk the walk is.

The updated 2007 recommendation clearly states that the recommended amount of aerobic activity (whether moderate or vigorous) is in addition to routine activities of daily living which are of light intensity, (such as casual walking or shopping), or less than 10 minutes. While it acknowledges that few activities in contemporary life are conducted routinely at a moderate intensity for at least 10 minutes in duration, some activities like walking briskly to work, mowing the lawn, vacuuming the carpet could be included.

The dose-response relation between physical activity and health benefits, in particular the lowering of the risk of cardiovascular disease and premature mortality, means that those who exceed the recommended 30 minutes are likely to gain additional risk reductions.

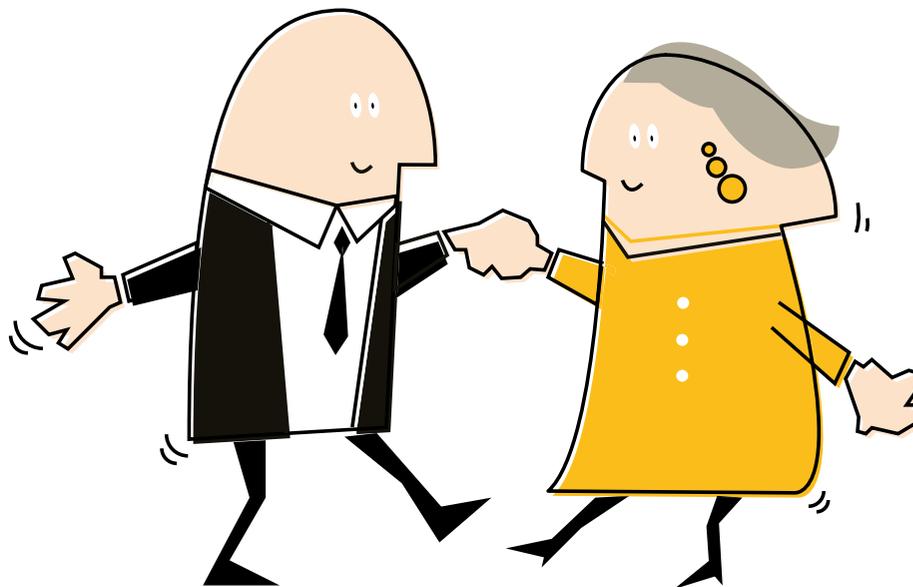


GUIDELINES AND RECOMMENDATIONS

Overweight or obese patients

The prevalence of obesity in Scotland has increased over the past two decades, reaching 22% in men and 24% in women in 2003. About 60% of the population aged 16 and over are overweight or obese. Overweight or obese patients should be encouraged to address energy expenditure by increasing the daily amount of physical activity they do. The recommendations for physical activity are summarised as follows: (i) To prevent the gradual adult transition to overweight or obesity requires 45–60 minutes of moderate intensity activity per day, particularly if energy intake is not reduced and (ii) people who have been obese and who have lost weight should be advised that they may need to do 60–90 minutes of moderate intensity activity a day to sustain their weight loss.

The NICE Guidelines²⁶ for England and Wales recommend that adults should be encouraged to increase their physical activity even if they do not lose weight as a result, because of all the other health benefits which physical activity can bring, such as reduced risk of type 2 diabetes and cardiovascular disease.



“ The decline in daily levels of physical activity and rise of sedentary lifestyles are increasingly seen as important factors contributing to the obesity epidemic in developed countries. ”

ScotPHO, *Obesity in Scotland*. An epidemiology briefing 2007. Page 31.

OLDER ADULTS

Older people face the prospect of increased morbidity and mortality as part of the natural ageing process. They experience a gradual loss in muscle mass, muscle strength, muscle power, balance, flexibility and cardio-respiratory function. There is also a decline in cognitive abilities, and a higher risk of cognitive impairment, depression, osteoarthritis and falls. Older people are more likely to be dependent on others and susceptible to fear of crime and traffic. There is little recognition of the substantial decline in functional capacity: this can have important implications for performing many activities of daily living that often go unnoticed until a threshold is reached when suddenly a person cannot do a particular task. This results in a loss of independence and an inability to participate fully in life.

Physical activity can play an important role in delaying the ageing process and in helping older people to maintain functional capacity and to reduce their risk of health problems.

The recommendation²⁷ for older adults describes the amounts and types of physical activity that promote health and prevent disease. It applies to:

- all adults aged over 65 years
- adults aged 50–64 years with ‘clinically significant’ chronic conditions (for which they are receiving, or should receive, regular medical care and treatment)
- adults aged 50–64 years with ‘clinically significant’ functional limitations (that impair their ability to engage in physical activity).

The physical activity recommendations for adults are also appropriate for older adults and include both aerobic and muscle-strengthening activities. However, specific additional activities are recommended as particularly beneficial, in particular those that maximise strength development and promote flexibility and balance.

Aerobic physical activity

As for adults, the recommendation is for a minimum of 30 minutes’ moderate-intensity activity on five days each week or 20 minutes’ vigorous intensity three times a week or a combination of both moderate and vigorous activity.

Although the adult recommendation defines aerobic intensity in absolute terms (e.g. expressed in METS), a different definition of aerobic intensity is appropriate for older adults, because fitness levels can be low. Moderate-intensity aerobic activity involves a moderate level of effort relative to an individual’s aerobic fitness. Thus, for some older adults, a moderate-intensity walk will be a slow walk, whereas for others it will be a brisk walk.

GUIDELINES AND RECOMMENDATIONS

Muscle-strengthening physical activity

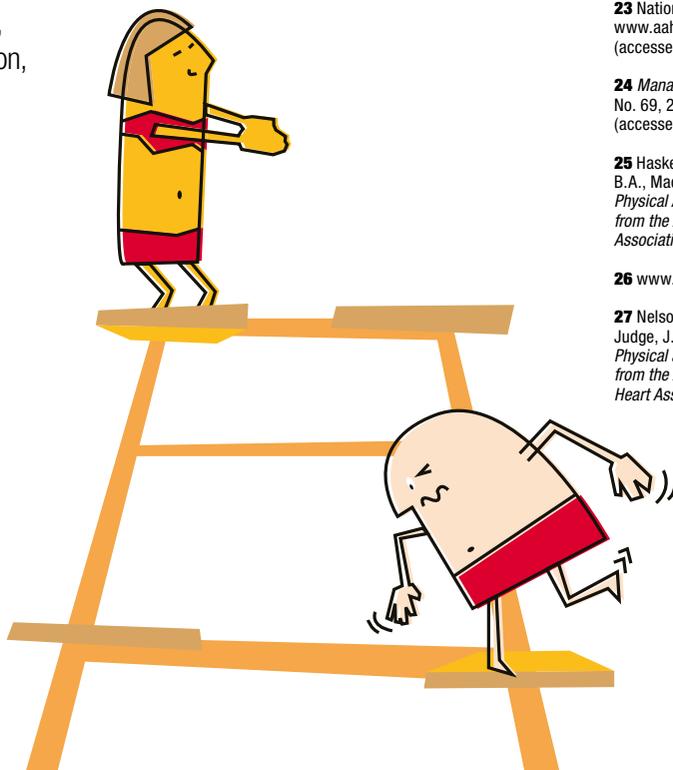
As for adults, it is recommended that eight to ten exercises are performed on two or more non-consecutive days per week, using the major muscle groups. In addition, older adults should use a resistance weight that allows 10–15 repetitions for each exercise.

Flexibility

To maintain the flexibility necessary for regular physical activity and daily life, older adults should perform activities that maintain or increase flexibility on at least two days each week for at least 10 minutes each day.

Balance

To reduce the risk of injury from falls, older adults should perform exercises that maintain or improve balance.



21 Department of Health *At Least Five a Week. Evidence on the impact of physical activity and its relationship to health.* A report from the Chief Medical Officer. London, 2004.

22 http://www.aahperd.org/naspe/template.cfm?template=ns_active.html (accessed 12 February 2008).

23 National Association for Sport & Physical Education (NASPE) http://www.aahperd.org/naspe/template.cfm?template=ns_children.html (accessed 12 February 2008).

24 *Management of Obesity in Children and Young People* (Guidelines No. 69, 2003) www.sign.ac.uk/guidelines/fulltext/69/index.html (accessed 12 February 2008).

25 Haskell, W.L., Lee, I.-M., Pate, R.P., Powell, K.E., Blair, S.N., Franklin, B.A., Macera, C.A., Heath, G.W., Thompson, P.D., and Bauman A. *Physical Activity and Public Health. Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association.* *Circulation* 2007; 116.

26 www.nice.org.uk/nicemedia/pdf/word/CG43NICEGuideline.doc

27 Nelson, M.E., Rejeski, W.J., Blair, S.N., Duncan, P.W., Judge, J.O., King, A.C., Macera, C.A., and Castanda-Sceppa, C. *Physical activity and public health in older adults. Recommendation from the American College of Sports Medicine and the American Heart Association.* *Circulation* 2007, 116, 1094–1105.

PART 3 TRANSLATING EVIDENCE INTO PRACTICE



TRANSLATING EVIDENCE INTO PRACTICE

Part Three adopts a patient-centred approach and aims to support health practitioners in encouraging patients to take greater responsibility for their own health and wellbeing.

Thus, while Part Two provided the most recent guidelines around promoting physical activity, the purpose of this section is to translate a set of numbers (such as those in the physical activity recommendations) into practice – by considering what types of activity are appropriate and how they might be integrated into everyday life.

THE ROLE OF PRIMARY CARE IN PROMOTING PHYSICAL ACTIVITY

In Scotland, 88% of people registered with a GP practice saw a member of the practice team during the year ending March 2006; within this group, patients saw a member of the practice team an average of four times during the year.²⁸ Primary care practitioners are therefore in an ideal position to provide a clear and concise public health message on the recommended levels of physical activity to benefit health. They are regarded as a reliable source of health information and every consultation represents a unique opportunity to provide personalised counselling on how to become more active.

Given the high prevalence of inactivity, we can assume that the majority of patients who present to primary care will benefit from being more physically active. Doctors, nurses, health visitors, pharmacists and other practitioners can support and encourage patients to take greater responsibility for their own health and

wellbeing, an approach that has been endorsed in the recent Better Health, Better Care plan for NHS Scotland.²⁹ Specifically, the role of primary care professionals should be to raise awareness among patients of the importance of physical activity to their health and to provide advice about how they might become more active. In 2006, the National Institute of Clinical Health and Excellence (NICE) issued recommendations about brief interventions in primary care to increase physical activity. Brief interventions were defined as opportunistic advice, discussion, negotiation or encouragement. Although NICE guidelines do not apply in Scotland, NHS Health Scotland convened an expert group to provide a Scottish context to these recommendations and concluded that the following NICE recommendations were based on the best available evidence:

'The primary care workforce should take the opportunity whenever possible to identify inactive adults and encourage them to achieve 30 minutes of moderate intensity physical activity on 5 days of the week or more. Judgement should be used to determine when this recommendation is inappropriate.'

'Individual needs, preferences and circumstances should be taken into account to develop physical activity goals. Written information about the benefits of physical activity and local opportunities should be provided. Follow up should be at appropriate intervals over a 3-to-6-month period.'

Surveys show that only one in three adults in Scotland is aware of the minimum recommended level of physical activity. There is also scope for improvement in awareness amongst primary care practitioners. The primary care setting is uniquely placed to raise public awareness of the key messages around physical activity. Since most adults in Scotland are not active enough to benefit their health, it follows that all patients presenting to primary care would benefit from brief advice and encouragement to be more physically active.

A POPULATION APPROACH?

Reviews to date have not provided clear guidance on how to assess the physical activity levels of patients. Work is currently in progress in Scotland, in collaboration with other UK regions, to identify the most appropriate and accessible validated tool for identifying those patients who are inactive.

For the purpose of this guide, it is suggested that all patients coming through the primary care setting would benefit from increasing their activity levels.

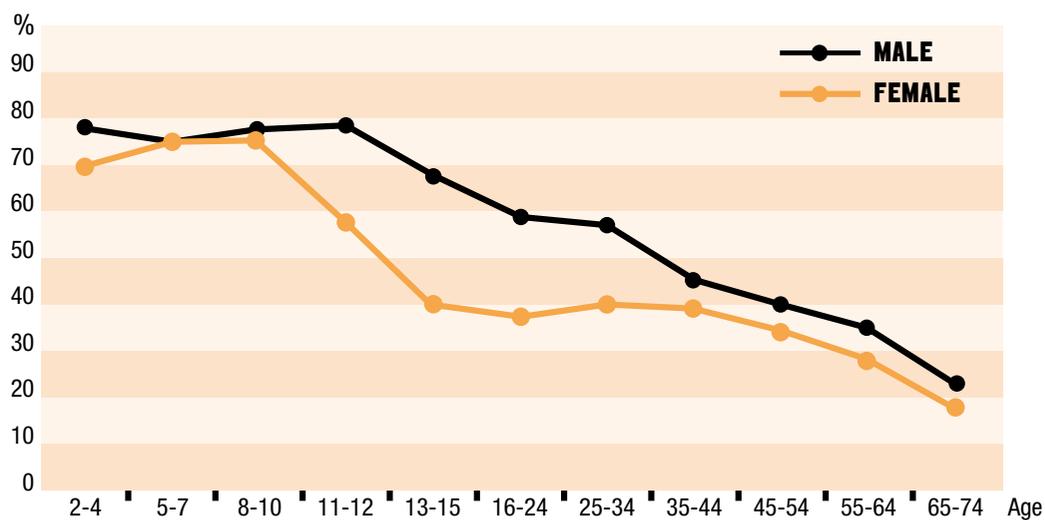


Figure 1:
Percentage of Scottish population meeting recommended physical activity levels (from *Scottish Health Survey 2003*)

The 2003 *Scottish Health Survey* shows an alarming decline in activity among adults as they get older. By the time they are 65 and 74, almost 9 in 10 men and women fall short of the recommended amount of physical activity. A number of studies show that, overall, adults with a disability and those from ethnic minority groups are less active than people from other groups. This puts them at higher risk of the diseases associated with inactivity.

The 'entry points' for discussion around patients' physical activity levels are manifold, and will vary from one patient to another. Examples of prompts for initiating discussion with patients around physical activity include registration with a GP practice, consultation for related conditions (e.g. type 2 diabetes and CVD) and routine health checks.

Although a population approach is advocated, there are subgroups in the population³⁰ that warrant particular attention:

- Health surveys indicate that women are generally less active than men, with participation levels dropping off markedly during teenage transition. Women are also likely to become less active with the onset of family responsibilities or gain weight at particular stages of their life, such as during and after pregnancy and the menopause. Physical activity has been shown to have a positive effect on several menopause symptoms; in addition, physical activity promotes better sleep, which may help to reduce feelings of extreme tiredness, improve mood and reduce stress, anxiety and feelings of depression.

- Smokers who are being referred to smoking cessation support. Exercise has been found to be an effective non-pharmacological tool for controlling cigarette cravings.³¹ Increasing physical activity during this time might also reduce the likelihood of increasing weight (and prevent subsequent relapse).

- Population surveys have reported that the prevalence of physical inactivity is higher in some ethnic minority groups, people in low-income households and people with low levels of education. There is one caveat insofar as there is an inverse correlation with social grade when walking (as part of daily routine) and occupation are taken into account, due to lower levels of car ownership and higher levels of manual labour, respectively.



MOTIVATING PATIENTS TO BECOME MORE ACTIVE

The decision to change any health-related behaviour lies ultimately with the patient. In practice, the practitioner needs to demonstrate an understanding of the patient's point of view and listen more than tell, with the aim of 'finding things out' and discovering the patient's readiness for change.

Qualitative research involving focus groups suggests that the most motivating reasons for being active are those that are more about individual wellbeing and that are often the most immediate, obvious or tangible to the patient. Using a patient-centred approach, the following benefits might be more compelling than those that are more concerned with physical health, are longer-term or are deferred.

When a person becomes physically active they are likely to:

- feel better in terms of higher subjective wellbeing, improved mood and emotions, life satisfaction, quality of life and vigour
- feel better about themselves through improved physical self-perception and improved self-esteem
- be able to concentrate better
- have improved sleep (longer and more deeply); those who do not have a good quality or quantity of sleep are particularly likely to benefit
- feel more generally relaxed (reduction of trait anxiety) and after single episodes of activity (reduction of state anxiety)
- have a coping strategy for stress (especially useful when coping with nicotine withdrawal for those smokers in the early stages of cessation).

For older adults, the following benefits of being active may be emphasised:

- helps individuals to stay in touch with friends and neighbours, and get out and about; for example, going to the shops or visiting family or friends
- maintains independence and mobility in later life
- reduces likelihood of falling and sustaining injuries.

“ Walking has been described as near-perfect exercise. Even walking at a moderate pace of 5 km/hour (3 miles/hour) expends sufficient energy to meet the definition of moderate intensity physical activity. Compared with many sports and other recreational pursuits, walking is a popular, familiar, convenient, and free form of exercise that can be incorporated into everyday life and sustained into old age. ”

Let's Make Scotland More Active.

GETTING STARTED

Advice to patients about increasing their physical activity should focus on activities that can fit easily into their everyday life and are tailored to their individual preferences and circumstances. Some patients will enjoy structured activity such as going to the gym; others may prefer to take up a new leisure interest, such as a dance class or undertake environmental volunteering such as Green Gyms; and others may wish to introduce active commuting to work into their daily routine. In reality, the typical desirable activity pattern will be a composite one and will include a mix of personal transport and job-related, household and recreational activities.

Walking is an ideal activity to promote to inactive people. It is common to virtually everyone and does not need special skills or equipment. It is convenient and may be fitted into daily routines. It can be self-regulated in intensity, duration and frequency and is inherently safe. It reaches a level of moderate intensity when the walker is breathing deeper than normal but still able to talk fairly easily and the heart is beating faster but not racing.

Each city, town and village has a basic framework of paths that are available for recreation and everyday journeys. These 'core paths' provide opportunities for walking, cycling, riding and other activities for people of all ages and abilities. They are of particular benefit because they are close to where people live and link into, and support wider paths networks. In this respect, outdoor access officers in local authorities are useful contacts in order to get local information (see Part Four). Walking can also be done in an indoor environment, such as using the stairs instead of the lift or escalator.

TRANSLATING EVIDENCE INTO PRACTICE

THE FOUR TYPES OF PHYSICAL ACTIVITY

Generally, activity can be classified into four types:

For **stamina**, in order to keep lungs, heart and circulation healthy and in good working order. Examples: brisk walking, gardening, washing the car, aerobics class, movement class, dancing, swimming, aqua aerobics, cycling, various sports.

For **strength**, in order to maintain muscle and bone strength and help with daily tasks as people get older, such as climbing the stairs, getting out of a chair easily or opening a jar. Stronger, larger muscles burn more calories so their use can help a person keep to a healthy weight. Strength activities will also help with good posture and balance. After the age of 40 it is important to maintain muscle strength because inactivity can contribute to a loss of muscle strength by 1% per year. Examples: climbing stairs, walking uphill, lifting and carrying shopping, digging the garden, weight training, Pilates,

yoga, t'ai chi, weights or resistance exercises (which can be done at home, in a class or at a gym).

For **flexibility**, in order to maintain a full range of movement and to help people stay independent and move more easily as they get older. Regular flexibility activity will increase the range of motion for joints, increase relaxation, reduce muscle tension and reduce the risk of future injury. Retaining flexibility will mean that as people get older they will still be able to put on their shoes and socks, reach for something on a high shelf, get in and out of the bath, wash their hair or turn their head easily to look behind when parking the car.

Examples: gentle bending, reaching and stretching (in the morning after waking up, after sitting for long periods in the office, or before going to bed in the evenings), t'ai chi, yoga, Pilates, dancing, swimming, bowling, golf, housework such as vacuuming and sweeping.

For **balance**, in order to improve and maintain balance, give confidence in moving and help to prevent accidental falls. Examples: most activities that involve standing, such as walking, t'ai chi, dancing, keep-fit classes or specific balance exercises.



STAMINA

Brisk walking, gardening or swimming will keep lungs, heart and circulation in good shape.

FLEXIBILITY

Vacuuming, yoga or DIY will keep you supple.

STRENGTH

Climbing stairs, doing digging or carrying shopping helps keep muscles and bones strong.

BALANCE

Try dancing, t'ai chi or keep fit classes.

WHAT ACTIVITY CAN BE INCLUDED IN THE RECOMMENDED LEVEL?

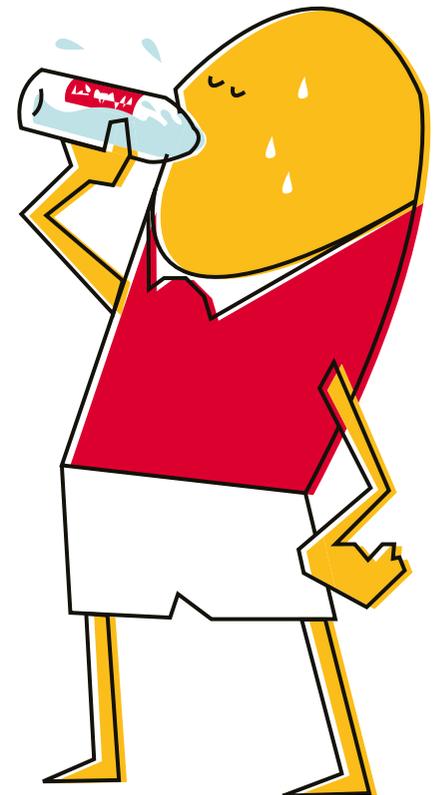
The updated recommendation now clearly states that the recommended amount of aerobic activity (whether of moderate or vigorous intensity) is in addition to those routine activities of daily living that are of light intensity (such as self care, casual walking or grocery shopping) or that last less than 10 minutes (such as taking out the rubbish or walking from the car park to work or the shops).

However, there are some activities that are conducted at a moderate intensity for at least 10 minutes as part of daily life and these can be counted towards the recommendation; for example, brisk walking to work, gardening with a shovel, mowing the lawn, washing the car. Table 1 overleaf gives examples of common physical activities and classifies them according to their level of intensity.

'Moderate' activity means any activity that leaves a person feeling warm and breathing more deeply than usual. It stimulates the body's cardio-respiratory, musculoskeletal and metabolic systems, and over time causes them to adapt and become more efficient. A person who is doing moderate intensity activity will usually experience:

- an increase in breathing rate
- an increase in heart rate, to the level at which the pulse can be felt. Note that the term 'out of breath' should be avoided, as research indicates that this description may alarm some patients
- a feeling of increased warmth, possibly accompanied by sweating on hot or humid days.

The amount of activity that a person needs to do to achieve an activity of moderate intensity varies considerably. A person who is unfit or overweight may only have to walk up a slope to experience those feelings, whereas a very fit athlete may be able to run quite fast before the feelings become apparent. In short, in an activity such as walking, it is important for an individual to focus on their perception of the effort they need to make, rather than their speed.



TRANSLATING EVIDENCE INTO PRACTICE

WHAT ACTIVITY CAN BE INCLUDED IN THE RECOMMENDED LEVEL?

One simple method for measuring the intensity of an activity is the 'talk test'.

- A person who is active at a **light-intensity** level should be able to sing while doing the activity.
- One who is active at a **moderate-intensity** level should be able to carry on a conversation comfortably while engaging in the activity.
- If a person is breathing deeply and unable to carry on a conversation the activity can be considered **vigorous**.

Another way of checking intensity is to use the 'breathing test'. It is important to tell the patient to pay attention to their breathing. Most people breathe through their noses when they are in a resting or in a low impact state. When the intensity of an activity is increased, the body requires more oxygenated blood flow and therefore they begin to open their mouths. Explain to the patient that complete mouth breathing (without feeling any discomfort) is a good indicator that they have reached the appropriate intensity.

INTENSITIES AND ENERGY EXPENDITURE FOR COMMON TYPES OF PHYSICAL ACTIVITY

Activity	Intensity	Intensity (METS)
Ironing	Light	2.3
Cleaning and dusting	Light	2.5
Walking – strolling, 2mph	Light	2.5
Painting/decorating	Moderate	3.0
Walking – 3mph	Moderate	3.3
Hoovering	Moderate	3.5
Golf – walking, pulling clubs	Moderate	4.3
Badminton – social	Moderate	4.5
Tennis – doubles	Moderate	5.0
Walking – brisk, 4mph	Moderate	5.0
Mowing lawn – walking, using power-mower	Moderate	5.5
Cycling – 10-12mph	Moderate	6.0
Aerobic dancing	Vigorous	6.5
Cycling – 12-14mph	Vigorous	8.0
Swimming – slow crawl, 50 yards per minute	Vigorous	8.0
Tennis – singles	Vigorous	8.0
Running – 6mph (10 minutes/mile)	Vigorous	10.0
Running – 7mph (8.5 minutes/mile)	Vigorous	11.5
Running – 8mph (7.5 minutes/mile)	Vigorous	13.5

MET = Metabolic equivalent

1 MET = A person's metabolic rate (rate of energy expenditure) when at rest

2 METS = A doubling of the resting metabolic rate

Source: Based on data from Ainsworth *et al*, 2000⁴⁷

BUILDING UP GRADUALLY

Individuals taking up activity for the first time, or rediscovering it after a period of inactivity, should be encouraged to build up gradually to the recommended level. This will inevitably be a slow process, starting with light-intensity activities, such as walking or easy gardening, which can be increased in duration or intensity gradually over time.

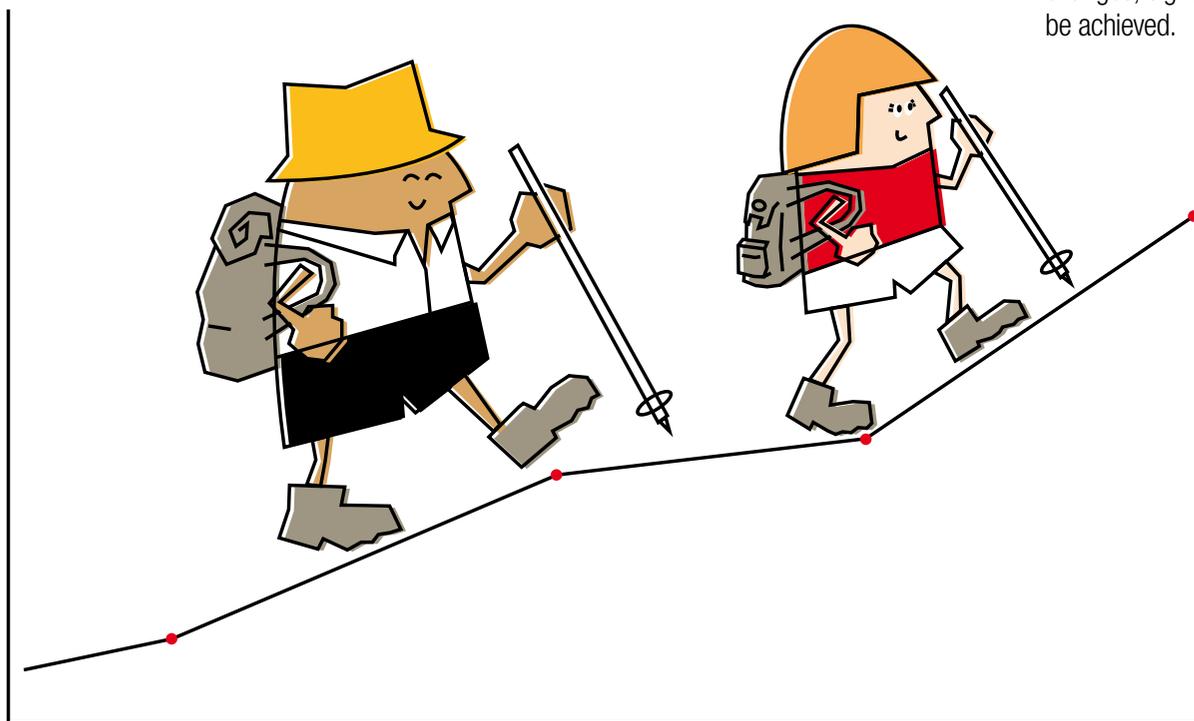
Accumulating activity in shorter bouts of 10 or 15 minutes makes it easier and more acceptable for most people, as well as selecting those activities that can be

incorporated into everyday life, for example walking or cycling instead of travelling by car or taking up active leisure pursuits and hobbies such as gardening or social sporting activities.

Adults who are overweight or obese will need to recognise that their daily requirement for physical activity has to increase from 30 minutes of moderate activity to between 60 and 90 minutes of moderate activity. In order to achieve this level of activity, adults are advised to segment the day

into three parts – morning, afternoon and evening and try to undertake 20 minutes, in total, of physical activity during each segment (morning, afternoon, evening).

This could include walking to and from work as part of a journey, walking during a lunch break and include some activity during the evening. Thirty minutes of moderate activity will provide health benefits, whereas moving towards 60 minutes will make a contribution to losing weight. If increased activity is accompanied with some dietary changes, significant weight reductions can be achieved.



LOCAL KNOWLEDGE

The primary care setting (GP practice, medical centre, community pharmacy) is located at the heart of the community and is therefore well placed to provide information to patients or customers about local opportunities to be active. It is recommended that primary care teams, pharmacies and individual practices make available a list of physical activity opportunities in their local area. Information about these can be drawn from a number of sources, for example national agency or local authority websites and leaflets (see Part Four for more details).

Providing information will make it easier for patients to access local opportunities and enable them to make a longer-term commitment to being active.



The Physical Activity and Health Alliance, or PAHA, is an online community for practitioners engaged in physical activity and health across Scotland. The current membership of over 2000 professionals draws from a broad and diverse physical activity workforce, including those from health, education, environment, transport and planning. The website www.paha.org.uk is a first port of call for information and resources to help members of the physical activity workforce implement the national physical activity strategy *Let's Make Scotland More Active*. PAHA organises networking events across Scotland and is developing 'Active Scotland', a website enabling both practitioners and the general public to search by postcode and activity type for details of local opportunities to be physically active.

CONTRAINDICATIONS AND RISKS

Physical activity has both risks and benefits, and therefore the objective is to provide guidelines that minimise risks and maximise benefits. The wide range of health benefits from physical activity can be experienced with only small risks of negative effects, such as injury.

Many of these risks are reduced to minimal levels if activity is limited to moderate activity and if people progress gradually from one level of intensity to another.

Healthy adults who meet the recommendations by performing moderate-intensity activities have an overall musculo-skeletal injury rate that is not much different than inactive adults. Risk of musculo-skeletal injuries increases as the intensity and amount of the activity increases. Although physical activity above the minimal recommendations results in additional health benefits, the associated musculo-skeletal health risks are increased as well, possibly negating some of the added benefit.

Similarly, the risk of sudden cardiac arrest or myocardial infarction is very low in generally healthy adults during moderate-intensity physical activities but the risk of cardiovascular complications increases transiently during vigorous physical exertion, especially for those who have latent or documented CHD and are habitually sedentary. Sudden cardiac death, especially in younger people, is a rare, albeit high-profile, risk of vigorous physical activity. The absolute rate of sudden death occurring during and up to 30 minutes after vigorous activity is extremely low, even in individuals with cardiac disease – one sudden death per 1.51 million episodes of physical exertion.³² It is also worth noting that, compared with their sedentary counterparts, physically active individuals have a 25–50% lower overall risk of developing CVD.

It is generally believed that the benefits of regular moderate-to-vigorous intensity physical activity far outweigh the risks.

The American College of Sports and Medicine provides the most authoritative guidelines to understanding contraindications, namely when patients should not engage in physical activity without medical review. The British Association of Cardiac Rehabilitation is producing comprehensive guidelines for the UK and these will be available during 2008. If patients are diagnosed with any of the following then they would not be considered eligible to participate in an exercise referral scheme for example:

- resting systolic blood pressure \geq 180 mmHg/diastolic \geq 100 mmHg
- febrile illness
- uncontrolled or unstable angina
- acute uncontrolled psychiatric illness
- osteoporosis (T score \geq 2.5)
- significant drop in blood pressure during exercise
- uncontrolled diabetes
- unstable or acute heart failure.

Physical activity has both risks and benefits, and therefore the objective is to provide guidelines to the patient that minimise risks and maximise benefits.

Although exercise referrals³³ fall beyond the remit of this guidance, the National Quality Assurance Framework published by the Department of Health in 2001 provides some useful pointers when considering medico-legal issues pertaining to encouraging patients to be more active generally.

The Framework distinguishes between the two distinct, but related, approaches within the overall context of physical activity:

- (i) recommending that a particular patient tries to be more habitually active in order to gain health benefits, compared with
- (ii) specifically directing a patient through the referral process to personnel and facilities through which a tailored exercise programme can be devised and delivered to him or her.

The former is relevant to this guidance.

33 Exercise referral is the system by which the GP or practice nurse refers patients to facilities such as leisure centres or gyms for assessment and supervised exercise programmes.

The recommendation to be habitually active is usually general in nature (e.g. 'walk more' or 'try to be more active'), does not involve any support structure and is appropriate if the following are both true: (i) the person is receptive and capable of carrying the recommendation into action independently (i.e. they are in the appropriate frame of mind to change their activity levels and to find means to do this that are safe and effective) and (ii) the person's condition (health risk factors) and needs (which may be social and/or emotional and/or medical) do not require tailored programming.

When increased physical activity is simply recommended, the clinical and legal responsibility usually remains with the health professional, although the patient or client also has responsibility for his or her own actions when, and if, they put the recommendations into practice. This is in contrast with exercise referrals, when the responsibility for safe and effective management, design and delivery of the exercise programme passes to the exercise and leisure professionals who should be members of a professional register and carry their own professional indemnity insurance.

28 Practice Team Information (PTI), ISD Scotland 2007. www.isdscotland.org/isd/information-and-statistics.jsp?pContentID=3680&p_applic=CCC&p_service=Content.show& (accessed 12 February 2008).

29 Scottish Government *Better Health Better Care: Action Plan* 2007.

30 Scottish Executive, *Scottish Health Survey* 2003.

31 Taylor, A.H., Ussher, M., & Faulkner, G. The acute effects of exercise on cigarette cravings, withdrawal symptoms, affect and smoking behaviour: a systematic review. *Addiction* 2007, 102, 534-543.

32 Department of Health, *Physical Activity Care pathway: Guide for practitioners*, 2007.

PART 4 ADDITIONAL PATIENT ADVICE AND INFORMATION



ADDITIONAL PATIENT ADVICE AND INFORMATION

This section provides patient advice on the benefits of getting active and tips on getting started. The information in the following pages can be shown to the patient during a consultation, photocopied for giving to the patient or incorporated into health information leaflets for patients. There are also patient leaflets available from national organisations such as NHS Health Scotland and the British Heart Foundation, and contact details for these and other organisations relevant to the promotion of physical activity are provided. Finally, for those primary care practitioners who want to find out more, there is a bibliography and sources for further reading at the end of the section.

BENEFITS OF PHYSICAL ACTIVITY

Increasing physical activity improves:

- ✓ longevity
- ✓ flexibility
- ✓ function and independent living
- ✓ bone strength
- ✓ quality of sleep
- ✓ weight control
- ✓ wellbeing

Increasing physical activity decreases:

- ✓ risk of heart attack
- ✓ risk of stroke
- ✓ risk of developing type 2 diabetes
- ✓ risk of some cancers
- ✓ risk of fractures
- ✓ depression
- ✓ obesity
- ✓ risk of memory loss and some types of dementia



WHAT YOU SHOULD TELL YOUR GP OR PRACTITIONER BEFORE YOU CHANGE YOUR ACTIVITY LEVELS

- you have a heart condition or you have had a stroke, and your doctor recommended only medically supervised physical activity
- you often have pains or pressure in the left or mid-chest area, left neck, shoulder or arm
- you have developed chest pain or discomfort within the last month
- you tend to lose consciousness or fall due to dizziness
- you feel extremely breathless after mild exertion
- your doctor has recommended that you take medicine for your blood pressure, a heart condition or a stroke
- your doctor has said that you have bone, joint or muscle problems that could be made worse by the proposed physical activity
- you have a medical condition or other physical reason not mentioned here that might need special attention in an exercise programme (e.g. insulin-dependent diabetes)
- you are middle-aged or older and have not been physically active but are now planning a relatively vigorous exercise programme.



GETTING STARTED

Choose a time of day that suits you and does not make you alter your routine too much. Find an activity that you enjoy. By choosing activities you enjoy, you will be more likely to stick with them.

If you have been inactive for a while, begin by choosing moderate-intensity activities you enjoy the most (see Table 1 for details of the intensity/energy expenditure of different types of activities). Gradually build up the time spent doing the activity by adding a few minutes every few days or so until you can comfortably perform a minimum recommended amount of activity (30 minutes per day).

As the minimum amount becomes easier, gradually increase either the length of time performing an activity or increase the intensity of the activity, or both.

Set goals and work toward them, starting with short-term and realistic goals. Reward yourself when you have reached one of your goals.

Take three to five minutes at the beginning of any physical activity (e.g. walking, jogging, swimming, cycling) to properly warm up your muscles and prepare yourself for exercise by gradually increasing the intensity of the activity – start off slowly and build up to your normal pace. As you near the end of the activity, cool down by reducing the level of intensity. Finish by stretching the muscles you used. Recruit a friend or join a group activity. Some people find it easier to stay active in a social environment.

Wear comfortable footwear and loose clothing that is suitable for the prevailing conditions. Reduce the time and intensity of physical activity during temperature extremes, including high humidity.

ADDITIONAL PATIENT ADVICE AND INFORMATION GETTING STARTED

Remember to drink water regularly throughout the day.

Do not drink alcohol or eat a large meal (wait for two hours) prior to undertaking your daily physical activity.

Listen to your body – keep an eye on your level of fatigue, heart rate and physical discomfort.

If you are poorly or unwell do not exercise – take a rest day.

Explore new physical activities; try something you have not done for a long time. Vary your activities, both for interest and to broaden the range of benefits.

Reward and acknowledge your efforts.

Patients need to be advised that if they are about to start exercising and they experience any of the following symptoms then they should stop exercising and seek advice.

Stop the activity if you feel any of these:

- chest tightness, discomfort or pain
- dizziness or light-headedness
- difficulty breathing or breathlessness
- nausea
- hallucinations
- unsteadiness
- profuse sweating
- cold clammy skin
- headaches
- visual disturbance
- leg pain or ache
- palpitations (feeling of pounding or racing heart)
- faintness
- confusion
- nervousness
- numbness
- hand tremors
- sharp joint pain or any acute pain
- irregular, rapid or fluttery heartbeat
- fever

If you have diabetes: stop the activity if you experience shakiness, tingling lips, hunger, weakness or palpitations.

SYMPTOMS DURING PHYSICAL ACTIVITY

What is normal:

- faster pulse
- breathing deeply
- breathing faster
- feeling warm
- sweating

What is not normal:

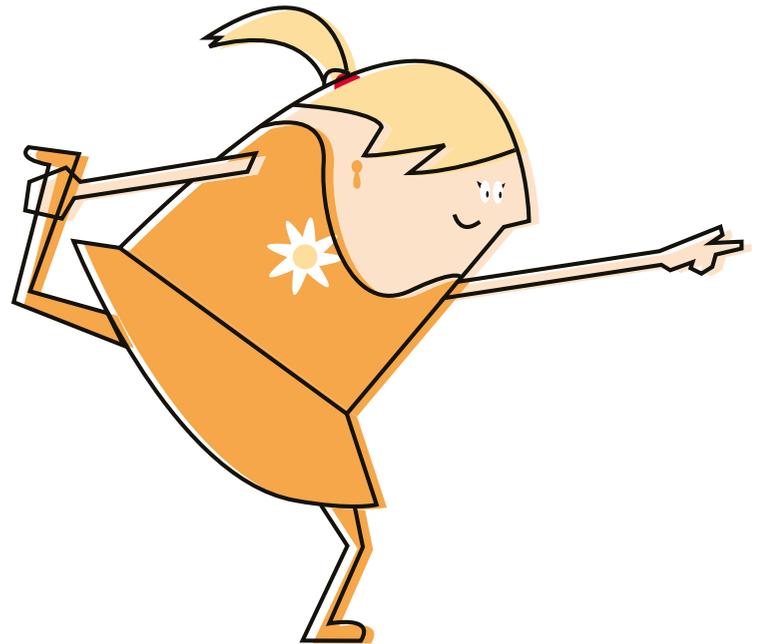
- heaviness in your chest (angina)
- chest pain, pain in the arm, neck or jaw
- irregular heartbeats
- extreme breathlessness
- wheezing, not being able to catch your breath
- light-headedness
- nausea
- extreme fatigue
- numbness
- pain of any kind

HOW TO AVOID INJURIES

- If you have been sedentary for a long time, are overweight, have a high risk of CHD, or some other chronic health problem, then see your doctor for a medical evaluation before beginning a physical activity programme.
- Wear comfortable, properly fitted footwear and comfortable, loose-fitting clothing that is appropriate for the weather and the activity.
- Listen to your body – monitor your level of fatigue, breathing and physical discomfort.

- Take three to five minutes at the beginning of any physical activity to properly warm up your muscles by slowly increasing the level of intensity. As you near the end of the activity, cool down by reducing the intensity. (For example, before jogging walk for three to five minutes, increasing your pace to a brisk walk. After jogging, walk briskly, decreasing your pace to a slow walk over three to five minutes. Finish by stretching the muscles you used – in this case, primarily the muscles of the legs.)

- Start at an easy pace – increase time or distance gradually.
- Drink plenty of water throughout the day to replace lost fluids. Drink a glass of water before you get moving, and drink another half cup for every 15 minutes that you remain active.
- Be aware of the signs of overexertion. Breathlessness and muscle soreness could be danger signs.



CALORIE BURNING GUIDE

A GUIDE TO ENERGY EXPENDITURE OF DIFFERENT TYPES OF ACTIVITIES

ACTIVITY	CALORIES PER HOUR – 8.5 ST (54 KG)	CALORIES PER HOUR – 12.5 ST (79.4 KG)
Badminton - single / recreational	310	370
Bicycling – 10 mph	370	440
Callisthenics (continuous)		
Low intensity	245	290
Medium intensity	395	470
High intensity	585	690
Dancing	225	265
Domestic work (cleaning windows, scrubbing floor – no pause)	225	265
Driving car	85	100
Food preparation	120	140
Golf	225	265
Jogging (5.5 mph)	585	690
Lawn mowing – power mowing	225	265
Making beds	185	220
Office work	130	150
Painting house	185	220
Shopping	150	180
Sitting reading	80	96
Swimming (30 yards per minute)	375	455
Table tennis – recreational	270	315
Tennis singles	380	450
Walking at 3.5 mph	280	330
Watching TV	70	80
Washing the car	205	245
Window cleaning	205	245
Writing	80	95

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Physical activity and public health in older adults: recommendation from the American College of Sports Medicine and the American Heart Association. *Circulation*, 116.

USEFUL CONTACTS

**British Heart Foundation (BHF)
National Centre for Physical Activity and Health –
www.bhfactive.org.uk**

The BHF National Centre for Physical Activity and Health provides a comprehensive information centre for professionals, including an advice service and useful factsheets. Contact the Information Centre on 01509 223259 or BHFNC@lboro.ac.uk.

**British Trust for Conservation Volunteers –
(BTCV) www.btcv.org**

The British Trust for Conservation Volunteers manages voluntary environmental projects and engages over 140,000 volunteers annually within the delivery of the BTCV Green Gym programmes. BTCV Green Gym helps people of all ages to be physically active and mentally well by offering the opportunity to 'work out' in the open air through local, practical environmental work. BTCV has a Scotland office in Stirling and can be contacted on 01786 479697 or email 'Scotland@btcv.org.uk'.

**British Waterways Scotland –
www.scottishcanals.co.uk/forth/index.html**

Scotland's inland waterways have undergone a physical transformation and have taken on a new lease of life. They are now a thriving leisure resource, for the people of and visitors to Scotland, to bring benefit to the communities through which they run. In Scotland the 137-mile (220-km) canal network, originally built between 1768 and 1822, includes the Caledonian, Crinan, Forth and Clyde, Union and Monkland canals.

**Cycling Scotland –
www.cyclingscotland.org**

Cycling Scotland aims to mainstream cycling as a sustainable mode of transport, a means of exercise

and a strong contributor to the Scottish tourist economy. The organisation promotes public participation in cycling events, gives training to ensure people can cycle with confidence, and provides engineering services to ensure that cyclists are catered for on Scotland's roads and paths.

**Forestry Commission Scotland –
forestry.gov.uk/scotland**

Forestry Commission Scotland serves as the forestry department of the Scottish Government. Their mission is to protect and expand Scotland's forests and woodlands, and increase their value to society and the environment. Notably, the Woods In and Around Towns (WIAT) initiative aims to increase the contribution of woodland to the quality of life in Scotland's urban and post-industrial areas.

**Greenspace Scotland –
www.greenspacescotland.org.uk**

Greenspace Scotland was established in 2003 to promote a step change in the development and management of quality greenspaces in towns and cities. Their goal is that everyone living and working in urban Scotland has easy access to a quality greenspaces that meet local needs and improve their quality of life.

**jogscotland –
www.jogscotland.org.uk**

This organisation delivers simple and gentle walk/jog/run programmes to encourage everyone to get out and be active. The organisation trains leaders, and provides support, advice and promotion for jogging groups across the country in local communities and in workplace settings as well as organising events such as the Co-op jogscotland 5K challenges. The leaders have experience of developing and promoting

healthy living and increased physical activity with traditionally 'hard-to-reach' groups of people.

**Living Streets –
www.livingstreets.org.uk**

Living Streets is a charity that campaigns to create better streets and public spaces for people on foot. Their work spans policy, research, lobbying and advice, and delivers practical, positive solutions to pedestrian issues.

**NHS Health Scotland –
www.healthscotland.com**

Health Scotland is the national health improvement agency. Its website provides information, resources and learning/development opportunities to support health improvement practitioners. Resources include leaflets that are useful to hand out to members of the general public (Active Living Booklet series; Get You and your Family Moving; Help Yourself to Lose Weight; Help Yourself to Reduce the Risk of High Blood Pressure; Keeping Active During and After Pregnancy and the popular Hassle Free Exercise).

**OPENspace –
www.openspace.eca.ac.uk**

OPENspace is the research centre for inclusive access to outdoor environments. Its work covers all types of landscape, in urban or countryside contexts, the benefits it can offer and the barriers to access.

**Paths for All Partnership –
www.pathsforall.org.uk**

The Paths for All Partnership facilitates the development of paths for recreation, health and wellbeing, strengthening communities, sustainable transport and economic development. There are two main areas of activity: Outdoor Access and Paths to Health.

Paths to Health –

www.pathsforall.org.uk/pathstohealth

Paths to Health promotes walking for health. They provide advice on how to set up walking projects and provide training, grants and resources to support the promotion of walking in local areas. The initiative now extends to 200 community-based health walks schemes and involves over 20,000 people. Contact the local Paths to Health Development Officer for more information – details are on the website. The link for all of the outdoor access officers across Scotland is ‘www.outdooraccess-scotland.com’, through which contact details for the rangers’ services can be obtained. This is the main site for the Scottish Outdoor Access Code, which explains access rights and responsibilities.

Physical Activity and Health Alliance (PAHA) –

www.paha.org.uk

PAHA is an online community for practitioners engaged in physical activity and health across Scotland. The website contains information and resources to help members of the physical activity workforce implement the national physical activity strategy, ‘Let’s Make Scotland More Active’. You will find a link here to the Active Scotland website.

SCOTPHO –

www.scotpho.org.uk

This collaboration brings together the key national organisations involved in public health intelligence in Scotland, and ensures that the public health community has easy access to clear and relevant information/statistics to support decision-

making. The website carries summary data and statistics, background information, interpretation, policy notes, commentaries on data sources, references and links to further information for a wide range of topics relating to the health of the Scottish population.

Scottish Centre for Healthy Working Lives –

www.healthscotland.org.uk/hwl

The Scottish Centre for Healthy Working Lives brings together Scotland’s Health at Work (SHAW) and Safe and Healthy Working (SaHW) under the same umbrella. The Centre has also taken responsibility for the business and employability strands of Scotland Against Drugs.

Scottish Disability Equality Forum (SDEF) –

www.sdef.org.uk

The Scottish Disability Equality Forum contact is Keith Robertson. He is the Access Development Officer and is the main link with all the Local Access Panels around Scotland (his email address is: keith.robertson@sdef.org.uk).

Scottish Natural Heritage –

www.snh.org.uk

The natural heritage is one of Scotland’s biggest assets. The role of Scottish Natural Heritage (SNH) is to look after the natural heritage, help people to enjoy and value it, and encourage people to use it sustainably.

Scottish Physical Activity Research Collaboration (SPARColl) –

www.sparcoll.org.uk

SPARColl aims to contribute to the evidence base on

physical activity and health by evaluating the effects of interventions, with a particular interest in walking as a mode of physical activity.

Scottish Tourist Board –

www.visitscotland.com

The website contains suggestions for walks from an easy stroll to a wilderness trek, with coloured boot icons and walks-grading information to make it easier to select the route. The ‘great outdoors’ section includes bike route ideas and maps.

Sportscotland –

www.sportscotland.org.uk

This organisation is the national agency for sport in Scotland. Their mission is to encourage everyone in Scotland to discover and develop their own sporting experience, and consequently increase participation and improve performances in Scottish sport.

Sustrans –

www.sustrans.org.uk

Sustrans is the UK’s leading sustainable transport charity and works towards achieving a vision of a world in which people can choose to travel in ways that benefit their health and the environment. The National Cycle Network is their great success story – the first 10,000 miles of the network have been completed and carry over 230 million journeys each year. In addition, Sustrans currently co-ordinates over 2000 volunteer rangers who maintain routes in their communities.



