

16: PHYSICAL ACTIVITY AND STARTING TO GET ACTIVE

For many patients, the thought of starting to become physically active can be overwhelming. It is perceived as being difficult, painful, largely gym-based, with only demanding regimes producing real benefits.

These are misguided assumptions and advice should be more about incorporating physical activity into everyday life, with available alternatives, to gym-based exercise. This section gives brief guidance on the main principles of physical activity, how to become more active and how to dispel these beliefs.

Assessment of present levels of activity:

- The UK General Practice Physical Activity Questionnaire (GPPAQ)¹ can be used to categorize patients into recommended levels of activity
- 'The Scot-PASQ'.² A brief assessment using just 3 questions. Used as a motivational screening tool to help raise the issue of physical activity and deliver advice

1. In the past week, on how many days have you been physically active for a total of 30 minutes or more?
2. If four days or less, have you been physically active for at least two and a half hours (150 minutes) over the course of the past week?
3. Are you interested in being more physically active?

Read the brief guidance on how to use the tool by downloading it here: <http://www.healthscotland.com/documents/6255.aspx>

Four important aspects of exercise:

- **Cardiovascular fitness**
- **Muscular strength**
- **Endurance**
- **Flexibility**

Many of the health benefits of exercise come from improved **cardiovascular fitness** using aerobic exercise. However, **muscle strength** and resistance exercises also benefit bone formation, glucose metabolism, hypertension and maintenance of weight.

Muscle strength and **endurance** are also essential to maintain mobility and prevention of falls, which increases in importance as we grow older. **Flexibility** is often overlooked, but is also important as it reduces the possibility of injury, stiffness and an inability to perform simple tasks like bending to tie shoe laces or hair washing.

There are some simple basic principles that can be used in 'prescribing exercise', which when grasped by patients, will promote more enjoyment and increase motivation, helping them to get over some of their beliefs/fears of pain or difficulty.

Warm up and Cool down

It is desirable that individuals include a warm up and cool down as part of their activity. This may be the same activity performed at a lower intensity. For example, walking at a slow pace for your warm up and cool down, with a moderate intensity walk for 30 minutes as the main activity.

Apply the FITT principle.

Frequency..... How many times a week for an activity?

Intensity..... How hard to exert?

Time..... How long in minutes?

Type..... Which type of activity agreed with the patient?

The current UK physical activity guidelines are for moderate intensity activity on 5 or more days a week. For individuals who have led a sedentary lifestyle, this may be difficult to establish initially. Here, the advice may be to exercise aerobically three times a week, allowing a day or two in between exercise days. However, once this is established individuals should be encouraged to increase the frequency to 5 or more days.

Frequency is the most important aspect to establish as without a routine pattern it will not become a lifestyle change. Motivation is what gets you started, but habit is what keeps you going.

Those who have been inactive for a long time may need to start at low **Intensity** but need to be aware that the evidence for benefit is mostly from moderate exercise. Thus, if walking they will not improve their cardiovascular fitness with only a gentle stroll for 30 minutes. Moderate exercise when walking is when someone is breathing a little faster and feeling a little warmer than normal but still able to hold a conversation, taking a few extra breathes between sentences. If they are gasping between words, then they are taking high intensity activity. If walking, aim to increase the number of minutes of walk first, before increasing the intensity (by walking faster or uphill).

Time or how long to exercise, should be established excluding any warm up or cool down. Present guidelines have recently been changed and people can be advised that bouts of physical activity of 10 min or more accumulated throughout the day are as effective as longer sessions.

There are many activities that can be started and it is most important to find a **Type** of exercise that the individual finds enjoyable convenient, affordable and achievable. Walking, cycling and swimming are three of the commonest and known to virtually everyone, but there are many more. Dancing, yoga, Pilates and Tai Chi are also very popular and also help prevent falls and encourage core strength.



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Definitions of moderate and vigorous intensity:

- *Moderate intensity* physical activity causes adults to feel warmer, breathe harder and the heart beats faster with the example of brisk walking being the easiest to recognize.
- *Vigorous intensity* physical activity causes adults to get warm quickly, breathe much harder, perspire and find it difficult to maintain a conversation

Monitoring

Some people find it helpful to monitor their progress and use this to motivate themselves.

Ways of monitoring progress:

- Keep an exercise diary – cheap and easy to record your progress, success, feelings and to identify barriers to exercise
- Pedometers – cheap and easy to use, but not always reliable³
- Accelerometers – more reliable and can be linked to a computer program for monitoring
- Walk4life – the walking web based site which is free to join; it uses ordinance survey maps and routes and has a ‘track your progress’ page to monitor your own fitness

How many steps is enough? Differing advice is often given over how many steps is good for our health, with perhaps 10,000 steps a day as the commonest quoted.^{4, 5, 6} Yet, adult physical activity guidelines advise at least 30 minutes of moderate intensity activity per day and this translates to only 3000 - 4000 steps.^{7, 8} To fit with public health guidelines these should be:^{9, 10}

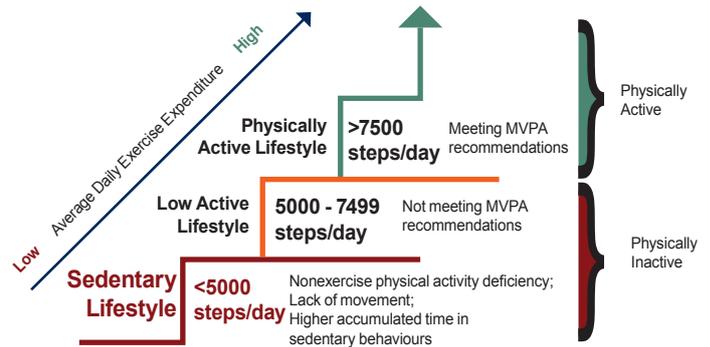
- Of moderate intensity (i.e. over 100 steps/minute)⁷
- Accumulated in at least 10 minute bouts
- Taken over and above some minimal level of physical activity (i.e., number of daily steps) below which individuals may be classified as sedentary

As the pedometer or accelerometer will also detect also a low intensity levels of steps, it is these small daily movements that are added to the total step count, but they are unlikely to contribute much to health benefits. It is therefore suggested that, total steps of less than 5000 steps/day, may reflect a level of sedentary activity which is associated with a higher prevalence of obesity.^{9, 11}

However, adding 3000-4000/day moderate intensity steps to this, then equates with a hierarchy level of 7500-9999 steps/day (somewhat active) which may be more useful for monitoring or motivation purposes.⁹

- < 5000 steps/day – sedentary
- 5000 – 7499 steps/day – low active
- 7500 - 9999 steps/day – somewhat active
- > 10000 -12.499 steps/day – active
- > 12,500 – steps/day – highly active

Fig 1 Step - defined sedentary lifestyle index for adults: MVPA, moderate – to - vigorous physical activity¹⁰



In summary, every step may be counted, but greater emphasis still needs to be placed on ‘healthy’ moderate intensity steps.

The above advice is partly taken from Bandolier’s¹² advice on ‘Starting to Exercise’, available from their fuller version at:

<http://www.bandolier.org.uk/booth/hiving/startoex.html>

and the Swedish guidance on activity¹³ at:

<http://fyss.se/wp-content/uploads/2011/06/2.-General-recommendations-regarding-physical-activity.pdf>

Getting Started

Increasing physical activity for many is difficult and encouragement and ideas are often needed about integrating activity into daily life.

There are many ways of increasing activity and walking is one of the easiest. If 30 minutes all at once seems too much, then try short bouts in the day such as 10 minutes and try to build that up over time.

For example:

- Leave the car at home for short trips to shops or friends
- Walk to school with the children when you can
- Park the car when used, at the far side of a car park
- If commuting, get off the train or bus one or two stops early to fit in a walk to work
- Avoid lifts and escalators – use the stairs
- Use a standing desk to work from; these can be used both standing or sitting as they have a hydraulic system attached
- Get up from a desk to walk across the office to speak to a colleague rather than phone or email
- Promote and support standing meetings. (Standing burns 15 calories an hour compared to 5 an hour sitting)
- Have a walking meeting
- Read your tablet on top of the filing cabinet
- At home or work if you have a cordless phone, walk and talk
- Meet friends for a walk
- Use an exercise bike whilst watching TV or listening to a podcast or music; don’t store it in the spare room!

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Around the house many jobs involve activity and can help get you going:

- Cleaning and polishing furniture, floors and windows.
- Vacuuming
- Many gardening activities such as cutting the grass or the hedge.
- Brushing the yard or raking up leaves.
- Washing and polishing the car by hand.
- DIY – carpentry, sanding, painting, building etc.

There are many other activities but most important is finding a form of exercise that the individual finds enjoyable, social and achievable.

- **Walking** – walk with a friend or join a walking group. [Walk4life](#) has information on local walks and walking groups for many areas. There are also health walks, which are short led walks in most local areas
- **Cycling** – many cycle paths have or are being developed across the UK and it is a fun activity for all the family. Sustrans has the [National Cycle Network](#) map freely available
- **Cycle or walk around your local park** – getting outside and being in green space can help you feel better, there are also lots of things to see as well, such as wildlife and people.
- **Dance** – popular, enjoyable and social with many alternative types such as salsa, zumba, line dancing and ballroom.
- **Swimming** – traditional fun for the family with water aerobics for some. Try to swim a little longer each time and try not to take too many rests
- **Golf** – 18 holes is five miles on most courses or even pitch and putt with the children
- **Tennis, squash, badminton** – many clubs and courts all around the country for fun and competition.
- **Football** – the nation's most popular sport, so get out with your children and kick a ball again!
- **Walking football** is becoming popular, a new activity for older people or those who cannot run any more
- **Marshall arts** are popular and improve strength and flexibility as well as cardiac fitness
- **Yoga and Pilates** – excellent activities for flexibility, core strength and posture to relieve and prevent many back problems.

Remember every activity counts



In Primary Care across the UK, there are almost 900,000 GP consultations daily.¹⁴ The average patient visits their GP about 4 times per year.¹⁵ During these visits there is ample opportunity for the GP, practice nurse and health care assistant to promote exercise as part of a beneficial lifestyle and as a form of treatment in many diseases. In Secondary Care, there are many thousands of outpatients and inpatient consultations where exercise advice should be incorporated into the treatment plan.

The majority of patients need encouragement towards being more active through simple guiding techniques of Motivational Interviewing and straight forward advice on promoting activity or taking up exercise. Many patients do not want to go to a gym, but prefer to participate in walking, cycling, swimming and dancing, the advice for which falls comfortably within the role of any health professional.

As patients present with more complex problems, with one or more co-morbidities, doctors or nurses may prefer to refer to Local Exercise Schemes or physiotherapists depending on the conditions and level of risk for more detailed advice. However, there is still plenty of simple encouragement regarding walking, gardening and housework, which can be done in parallel, from which most patients will benefit.

A small number of patients require rehabilitation through specialised physiotherapists or high level 4 gym instructors, or through pulmonary or cardiac rehabilitation units. Assessments of these patients may need to be made by Cardiac, Respiratory or, if available, Sport and Exercise Medicine (SEM) consultants.

Absolute Contraindications of Exercise

To help health professionals advise patients prior to increasing their activity there are a recognised list of absolute contraindications, which should be checked to screen patients and if any are present then treating the condition is required before activity can increase.

They are presented below in two different formats, as a list and as a flow chart adapted from the American 2015 guidance on pre-participation health screening.

- Uncontrolled or poorly controlled asthma¹⁶
- Cancer or blood disorders: when treatment or disease cause leucocytes below $0.5 \times 10^9/L$, haemoglobin below 8.0g/dl or platelets below 50×10^9 ref¹⁹
- COPD: patients are required to be stable before training and oxygen saturation levels should be above 88-90%¹⁷
- Diabetes: if blood glucose is >13 mmol or <5.5 mmol/l then it should be corrected first¹⁸ Patients with diabetic peripheral or autonomic neuropathy or foot ulcers should avoid weight bearing exercise. Any diabetic with acute illness or infection¹⁶
- Heart disease: acute myocardial infarction or unstable angina until stable for at least 5 days, dyspnoea at rest, pericarditis, myocarditis, endocarditis, symptomatic aortic stenosis, cardiomyopathy, unstable or acute heart failure, uncontrolled tachycardia¹⁶



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- Hypertension: resting blood pressures of a systolic >180 or diastolic >100 or higher should receive medication before regular physical activity¹⁸ with particular restrictions on heavy weights strength conditioning, which can create particularly high pressures²⁰
- Osteoporosis: avoid activities with a high risk of falling¹⁶
- Fever: should be settled to avoid a risk of developing myocarditis¹⁸
- Unexplained dizzy spells¹⁸
- Acute pulmonary embolus or pulmonary infarction. Excessive or unexplained breathlessness on exertion¹⁸
- Any acute severe illness¹⁸

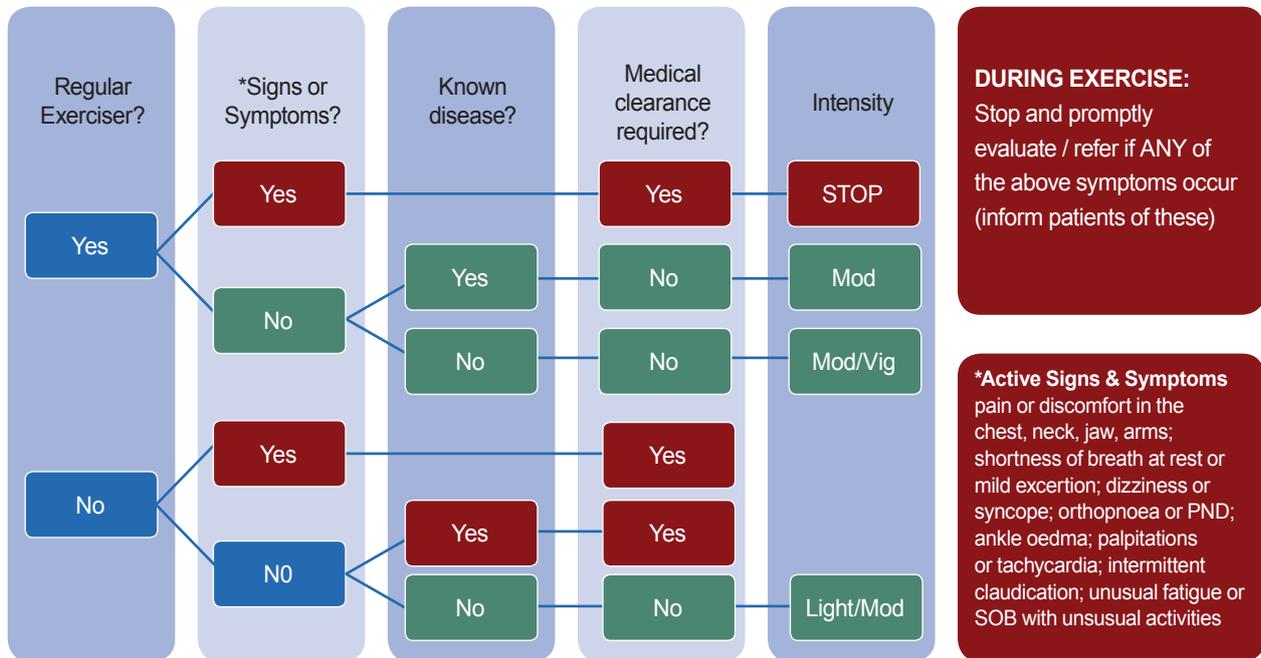
Absolute contraindications taken from

BACR (2006) Phase IV Exercise Instructor Training Manual and ACSM (2009) Guidelines for Exercise Testing and Prescription. Cited in: Welsh Local Government Association. (2010) *National Exercise Referral Scheme*. Cardiff: Welsh Local Government Association.

Disclaimer

Health professionals are not trained in giving exercise programmes to individuals and this resource is not intended to encourage anyone to go beyond their own experience. However, guiding someone to walk, swim, cycle or dance is within everyone's understanding.

**Pre-participation Screening
Summary of updated ACSM recommendations ²¹**



ACSM 2015, Updated recommendations for Exercise Participation Health Screening

Extracted from the Welsh Deanery CPD module on physical activity Motivate2Move.
Now part of the RCGP clinical programme on physical activity and lifestyle

References on factsheet 17 or on the [Motivate2Move website](#)