

# FIT FOR LIFE



A GUIDE FOR ADULTS WITH A DISABILITY: LES AUTRES



Exercise



Nutrition



Psychology



This resource can help you get Fit for Life. It starts with the basics and teaches you how to lead a healthy, well-balanced and active lifestyle as a disabled person and allows you to progress at your own pace. If you then choose to take up a sport, you can download the Fit for Sport section which will help you understand how to adjust your training and nutrition, and how to use some psychological skills to improve your performance. No matter what level you are currently at, or even if you are just getting started, this guide can help you to achieve your own personal goals. Most importantly this guide will hopefully give you the confidence to lead a healthy, more active lifestyle and maybe try something new. **Good luck!**

# ZOE NEWSON

## ParalympicsGB Powerlifter

London 2012 Paralympic Games bronze medallist

"Having played sports such as Football and Athletics as a child I started Powerlifting at the age of 14 and have never looked back. My advice is to try lots of different sports and activities so that you can find some that you really enjoy. This will help improve your health and fitness, and help you to stay active in the long-term.

Powerlifting is a sport which requires a great deal of strength and power, and yet you also compete in specific weight categories. I therefore understand the importance of tailoring my training and eating a well-balanced diet to help ensure I am healthy and can compete at my best. Representing my country (Great Britain) at the London 2012 Paralympic Games was an amazing experience and I hope that the Games also inspired you to get active."



# IS THIS SECTION FOR ME?

## FIT FOR LIFE

- ✓ Do you want to get fitter and healthier?
- ✓ Do you currently do little physical activity and exercise?
- ✓ Do you have limited nutrition knowledge?
- ✓ Do you want to learn and/or recap the basics?

THIS SECTION IS DOWNLOADED



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## FIT FOR SPORT

- ✓ Do you already regularly (at least three to four times per week) take part in exercise and/or sport?
- ✓ Do you want to improve your performance?
- ✓ Do you want to tailor your nutrition to your sport?
- ✓ Do you want to understand how to use some psychological skills to improve?

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# FIT FOR LIFE



From a health perspective, regular exercise can make everyday living easier and also more enjoyable. Other benefits include:

- Improved well-being and decreased stress
- Improved health (lower cholesterol and blood pressure, reduced risk of obesity, diabetes and heart disease)
- Weight management
- Improved ability to perform activities of daily life
- Increased fitness (better breathing, increased strength and endurance)
- Improved balance and co-ordination
- Improved range of movement and joint mobility

It is well-known that if you want to be healthy, then physical activity and/or exercise should form part of your lifestyle.

**PHYSICAL ACTIVITY** = Any action or movement that requires you to contract your muscles.

**EXERCISE** = A planned and purposeful action from which we aim to improve our fitness levels and our health.

You may sometimes face potential barriers to exercise but remember that many activities can be adapted to suit your needs. A large number of fitness facilities are now fully accessible for disabled people too.





# HOW TO OVERCOME BARRIERS TO EXERCISE

Taking part in some form of activity or exercise is necessary for you to become physically fit.

Additionally, physical activity can help you become mentally fit. Exercise can help improve health and well-being by improving mood, reducing stress and decreasing depression. It can also help boost your self-esteem and give you confidence in other areas of life. To gain these psychological benefits you must maintain a regular exercise routine but this isn't always easy. Disabled people may face a number of barriers to physical activity which can make becoming and staying active a real challenge.

Here are a few of the common barriers and how you can try to overcome them:



## “I really don’t know where to start”

The most important thing is to find an activity that you enjoy doing so that you will keep doing it. Join a friend at the gym, try an exercise class or head to the park with your family; adding a social element can make it much more fun. Don't be afraid of trying new and unfamiliar activities as these can often surprise you and leave you wanting more. Find some like-minded people to exercise with so that you can help motivate each other.

Also visit [www.parasport.org.uk](http://www.parasport.org.uk) for information on what sports are available for disabled people and to help you find local sports clubs.

## “I just don’t have the time”

Many people live hectic lifestyles that are busy with both work and family commitments. Not having sufficient time to exercise is a genuine concern. Difficulties with travel can make your trip to an exercise venue annoyingly long or expensive and so it is important to consider where else you might be able to exercise. A long commute to your local gym is no longer needed if you can do a workout at your local park or even in your own home/garden. The amount of exercise you need to do to gain benefits is often overestimated too. As little as 30 minutes of moderate intensity activity a day, five times a week is enough to help you feel physically and mentally fit. Multiple bouts of at least 10 minutes are also just as good; how about before or after work and a short session during your lunch hour?

## “My local facility isn’t accessible”

Accessibility is a common issue faced by disabled people. However, you do not necessarily need a gym or leisure centre to become more active. You can do lots of exercises with minimal equipment in many different environments such as in your home or at the park. However, if you do fancy the gym, the Inclusive Fitness Initiative (IFI) has an application where you can find a local club that has accessible equipment for disabled people. Visit [www.efds.co.uk/inclusive\\_fitness/ifi\\_gyms](http://www.efds.co.uk/inclusive_fitness/ifi_gyms) for more information.

## “I feel too tired to exercise”

Many people say they don't exercise because they are too tired. This may be due to your disability or the effects of your medication so speak to your treating clinician and see if there are any other options. Remember to start with small amounts of exercise and integrate the sessions into your daily routine so that it does not influence your other commitments. Also remember that regular exercise can actually help you sleep better.

## “Because I’ve always been rubbish at exercise and sport”

You may have disliked PE at school because of an emphasis on competitive sport, the group atmosphere, due to a lack of choice or that age-old classic of being picked last. It may be hard to forget these feelings but remember that as an adult you can choose exactly what type of exercise and/or sport you do, who you do it with, when and also whether you do it for leisure or competitively; you are in control! Finding a type of exercise that you enjoy will hopefully prolong your involvement.



# PHYSICAL ACTIVITY AND EXERCISE

In order to keep fit and active and to realise some of the benefits mentioned earlier you should include some physical activity and exercise in your daily routine. The key to getting active in the first place is to find activities/sports that you enjoy doing. Regardless of your disability there are very few activities that you can't do and some will need very little adaptation.

The general guidelines for getting fit do not differ greatly from those for non-disabled people. However, this guide discusses specific topics, adaptations and areas of emphasis for disabled people in the Les Autres category.

The main goals of Fit for Life are to improve your ability to perform tasks of daily living and to stop the onset of a variety of problems associated with inactivity. Your individual goals may be large or small, and may include getting to a healthy weight, being able to jog around the block, having the ability to play outside with your kids, or you may want to take up something new to help you get fit and meet new people. Whatever you wish to achieve, getting to grips with the basics is a great place to start.

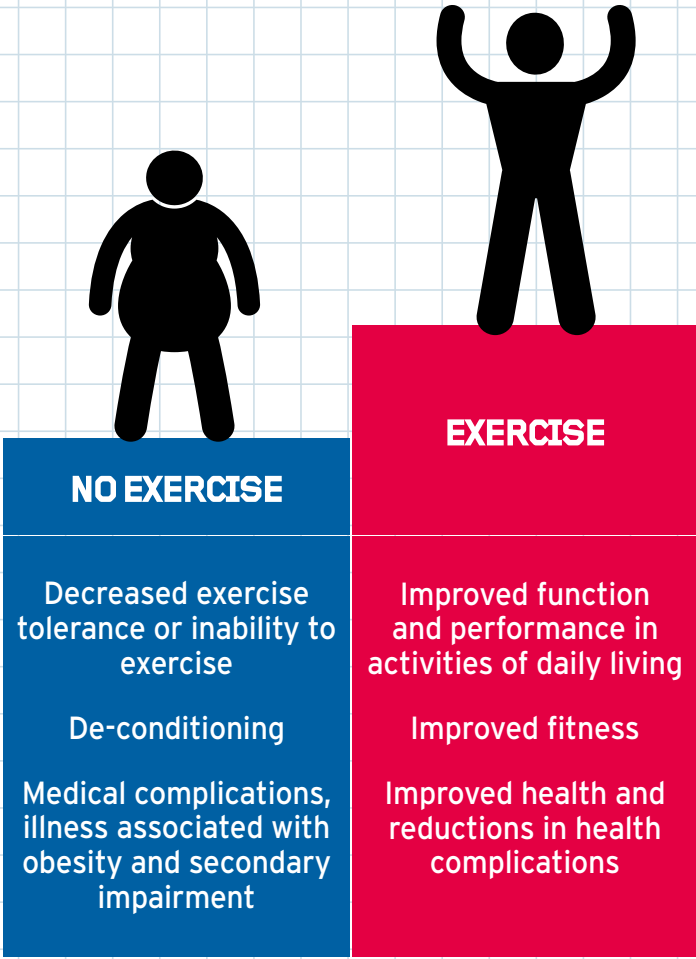


Figure 1. The effects of no exercise vs. the benefits of exercise.

## General Guidelines

If you currently do very little physical activity or exercise you should start by thinking about your everyday chores and how you can make them more active. This will help to improve your health in small do-able steps through increasing your energy output during the day and therefore helping with weight maintenance. Consider some of the following ideas:

- Gardening
- Cleaning and other household chores
- DIY
- Washing the car
- Walk/bike to work or to the shops rather than getting in the car
- Use the stairs
- Jogging around a local park or trail
- Playing games with family members
- Dancing
- Consider volunteering for a local organisation, charity or sports club

Do what you can and take breaks when you need to. Once you have built up your basic fitness you can consider progressing to some planned exercise sessions.



## Organised Exercise

Common symptoms for individuals in the Les Autres category include overall fatigue, painful joints and reduced muscle strength. Increasing your activity levels can improve your health and well-being, reduce feelings of discomfort, as well as improving your overall strength and fitness. On the flipside, there is also a risk of doing too much activity and overloading the body. Consequently, planning your physical activity and exercise programme (ideally with an exercise professional) and making the type, intensity and duration of exercise specific to your individual needs is crucial.

An exercise session usually consists of three components; a warm-up, the main session and a cool-down.

### Warm-up

An effective warm-up is designed to prepare your body for exercise.

- 5-10 minutes of low to moderate intensity exercise will raise your heart rate and increase your muscle temperature.
- You should gradually increase the intensity of exercise to that at which you will be exercising.
- Try to include the movements that you will use during the activity you are warming-up for. Movements that progress through your full range of motion can be useful to prepare your body for the demands of exercise.

### Main Workout

In the initial stages it is important that you choose an activity you find enjoyable; do what you can and build on it until you can reach the recommended 30 minutes for moderate intensity exercise (you should be able to have a conversation), or 20 minutes for vigorous exercise (you can't say more than a few words without pausing for breath).

The type of exercise you do will vary and may depend on your disability but the duration and intensity should gradually increase as your fitness develops.

### Cool-down

- 5-10 minutes gentle exercise/activities which gradually decrease large muscle group activity and help to aid the clearance of waste products.
- Stretching exercises for multiple joints/muscle groups.
- The cool-down is also a good time to reflect on your session.





## The Main Components of Fitness

Fitness is comprised of many different elements but here we are going to focus on **Flexibility**, **Strength** and **Aerobic** fitness. Evidence suggests that disabled people gain similar health benefits and adaptations to exercise as non-disabled individuals. See page 16 for recommendations on how long and hard your exercise session should be.

### Flexibility

Flexibility is simply the range of motion you have around a joint. Take a gymnast for example; they are clearly flexible because they are able to put their bodies into positions that many of us would not even attempt. The American College of Sports Medicine (ACSM, the largest sports medicine and exercise science organisation in the world, [www.acsm.org](http://www.acsm.org)) guidelines state that adults should try to do flexibility exercises at least two to three days per week to improve their range of motion.

Here are some tips to help with your flexibility:

- Stretching is most effective when the muscle is warm so always do some light to moderate aerobic activity beforehand.
- You should move into a stretch to the point of tightness or slight discomfort and then hold.
- Hold static stretches (once you are in the stretch position you do not move) for 10-30 seconds during the warm-up, or use dynamic stretches (stretching as you are moving, without bouncing) that mimic the movements of the subsequent activity.
- During a cool-down stretch all major muscle groups that you used in your workout and any smaller muscles that you may have targeted (20-30 seconds per stretch). Static stretches can be useful for this.
- Regular stretching should also be performed on days you are not exercising to maintain a normal range of motion around your joints.
- To develop flexibility further it is worth holding stretches for at least 60 seconds or alternatively repeat the stretch to accumulate this time.

### Wheelchair Users

As a wheelchair user it is quite common to experience postural problems due to slumping and/or you may have a rounded posture caused by tightness in your chest and front shoulder muscles, which can sometimes lead to shoulder problems. Flexibility training that focuses on the shoulder region along with strengthening exercises for your back muscles can help to prevent this.

If you spend the majority of your day in a sitting position this can cause tight and weakened hip flexors (the muscles that are designed to move your thigh towards your trunk). It is therefore good practice to stretch the muscles around your trunk, hips and knees on a regular basis.

### Strength Training

In the initial stages of a programme strength training is defined as anything that challenges your body above its norm in terms of lifting or moving weight. Strength training does not have to take place in a gym; lifting a bag of sugar, tins, bottles or simply your own body weight can be classed as strength training and you can make it a good workout depending on the weight, number of repetitions and exercise selection.

Out of the gym, strength training can be done using a number of alternatives:

- You can do some exercises using simply your own body weight such as press-ups, dips, squats or chin-ups.
- Small wrist and ankle weights with Velcro straps can also be useful to increase the resistance during any type of exercise.
- Partner resisted strength exercises can be performed using the same movements as you would use on gym machines but with a partner resisting these movements rather than a weight. These can be done at home, at work, in the park, almost anywhere!
- Elastic tubing (often called dyna bands, therabands or clini bands) are simply pieces of elastic which offer more resistance the greater you stretch them. Again, these give you the freedom to mimic many of the movements that can be done in the gym.

If you choose to go to a gym perform exercises without any or with minimal weight when learning new techniques. Once you have mastered the technique (ideally under supervision) choose a weight that will produce a moderate amount of muscular fatigue during the number of repetitions you have planned. Your chosen weight should allow you to complete a full set without stopping and you should be able to maintain good technique throughout. Heavy or intense strength exercises using impaired/weakened muscles may be counterproductive as they can further weaken rather than strengthen these muscles so choose the muscle groups least affected if you want to lift heavier weights. When planning a session, ensure you include a balance of exercises for the front and back, and left and right-hand side of your body.

You should expect some general muscle soreness in your first few weeks of training but this will soon subside once you get used to the new type of exercise.

To prevent undue muscle soreness, try not to train the same muscle groups on consecutive days.

Visit [www.efds.co.uk/inclusive\\_fitness](http://www.efds.co.uk/inclusive_fitness) to find a local inclusive fitness facility and take advantage of an induction and the knowledge of trained staff.

### Wheelchair Users

A great deal of strength is required in your shoulder, arm and trunk muscles to perform daily activities such as transferring in and out of your chair. Strength training can be extremely useful in making these tasks feel easier. When performing exercises using cable machines, free weights (dumbbells) or therabands ensure you secure your brakes prior to starting.

It is important to note that strength exercises should try to use the full range of motion/flexibility that you possess as this will enhance functionality. Increased range without increased strength will not produce much benefit and conversely, increased strength in a shortened range may exacerbate issues of function.

### Aerobic Training

Aerobic training is any activity that raises your heart rate and gets you out of breath for a sustained period of time. It trains the cardiovascular (heart, blood and blood vessels) and respiratory (lungs) systems to help reduce fatigue and improve your ability to perform activities of daily living. There are various forms of aerobic exercise such as walking, wheeling, aerobics classes or playing a competitive sport. See page 17 for some ideas.

- Don't overdo it in the initial stages of an aerobic exercise programme. An inappropriate activity, intensity or duration may result in increased weakness and fatigue in the following days. The key is to start slowly and progress gradually.
- Aerobic exercise should be paced and allow for breaks when needed. If you get tired very quickly or your muscles become fatigued, you should rest and recover. Multiple short sessions are better than one long one to prevent undue fatigue. Also consider reducing the intensity next time you do the same type of activity.
- When starting an exercise programme for the first time, two to three sessions per week will allow for sufficient rest in-between sessions. Once your fitness has improved the frequency, duration and/or intensity can be increased gradually.
- Vary the type of exercise you do to reduce over-use injuries and prevent boredom. Circuit training can be effective and fun as it includes plenty of variety and you can work at your own level.







## Considerations for Individuals with...

### Dwarfism:

- Varying degrees of muscle tone and range of movement about a joint will require you to work within your own limits.
- A sway of the lower back or a curvature of the spine, as well as bowed legs can result in back pain and difficulty walking. Try bike riding, it is great for strengthening your leg muscles and is suitable for those with bowed legs.
- Isometric exercises (where you hold your body in one position e.g. the plank) are useful to strengthen the muscles around your joints.
- Try Swimming, it reduces the strain and impact that is placed on your joints during many other traditional forms of exercise but still provides a great aerobic workout.
- Exercises that involve smoother movements are better than those that involve a lot of jumping and impact on your joints. Care should therefore be taken to avoid impact activities such as trampolining and gymnastics.

### Multiple Sclerosis (MS):

- Exercise can help improve strength and fitness and therefore help you to manage your fatigue.
- A blunted heart rate and blood pressure response to exercise can occur due to irregular autonomic nervous system (ANS) functioning. Use the rating of Perceived Exertion (RPE) scale to monitor training intensity (see page 29 for more information).
- Ensure you take regular rest intervals, both between exercise sets and between training sessions.
- Know your limits and don't be afraid to tell your exercise partner, coach or fitness instructor about how much you can do.
- Following a relapse, do not try to exercise until after your symptoms have 'levelled out' and you have completed any prescribed course of medication or steroid treatment.
- Your exercise programme should be reviewed if your individual needs change.

### Muscular Dystrophy (MD):

- Exercise cannot change how your condition progresses but it will help to maintain your muscles' existing strength.
- Discuss the influence of spinal deformities, respiratory problems and/or cardiovascular complications with your doctor prior to beginning a new exercise programme.
- If you experience muscle weakness or atrophy, consider using a brace or splint.
- If walking or weight-bearing activities are difficult try Swimming or other water-based exercises.
- Ensure you take regular rest intervals, both between exercise sets and between training sessions.
- Your exercise programme should be reviewed regularly as your individual needs change.

### Polio and Post-Polio Syndrome (PPS):

- Exercise is most likely to benefit your muscles that were least affected by polio.
- Perform a full range of exercises for unaffected muscles but exercise caution and only perform short-term exercise for affected muscles showing no signs of weakness. It is not recommended to exercise severely weakened muscles.
- Heavy or intense resistive exercise and weight-lifting using polio-affected muscles may be counterproductive, as this can further weaken rather than strengthen these muscles.
- Aerobic training can therefore be more effective than strength training for maintaining overall fitness, especially if you pace your session well and allow for frequent rest periods. You should focus on the duration rather than intensity of each session to help improve fitness without inducing undue fatigue.
- Stop immediately if you experience undue fatigue, weakness or discomfort. This usually means you are doing too much!

### Impaired Thermoregulation:

If you experience irregular body temperature or heat sensitivity, consider the following:

- Ensure you wear appropriate clothing for the temperature of your exercise environment. In cold environments, wear extra layers and consider using hot drinks to hydrate.
- Drink sufficient fluids to remain hydrated (see page 20 for more information).

- Take frequent breaks to prevent overheating.
- In warm/hot environments, try to exercise in the cooler periods of the day and in well-ventilated environments. Try using a fan, cold flannel or water spray to aid cooling.

### Impaired Balance:

- Get inventive! Consider alternative positions or support (wall, stable object, exercise partner) to allow you to perform specific stretches safely.
- Consider performing strength exercises in a seated position or lying on a bench, possibly making use of seat belts/wraps or stretch bands to keep your body stable and in the correct position.
- In a gym environment, try using the fixed resistance machines which will help stabilise your body and guide the direction of movement.

### Impaired Coordination:

- If you find simultaneous bilateral movements hard (e.g. moving both arms at the same time during a bicep curl) then try exercising each side of your body separately.
- Train with a partner for support and take your time to assume the correct position.
- The use of therabands, suspension cables or towels can help you perform exercises more easily because they complement any individuality in actions.
- If you are taking part in an exercise class, ask the instructor to run through some of the movements and techniques required prior to starting the session.

### Impaired Sensation:

- To help prevent injury, avoid using passive stretches where someone else moves your limbs.
- If you find it hard to grip weights or cables, you can use gripping aids such as flexion mitts or straps to help you perform these exercises safely and effectively.

### Considerations for Wheelchair Users:

- Pressure areas may be prone to ulceration so check your skin and reposition yourself regularly. Perform regular wheelchair push-ups to relieve pressure. You could set a reminder to do this every 15-30 minutes.
- If your level of weight-bearing activity is low you may be susceptible to osteoporosis. Taking part in physical activity will help to prevent this however, if the bones of your legs do become weak this increases your risk of a fracture if you fall. Hence, your safety and stability during any exercise is of utmost importance.





Table 1. Goals and Recommendations for Flexibility, Strength and Aerobic Training

| Type of exercise   | Goals  | Intensity/frequency/duration  |
|--|--|---|
| <b>Flexibility</b> <ul style="list-style-type: none"><li>• Stretching</li></ul>  | <ul style="list-style-type: none"><li>• Improve your range of motion</li><li>• Improve your performance of daily living activities</li></ul> | <ul style="list-style-type: none"><li>• Before and after exercise or as a standalone session</li><li>• Two to three days per week</li></ul>   |
| <b>Strength</b> <ul style="list-style-type: none"><li>• Body weight exercises, free weights, medicine balls, therabands, cords or weight machines</li><li>• Core exercises</li></ul>                                       | <ul style="list-style-type: none"><li>• Improve strength</li><li>• Increase muscle tone</li><li>• Help improve posture</li></ul>             | <ul style="list-style-type: none"><li>• Three sets of 8-12 repetitions</li><li>• Two sessions per week</li><li>• Rest and recovery are key to ensure you always use the correct technique</li></ul>   |
| <b>Aerobic</b> <ul style="list-style-type: none"><li>• If you are able, you could run, cycle or play sports</li><li>• If you are a wheelchair user try arm cranking, Swimming, Wheelchair Sports or Hand Cycling</li></ul> | <ul style="list-style-type: none"><li>• Increase endurance</li><li>• Maximise independence</li></ul>   | <ul style="list-style-type: none"><li>• Moderate intensity exercise for ~30 minutes per session (12-14 RPE*)</li><li>• Vigorous intensity exercise for ~20 minutes per session (15+ RPE*)</li><li>• Three to five days per week</li><li>• Stop if you feel fatigued</li><li>• If necessary work for short bouts of 5-10 min and rest in-between</li></ul> |

**NOTE** \*RPE = Rating of Perceived Exertion (RPE) (6-20 scale) which will be explained further on page 29.

### > Not got enough time?

Evidence also suggests that you can accumulate the desired amount of cardiovascular training in multiple, smaller chunks of time such as 10 minute bouts of walking/running or resistance exercise. This is useful if you are starting to exercise for the first time or if you simply don't have big blocks of time to spare.



#### NOTE:

Quality not quantity!  
More is not always better so exercise within your own limits and don't push yourself too hard, too soon, especially if you are new to exercise.

## Safety Always Comes First

Please consider these safety points before starting your exercise programme:

1. Consult your doctor if you are considering starting an exercise programme for the very first time or if you experience any adverse consequences. Always check whether any of your medication could have an effect on exercise tolerance (for example: regulating your body temperature or the effects of your medication on blood pressure).
2. Stop exercising if you experience pain, discomfort, nausea, dizziness, light-headedness, chest pain and/or shortness of breath.
3. Don't exercise if you are feeling unwell (for example: if you are suffering from a cold, flu, bladder infection, pressure ulcer or unusual spasticity). Exercise may worsen your symptoms and will not result in a quality exercise session.
4. If you choose to go to a local leisure centre or gym, ask for an induction (if you are not offered one) so that you become familiar with the equipment and environment.
5. Pacing of daily activities or rest periods during the day may be necessary during the initial stages of an exercise programme to help reduce fatigue. It can be useful to record your daily physical activity and exercise to help you determine an appropriate intensity and duration.
6. Individuals who experience severe fatigue may need/wish to use mobility aids and energy saving devices during both work and leisure time activities.

## What Type of Exercise Can I Do?

The most important thing is to find something that suits you and that you enjoy doing. There are always plenty of options and alternatives.

Table 2. Types of Exercise Suitable for Disabled People: Les Autres

| Type of Exercise  | Advantages   | Disadvantages  | Adaptations/Advice   |
|---|--|--|--|
| <b>Aerobics/Seated aerobics</b>   | Inexpensive.<br>Can be performed at your own intensity, either at home or as part of an exercise class.                                    |  | Therabands can be incorporated into the routine.<br>Ask about public classes that can accommodate your needs.  |
| <b>Arm cranking</b>   | Found in some gyms.<br>Mechanically more efficient than wheelchair propulsion.   | Remaining seated for long periods on a hard surface can increase the risk of pressure sores. Try using a pressure cushion to reduce this risk. | Flexion mitts or straps can be used if you have limited grip.  |
| <b>Circuit training</b>   | A weights circuit can be interspaced with high revolution/low resistance cycling or arm cranking.  |  | Use a number of exercise stations and alternate between muscle groups. Rest after each activity or when the circuit is complete.   |
| <b>Cycling/Hand Cycling</b>   | Relatively efficient form of locomotion with a gearing system to accommodate difficult terrain.  | Cycling, outdoors especially, is best suited for those who have good leg strength and balance.   | Arm crank attachments can be used on everyday wheelchairs at minimal cost.   |
| <b>Nordic pole walking</b>  | Provides a great workout whilst reducing the load placed on the legs.  | Requires good upper body function to perform correctly and to help prevent injury.   | Take your time to learn the technique, preferably with a qualified instructor.   |
| <b>Power chair sports e.g. Boccia, Football</b>                                       | Competitive and social team environment.<br>Controlled movement of the chair required.   | You may have to purchase some additional equipment.  | Do as much as you are able to do and gradually build on it.  |
| <b>Rowing</b>   | Good all-round conditioning<br>It uses opposite muscle groups to those used during wheelchair propulsion.                                  | Back strain may result if technique is incorrect.  | A stationary seat can be incorporated into the Concept Rower (found in most gyms) enabling an isolated upper body rowing action where necessary.   |
| <b>Running</b>  | Inexpensive.<br>Good all-round conditioning.<br>Can be performed outdoors on a track, road, trail or indoors on a treadmill.               | Running is not recommended for those who are unable to balance and maintain proper coordination.   | Always attach the safety/emergency cord when using a treadmill.  |
| <b>Sports e.g. Archery, Athletics, Football, Table Tennis, Wheelchair Sports etc.</b> | Good cross-training or specific training for a given sport.<br>Competitive and social.   | There are none, so give one a try and have some fun!   | Use the Parasport website to find a local club to play your chosen sport.<br>Visit <a href="http://www.parasport.org.uk">www.parasport.org.uk</a><br>Strapping can be used to stabilise you in your wheelchair.                |
| <b>Swimming</b>   | Good cross training as the water supports your body weight whilst gently resisting your movements.   |  | A swim-jogger buoyancy vest can be used for aqua-jogging or floats can help support impaired limbs.<br>You may need to consider how you will get from the changing rooms to poolside, especially if you are a wheelchair user. |
| <b>Tai Chi/Yoga</b>   | Improves balance, posture, flexibility and breathing patterns.<br>Inexpensive.   |  | Seated routines have also been developed for wheelchair users.   |
| <b>Wheelchair propulsion</b>  | Specificity training for Wheelchair Sports.<br>Can be performed almost anywhere within reason.<br>No additional cost for wheelchair users. | Risk of overuse injuries due to increased stresses to the shoulder if training is not structured appropriately.                                | Use a hybrid day chair or sports wheelchair and use the correct tyres for your chosen terrain.<br>Choose a familiar circuit to monitor progression.  |

For more information on les autres sports in the United Kingdom visit the British Amputee and Les Autres Sports Association (BALASA) at <https://sites.google.com/a/balasa.org.uk/main/>





# NUTRITION

## Key Features of a Healthy Diet



An important component of being Fit for Life is your nutrition. With such a wide variety of food products on the market and the increased availability of convenience foods, it is important to make sure we know how to eat a healthy, well-balanced diet.

Having a disability does not change the general guidelines on how to eat healthily however, there may simply be a change to the amount you need to eat to maintain a healthy weight or there may be some practical issues around choosing and preparing meals.

## Calcium...

Rich food sources include milk, cheese and yoghurt.

## Fruits and Vegetables...

Include plenty of colour and variety.

## Fat...

Some unsaturated 'healthy' fat found in foods such as oily fish, olive oil and nuts should be included in your diet but try to avoid eating excess saturated fat in products such as cakes, pastries, fried and processed foods.

## Carbohydrates...

Found in foods such as potatoes, pasta, rice, bread and breakfast cereals.

## Protein...

Found in foods such as lean meat, fish, eggs or vegetarian alternatives.

## Fluid...

Such as water, tea, squash, juice, milk and fruit will help maintain hydration, which is important for the day-to-day functioning of the body.

The components of a healthy diet help provide the body with what it needs to fight infection, help prevent illnesses such as heart disease, and to maintain your day-to-day health so you can get on with leading an active lifestyle. Now let's take a closer look at each component:

### Carbohydrate

foods are an important source of energy, vitamins and minerals, and should be included in any healthy diet. Quantities should vary according to how active you are, (e.g. generally more activity requires more energy and therefore more carbohydrate).

### Fibre

Wholegrain and wholemeal versions of carbohydrate sources are a great source of fibre. Other sources of fibre include vegetables, fresh (with the skin!) and dried fruit, beans, nuts and oats. You should adjust your own fibre intake to maintain personal bowel movement. Note that some common medications may also affect bowel function.



**Fruits and Vegetables** are good sources of fibre and they provide a wide range of vitamins. They also contain ‘antioxidants’, chemicals which will help fight infection and prevent disease. The ideal target is 5-a-day; one portion might be one medium fruit such as an apple or an orange, one small plate of salad, one tablespoon of dried fruit, three tablespoons of cooked vegetables or a small glass of fruit juice. Include a wide variety of types and colours. Boil or microwave vegetables in minimal water or try steaming, and keep cooking time to a minimum to prevent vitamins being lost. These are a great way to provide vitamins and minerals in your daily diet. If you struggle to masticate (chew) and swallow foods, fruits and vegetables can be easily puréed, mashed or made into smoothies or juices.

**Protein** is needed for growth and repair in the body. Opt for lean, low fat versions and use cooking methods that keep fat to a minimum such as grilling, poaching, boiling or steaming. Including some protein at each meal will help you meet the recommended two to three portions a day. Meat (red and white), fish, eggs, cheese, milk or vegetarian alternatives such as beans, lentils, tofu and Quorn are all good sources. Red meat can also help ensure an adequate iron intake but if you choose not to eat it, take care to eat other iron-rich foods. For those who struggle to obtain enough protein from their diet, protein or meal replacement supplements can be useful as a convenient way to help you meet your requirements.

**Iron** is important because it is used in the formation of haemoglobin, a part of the blood that carries oxygen around the body. Those at risk of low haemoglobin levels, also known as anaemia, include vegetarians, endurance athletes, teenagers and females. Foods containing iron include offal, fish such as pilchards, salmon and sardines, eggs, green leafy vegetables, nuts, pulses and breakfast cereals fortified with iron. The absorption of iron can be aided by eating foods containing vitamin C e.g. tomatoes, green leafy vegetables, peppers and citrus fruits at the same time as iron-rich foods, and can be hindered by drinking caffeinated drinks such as tea and coffee, so drink them after your meal instead.



**Calcium** is important for strong bones. It is therefore important to ensure that your calcium intake is optimal to aid bone health, especially if you are unable to perform weight-bearing exercise and may therefore be susceptible to osteoporosis and at risk of fracture if you fall. Taking enough calcium into the body from food is possible and aiming for three portions of calcium rich foods a day will help you meet your needs. Table 3 highlights some calcium-rich foods. If you can’t tolerate milk or dairy products, or have a family history of osteoporosis, you should take extra care to ensure your intake is sufficient and you may consider using a supplement if you struggle to meet your needs.

**Vitamin D** aids the absorption of calcium to support bone health. It is also an important vitamin to consider for immunity as it may enhance your ability to fight infection.

The main source of vitamin D is produced due to the action of the sun on your skin but small amounts can also be obtained from the diet in foods such as eggs, offal, oily fish and fortified margarines, juices or cereals. Supplementation is also an option during the winter months or for individuals that spend a lot of their time training indoors.

As a minimum aim to get 20 minutes sun exposure three times a week. Safe exposure to the sun is important so do not stay out long enough to get burnt.

**Fluid** intake is vital for health. All aspects of a healthy body rely on good hydration, from brain function to good skin. Have a variety of drinks over the day such as fruit juices, squash and tea or coffee, but including some water is always a good idea. Don’t forget that you get fluid from your food too. Most people need at least 1.5-2 litres of fluid a day, plus more to cope with exercise and heat. Drinking adequate fluid is extremely important along with a high fibre diet to prevent constipation, maintain bowel function and also to help prevent urinary tract infections (UTIs).

**Fat** plays an important role in your diet, it provides you with essential fatty acids and the fat-soluble vitamins A, D, E and K. Aim to eat small amounts of unsaturated fat (polyunsaturated and monounsaturated) but reduce the amount of saturated fat in your diet.

- Saturated fat is found in foods of animal origin such as butter, lard, full fat milk, cream and the visible fat in meat. These can cause fatty deposits to build up in your arteries so opt for leaner or unsaturated versions if possible.
- Monounsaturated fat is found in olive and rapeseed oil, nuts, seeds and avocados. Olive oil can be used in cooking or as a salad dressing and is also used to make margarine.
- Polyunsaturated fat is further broken down into omega 6 and omega 3 varieties:
  - i. Omega 6 fats (sunflower, corn and soya oils and margarines made from them) do not cause the arteries to clog up in the way that saturated fats do.
  - ii. Omega 3 fats (oily fish such as sardines, pilchards, mackerel or kippers) do not produce fatty deposits in the arteries and are actually thought to protect the body from heart disease. The recommendation is that men, boys and women past child bearing age can eat up to four portions per week of oily fish. Women of child bearing age, including pregnant and breastfeeding women, and girls can eat up to two portions per week
- Don’t forget that any high fat food is also high in calories, so over-consumption will likely result in weight gain and potentially obesity, which in itself is a health risk, so keep an eye on your portion sizes.

**Medication**  
Certain drugs may cause unwanted side-effects that can affect your ability to exercise and your desire to eat e.g. weight gain, nutrient-drug interactions, nausea and vomiting. Some drugs used in the treatment of certain types of Multiple Sclerosis can cause diarrhea, vomiting and also constipation. Unfortunately these may be unavoidable but try to adapt your eating schedule around these symptoms i.e. learn what type of foods you can and cannot eat when feeling nauseous and try to eat as soon as the symptoms disappear to ensure you consume enough energy to meet your daily needs.

Table 3. Calcium Content of Foods

| Food                                 | Quantity (One portion)          | Amount of calcium (mg) |
|--------------------------------------|---------------------------------|------------------------|
| Semi skimmed milk                    | 1/3 pint/200 ml                 | 237                    |
| Skimmed milk                         | 1/3 pint/200 ml                 | 249                    |
| Soya milk                            | 1/3 pint/200 ml                 | 25                     |
| Calcium fortified soya milk          | 1/3 pint/200 ml                 | 230                    |
| Yogurt                               | One pot/125 g                   | 225                    |
| Cheddar cheese                       | 30 g/1 oz. matchbox sized piece | 216                    |
| Cheese spread                        | 25 g large triangle             | 105                    |
| Cottage cheese                       | One pot/110 g                   | 82                     |
| Tinned salmon                        | 100 g                           | 95                     |
| Tinned sardines/pilchards with bones | 100 g                           | 460                    |
| Bread white or brown                 | Two slices/72 g                 | 72                     |
| Baked beans                          | 200 g - A small tin             | 100                    |
| Tofu steamed                         | 100 g                           | 500                    |

➤ **NOTE:** Lower fat dairy foods contain the same amount of calcium as full fat





## Weight Management

Maintaining a suitable weight is important for health and weight should be neither too high nor too low. The major concern for many people who struggle to maintain a suitable weight is the potential effect on their health in terms of the risk of future development of diabetes, heart disease, joint problems and immobility. If you are active in sport then there is also the added issue of the effect this may have on your performance.

Possible reductions in voluntary physical activity, a lack of structured exercise and/or the regular use of convenience foods can put some individuals at risk of being overweight and obese. It is a common problem but one which you can help prevent by following a healthy, well-balanced diet alongside a physical activity/exercise programme.

For some individuals such as those with dwarfism even a few extra kilos can cause problems. Being overweight will place unwanted stress on your back and lower limbs. Unfortunately, there are no disability-specific standards to easily compare your weight or body composition. It is also important to remember that fat distribution and hence body shape may be determined to some extent by your condition. For those with fatigue syndromes, overweight and obesity can aggravate symptoms, cause complications such as pressure sores or thrombosis, and may cause secondary complications.

It is therefore important to be realistic about your energy requirements especially if, due to your disability, you're forced to reduce your physical activity levels or your mobility is hindered. If you are a wheelchair user, your energy requirements will likely be reduced also.

**WEIGHT GAIN** - When **ENERGY IN** is more than **ENERGY OUT**

**WEIGHT BALANCE** - When **ENERGY OUT** is the same as **ENERGY IN**

**WEIGHT LOSS** - When **ENERGY IN** is less than **ENERGY OUT**



### DON'T... aim for quick losses

It may be encouraging to see the weight drop off but this is rarely maintained because it usually results in the body losing muscle rather than fat, and is not helpful to general health or activity.

### DO... follow a well-balanced diet.

The first step towards healthy eating is choosing real, fresh and unprocessed foods and snacks but you must also keep an eye on your portion sizes and be realistic about your energy requirements based on your activity levels.

### DO... be patient.

Consider weight loss in a sensible and measured way.

### DON'T... give in to the barriers

There are potential barriers to eating healthily or exercising but if you want to lose weight these are the two key components.

### DO... combine your diet with physical activity/exercise

This will help you to achieve and maintain your weight loss goals whilst also improving your health and reducing your risk of disease.

### DON'T... give up

If you run into problems, talk to a friend or relative. Check whether there are any local support sessions you can attend or you could try a slimming club, but check that it operates on the basis of healthy eating. Seek help from a registered dietitian or nutritionist if needed.







## What Else Might Help?

- Eat routinely (two to three meals per day). Try not to skip meals because this usually leads to over-compensation at the next.
- Nibbling between meals can add more calories to a day's food intake than you might think. Choose low calorie drinks and snacks and be realistic about the amount of energy you need.
- Avoid putting too much on your plate. You can always go back for more if you're still hungry.
- Write a food diary to monitor your progress and find areas for improvement.
- Set goals and reward yourself when you achieve them. Try rewards such as a massage or a new item of clothing rather than calorie-laden treats like chocolate, cake or crisps.
- Weigh yourself about once a month to monitor progress. More frequent weigh-ins are not recommended due to daily fluctuations in weight.

For those with Multiple Sclerosis there are a number of "popular" diets which are restrictive in terms of nutrient intake because they eliminate gluten or certain food groups from the diet. Evidence for such dietary restrictions is very limited but they can work on an individual basis. Consult a dietitian if you are considering a drastic change in your diet. In the sporting world it must be remembered that such restrictions may compromise the availability of sufficient energy and nutrients to maintain participation, training and competition in sport.

## Practical Issues in the Kitchen

It can be very tiring and time-consuming for some individuals to prepare fresh meals on a daily basis. Here are a few hints and tips to make cooking safer, healthier and more enjoyable:

- Use weighted (for more control) or ergonomic lightweight utensils.
- Reach extenders can be useful.
- Dishes/chopping boards with suction cups help prevent slipping.
- If chopping food is difficult, try ready prepared vegetables (although these do cost more). Frozen vegetables are a good alternative because freezing preserves the nutrients in the vegetables. Food processors can also help reduce knife use.
- Online shopping may be useful if access at your local supermarket is not appropriate or it tires you out.
- Look for healthier ready-prepared or ready-made ingredients and meals but always remember to read the label! (See Understanding food labels factsheet on the Peter Harrison Centre website).
- Choose quick and easy recipes such as stir-frys, salads, soups and pasta dishes. You can find simple recipes in cookbooks or you can search for them online.
- Cook meals in batches when you have plenty of time and freeze them in portions to reheat when you need a quick meal or if you don't have time to cook. Remember to label what they are and how many portions are in each container.
- A microwave can be useful for reheating meals and ready-made sauces, and for cooking vegetables or microwavable rice.
- Ensure your kitchen is set-up so that it is safe and easy to move around, especially if you are a wheelchair user.
- Use a stool to sit at the worktop if you find standing for long periods tiring.



## Food Safety and Hygiene

If you travel or work abroad, or you are simply going on holiday, you can be exposed to a whole range of situations which could result in illness; poor food hygiene, sanitation problems, poor water quality, or inadequate hygiene standards of others in public places. No individual wants to miss their holiday, work or as an athlete, their training or a competition because of illness. It is therefore sensible to be aware of the risks and to take reasonable precautions to avoid problems.

- Keep raw meat at the bottom of the fridge so that it cannot drip blood onto other food.
- Check 'Best Before' or 'Use By' dates. Do not eat food that is past its date. Even if food is within its date do not eat it if it looks, smells or feels off.
- Transfer any left-over canned food into a covered container to be stored.

## Diarrhoea and Sickness

This is most likely to happen as a result of food poisoning or an infection that has been picked up by touching communal objects such as door handles or toilet seats. Always wash your hands well after using the toilet. Alcohol-based gels can also be used after washing to reduce the risk of contamination. If you do develop diarrhoea or sickness you must be careful not to become dehydrated.

## Safety Tips

- Buy bottled water abroad if the tap water is suspect. Use this to clean your teeth and your fresh fruit and vegetables, and avoid ice cubes.
- When taking a shower, washing your face or having a shave do not let water enter your mouth. Take care in swimming pools.
- Keep your drinks bottle clean. Use water or squash bottles that can be thrown away and replaced frequently, or sterilise your drinks bottle regularly (using a sterilising solution) to prevent contamination.
- Salads, raw vegetables and fruit can be a source of food poisoning because the food is handled and not cooked.
- Peel fruit rather than eating the skin.
- High risk foods include seafood (e.g. prawns, cockles, mussels), rare meat, unpasteurised milk, soft-cooked eggs and barbecued meats which can be undercooked in the middle.

## Food Hygiene

Food hygiene is very important in the home and also when travelling abroad. Always try to follow some basic guidelines:

- Wash your hands before handling food and again after sneezing, coughing or using the toilet.
- Clean surfaces and floors regularly; food waste attracts insects and vermin.
- Cover any cuts with a waterproof plaster before handling food.
- Keep track of any food that you put in the fridge. Furry, mouldy food is unacceptable and it could contaminate other food.

## Wheelchair Users

When propelling a wheelchair, your wheels, and therefore hands, come into contact with any number of things that may have been on the floor. Please be careful to sanitise your hands prior to eating or touching your eyes, nose or mouth to help prevent the spread of germs. Small bottles of hand sanitiser or wet wipes are easy to carry in your pocket or bag and are useful for this purpose.



This FIT FOR LIFE guide has hopefully taught you the basics about exercise and nutrition, and about how to lead a healthy, well-balanced and active lifestyle. If you have also chosen to take up a sport and you are now taking part in exercise at least three or four times per week, you may want to download our FIT FOR SPORT guide. This will help you tailor your training, nutrition and psychological skills to ultimately improve your performance. Good luck!





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### About The Coca-Cola Foundation: Funder's of The Fit and Healthy Educational Resource

Since its inception, The Coca-Cola Foundation has awarded more than \$500 million to support global sustainable community initiatives, including water stewardship, community recycling, active healthy living, and education. For more information about The Foundation, please go to [www.thecoca-colacompany.com/citizenship/foundation\\_coke.html](http://www.thecoca-colacompany.com/citizenship/foundation_coke.html)

The creators of the Fit and Healthy Educational Toolkit (Toolkit) have taken reasonable measures to ensure the accuracy and validity of the Toolkit but the information therein is provided as a guideline only and may not be suitable for all disabled people as each person is unique. It is therefore important to adapt the recommendations to suit your own individual needs. Adults are encouraged to participate in a range of physical activities and exercises that are safe, enjoyable, and that help to improve both function and fitness.

If you are new to exercise, newly injured/impaired or have any secondary medical conditions, or you are unsure about the content of any of the information within the Toolkit we recommend that you consult a qualified medical professional such as your physician, before engaging in new types or intensities of activity. Remember it is important to start with small amounts of exercise and progress slowly.

All exercises are performed at your own risk. You must not rely on the information in this Toolkit as an alternative to medical advice from your physician or other professional healthcare provider. If you think you may be suffering from any medical condition, you should seek immediate medical attention. You should never disregard medical advice or discontinue medical treatment because of information in this Toolkit. The information in this Toolkit is provided without any representations or warranties, express or implied, or fitness for any purpose.

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email: [phc@lboro.ac.uk](mailto:phc@lboro.ac.uk)

Find the online resources at: [www.lboro.ac.uk/phc-toolkit](http://www.lboro.ac.uk/phc-toolkit)

#### Useful links:

**[www.parasport.org.uk](http://www.parasport.org.uk)** - Discover which sports you can play and where

**[www.paralympics.org.uk](http://www.paralympics.org.uk)** - Find out what's going on in the world of Paralympic sport

**[www.ukad.org.uk](http://www.ukad.org.uk)** - Information on anti-doping issues for athletes

**[www.efds.co.uk/inclusive\\_fitness/ifi\\_gym](http://www.efds.co.uk/inclusive_fitness/ifi_gym)** - Find your local accessible fitness

**<https://sites.google.com/a/balasa.org.uk/main/>**

**[www.wheelpower.org.uk](http://www.wheelpower.org.uk)** - Providing wheelchair users with the opportunity to lead active lifestyles

**[www.dsauk.org](http://www.dsauk.org)** - Dwarf Sports Association UK

