

Managing Hypertension



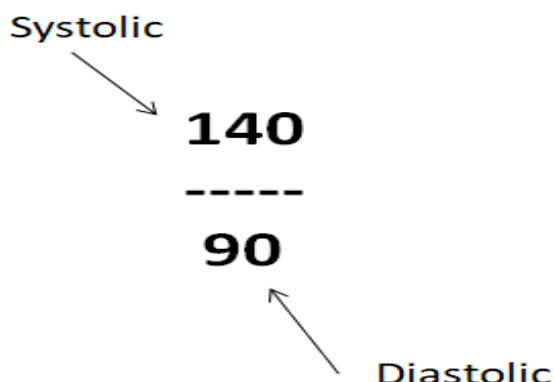
Waterside PCN

Created by the Waterside Primary Care Network
Health & Wellbeing Team



What is hypertension?

Hypertension is a condition where blood pressure is high over a long period of time.



What is blood pressure?

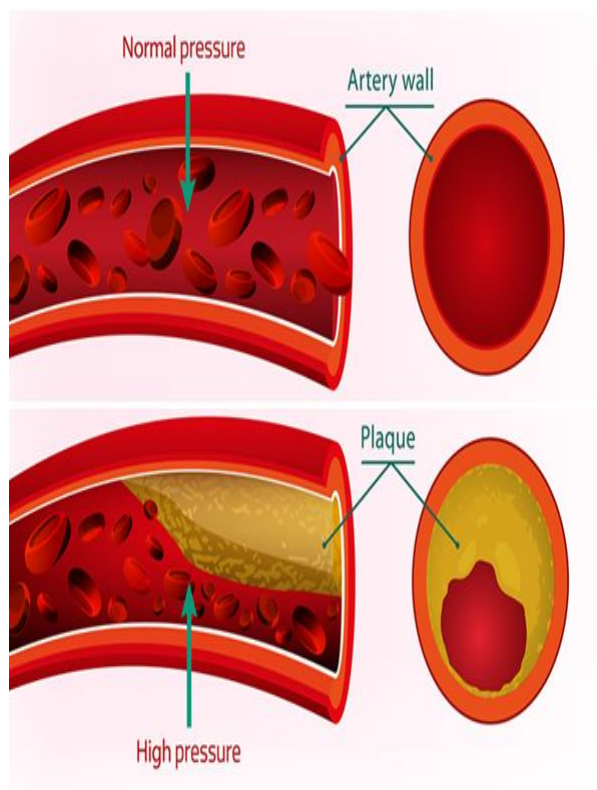
Your blood pressure is the pressure of blood against the walls of your arteries.

(NICE guidelines)

When blood pressure is measured, there are 2 readings: systolic and diastolic.

The systolic is the pressure when the heart contracts. The diastolic is the pressure when the heart is relaxed.

NICE guidelines states that hypertension is having a reading of over 140/90.



What increases my risk of hypertension?

Factors you can change

Physical inactivity: Leading a sedentary lifestyle can mean your heart has to work harder to deliver oxygenated blood around the body.

Being overweight: Carrying extra weight puts more pressure on our heart to deliver blood around the body.

High sodium intake: Sodium, and the salt we get in food, increases fluid retention and therefore, increase blood pressure.

Excessive alcohol intake: Drinking a lot of alcohol can contribute to weight gain and poor cardiovascular health.

Smoking: Smoking increases plaque build up in arteries. Carbon monoxide also damages the inner walls of the arteries.

Stress: Promotes vasoconstriction (narrowing of blood vessels) as cortisol levels increase.

Poor sleep: Lack of sleep can result in poor regulation of cortisol, which increases blood pressure.



If you have any concerns regarding your risk factors or conditions, please speak with your doctor.

What increases my risk of hypertension?

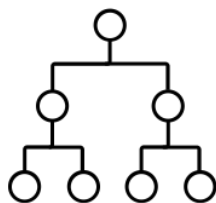
Factors you cannot change

Family history: Having a direct family member with hypertension increases your risk of developing it.

Age: Over 65's are at risk of developing hypertension.

Ethnicity: South Asians, Africans and African Caribbean's are at a higher risk of developing hypertension and type 2 diabetes.

Medication: Some types of medication including contraceptive pills and anti-depressants can increase your risk of hypertension.



Which risk factors apply to you?

If you have any concerns regarding your risk factors or conditions, please speak with your doctor.

Managing Hypertension



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There are several types of medication used to manage hypertension.

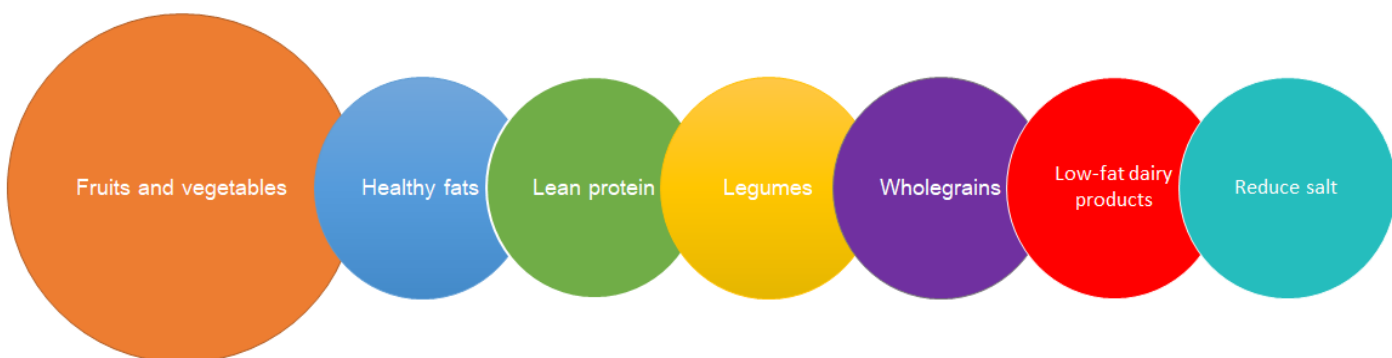
If you have any questions regarding your own medication, please speak to your GP about this.

Medication	How it Works	Considerations
Vasodilators ACE Inhibitors & ARB's Typically end in '-pril' e.g. Ramipril)	Relax blood vessels	<ul style="list-style-type: none">• Postural hypotension
Calcium-Channel Blockers Typically end in '-pine' e.g. Amlodopine	Slow heart rate	<ul style="list-style-type: none">• Leg swelling• Impair thermoregulation• Blunts heart rate response
Beta-Blockers Typically end in '-lol' e.g. Bisprolol	Slow heart rate	<ul style="list-style-type: none">• Impair thermoregulation• Blunts heart rate response
Diuretics Typically end in '-ide' e.g. Bumetanide	Promotes urination which reduces sodium & fluid volume	<ul style="list-style-type: none">• Dehydration• Low potassium• Impair thermoregulation

For more information about medication, click [here](#)



Nutrition and hypertension



Fruit and vegetables

Fruits and vegetables are packed with lots of vitamins and minerals.

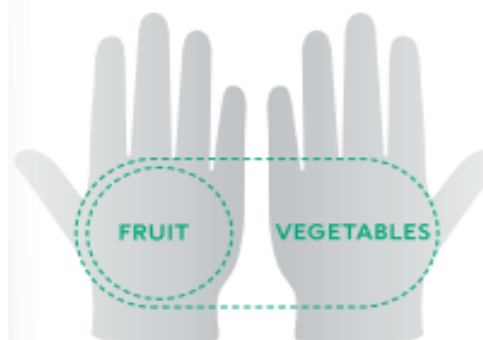
Potassium is especially important as it helps to relax blood vessel walls and helps to counteract the effects of sodium.

Many fruits and vegetables also contain polyphenols which can help to increase nitric oxide which is known to cause blood vessel dilation, helping to lower blood pressure.

How many portions should I eat in a day?

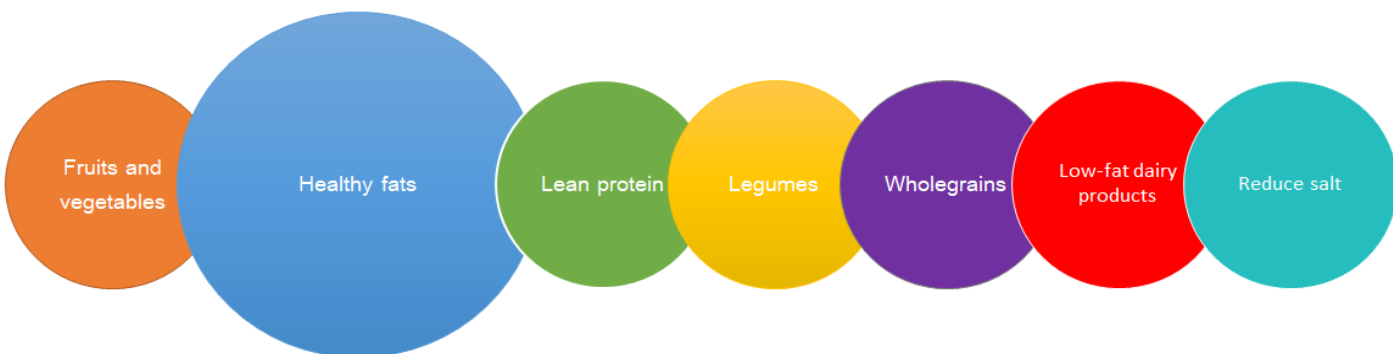


What does one portion look like?





Nutrition and hypertension



Fats

Unsaturated fats can help improve cholesterol levels, whereas saturated and trans fats can increase cholesterol.

Monounsaturated and polyunsaturated fats should be eaten regularly (avocado, oily fish, nuts, seeds and olive oil).

Saturated fats should be limited (for example, red meat).

Artificial trans fats/hydrogenated fats should be eaten sparingly (for example, doughnuts, pastries and biscuits).

How many portions should I eat in a day?

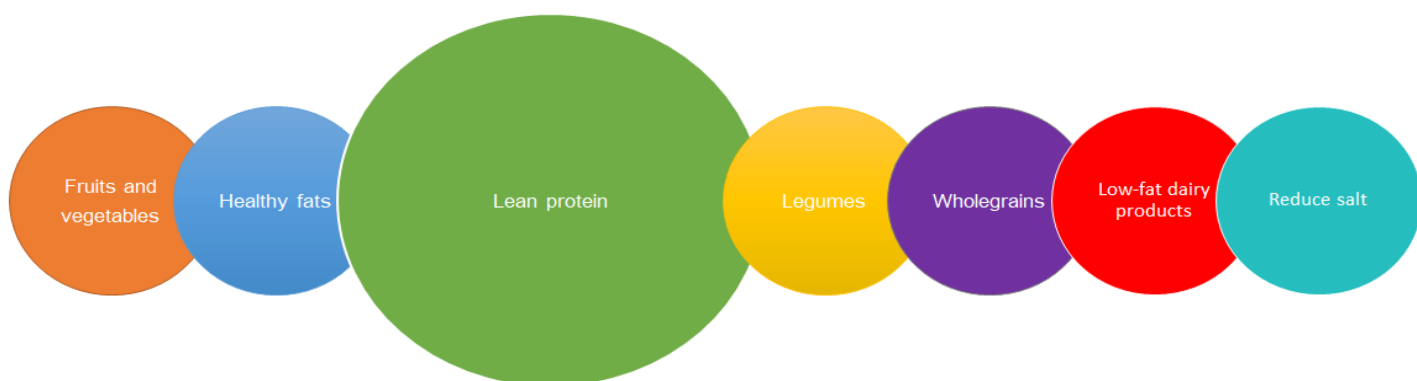


What does one portion look like?





Nutrition and hypertension



Protein

Protein is needed for many reasons:

- Energy
- Repair and maintenance
- Helping to fight against viruses & bacteria
- Helping to carry out thousands of chemical reactions

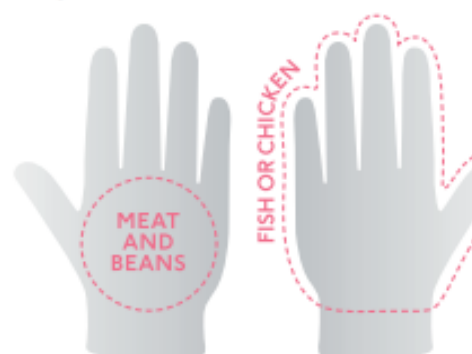
Sources of lean protein include:

- Chicken
- Turkey
- White meat
- Beans
- Eggs
- Greek yoghurt

How many portions should I eat in a day?

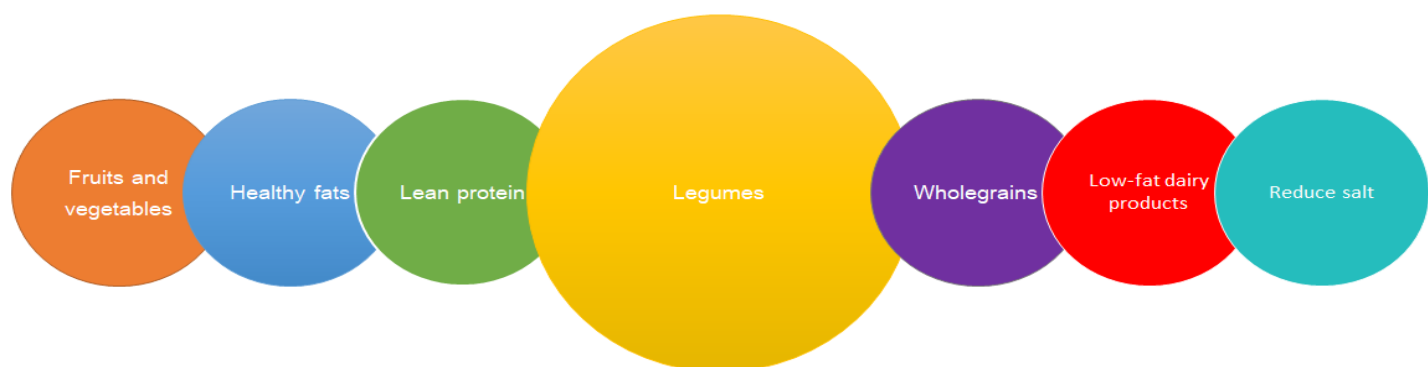


What does one portion look like?





Nutrition and hypertension



Legumes

Legumes are beneficial for our health because they contain potassium and magnesium (both of which help regulate blood pressure) and fibre. They are also a source of protein

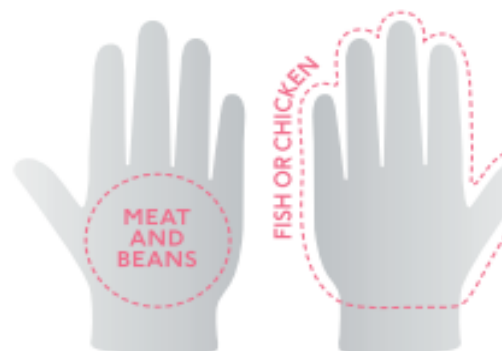
Legumes are beans and lentils which include:

- Kidney/black/pinto/butter beans
- Chickpeas
- Green lentils
- Split red lentils

How many portions should I eat in a day?

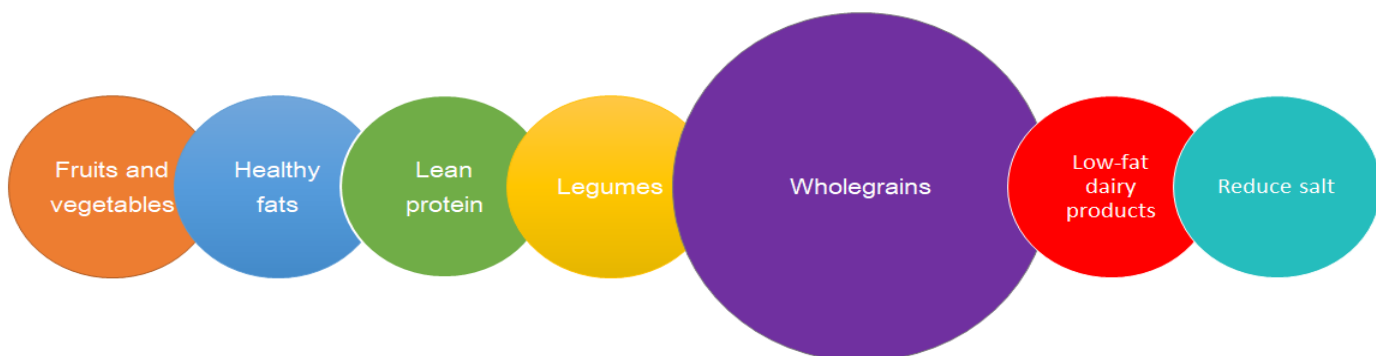


What does one portion look like?





Nutrition and hypertension



Wholegrains

Wholegrains compared to refined grains are less processed and contain more vitamins because the germ and bran are included.

Examples of wholegrains are:

- Brown or seeded bread
- Brown rice and pasta
- Oats
- Buckwheat
- Quinoa
- Millet

How many portions should I eat in a day?

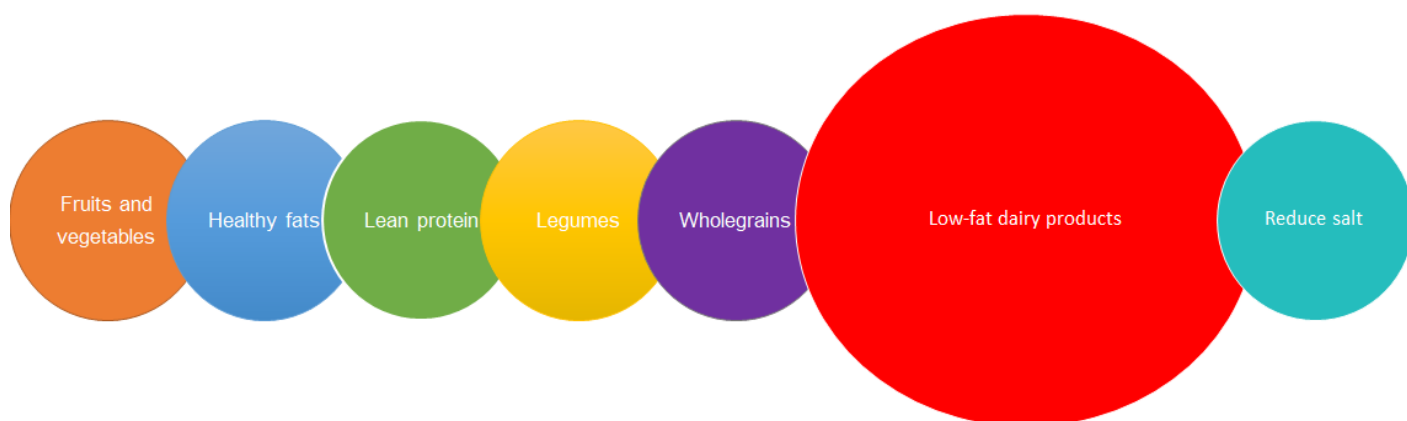


What does one portion look like?





Nutrition and hypertension



Dairy

Dairy contains calcium, potassium and magnesium; all shown to help with blood pressure.

Dairy products also contain a type of protein called bioactive peptides which have shown to have a positive impact on blood pressure.

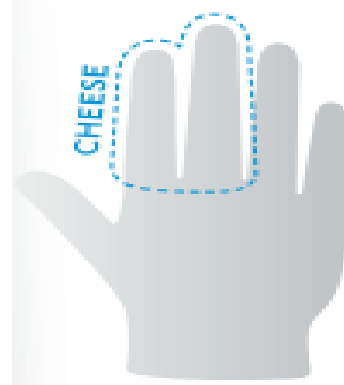
Dairy sources include:

- Semi/skimmed milk
- Greek yoghurt
- Cottage and feta cheese

How many portions should I eat in a day?

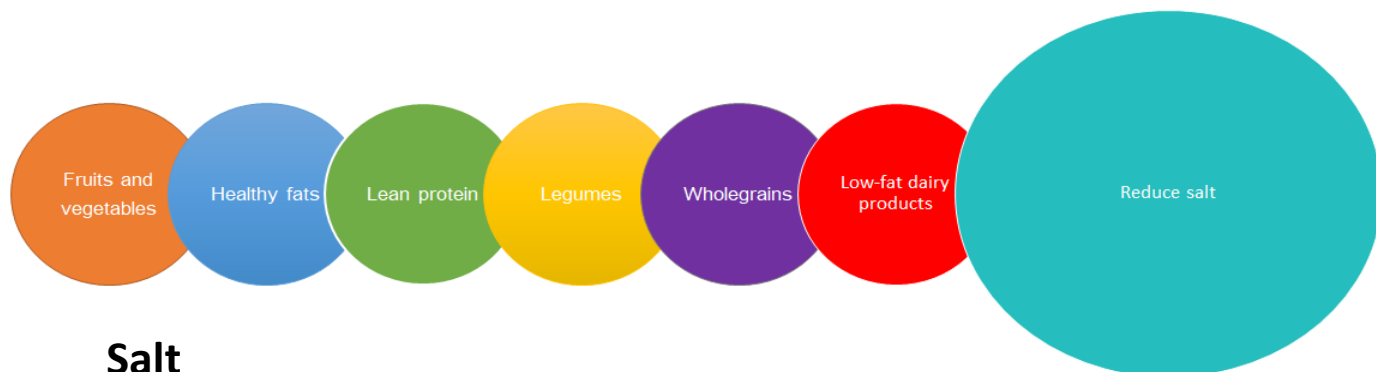


What does one portion look like?





Nutrition and hypertension



Salt

Salt plays a big role in blood pressure management because the sodium increases fluid retention.

Did you know?

Salt and sodium are not the same. Sodium is found naturally in foods, but is a component of salt. The chemical name for salt is Sodium Chloride and is approximately 40% sodium and 60% chloride.

It is recommended that adults should not have any more than 6g of salt a day (1 tsp).

75% of our salt intake is already added to our food, particularly canned soups, tomato products and condiments.

Variations of salt, such as Himalayan and rock salt are almost exactly the same as table salt and do not have any substantial health benefits.



Nutrition and hypertension

The Dietary Approaches to Stop Hypertension (DASH) diet focusses on including lean protein, wholegrains, plenty of fruit and vegetables and reduced salt to help manage high blood pressure.

For more information, click [here](#).

The DASH Diet for Healthy Blood Pressure

Follow these DASH (Dietary Approaches to Stop Hypertension) guidelines for a healthier, more balanced diet

- Grains**
6 TO 8 SERVINGS PER DAY
- Fresh Fruits and Vegetables**
4 TO 5 SERVINGS OF EACH PER DAY
- Lean Protein**
6 OR LESS SERVINGS PER DAY
- Legumes or Nuts/Seeds**
4 TO 5 SERVINGS PER WEEK
- Fats and Sweets**
LIMITED
- Low-fat Dairy**
2 TO 3 SERVINGS PER DAY

OhioHealth
Discover how the DASH Diet can help you manage your blood pressure at blog.ohiohealth.com

Physical activity and hypertension

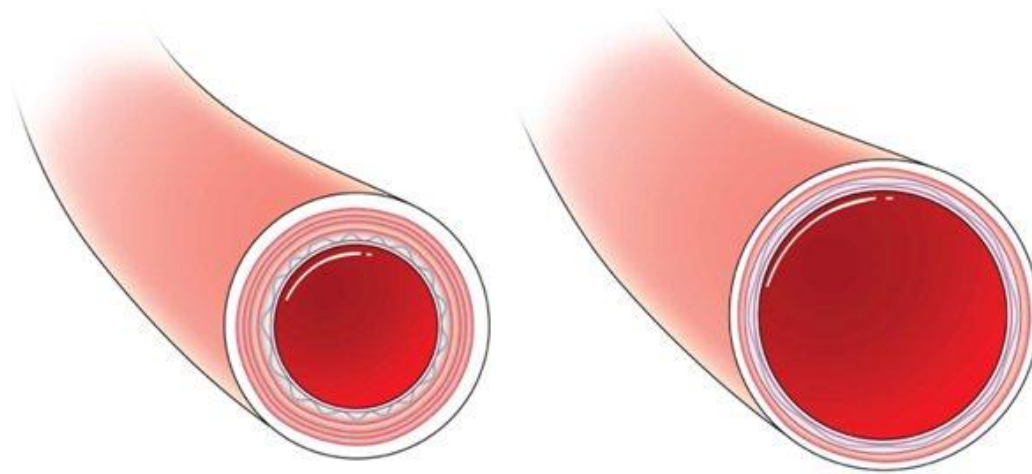


It is recommended to do at least 150 minutes a week or 30 minutes 5 days a week at a moderate level of intensity. This can be broken down into 10 minute chunks.

A moderate level of intensity is equivalent to feeling warm, your heart rate has increased and you are breathing deeper. However, you should be able to hold a conversation.

Nutrition and hypertension

What happens to blood pressure when I exercise?



Normal Vessel

Dilated Vessel

How does physical activity improve blood pressure in the long term?

Improves heart strength

Formation of new capillaries (capillarisation)

Can prevent blood pressure from rising if you are non-hypertensive

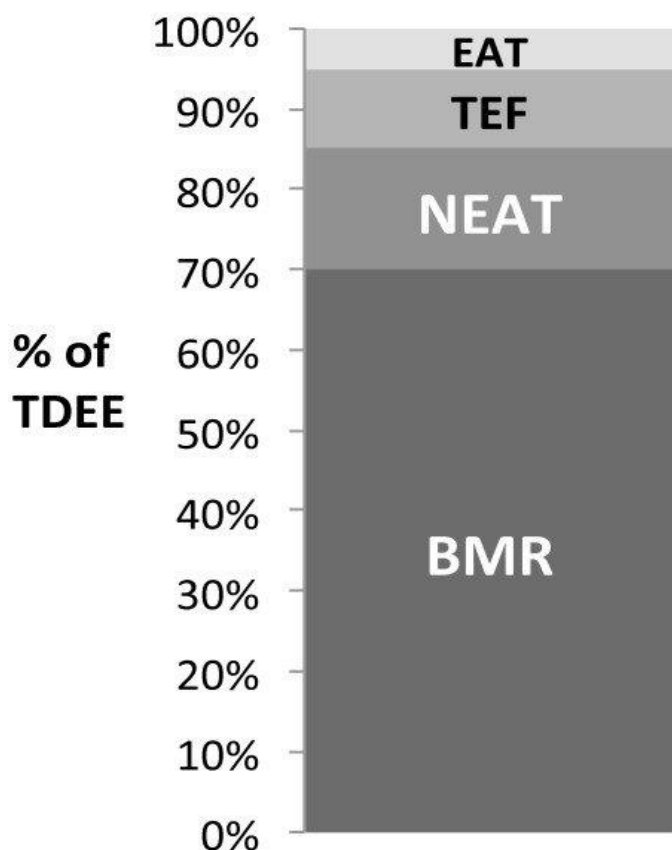
Helps with weight management which indirectly improves blood pressure



So how do we burn energy?

We are constantly burning energy, even when we are doing nothing!

The total amount of energy we burn is called our Total Daily Energy Expenditure (TDEE). If we consume the same amount of energy as our TDEE, our weight will remain the same.



Basal Metabolic Rate (BMR)

BMR accounts for around 75% of all of the energy we burn throughout the day. BMR is all of the processes our body is doing to keep us alive, such as breathing, circulation, nutrient processing and cell creation.

BMR tends to require less energy with age however, being physically active can increase this. This is because muscle requires more energy to maintain itself compared to fat. For example, if two people weighed the same and were the same height, but one had more muscle, they would burn more energy at rest compared to the person with less muscle.



Thermic Effect of Food (TEF)

TEF accounts for around 10% of our energy burned daily. It is the energy needed to digest, absorb and dispose of our food. In essence, to get energy from food, we need to use energy to process food. TEF may differ depending on the type of food eaten and quantity.

Exercise Activity Thermogenesis (EAT)

For the average person, EAT accounts for around 5% of all energy burned daily. However, this will depend on your activity levels. EAT includes all exercise and physical activity we do such as running, walking, swimming, cycling etc.

Non-Exercise Activity Thermogenesis (NEAT)

NEAT accounts for approximately 15% of the energy we burn throughout the day. NEAT represents movement that we do which is not intended to be exercise. This includes cleaning, cooking, fidgeting, shopping and more.

Moving more not only helps burn more calories but can help regulate blood pressure and glucose levels as well as reducing aches and pains in joints.

Ways of increasing NEAT include standing instead of sitting, doing chores yourself and getting through a to-do list when the TV adverts are on.

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Top tips to move more

Leave the car - walk or cycle

Get an activity monitor/smart watch/pedometer

Find a buddy

Dance whilst listening to music

Get off the bus a stop earlier

Park car further away from shop entrance

Take the stairs

Set an alarm every 30mins to get up and move

Stretch first thing in the morning

Get up during TV advert



an activity you enjoy

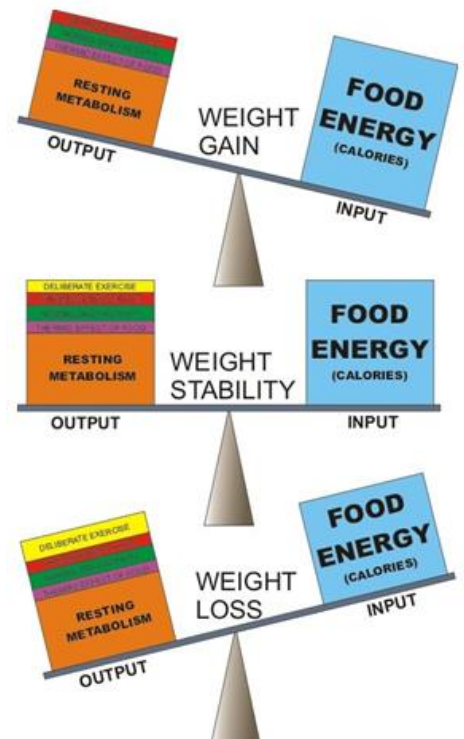
Start small – try adding just 250 steps to your day

Make walking more fun, listen to a podcast or your favourite album

Weight management

In order to lose weight, you need to be in what's called a 'calorie deficit', meaning you are burning more calories than you are consuming (see bottom scale).

Input is calories from food, and output is calories out from physical activity, exercise and body functions. We have control over both the input and the output.



Managing Hypertension



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Considerations for physical activity



Medications – Some medications can impair thermoregulation (body's ability to control temperature) including diuretics, beta-blockers and calcium channel blockers.



Medications - Some medications such as beta blockers blunt heart rate response – roughly 10bpm lower than normal. So do not follow the heart rate guide seen on gym equipment, and consider this when trying to reach a HR zone.



Medication - Beta-blockers, calcium channel blockers & vasodilators can cause hypotension (low blood pressure) so ensure you have a gradual warm-up and cool-down and avoid sudden changes in posture (don't go from lying to standing).



Isometric exercises – exercises where you are contracting but not moving, such as planks and wall-sits, as this can temporarily increase blood pressure

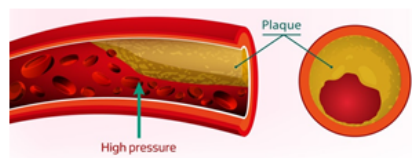


Speak to your GP first before starting any exercise programme.

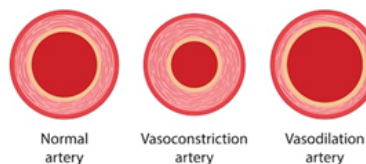
Smoking and hypertension

How does smoking increase blood pressure?

- Builds up plaque in the artery walls



- Constricts vessel walls (vasoconstriction)



- Carbon monoxide replaces oxygen in red blood cells. The heart therefore has to work harder to get oxygenated blood around the body.

What happens when you quit?

The sooner you quit, the sooner you'll notice changes to your body and health. Look at what happens when you quit for good.



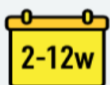
After 20 minutes

Check your pulse rate, it will already be starting to return to normal.



After 48 hours

All carbon monoxide is flushed out. Your lungs are clearing out mucus and your senses of taste and smell are improving.



After 2 to 12 weeks

Blood will be pumping through to your heart and muscles much better because your circulation will have improved.



After 1 year

Great news! Your risk of heart attack will have halved compared with a smoker's.



After 8 hours

Your oxygen levels are recovering, and the harmful carbon monoxide level in your blood will have reduced by half.



After 72 hours

If you notice that breathing feels easier, it's because your bronchial tubes have started to relax. Also your energy will be increasing.



After 3 to 9 months

Any coughs, wheezing or breathing problems will be improving as your lung function increases by up to 10%.



After 10 years

More great news! Your risk of death from lung cancer will have halved compared with a smoker's.

For support in quitting smoking, visit

www.smokefreehampshire.co.uk

Alcohol and hypertension

It is recommended to not exceed 14 units of alcohol a week.

What does a unit look like?

1 unit



Single shot of spirits *
(25ml, ABV 40%)

2.1 units



Standard glass of wine
(175ml, ABV 12%)

3 units



Large glass of wine
(250ml, abv 12%)

1.7 units



Bottle of lager/beer/cider
(330ml, ABV 5%)

2 units



Pint of low strength
beer/lager/cider (ABV 3.6%)

3 units



Pint of high strength
beer/lager/cider (ABV 5.2%)

*Gin, rum, vodka, whisky, tequila, sambuca)

Alcohol and hypertension

Tips to reduce alcohol intake:

- Reduce the number of days we are drinking alcohol
- Use smaller glasses
- Reduce number of drinks
- Drink low alcohol alternatives
- Switch to no alcohol alternatives between drinks
- Consider the type of mixers
- Mindfulness when drinking/paying attention to drinks
- Having a good support system around us



Stress and hypertension

How does stress affect blood pressure?

Fight or flight and hormone response:

This causes our heart to beat faster and our blood vessels to narrow to make us more alert; this causes our blood pressure to increase.



Can influence our coping behaviours:

Prolonged stress and low mood may influence our behaviours; eating/drinking/smoking as coping mechanisms, which could increase our blood pressure.



Anti-depressant effects on blood pressure: Some anti-depressants may also cause an increase in blood pressure.



Looking after our mental health



Keeping a note of how you are feeling and what has happened in the day can help you identify triggers and patterns.



Doing regular physical activity is a great way to de-stress, increase confidence and release endorphins.



Try hobbies such as gardening, crosswords, yoga or anything that you enjoy.



Speak to friends and family about how you are feeling. Getting help can help too, such as speaking to a GP or Solent Mind.



Using self-help apps such as Calm, Balance and Insight Timer.

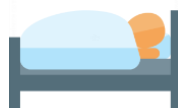
Sleep hygiene

Sleep environment

Keep the room dark and cool (16-18°C).

Keep room clutter free.

Consider the quality of your mattress and pillow.



Routine

Create routine – take time to relax before you go to sleep.

Allow light in when you wake up – sunlight helps stop the effects of melatonin (sleep hormone).



Caffeine and alcohol

Caffeine is an adenosine blocker (a compound that makes us feel drowsy).

Swap to herbal/fruit teas.

Reduce alcohol frequency and amount.



Screen time

Being exposed to light reduces the production of melatonin (sleep hormone).

Avoid technology in the evening.

Keep electronics away to avoid temptation.



Physical activity

Regular physical activity can ease stress and anxiety symptoms and increase our body temperature, making us feel tired.

Aim to do 30 minutes of physical activity per day.

Meditation and yoga in the evening.

