



**University
Hospitals Sussex**
NHS Foundation Trust

Nutrition and chronic obstructive pulmonary disease (COPD)

Dietetics

Patient information

What is this information about?

This information is about how you can eat and drink well to get the nutrition you need to be as healthy as possible if you have Chronic Obstructive Pulmonary Disease (COPD).

It explains:

- What COPD is and what symptoms people often get if they have COPD.
- What can happen to your body and how you may feel if you do not get the right nutrition when you have COPD.
- Why getting the right nutrition is important if you have COPD.
- What foods and drinks you could have to make sure that you are getting the right nutrition for you.
- How to check food labels.
- How your weight can affect your copd and how to maintain your weight at a level that is healthy for you.
- Tips that that can help you eat well to fight the symptoms and side effects of COPD.

Why have I been given this information?

You have been given this information because you have COPD. Following the advice in this information can help you to get the right nutrition. This can:

- help your body to cope better with your COPD
- make your symptoms less severe
- help you to avoid or fight-off the lung infections which you can get when you have COPD.

What is Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is the name for a group of ongoing lung conditions caused by damage to the lungs. The damage may be caused by your lungs becoming irritated over a long period of time by something such as cigarette smoke, fumes, dust or chemicals.

The damage results in swelling and irritation, also called inflammation, inside the airways. This limits airflow into and out of the lungs. This limited airflow is known as obstruction.

What is nutrition?

Our food and what we drink contains nutrients. These are chemical compounds (such as protein, fat, carbohydrate (carbs), vitamins and minerals. Together these give us our nutrition. We need the right nutrition for our bodies to work, grow, stay healthy and repair damage caused by illness or injury.

What are the usual symptoms of COPD?

People living with COPD often have symptoms including:

- shortness of breath and wheezing
- coughing
- an increase in sputum (phlegm). This is mucus which is coughed up from the airways and lungs.
- frequent chest infections
- becoming less fit
- having less muscle strength and muscle wastage
- weight loss.

What things which are related to nutrition can happen if I have COPD?

You may:

- have malnutrition (not having enough nutrition or not getting the right balance of nutrients in your diet (what you eat and drink).
- need more nutrition (have increased nutritional needs)
- not feel as hungry or not feel like eating (loss of appetite)
- feel tired or that you do not have much energy (fatigued)
- have muscle wastage
- have weight loss.

Common nutritional implications of COPD

Why is getting the right nutrition even more important if I have COPD?

Good nutrition is important if you have COPD because:

- It provides you with energy.

COPD increases the amount of energy that it takes you to breathe. This means you have less energy for other things and can easily get tired if you are not getting the right nutrition.

- **It helps you to fight infections and reduce the chance that you will get them.** People with COPD often get chest infections. A balanced diet which gives you the nutrition you need reduces your chances of getting these, and other infections which people with COPD can get often.
- **It helps to keep your chest muscles strong so you can breathe better.** If you are not getting the nutrition you need, the muscles in your tummy and chest (abdominal and pulmonary muscles) can 'waste away' and become weak.

This includes your diaphragm. Your diaphragm is the main muscle you use to breathe in and out. It separates your chest cavity from your abdomen.

If this and other muscles you use to breathe are weakened it makes it more difficult for you to breathe, and you can be short of breath.

- It makes it easier for you to exercise so you can get more of the exercise that you need (it increases your 'exercise tolerance').

If you are not getting the nutrition you need it is more difficult for you to exercise. This lowers your general fitness level, and you are more likely to feel breathless.

What is a healthy and well-balanced diet?

The Eatwell Guide shows you how many portions of food from the different food groups that you should eat to get the balance of your diet right.

You can use it to help you to get the nutrition you need.

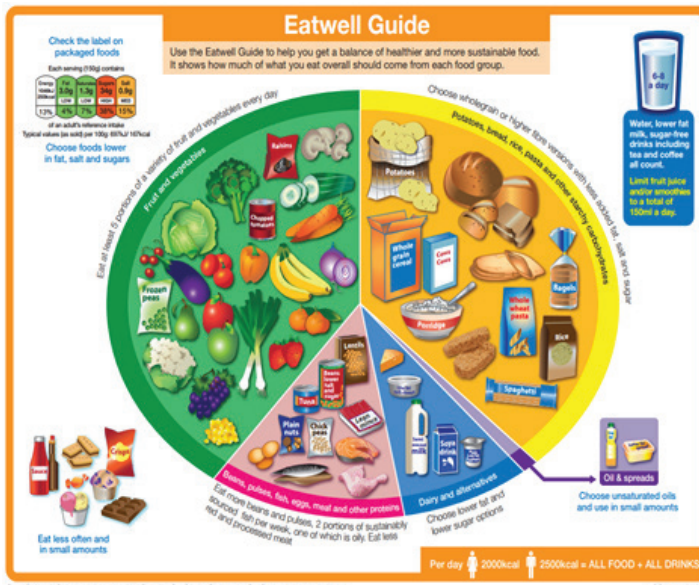


Figure 1. Illustration of the 'Eat well plate'

Food	A portion is:
<p>Fruit and vegetables. Aim to have 5 portions a day.</p>	<ul style="list-style-type: none"> • medium glass of fruit juice • 1 apple, pear, peach or banana • 2 kiwi fruits, plums or satsumas • a slice of melon or pineapple • 7 to 10 grapes, berries or cherries • 3 heaped tablespoons of vegetables or dried fruit • dessert bowl of salad
<p>Bread, cereals, and potatoes. Aim to include some of this food group at each meal.</p>	<ul style="list-style-type: none"> • 3 heaped tablespoons of pasta • 1 large slice of bread • 1 Weetabix or shredded wheat type cereal • 3 heaped tablespoons of breakfast cereal • 2 heaped tablespoons of rice • 2 medium potatoes
<p>Meat, fish and alternatives. Aim to include in meals twice a day.</p>	<ul style="list-style-type: none"> • 4 tablespoons of lentils or beans • a piece of meat around the size of the palm of your hand • 2 eggs
<p>Milk and dairy foods. Aim to have three portions a day.</p>	<ul style="list-style-type: none"> • 1/3 pint of milk • 1oz of cheese • 1 pot of yoghurt
<p>Food and drinks high in fat and sugar</p>	<p>There is no set portion size for these foods. Only eat moderate amounts of these.</p>

Are there any other foods which I should only eat a moderate amount of or avoid?

Some foods cause gas to be made in your stomach which can make it bloated, like a blown-up balloon.

If your stomach is bloated it can press up against the space in your chest where your lungs are. This means there is less space for your lungs to expand into so you cannot breathe in as much air and may feel breathless.

Foods which can make gas in your stomach include beans, cauliflowers and onions so try to avoid these if they make you feel bloated.

What should I drink (what fluids should I have)?

- Aim to drink between 6 to 8 glasses (1.5 to 2L) a day.
- Drinking plenty helps your body to be well hydrated. This means it has enough water in it. Being well hydrated:
 - helps to make mucus less thick and sticky (viscous). This can make it easier to clear mucus from your chest and so helps you to breathe more easily.
 - helps to prevent you from getting constipation (when you poo less often than usual and your poo is hard and dry).
 - makes you less likely to get infections in your bladder, kidneys and the tubes that carry pee (urine) out of your body (your urinary tract).
- Fruit juices, squash, herbal teas, milk and soup all count towards what you should aim to drink each day (your fluid intake), but water is the best thing for you to drink to help you to stay well hydrated.
- Only drink moderate amounts of tea and coffee. They have a diuretic effect on your body. This means they cause your body to lose more water.

- The caffeine in tea and coffee may also mean that some of the medications you are taking do not work as they should.
- Avoid fizzy (carbonated) drinks as they are full of gas. This may make cause bloating which presses on your lungs and makes it harder for you to breathe.

How can I use food labels to help me get the right nutrition in my diet?

Checking food labels will give you a clearer idea of what is in the foods that you are buying. Labels should be clearly colour coded to show if foods are high, medium, or low in sugar, fat, saturated fat and salt.

Green – Low level of nutrient

Amber – Medium level of nutrient

Red – High level of nutrient

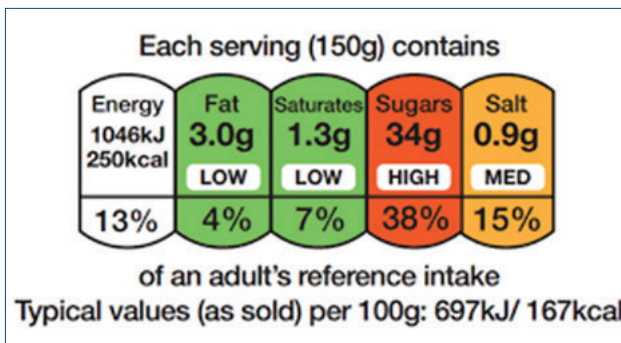


Figure 2. Example of a food label.

How much salt should I have in my diet?

Salt causes the body to retain fluids. This may increase breathlessness. Try to have no more than 6g of salt a day in your diet. This is around a teaspoon of salt.

What tips can help me to cut down on the amount of salt I have in my diet?

- Check the salt content of the foods that you eat. Anything greater than 1.5g per 100g is high in salt.
- Eat less of foods with a high salt content. Foods high in salt include things such as: processed meats, cheese, smoked meat and fish, bread products (such as crumpets, bagels and ciabatta), pasta sauces, crisps, pizza, ready meals, soup, sausages, tomato ketchup, mayonnaise, and other sauces.
- Avoid adding salt to food that you are cooking or at the table.
- Try adding things such as lemon, mustard, vinegar, pepper, herbs and spices instead of salt to add flavour to your food.

Should I try to include omega-3 oils in my diet?

Yes. Omega-3 oils may help to reduce lung inflammation (your lungs becoming swollen and irritated) and improve how well you are with COPD.

Oily fish is a good source of omega-3, but there are other foods which are also rich in it. Try to have at least one portion of oily fish per week (140g).

	Omega-3 sources
Oily fish	Mackerel, Salmon, Pilchards Fresh tuna (not tinned) Kippers, Herring Trout
Non-oily fish	Linseeds (also called flax seeds) Soya, Rapeseed and olive oil Unsalted nuts, Green leafy vegetables

What tips can help me to increase the amount of omega-3 in my diet?

- Buy fresh fish in season and look out for special offers.
- Try taking an omega-3 supplement (such as a capsule) if you are unable to include it in your diet.
- Include plenty of green leafy vegetables in your diet.
- Use olive or rapeseed oil for cooking and use spreads that contain them.
- Snack on unsalted nuts or use them in cooking. For example, walnuts, almonds and hazelnuts.

What do I need to know about vitamin D and osteoporosis?

- People with COPD may be more likely to have vitamin D deficiency (not have enough vitamin D in their bodies). Our bodies make vitamin D when our skin is in sunlight. People with COPD may get out in the sunshine less than usual. They may also get less vitamin D in their diet.

If you are not getting enough vitamin D, you may be more likely to get muscle weakness and osteoporosis. Osteoporosis is a condition that weakens the bones, making them fragile and more likely to break, and muscle weakness.

- Research shows vitamin D may improve immunity and protect against viral and bacterial infections.
- Consider taking a vitamin D supplement. The recommended daily intake is 10 micrograms (10ug) a day.

- The main ways for our bodies to get vitamin D is through sunlight and supplements. Some foods also contain small amounts. These include:
 - oily fish
 - dairy foods
 - eggs
 - spreads (margarines) and breakfast cereals which have had vitamin D added to them (are fortified with vitamin D).

Why else might I be more likely to get osteoporosis if I have COPD?

People with COPD can also be more likely to get osteoporosis because:

- They may eat less and be less able to take calcium into their body (absorb calcium) from their food and drink.
- They may do less of the 'weight bearing' exercise which strengthens muscles and bones. This includes activities where your body weight is supported by your feet and legs such as walking, running, dancing, and stair climbing.
- Corticosteroid medications that you may be taking for COPD increase the chance of getting osteoporosis.

What can I do to reduce the chance that I may get osteoporosis?

To help prevent osteoporosis:

- Stop smoking. Smoking increases the chance that you may get osteoporosis.
- Eat plenty of foods which are rich in calcium. For example, milk, yoghurts, cheese, pilchards, sardines, pulses (peas, beans and lentils), bread and green leafy vegetables.

What tips can help me to manage some of the usual symptoms of COPD?

Shortness of breath:

- Try to clear your chest of any mucus before you eat a meal. This may help you to breathe more easily while you are eating.
- Eat and chew your food slowly. Try putting your cutlery down in-between mouthfuls.
- Eat foods which are easy to chew. For example, cottage pie and omelettes. This will help to save your energy for breathing.
- Eat smaller meals but eat more often.
- If you are having a drink (beverage) with your meal, save it until after you have finished eating. Drinking while you eat may make you feel bloated and breathless.
- Sit upright while you are eating and for around 2 hours afterwards. This reduces the chance that you will get acid reflux or heartburn (a burning pain in the chest caused by stomach acid flowing back up your 'food pipe').
- Also, avoid slouching or lying down as these put extra pressure on your diaphragm and make it more difficult for you to breathe.

Tiredness:

- Plan your meals in advance.
- Sit for activities that use energy such as cooking or washing up.
- Have meals that are easy to prepare, cook and eat. For example, use ready meals and ready prepared vegetables.
- Rest before and after you do something energetic such as shopping.
- Cook double portions when you can and freeze what you do not need straight away to have another time.
- Use lightweight cooking pans and utensils.
- Try to make sure you are getting enough sleep.

Ensure you are getting a good night's sleep. You can find NHS advice about sleep problems here, www.nhs.uk/every-mind-matters/mental-health-issues/sleep/.

Constipation:

- Try to have more fibre in your diet. Fibre helps to prevent constipation by enabling food to move more easily through your gut (bowels). Foods that are high in fibre include wholegrain bread, pasta, rice, beans and pulses, vegetables, fruit, and cereals.
- Make sure you drink plenty. If you have constipation, increase the amount you drink to 2 litres a day.
- Increase the amount of physical activity such as exercise, walking or doing housework that you do. This can increase how often you poo and ease constipation.
- Include foods which contain magnesium in your diet. These include spinach, artichokes, almonds, brazil nuts and raisins. Magnesium relaxes the bowels and draws in water, which softens your poo.
- There are many medications which can help if you have constipation. If you find the suggestions listed above are not working, contact your GP or pharmacist and ask them about laxatives.

Dry Mouth:

- Oxygen therapy and medications often cause a dry mouth.
- Choose foods which are soft, moist or both. For example, shepherd's pie, or sponge and custard.
- Add extra gravy or sauces to your meals.
- Drink plenty of fluids
- Avoid salty foods
- Try sucking fruit sweets or ice cubes or chewing sugar free gum.
- Dry mouth products which act like saliva are available. Speak with your GP if you continue to have a dry mouth.

Weight and COPD

What if I am underweight?

- A healthy Body Mass Index (BMI) for someone with COPD is usually between 20 to 30kg/m².
- Your diet (what you eat and drink) and getting the right nutrition are very important in reaching a healthy BMI and staying at a good weight for you.
- A balanced and varied diet can help you to stay as strong and fit as possible.

Being underweight can make you feel:

- tired
- weak
- short of breath
- full-up quickly, bloated or both.

Being underweight means you are more likely to:

- get infections
- have to stay in hospital more often and have longer stays when you do
- lose muscle strength
- get osteoporosis.

What tips can help me to gain weight?

- **Have small frequent meals and snacks**
- **Eat 'little and often'**. If you have a small appetite, this can help you to get the nutrition that you need.
- **Aim to eat every 2 to 3 hours**. Try to eat 3 meals and 2 to 3 snacks a day.

- **Use full fat varieties** of products such as milk, cheese, yoghurts, and sauces. Avoid low-calorie or low-fat varieties.
- **Choose nourishing drinks** such as milk, Horlicks and Ovaltine
- **Try to have one or two high calorie puddings a day.**
For example, custard, ice cream, cake, buns and fruit crumble.

Add things to your food to give you extra nutrition (fortify your food). For example add:

- cheese, butter or cream to potatoes, soups, sauces, vegetables
- cream, custard, ice-cream or honey to puddings
- 2 to 4 tablespoons of dried milk powder to full fat milk
- yoghurt, syrup, honey, sugar and dried fruit to breakfast cereal
- **Weigh yourself every week to see if you are closer to a healthy weight**
- **Try nutritional supplements.**

If you are struggling to put on weight, there are nutritional supplement drinks that you can buy. These include Complan and Meritene. If you think you may need them, ask your GP if they can prescribe other products such as Fortisip Compact, Ensure Plus Juce and Foodlink Complete.

What if I am overweight?

Many people with COPD gain weight. This is often caused by things such as giving up smoking, not being as active and being on steroid medications.

Being overweight can:

- Make you feel more breathless. Fat in and around your tummy leaves less room for your diaphragm to work in and that makes it harder to breathe.

- Make you less able to exercise. Being overweight puts pressure on the joints in your lower body, especially your hips and knees.
- Increase the chance that you will get high blood pressure, diabetes, heart disease and osteoarthritis.
- Increase the amount of oxygen that your body needs.

What tips can help me to lose weight?

- **Never skip meals**
- **Aim to eat 3 meals per day.** People who often skip meals may burn calories (use the energy in their food) more slowly.
- **Aim to have no more than 2 snacks per day.** Choose lower calorie options such as a piece of fruit, a low-fat yoghurt or carrot sticks and hummus.
- **Use low fat products**
- **Check food labels and swap to low fat or low sugar (or both) options.**
- **Grill, steam, boil or poach foods where possible.** Avoid frying and roasting in fat or oil.
- **Cut off any fat that you can see on meat, both before and after you cook it.**
- **Choose lower fat and unprocessed meats.** For example, chicken, turkey and lean beef.
- **Eat more vegetables and salad.** Aim to eat half a plate of these with each meal.
- **Limit treats such as chocolate bars or cake to 1 to 2 per week.**
- **Aim to lose 1 to 2lb a week (around 450 to 900g).** If you lose weight slowly you are more likely to be able to stick to your diet in the long term.

- **Avoid 'fad' diets.** Most of these do not give you the balanced nutrition that you need and are difficult to stick with for very long.
- **Weigh yourself once every week to see if you are closer to a healthy weight.** Your weight can go up and down from day to day, so it is not helpful to check your weight every day.
- **If you are concerned about your weight, ask to be referred (sent) to a dietitian.** You can ask your GP, consultant or physiotherapist to refer you.

Who can I contact for further information and advice?

For further information or to provide feedback please contact:

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