

Dietary advice for patients undergoing colorectal cancer surgery

Confirming your identity

Before you have a treatment or procedure, our staff will ask you your name and date of birth and check your ID band. If you do not have an ID band we will also ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

Before your surgery (also known as ‘prehabilitation’)

The most important message is to “eat well” and have a balanced diet.

The dietary advice below will help to provide your body with the nutrients it needs to optimise your energy levels and strength prior to surgery.

This advice can be followed by all, **unless you have been advised otherwise (such as for an existing medical condition) by your Doctor or Dietitian.**

Food group	Examples	Benefits for ‘prehabilitation’
Starchy carbohydrates Include with every meal	Cereals, bread, potatoes, rice, pasta, noodles, chapatti. Opt for wholegrain versions. A portion is typically 2-3 tablespoons/1 slice.	Energy, fibre, vitamins and minerals
Protein Include two portions per day	Lean meat such as chicken and turkey. Red meat such as beef and lamb in moderation. <i>Processed meats such as ham, bacon and salami should be limited as much as possible.</i> Include at least one portion of oily fish e.g. salmon, mackerel, and one portion of non-oily fish per week e.g. cod, haddock. Eggs and nuts are also a good source of protein. Choose plant based proteins regularly e.g. beans, lentils, tofu, soya. A portion for cooked meat is typically the size of a deck of cards, for fish the size of the palm of your hand, and for beans/lentils is four tbsp.	Protein, vitamins and minerals such as iron
Dairy and dairy alternatives Include 2-3 portions per day	Milk, yogurt, hard/soft cheese, milk alternatives such as nut or soya. A portion is typically one pot of yoghurt, matchbox size piece of cheese or 200ml of milk.	Protein, calcium and vitamins.
Fruit and vegetables Include at least 5 portions per day	Fresh, frozen, canned and dried fruit and vegetables	Vitamins, minerals and fibre

	One portion is equivalent to 80g, e.g. 1 apple/banana, or 2 plums/satsumas, or 1 handful of grapes	
High fat/sugary foods Include in small amounts only	Butter, margarine, oil, cream, cakes, biscuits, sweets and soft drinks.	These should only be eaten in small amounts, unless have been advised to increase your consumption of these foods by your Doctor or Dietitian.
Fluid Aim for at least 6-8 cups/glasses per day	Water, tea, coffee, juice, squash	Hydration, aid regular bowel movements

It is important to discuss with your Surgical Team or Dietitian if you are taking any vitamin and mineral supplements. Some supplements may need to be stopped prior to your surgery. Your Surgeon or Dietitian can provide more information on this.

I have been advised to follow a low fibre diet before surgery. What do this mean?

What is fibre?

Dietary fibre (sometimes referred to as roughage) is found within plants and is not digested and absorbed very easily in the gut.

Some people will be advised to follow a low fibre diet **before surgery**. This is to prevent blockages in the bowel, or minimise symptoms of bloating, abdominal pain, nausea or loose stool. You should only follow this dietary advice **before surgery**, if you have been advised to do so by your Surgical Team, or Dietitian. A full list of foods suitable for a low fibre diet are available on page 4 onwards.

After your surgery *(also known as ‘rehabilitation or recovery’)*

Nutrition plays an important part in your recovery following colorectal surgery. You will usually start on clear fluids, then progress to “free fluids” (all liquids). It is advisable to choose liquids containing calories to aid your recovery e.g. milk, juice, soup, ice cream, yogurt, milkshakes.

Your Surgical team will advise when it is suitable for you to start eating after your surgery. The following tips will help to make sure you are meeting your calorie and protein requirements after surgery. This will help you to optimise your recovery by minimising weight loss and maintaining muscle function.

- Focus on a little and often approach, aiming to eat every 1-2 hours as able

- Small portions of meals may be better tolerated
- Include high protein foods with every meal/snack (see below for suitable examples of high protein foods).
- Changing to higher calorie options (e.g. higher fat milk) for a short period after surgery may be useful if you are struggling with your food intake. Once your appetite improves, you can return to lower calorie options.
- Aim to include at least two high protein snacks per day, in between meals e.g. milky drinks, high protein yogurts, cheese and crackers, sandwiches, bowls of low fibre cereal, small pieces of meat/fish/eggs.

Following colorectal surgery, it is advisable to follow a low fibre diet for a short period.

Ileostomy formation: A low fibre diet is advised for **4 - 6 weeks**, however you may need to remain on a low fibre diet, until reversal or unless advised to gradually reintroduce fibre by your Dietitian or Stoma Nurse.

Colostomy formation: A low fibre diet is advised for **4 - 6 weeks**

No stoma formation: A low fibre diet is advised for **1 - 2 weeks**.

You may need to continue on a low fibre diet for longer if you are experiencing loose stool, high or watery stoma output, or other symptoms. You should discuss these symptoms with your Surgical Team or Dietitian who can provide further advice.

Making food choices on a low fibre diet

What starchy foods (breads, flours and cereals) can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ Rice Krispies, Cornflakes, Cocopops, Special K (without berries), Frosties, ✓ Plain cereal bars such as Rice Krispies, Cocopops, Frosties, Sugar Puffs ✓ White bread, white rolls and white baguettes ✓ White floured products e.g. crumpets, plain or cheese scones, scotch pancakes, plain white bagels, toasting waffles, English muffins ✓ Plain naan bread, plain chapatti, poppadum's ✓ White pitta breads/wraps ✓ Croissants, brioche ✓ Rice cakes/plain crackers 	<ul style="list-style-type: none"> ✗ All Bran, Branflakes, Weetabix, Shredded Wheat, Cheerios, porridge, oat cakes ✗ Cereals containing dried fruit, seeds or nuts such as granola, muesli, Sultana Bran, Fruit & Fibre, crunchy nut cornflakes, Special K (all other varieties) ✗ Granary, wholemeal, seeded, malted, multigrain, rye & 50/50 breads and bread products ✗ Wholegrain or seeded crackers or crispbreads ✗ Whole meal flour, whole grain, granary or chickpea flour, ✗ Cereal bars containing fruit, nuts, seeds ✗ Hot cross buns, seeded or fruit muffins

What potato, rice, noodles and pasta foods can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ All peeled white potatoes (boiled, mashed, fried or roasted) ✓ 1 x handful portion plantain (boiled or fried) ✓ Potato waffles ✓ Plain hash browns ✓ All plain white rice (basmati, long grain, Arborio risotto rice) ✓ Plain white pasta ✓ Yorkshire pudding ✓ Pastry ✓ Plain couscous ✓ Rice noodles 	<ul style="list-style-type: none"> ✗ Skins of white or sweet potatoes ✗ Hash browns made with onions ✗ Wholemeal pasta ✗ Gnocchi ✗ Brown, pilau or wild rice ✗ Couscous with added ingredients such as Moroccan medley, Mediterranean or roasted vegetable ✗ Bulgar wheat, quinoa ✗ Egg or white noodles

What protein foods can I eat (meat, fish, poultry, eggs and meat substitutes) can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ All types of meat, meat products, fish (fresh, frozen, tinned) ✓ Eggs ✓ Tofu ✓ Quorn ✓ Smooth pate 	<ul style="list-style-type: none"> ✗ Convenience meat products that contain vegetable chunks and onions such as fish pie, sausages ✗ Coarse pate made with onions ✗ Gristly and fatty meat, tough skin, fish skin and fish bones such as crackling

What fruit can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ *The following ripe fruit without skins: 1x peach, 2 x plums, 1 x apple, ¼ mango, ¼ papaya, 1 x banana, ¼ white/ cantaloupe melon, 4 x strawberries, 6 x grapes, 6 x cherries. ✓ *100mls fruit juices (no bits) except tomato or prune juice ✓ Pureed, stewed, tinned or cooked fruit (without skins, pips or stones) 	<ul style="list-style-type: none"> ✗ Fruit juices with bits ✗ Tomato juice or prune juice ✗ Smoothies ✗ Fruits with skins difficult to remove such as blueberries ✗ Unpeeled fruit ✗ Rhubarb, pineapple ✗ Berries and fruits with seeds such as blackberries, kiwi, raspberries, passion fruit, pomegranate, strawberry, apricots ✗ All dried fruit such as prunes, cranberries, apricot, dates, raisins

<ul style="list-style-type: none"> ✓ Tinned fruit ✓ Smooth fruit sauces and coulis with pips removed such as sieved apple sauce or sieved berry coulis <p>* Limit to one portion per day only</p>	
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What vegetables can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ *Selected well-cooked root vegetables with skins removed (maximum of 2 table-spoons): carrot, parsnip, turnip, swede, pumpkin, butternut squash ✓ *¼ of an aubergine (skins removed) ✓ *Well-cooked cauliflower 4 large florets (no tough stalks) ✓ *Well-cooked broccoli 3 large florets (no tough stalks) ✓ Sieved tomato sauces or soup including passata and tomato puree ✓ *Ripe avocado (1/4 medium avocado) <p>* Limit to one portion per day only</p>	<ul style="list-style-type: none"> ✗ All vegetable skins, pips, seeds, stalks and peel ✗ Raw vegetables ✗ Leeks ✗ Brussel sprouts ✗ Onions ✗ Gherkins ✗ Sweetcorn ✗ Mushrooms ✗ Asparagus ✗ Garlic ✗ Peas, sugar snaps, mangetout ✗ Green, broad, French and runner beans ✗ Beetroot ✗ Celery ✗ Radish ✗ Peppers ✗ Salad leaves such as lettuce, rocket, watercress and spinach ✗ Bean sprouts ✗ Pak choi ✗ Olives ✗ Whole tomatoes ✗ Chicory, fennel ✗ Soups with whole vegetable chunks

What pulses, nuts and seeds can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ Smooth coconut milk ✓ *Maximum of 15g / 1 tablespoon of peanut butter chewed very well ✓ *Maximum of 2 x tablespoons of hummus <p>* Limit to one portion per day only</p>	<ul style="list-style-type: none"> ✗ All varieties of pulses such as lentils, chickpeas ✗ All varieties of beans such as baked beans, broad beans, cannellini, kidney, black, soya and borlotti beans ✗ All varieties of nuts ✗ All varieties of seeds such as poppy , sesame, pumpkin, sunflower seeds

What dairy and dairy alternatives can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ All types of milk such as cow's, sheep's, goat's soya, oat, cashew, almond, rice ✓ Buttermilk ✓ Cream, crème fraîche, sour cream, fromage frais ✓ All plain types of cheese ✓ Butter, margarine, butter spreads ✓ Smooth yoghurt ✓ Ice cream, sorbets ✓ Custard 	<ul style="list-style-type: none"> ✗ Cheese containing dried fruit ✗ Yoghurt containing nuts, seeds, fruit pieces or compote ✗ Ice-creams containing fruit or nuts

What savoury snacks can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ Plain bread sticks ✓ Cheese twists ✓ Plain/salted pretzels ✓ 1 small bag of crisps ✓ Mini cheddars or TUC biscuits ✓ Smooth dips such as cheese & chive, soured cream & chive, cream cheese ✓ *2 tablespoons of smooth guacamole <p>* Limit to one portion per day only</p>	<ul style="list-style-type: none"> ✗ Wholegrain or seeded breadsticks ✗ Popcorn ✗ Bombay mix ✗ Dips that contain whole tomatoes, cucumbers and onions such as salsa, tzatziki ✗ Tortilla crisps

What sweet snacks can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ Cakes or cupcakes made with white flour (without dried fruit or nuts) ✓ Plain biscuits such as rich tea, shortbread ✓ Smooth custard ✓ Scotch/plain pancakes ✓ Plain jelly ✓ Dark/milk/white chocolate (without fruit and nuts) ✓ Toffees ✓ Marshmallows ✓ Custard tart ✓ Smooth nougat ✓ Rice pudding ✓ Tapioca creamed dessert ✓ Caramel ✓ Jelly sweets 	<ul style="list-style-type: none"> ✗ Cakes made with dried fruit, nuts or wholegrain flour ✗ Wholegrain or wholemeal biscuits such as hobnobs or digestives ✗ Flapjacks ✗ Biscuits containing dried fruit such as fig rolls or Nutri grain bars ✗ Fruit tarts ✗ Hot cross buns, tea cakes, fruit scones ✗ Cereal bars containing dried fruit, nuts and seeds ✗ Chocolate/Nougat or toffee with nuts or fruit

<ul style="list-style-type: none"> ✓ Boiled sweets ✓ *2 x tablespoons chocolate nut spread <p>* Limit to one portion per day only</p>	
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What condiments/miscellaneous foods can I eat?

Foods allowed:	Foods to avoid:
<ul style="list-style-type: none"> ✓ Cream of chicken, cream of mushroom, cream of tomato soups, leak and potato, *oxtail (1/2 carton or can) ✓ Tomato ketchup ✓ Chicken noodle soup ✓ *Pesto (no more than ½ a pot/jar) ✓ Soy sauce ✓ Plain gravy ✓ Sweet chili sauce ✓ Smooth mustard ✓ Brown sauce ✓ Barbeque sauce ✓ Worcester sauce ✓ Mayonnaise, salad cream ✓ Dried herbs ✓ Powdered spices ✓ Seedless jam or marmalade ✓ Lemon curd ✓ Maple syrup ✓ Honey ✓ Golden syrup, maple syrup ✓ Marmite, vegemite, Bovril ✓ Salt, pepper ✓ Sugar <p>* Limit to one portion per day only</p>	<ul style="list-style-type: none"> ✗ Soups with pieces such as minestrone or chunky vegetable soup ✗ Onion soup ✗ Broccoli and Stilton soup ✗ Carrot and coriander soup ✗ Coleslaw ✗ Jams with seeds ✗ Chutneys ✗ Wholegrain mustard ✗ Stalks and leaves of fresh herbs ✗ Jams with seeds and marmalade with peel ✗ Salad dressing with wholegrain mustard

If you are following a low fibre diet for longer than two weeks it may be challenging to meet your vitamin and mineral requirements. In this instance, it is recommended that you take a complete vitamin and mineral supplement such as Centrum A-Z, Boots A-Z or supermarket own brand A-Z.

Re-introducing fibre after surgery

Fibrous foods can be reintroduced back into the diet, approximately **1 - 2 weeks after surgery without a stoma formation, 4 - 6 weeks after colostomy formation, and moderately after 4 - 6 weeks, if appropriate after ileostomy formation.**

Tips and hints include:

- Make small, gradual changes.
- Reintroduce a new higher fibre foods slowly and gradually (2 - 3 tablespoons at a time), introducing a new higher fibre food every 2 - 3 days .
- If you develop symptoms, such as loose stools/high stoma output, abdominal discomfort or bloating, do not continue reintroducing this food. You should wait until your symptoms settle before continuing to introduce new foods.
- You may find it useful to keep a food diary to help you monitor your food reintroduction.
- If your symptoms persist then it is best to return to a low fibre diet, and you should contact your Surgical Team or Dietitian for advice.
- If you do not develop symptoms, continue reintroducing other foods until you are back to your normal diet. The aim would be to achieve a balanced diet, as detailed on page 1.

Monitoring your weight and symptoms after colorectal surgery

You should speak to your Surgical Team or Dietitian if you are experiencing the following:

- Frequent loose stools
- High or watery output from stoma
- Unintentional weight loss or poor appetite

Frequent loose stools

It is normal for your bowels to be looser for the first few weeks after colorectal surgery.

If you continue to have frequent loose stools, you should be cautious about reintroducing higher fibre foods back into your diet. You should contact your Surgical Team for more advice.

High or watery stoma output

When your large bowel is removed, you will absorb less water and salt. This can result in a watery output from your ileostomy initially, but this may improve as you recover from surgery. Some patients may require antidiarrheal medication such as Loperamide to control the output.

If your stoma output continues to be watery, and you are emptying the stoma bag more than 6 times during 24 hours, you are at risk of becoming dehydrated.

A watery stool can occur as a result of chemotherapy.

Signs that you are dehydrated:

- Dry, sticky mouth
- Increased thirst
- Light headedness or feeling dizzy especially when going from sitting to standing
- Tiredness
- Headache
- Passing less urine which is dark or strong smelling
- Muscle cramps

You should contact your Surgical Team if you experience any of these symptoms.

Dietary management of a high stoma output

- Drinking less “ordinary” fluid e.g. plain water
- Replace with oral rehydration solution e.g. St Mark’s Solution or double strength dioralyte. *Contact your Stoma Nurse or Dietitian for more advice.*
- Increase your salt intake e.g. choose additional salty snacks such as crisps, and add extra salt to meals and when cooking
- Reduce your fibre intake/do not reintroduce fibre
- Eat regularly, avoiding long periods without food
- Ensure foods is chewed well and take time when eating
- Choose naturally thick and starchy foods such as mashed potato, rice pudding, white pasta, white bread
- Have gelatinous products such as jelly babies, marshmallows

Unintentional weight loss or poor appetite

If you are losing weight, you may need to increase the amount of calories and protein in your diet, to support your body to recover.

The following tips can help you increase your calorie/protein intake;

- Add extra butter, margarine or oil to bread, potatoes, pasta and cooked vegetables.
- Add cheese, cream, yogurt, butter to sauces, soups and other meals.

- Add evaporated milk, condensed milk or cream to desserts and hot drinks.
- Have cream or ice cream with desserts.
- Add smooth peanut butter, chocolate spread, honey or jam to bread, toast, crackers and biscuits.

If you continue to lose weight despite making these changes, you may require additional nutritional support. You should contact your Dietitian if you are concerned about your weight.

King's Cancer Rehab Team contact details:

Email: kch-tr.cancerrehab@nhs.net

Consent

We must by law obtain your written consent to any operation and some other procedures beforehand. Staff will explain the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to speak with a senior member of staff again.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS:

Tel: 020 3299 3601

Email: kch-tr.palsdh@nhs.net

You can also contact us by using our online form at **www.kch.nhs.uk/contact/pals**

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND

Tel: 01689 863252

Email: kch-tr.palspruh@nhs.net

If you would like the information in this leaflet in a different language or format, please contact PALS on 020 3299 1844.