

Bowel Cancer talk

Hello everybody. I'm Beth and I'm a Nutritional Therapist. Nutritional therapists guide people to make better food choices to help keep them healthy and correct any imbalances which may be caused by deficiencies in their diet.

Today I would like to bring to your attention the factors which contribute to Bowel Cancer risk and those which reduce it.

One of the most important nutritional interventions is reducing inflammation. This can be done by adding in plentiful amounts of anti-inflammatory foods and changing the way you cook to ensure carcinogenic compounds are not released. On the screen you can see examples of anti-inflammatory foods. Antioxidants in the fruit and vegetables can reduce inflammation, as can omega 3 fats in foods like oily fish and chia seeds. The use of demulcents like slippery elm bark and marshmallow or liquorice can protect the gastrointestinal tract from irritation and in turn reduce inflammation. (Slippery elm causes reflex stimulation of the nerve endings in the gastrointestinal tract that produces mucus secretion).

Inflammation is there for a reason but chronic inflammation is not good for us. With chronic inflammation there are lots of compounds produced such as reactive oxygen species, reactive nitrogen species and NF Capa B. These all generate DNA damage but can also be repaired with nutrition.

Inflammation is a very big factor in developing bowel cancer. Inflammatory bowel conditions such as: Inflammatory bowel disease, gastric intestinal metaplasia, baric oesophagitis, chronic hepatitis, pancreatitis they are all conditions that can lead to cancer but the good news is they can also be helped with dietary measures. Regularly eating the sorts of foods shown on this slide can go a long way in helping reverse these conditions and lowering inflammation in your body.

Other than inflammatory conditions other factors that may cause inflammation within the body.

- **Alcohol** can irritate the gut lining and cause inflammation. So, if you are going to drink make sure you do so with food and only occasionally. Red wine contains resveratrol and some other polyphenols that are beneficial for health, in low doses.

- **BBQ** barbequing changes the compounds in meat and the meat can become carcinogenic. The fat drips onto the coals and the smoke that is produced then infuses the meat and this can be as bad as cigarette smoke which you then both inhale and consume. Red meat is the worst as the protein and fat composition is different to poultry and fish, however the skin of poultry becomes highly carcinogenic when barbequed or cooked at high temperatures. So, if you are going to bbq take the skin off the chicken after cooking or better still cook in foil and avoid red meat. Barbequed fish is not as bad due to different proteins and of course vegetables are fine (corn on the cob and vegetable kebabs) Use dry, non-sugary rubs to marinate food, not oily sugary rubs as they will contribute to the carcinogenic effect.
- **Processed Meat.** Studies have shown that processed meats cause higher blood levels of inflammatory makers so are best avoided altogether. Norway has a really high rate of bowel cancer since the introduction of processed meats, before it was very low.
- **Other Processed food like packaged ready meals** should be avoided. As a general rule if it has more than 5 ingredients and you couldn't make the meal yourself, due to the ingredients being unrecognisable, then avoid.
- **So, the compounds produced in cured, BBQ and processed meats cause inflammation but also red meat.**
- **Red meat** should only be eaten occasionally and then cooked low and slow. Always go for good quality grass fed meat as you are eating what the animal eats! The healthier the animal the healthier the meat. If you are going to eat red meat, there have been studies to show that good quality, organic red wine, can actually be useful to consume at the same time, as it can counter the compounds in red meat that are carcinogenic. But again, I'm talking occasionally.
- **Sugar and high glycemic index foods** any food that raises your blood sugar levels quickly will stimulate the release of the hormone insulin. Studies have shown that high levels of insulin contribute to cancer growth.

Other things that may cause inflammation are:

- **Tissue wounding** – drinking or eating foods that are too hot.
- **Microbial infections** – h pylori.
- **Chemical irritations** – alcohol and smoking.

Another factor to consider with regards to inflammation is what you cook with. It is important to use the right oils when cooking as many become carcinogenic at high temperatures. Oils start to decompose under too high a heat. Smoking fats begin the formation of free fatty acids, these cause inflammation and promote cancer growth. When you heat fats up, they produce invisible compounds called aldehydes that you can't smell unless they are very hot and those compounds are really carcinogenic.

Here is an example. China has a very high rate of gastric cancer in men and women and it's not just because of smoking – which is more prevalent in Chinese men. They both still have a high rate of cancer because of the habit of cooking food at a very high temperature, in oils like sesame oil, which burns easily. The blue smoke created is not just carcinogenic when you inhale it but it also gets into the food and increases the risk of gastric cancer, due to the range of inflammatory compounds and carcinogens consumed.

For high temperatures use coconut oil or ghee which is clarified butter, (the water and milk solids have been removed). Ghee's smoke point is 250C whereas butter's smoke point is 175C. Ghee is also a great source of butyric acid, a short chain fatty acid that has been linked to lower levels of inflammation and improved digestive health in both human and animal studies. If cooking at a medium temperature, use avocado oil, low to medium heat, olive oil. Try and use unrefined, organic, cold pressed cooking oils.

So, steam, bake or cook with the right oil for the right temperature.

Right now, in each and every one of us we have cells mutating in the lining of our colons. Many of these mutations go nowhere but if you have continued insult to the lining of your intestines, due to inflammation, then there could be a problem. So, it is vital to do what you can to reduce inflammation. This isn't just about what you eat but also reducing stress and taking care of yourself and your environment.

So, we've looked at what could possibly increase the risk of bowel cancer and how you can counter that. Now let's move on to what really has been shown to reduce your chances of getting bowel cancer or having a recurrence of it.

The magic ingredient is **Fibre**.

Studies (Epic study) have shown that the more people eat fibre the lower their risk of bowel cancer. This is for people who have had bowel cancer and want to prevent it coming back and for those with pre malignant conditions such as inflammatory bowel disease or those with genetic risk factors, that increase the risk of developing colon polyps.

There are two different types of dietary fibre – soluble fibre and insoluble fibre. They each have different functions and health benefits and are both present in most plant foods. Soluble fibre is found in oats, barley, nuts, seeds, lentils, fruits and vegetables. This fibre slows down digestion and helps us to stay fuller for longer. Soluble fibre stabilizes our blood sugar levels and can lower cholesterol reabsorption.

Insoluble fibre keeps us regular and acts like a brush through your colon keeping your whole system running smoothly. It can be found in skins of vegetables and fruit, nuts, seeds and wholegrain foods.

Resistant starch is also important, it works like fibre by resisting digestion in our small intestine and travels on to our large intestine where it acts as a prebiotic, which means it feeds our good bacteria that keep our gut healthy. It's found in cooked and cooled potatoes, rice and pasta; in oats, legumes and green bananas.

On your table you will find a task relating to fibre. What I'd like you to do is rank weight for weight, each food in order of fibre content. 1 being the highest amount of fibre and 10 the lowest. While you do this we can break for coffee and then Kate will kindly put the correct order so you can compare.

Fibre Task

Rank weight for weight each food in order of amount of fibre. 1 being highest 10 being lowest. Values shown in 100g.

Almonds	12g
Oats	10g
Wholemeal bread	7g
Walkers baked crisps	6.3g
Artichoke (globe)	5g
White bread	2.7g
Broccoli	2.6g
Brown Rice	1.8g
White rice	0.4g
Butter	0g

As you can see many foods have fibre in varying amounts. Making small tweaks to your diet such as swapping white bread for wholemeal and increasing the variety of plants you eat, can go a long way to helping you get your fibre needs.

Total fibre is what's important, so try and get a broad range of fibre from various plant foods such as: fruits, vegetables, legumes, cereals and wholegrains. (oats, wheat, spelt or if avoiding gluten, foods like teff or buckwheat - not true grains but still have the fibre and healthy compounds).

What you are looking for on a nutrition label is 6g per 100g for high fibre food and 3g or more per 100g for a source of fibre. You are aiming to consume 30g daily.

If you can't eat fibre because of a colonic restriction, it's important to make sure you are getting food in that feeds and benefits your microbiome and allows you to have a good level of short chain fatty acids, which the friendly bacteria in your gut produce by fermenting dietary fibre. In some cases that may mean supplementing with short chain fatty acids (Butyric acid salts) as

they play a vital role in colon health, due to the fact they are the main source of energy for the cells lining your colon.

Next, I would like to talk about calcium and dairy because although there's a number of ways that diet has an impact in reducing bowel cancer, by reducing the body's inflammatory response and increasing fibre. The other mechanism that is also working is to do with oxidative stress and what we know is that calcium itself, can help to buffer oxidative stress.

Calcium is a mineral most often associated with healthy bones and teeth, although it plays an important role in blood clotting, helping muscles contract, regulating heart rhythms and nerve function. What has been shown in studies consistently, is that the one cancer that is potentially prevented or partially prevented by dairy, is bowel cancer. This is due to a couple of factors, firstly the calcium buffering oxidative stress but also the live organisms.

The study which gathered this information (Epic study) suggests two portions of dairy a day, that's 120g of yogurt or kefir (a fermented milk drink high in probiotics. Kefir grains which are yeast and lactic acid bacteria are added to the milk and they multiply and ferment the sugars in the milk, turning the milk into kefir) twice a day or 30g of minimally processed cheese like feta or halloumi or artisan cheeses, not low fat or highly processed cheeses like baby bels or Philadelphia etc. Eating dairy twice a day rather than in one go is better, that way you are trickle charging your gut with healthy microbes and calcium.

When I say add dairy to your diet, I don't mean fresh milk, the research is supportive of fermented dairy but not milk. Just on a side note about milk, if you are going to drink animal milk, sheep's or goat's milk is metabolised better by the body and always have full fat milk. We need the fat in the milk to process the fat-soluble vitamins, ADEK.

We have some tasters of various milks by the coffee and tea if you would like to sample them at the end.

If you have an auto immune disease, you are likely to benefit from not eating dairy as it can exacerbate auto immune conditions. If this is the case you can get your calcium from non-dairy sources, from things like tahini and canned

oily fish and you can cover your fermented foods with non-dairy fermented foods like sauerkraut, and non-dairy yogurt such as almond and coconut.

As you can see from the screen, you can get your calcium needs from more than just dairy sources.

Ok so lastly, I would like to talk briefly about improving the microbiome.

Dysbiosis, problems in the microbiome, is probably the biggest cause of inflammation when it comes to gastrointestinal cancers. So along with fibre to feed your microbiome, it's a really good idea to eat naturally fermented foods such as sauerkraut, kimchi, live apple cider vinegar, kefir, non-dairy kefir (Koko's and Koyo are good makes), yogurt, kombucha, miso (miso soup contains the probiotic *A. oryzae*, which can reduce the risk of inflammatory bowel disease and other digestive problems). Fermented foods have good probiotics in them that occur naturally through the fermentation process. These help to repopulate your gut with the good bacteria which helps get rid of problem causing bacteria. Try and consume a variety of fermented foods.

So, to summarise:

- Reduce inflammation with anti-inflammatory foods and cooking with the right oils for the right temperature.
- Eat plenty of plant foods, 30 different kinds a week, if possible, to increase fibre to feed your microbiome and keep your gut healthy.
- Eat dairy or calcium rich foods.
- Eat fermented foods.
- Stay hydrated, get moving if possible and try and get plenty of sleep.

One last note, if you are interested in looking further into the studies showing the importance of nutrition and reducing cancer risk, please look at the EPIC study, Epic is the European Prospective Investigation into Cancer and Nutrition. It is one of the largest studies in the world, with more than

half a million participants, recruited across 10 European countries and the UK followed for almost 15 years.

Thank you for listening!