

Foods to help prevent insulin resistance & type 2 diabetes



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After you eat, digestible carbohydrates are broken down in the small intestine into glucose. The glucose then moves through the gut wall into your blood stream.

Insulin-secreting cells in the pancreas sense the increase in blood glucose and release the hormone insulin into the blood. Insulin sends a signal to the body's cells to remove glucose from the blood by transporting it into cells. Excess glucose is stored as glycogen, primarily in the liver but also in muscle.

When you haven't eaten for several hours your blood sugar starts to fall. To restore equilibrium your pancreas pumps out a complementary hormone called glucagon that converts the liver glycogen back into glucose and sends it back into your bloodstream. If all goes well your pancreas produces just enough of these hormones at just the right time to keep your blood glucose within optimal levels. A healthy body is described as 'insulin sensitive'.

Our metabolism evolved aeons ago when our diet included carbohydrates of a more complex nature. Today most calories in the average diet come in the form of carbohydrates and most of these are simple carbohydrates – sugars that quickly enter the blood stream. The body has to release high levels of insulin to keep the level of glucose in the bloodstream from spiralling out of control. In time cells become less responsive to the insulin signal. The pancreas senses that glucose levels are still high and releases more insulin. Eventually there is a response but it takes an excessive amount of hormone to get the job done. As a result you have abnormally high insulin levels and at this point the body is known as 'insulin resistant'.

Insulin resistance is an underlying factor in a range of health problems. The most obvious disease resulting from insulin resistance is type 2 diabetes.

Type 2 diabetes is a condition caused by problems in the way the body regulates and uses glucose. Primarily there are two problems. The pancreas does not produce enough insulin and cells respond poorly to insulin and take in less sugar.

The result is too much glucose circulating in the blood. Eventually, high blood sugar levels can lead to disorders of the circulatory, nervous and immune systems.

More people than ever have diabetes and more people than ever are at risk of type 2 diabetes. The majority of type 2 diabetes could be prevented and this would cost far less than treating diabetes and its complications.

Figures from the International Diabetes Federation show that 537 million adults and 1.2 million children worldwide are living with diabetes. Many remain undiagnosed and many millions more are predisposing themselves to this disease.

Eating a diet of refined & heavily processed foods, especially white flour and high sugar foods, far exceeds our body's metabolic ability to cope. Whilst type 2 diabetes is often labeled a 'disease of affluence', this is misleading because it is, poor people in industrialized countries as well as the developing world that face the greatest impact of this disease.

A diet to protect against insulin resistance and type 2 diabetes

Through diet & lifestyle diabetes is preventable and research has shown it is even reversible. When it comes to diet the carbohydrates, proteins and fats you choose will make a difference. Controlling blood glucose and insulin resistance is quite individual but the following offers a broad guideline. Mindful eating helps you recognise the effect individual foods have on your body.

Different carbohydrates are digested and absorbed at different rates. Some known as high glycemic index (GI) foods cause blood glucose levels to rise quickly after eating them. High GI foods include white bread, white rice, fruit juices, potatoes and most breakfast cereals. To reduce the size of your blood sugar response swap white grains for whole grains; whole fruits for juices, and just enjoy a few potatoes always with the skin on and eat them with some fat and protein.

Eating a source of protein, fibre and healthy fat with all of your meals can help stabilise blood sugar, especially when you consume starchy vegetables since the combination will slow down the absorption of sugar into the bloodstream.

Healthy fats are essential for your body. Healthy fats include olive oil, avocado, seeds like chia, hemp & flaxseed; nuts like walnuts & almonds. Oily fish like wild salmon, sardines and mackerel provide omega 3 fatty acids which are beneficial for all round health. Avoid trans fats from processed foods which can cause havoc in the body.

Protein rich legumes like peas, beans, lentils & chickpeas are a low GI food meaning they result in lower blood sugars and less insulin released after eating them. Scientific studies have shown a diet high in legumes lessens the risk of a number of diseases including type 2 diabetes. ①

Eating lots of high fibre, non-starchy vegetables like cauliflower, celery, tomato, broccoli, carrots, courgettes, cabbages, asparagus, mushrooms and salad greens, will reduce your blood sugar response after a meal. ②

Whilst vegetables in general exert a positive effect on health, a Danish study has found that traditional cultivars of bitter and strong tasting root vegetables and cabbage exhibited a positive impact on insulin sensitivity and had the greatest potential anti-diabetic effects compared to modern mild and sweet tasting vegetables. ③ So it's not just the quantity that counts.

High fibre whole grains are also associated with a reduced risk of developing type 2 diabetes. ④ Choose whole grain barley, rye, wheat or rice as well as the pseudo-grains amaranth, quinoa and buckwheat.

For some people it is best to avoid or moderate fruits with a high GI including grapes, banana and watermelon. Fruit juices are particularly bad and linked to an increase risk of diabetes. Overall, however, eating more whole fruits is associated with a reduced risk of diabetes. ⑤

Seasonal high fibre fruits like apples, raspberries and blackberries are a good addition to your diet.

The order in which you eat food also can also make a difference. A 2015 study found that insulin and glucose levels were significantly lower when protein and vegetables were eaten before carbohydrates. ⑥

Key nutrient support for insulin resistance & type 2 diabetes

Chromium (found in onions, broccoli & whole grains) has long been known to support insulin function.

Magnesium (found in almonds, oats & raw chocolate) is a key factor in the regulation of insulin and is one of the most common micro-nutrients found to be deficient in insulin resistant and type 2 diabetes patients.

Vitamin B12 (found in foods of animal origin or supplement) patients using metformin, a medication that helps insulin work, during prolonged periods may need vitamin B12 supplementation to reduce the risk of developing neuropathy and its consequences.

Vitamin C (found in peppers, broccoli & berries) is linked to reduced glucose levels in type 2 diabetes

Vitamin D (found in shiitake, eggs & sun!) improves glucose tolerance and insulin resistance

Recipes

Buckwheat & hemp breakfast

serves 1

handful of sprouted buckwheat

1 dessertspoon pumpkin seeds

1 dessertspoon sunflower seeds

120 ml oat or dairy milk

seasonal fruit - apple, strawberries, raspberries, blackberries

1 heaped tablespoon hulled hemp seeds

Soak the buckwheat, pumpkin & sunflower seeds in the milk overnight.

Serve topped with your chosen fruit and hemp seeds.

Quinoa & coconut breakfast

serves 4

200g rinsed quinoa

400 ml coconut milk

½ tsp vanilla

1 tsp cinnamon

50g sunflower seeds

50g chopped walnuts

100g fresh berries or 2 tablespoons dried berries- sour cherries work really well

50 g shelled hemp seeds

Combine quinoa, coconut milk, cinnamon & vanilla in a medium sauce pan. Bring to the boil and then place a lid on the pan and reduce to a very low heat. After 10 minutes stir and check the liquid and if most is absorbed, remove from the heat. With the lid on leave to rest for 5 minutes.

Stir in walnuts, sunflower seeds and berries, divide between 4 dishes and top with the hemp seeds.

This is delicious cold so it could last 1 person 4 days.

Warm chickpea salad

serves 4

400g tin chickpeas.
2 tablespoons olive oil
2 cloves garlic, finely diced
400g tin of chopped tomatoes
12 fresh sage leaves finely shredded
1 teaspoon fresh thyme leaves
salt and pepper to taste
4 tablespoons yeast flakes
4 handfuls rocket
2 tablespoons basil pesto

Strain the chickpeas.

Gently heat the olive oil and soften the garlic, tip in the tomatoes, sage, and thyme; increase the heat and cook for 2 to 3 minutes. Add the chickpeas to the tomato mixture, season with salt and pepper, and continue cooking until the beans are heated through. Stir in the yeast flakes.

Divide the rocket between 4 plates, spoon on the chickpeas, and add a swirl of basil pesto on top.

Winter slaw

serves 4

½ red cabbage – finely shredded
250g Brussels sprouts – finely sliced
4 celery sticks cut into fine slices
6 tablespoons olive oil
1 tablespoon lemon juice
1 teaspoon Dijon mustard
black pepper & salt
seeds from 1 pomegranate
handful of almonds sliced and toasted

Place the red cabbage, Brussels & celery in a bowl.

Mix together the olive oil, lemon juice, mustard, salt & pepper and mix through the vegetables. Top with pomegranate and almonds.

Tabbouleh

serves 4

1 cauliflower
1 cucumber peeled, seeded and diced
6 medium tomatoes seeded and diced
6 spring onions finely sliced
handful of parsley chopped
handful of mint chopped
handful tarragon chopped
handful rocket chopped
juice of 1 lemon
pinch of salt
good twist of black pepper

Method

Pulse cauliflower into small pieces or chop by hand to resemble bulgar wheat.

Mix all the ingredients together in a bowl, let sit for at least 10 minutes before serving.

Aromatic spiced lentils

serves 4

200g brown lentils
1/2 litre veg stock
2 red onions chopped
1" piece of ginger, grated 2 cloves garlic chopped
6 ground cardamom seeds olive oil.
juice of half a lemon.
handful chopped coriander

Wash lentils well, pop in a pan, cover with water and cook until tender and strain.

Gently cook the onion in the olive oil until soft, add the ginger, garlic & cardamom seeds. Strain the lentils. Purée 2/3rds of the lentils with enough stock to make a smooth not too thick sauce. Tip in the remaining lentils.

Warm through add the lemon juice, stir in coriander and serve with brown rice and wilted greens.

Roast vegetables with haricots mash

serves 4

1k mixed broccoli, carrots, cauliflower (or whatever you have to hand)
3 tablespoons olive oil
2 crushed garlic cloves
1 teaspoon ground cumin
1/4 teaspoon dried chilli flakes
1/4 teaspoon sea salt
2 x 400g tins cannellini beans
2 tablespoons olive oil
juice of half a lemon
good twist black pepper
handful parsley chopped

oven 200C gas mark 6

Cut the broccoli into florets and thinly slice the stalks. Cut the carrots into thick round slices.

Mix together 3 tablespoons olive oil, cumin, chilli & salt.

Toss the vegetables in the oil, tip onto a baking tray and roast for about 20 minutes

To make the mash, drain the haricots, pop into a pan, cover with water and bring to the boil. Cook for 5 minutes, drain and return to the pan with the olive oil, lemon juice and black pepper and mash to a puree.

Stir in the parsley, divide between 4 plates and pile the roasted vegetables on top.

Buckwheat pancakes with roast cherries

makes about 6 pancakes

275g raw buckwheat groats
2 tablespoons of kefir
1 teaspoon salt
ghee

Place the buckwheat in a bowl, cover well with water and soak overnight. The next morning pour off the soak water and rinse well.

Blend the buckwheat, kefir and salt in a blender with enough water so that it reaches the consistency of pancake batter. Aim to make your mixture as smooth as possible. Pour into a jug which has room for expansion, cover and leave in a warm place for 12 – 18 hours.

Heat a fry pan and swirl a little ghee around the base then pour in enough batter to cover the pan and make a pancake that is not too thick. Cook all the way through then flip over and cook for a further minute before sliding out onto a plate.

Repeat until you have made all the pancakes you want.
Store unused batter in the fridge where it will last for 3 days.

Roast cherries

enough for 6 pancakes

400g cherries
1 tablespoon olive oil
1/4 teaspoon salt
2 twists freshly ground black pepper
1/4 teaspoon ground cinnamon

oven 450C gas mark 8

Stone the cherries and toss them in the olive oil, salt and black pepper. Tip them onto a baking tray lined with parchment paper.
Roast for 12 - 15 minutes.
Turn into a bowl and gently toss with cinnamon.

Optimal human health comes from eating nutrient dense foods produced and processed in ways that maximise both the quality and quantity of nutrition.

Ecological health is integral to human health. Food grown using nature based, regenerative farming practices, manage sustainably the complex interactions between water, energy and food, thus protecting and enhancing the environment whilst producing nutritious food.

- buy organic food whenever you can
- eat seasonally
- source your food as locally as possible
- join a box scheme
- grow your own (garden, allotment or community garden)
- support food & farming campaigning organisations

References

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Daphne Lambert is an eco-nutritionist focusing on the interactions between agriculture, ecology and human nutrition.

Greencuisine Trust works to bring about a transformation in the way we eat. Through practical food experiences the Trust highlights the connections between our well-being, natural resources, the environment, and our planet.



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