

YOU ARE WHAT YOU EAT... AND DRINK

DR SIMON SAWHNEY *discusses the implications of being on dialysis for your diet*

If you spend an afternoon sitting in the waiting area of the Aberdeen dialysis unit, it will soon become clear that dialysis patients are obsessive about food and drink. There is constant animated discussion about what they can eat, what they can't eat, how much fluid they are allowed to drink... and how to get by without breaking the rules. As a kidney specialist I confess that I am also obsessed with my patients' consumption, and it can be difficult to put myself in their shoes.

Your home would be most unpleasant without regular tidy ups. Our kidneys are the housekeepers of the body. While you are reading this, blood from your body is passing through your kidneys, with excess toxic material and fluid draining away and turning into urine. As with all housekeepers, they cope with all our mess and we hardly appreciate the scale of their work until they're absent.

“WE TAKE OUR KIDNEYS FOR GRANTED WHEN WE OPEN THE FRIDGE OR DRINK A GLASS OF WATER. SUFFERERS OF KIDNEY DISEASE HAVE TO GO THROUGH HUGE LIFESTYLE CHANGES, AND THE MORE WE KNOW THE MORE WE CAN HELP”

When the kidneys start to fail, too much 'mess' leads to fatigue, nausea and places a strain on the heart and lungs. It can even be fatal. We can help the failed kidneys by performing dialysis, a machine substitute for the tired organ. But while your kidneys work constantly and discretely, dialysis only happens in short sessions. Dialysis patients therefore must manage their diet between sessions.

The most perceptible challenge is fluid. Before kidneys fail completely we often advise patients to stay well hydrated, but when you no longer make urine, the excess fluid will just build up. Patients can put on several kilos of fluid, which can be seen as swelling in their hands and feet before it is removed during their next dialysis. Every patient is different, but most must limit themselves to about a litre of fluid each day. They are also advised to cut down or avoid an almost endless list of foods including bananas, juices, crisps, chips, coffee, cereals, dried fruit and chocolate. This is not like a temporary compensation for an overindulgent Christmas. This is a diet for life, unless they are fortunate enough to receive a transplant.

The kidneys can either stop working suddenly or gradually, but adjusting to dialysis is particularly difficult when it occurs out of the blue (known as “crash-landing”). Our patients get to know and help each other and you can often spot a seasoned dialysis attender offering advice to a new initiate.

Being on dialysis is tough, and sufferers are required to change much more than their diet. Patients have to plan their lives around thrice weekly hospital visits, be ready for unexpected hospital stays when dialysis isn't working, and deal with the complications that come from the strain of kidney disease on the rest of the body. The causes of kidney failure are diverse and we cannot prevent them all, but here at the Aberdeen Applied Renal Research Collaboration (ARRC) we are trying to do our bit.

Aberdeen ARRC is led by Dr Corri Black and hosts one of the largest datasets for kidney disease in the world. We are exploring whether we can prevent people from “crash-landing” on dialysis by finding ways to recognise sufferers early. A focus of our research is to predict which people may develop kidney failure in the future by studying trends in kidney blood tests over time in the population. Our aim is to improve care in kidney disease by providing doctors and patients with the extra information they need to plan ahead.

Kidney failure is a global disease, that's why we celebrate World Kidney Day to raise awareness of this essential organ. This year on March 12th you are all invited to participate in World Kidney Day by uploading a picture of yourself drinking a glass of water. Tweet it to @worldkidneyday or share it on the World Kidney Day Facebook page.

We take our kidneys for granted when we open the fridge or drink a glass of water. Sufferers of kidney disease have to go through huge lifestyle changes, and the more we know the more we can help.

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ILLUSTRATIONS: VANESSA DE MELLO

BEETLES FOR DINNER, WORMS FOR DESSERT

ALI THOMSON *ventures into the world of insect gastronomy*

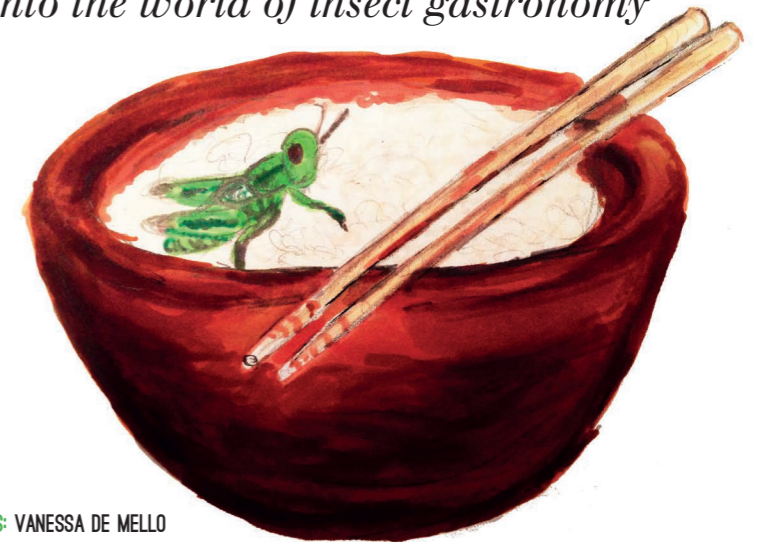
When travelling abroad, one of the inevitable culinary experiences people may face is the opportunity to eat an insect of some description. This could be a plate of fire ants, a flambéed cricket, or even a scorpion lollipop! As much as this makes our stomachs turn, it could be the norm in years to come. Our global population continues to rise, and food shortages are becoming an increasingly prominent problem. Between urbanisation and a constant pressure to preserve rainforests and other ecosystems, it is becoming harder to increase arable land for food production.

“IN GROUND CINNAMON, 800 FRAGMENTS OF INSECT IS CONSIDERED PERFECTLY ACCEPTABLE, AS ARE TWO MAGGOTS OR 30 FLY EGGS IN A JAR OF PASTA SAUCE”

Entomophagy (the consumption of insects as food) is one very viable solution to our food shortage problems. However in the western world the concept of eating insects is taboo. We spray our food with pesticides, and we've even based TV game shows around people eating insects for a bucket of cash. Why is this such a big deal? If you step back from western culture, you will see that the rest of the world considers entomophagy to be completely unremarkable. In fact, insects are specifically eaten for their taste, nutritional content and convenience.

ARE THEY EVEN THAT NUTRITIONAL?

Yes! Insects are a fantastic source of protein. The nutritional value of insects varies, but they are all rich in



ILLUSTRATIONS: VANESSA DE MELLO

energy, protein and a whole host of micronutrients. For instance, 100 g of locusts contains 499 kcal and 100 g of green ants contains an impressive 1277 kcals - that's if you eat them raw, but feel free to prepare them in any way you wish.

BEEF VS INSECTS

Entomologist Dr Mark Finke from Arizona, Rio Verde looked at the nutritional content of a variety of insects and compared them to that of beef. He concluded that beef has a higher content of micronutrients and fatty acids, but comparable or lower amounts of amino acids, minerals and vitamins. That said, insects are far more efficient at turning food into body mass. Crickets can turn 1.7 Kgs of food into 1Kg of body mass, yet cows must eat a whopping 10Kgs of food in order to gain 1kg of body mass. Even more importantly, we can eat 80% of a cricket, but only 40% of a cow. This makes insects a far superior food source, at least in terms of efficiency.

We've already begun eating insects. Realistically, and perhaps horrifically for some, we can't expect all of our food to be absolutely bug-free. Insects are found on all food that is grown for human consumption. Believe it or not, the US Food and Drug Administration has produced a list of acceptable volumes of bugs that appear in our food. In ground

cinnamon, 800 fragments of insect is considered perfectly acceptable, as are two maggots or 30 fly eggs in a jar of pasta sauce.

CULINARY INSECT DELIGHTS

There are 1,417 species of edible insect, all prepared in a myriad of ways. Crickets are a popular dry-roasted snack, or eaten as a side with a bowl of rice. In South America the tarantula is a popular dish. Peter Menzel, author of *Man Eating Bugs* says “If day-old chickens had no bones, had hair instead of feathers, and were the size of newborn sparrow, they might taste like tarantulas”.

Witchetty grubs (moth larvae) are another favourite and a dietary staple of the Aboriginal people of Australia. Eaten raw, they taste like almonds, but when cooked on hot coals they form a delightfully crisp skin that tastes like roast chicken.

WHAT CAN WE CONCLUDE?

Sprinkling dried grasshoppers on your cornflakes might not appeal to you. However, insects are cheap to produce, full of nutrients, and when prepared in the right way they can taste delicious. Perhaps it's time to ditch the beef burger and embrace the idea of eating creepy crawlies.

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