

SWEET AS!

(is sugar as innocent as it tastes?)



by Mike Cooney



It's 8.30pm, and I'm rifling through my cupboards with a sense of urgency. The kids have just been put to bed, my wife and I are about to sit down to a movie, the jug's boiled, and we need a little 'something' to go with our cuppa.

"Aarrgghh!" I quietly curse under my breath.

"My secret stash of *Jaffas* has gone! And my last few *Milk Bottles*!" I feel a little like a drug addict, desperately searching for his next 'fix'. And I suddenly regret our decision to live out in the country, far from any shops.

"At least there's the cooking chocolate ..." I think to myself, reaching for the dark slab of goodness behind the flour.

"Nooo! It's gone too! Those darn kids!"

Okay, so maybe this is a slight exaggeration on my part.

But there's no doubt about it, sugar and the food it sweetens have a strong grip on us Kiwis. However, the subject's had a bit of media attention lately, and it seems our sugary love affair isn't as sweet as we'd hoped. In fact, some have labelled sugar 'toxic' and 'pure poison'.

Really? Those soft, pink, melt-in-your-mouth marshmallows?

How could they be evil?

Anyway, to separate the facts from the fiction, we tracked down Grapevine's friend, author, speaker, nutritional biochemist and health guru, DR LIBBY WEAVER. She'd just released her latest cookbook – *Sweet Food Story* – so the timing was perfect.

Surely, she'd be able to set the story straight.

So, let's start with a biggie: is sugar toxic?

DR LIBBY: Well, firstly, to avoid confusion, we need get the definitions right. A sugar is actually a carbohydrate – and glucose, for example, is a type of simple sugar that we actually *need*! So when people say sugar is toxic, what most are referring to is refined, highly-processed sugar that gets added to a lot of packaged foods.

Sugar is also found naturally in growing plants and vegetables. In fact, in a scientific sense, sugars are the *fuel* for plants. In the same way that animals (humans included) store fat for lean times, plants store sugars for their lean times. They actually create sugars within themselves – some of them stay in the simple form

of glucose or fructose, while others join together to form sucrose.

Every time we consume green vegetables, for example, we're getting minute amounts of sugars. So is sugar toxic? The answer is no, because the human body actually needs it. And it's widely spread throughout most whole-foods.

GRAPEVINE: So it's the *refined* stuff we need to be worried about?

DR LIBBY: Absolutely. What most people are describing as 'toxic' is the highly processed and refined sugars that've been added to our foods. If we look to history and apply some common-sense to this, we discover that humans ate in a certain way for a very long time. This included plenty of vegetables and plant matter, fruits when they were in season – things we've consumed for eons! What's changed is the processing.

People have everyday access to over 5000 processed and packaged foods on supermarket shelves in New Zealand now. These so-called food products supply the human body with a highly concentrated form of refined sugars – and they've been so processed that, by the time they reach us, all the nutrients (that were originally in cane juice, for example) are long gone. So that's the change – that, and the sheer volume we're consuming, which is now vastly different to even 20 years ago, let alone 50 years ago!

GRAPEVINE: I read somewhere that the average Kiwi is consuming 50 kilos of sugar per year – is that true?

DR LIBBY: There's a fair bit of debate in the scientific literature about how much it actually is. There was one study published saying 27 kilos per person per year, and another study saying 51

kilos per person per year. They're vastly different numbers, but both of them were quality research papers – so I can't tell you which one is right! Maybe somewhere in between that? Regardless, it's too much!

GRAPEVINE: There's also talk about sugar being addictive, that it can affect us like a drug ...

DR LIBBY: I think for some people it is. The mechanisms of addictions are quite varied and a number of different hormones are involved – both neurotransmitters that the brain makes and those the digestive system makes. *Dopamine*, for example, is usually one of the key neuro-transmitters involved in addiction. So there's some suggestion beginning to show up in science that, yes, sugars can be addictive.

However, we've got to understand why people are going back for more and more of it. For example, here's a different explanation – one that points to addictive-type behaviour with sugar:

When we consume large amounts of processed foods, or if we're stressed, our body is circulating high levels of *insulin* (a fat-storage hormone which also regulates the level of glucose in our blood). And when we've got lots of insulin, our body can no longer detect an appetite-regulating hormone, called *leptin*. Our fat cells produce leptin to let us know we've eaten, and that we can now stop eating – but those instructions aren't heard when high levels of insulin are present.

Although that isn't technically addiction as we understand it, it leads to that "I can't stop" behaviour.

GRAPEVINE: Is this where sugar's relationship to obesity comes in?

DR LIBBY: That's most definitely a major



factor. When I'm talking to people about their food patterns, the complaint I hear all the time is: *"I start eating it, and I can't stop!"* And if you think about people's food behaviours at the end of the day, they might sit down to a reasonably nutritious meal for dinner, but no one goes back for more broccoli! They go looking for sweet food after dinner! So yes, other bio-chemical mechanisms are involved, but that insulin one is a real biggie.

GRAPEVINE: Tell me, did I hear right? That when they started pulling fat from food during the 'low-fat' revolution, they replaced it with sugar?

DR LIBBY: The 'low-fat' era began

during 1976 to 1980 – which, interestingly, ties in with the onset of what's been called the 'obesity epidemic'. The message back then was that the only way to control your body shape and weight was to eat fewer calories than you burn off. After all, sugar has four calories per gram, but fat has *nine*.

So, when the world became concerned about reducing calorie intake, the focus was: *we've got to cut out the fat!* And the food industry responded quickly – they pulled the fat out of the apple-pie and made a low-fat version. However, when you remove the fat from something, you leave a great big gaping hole which needs filling ... and they filled it up with sugar.

If that was all they'd done, consumers would've known it had happened and we'd be onto them. So they added *salt* to mask the sugar.

Now, if we were following the conventional health guidelines during that low-fat era, we ate more sugar and more salt than ever before in the entirety of human history – all in the belief that it was *good* for us!

Sugar consumption escalated during that period. And, unfortunately, this low-fat message continues to be prominent in our thinking today – that counting calories is the only way to lose weight. Despite the evidence now showing that's not the case.

GRAPEVINE: Do you mean to say, fat isn't Public Enemy #1?

DR LIBBY: Correct. Fat is essential to human health. It's essential to every process in our bodies: our brain function, our immune function, our digestive system, the type of bacteria that live in our intestines, our vision, our ability to reproduce ... the list is endless! Dietary fat plays a critical role in all these things, and science has always known that. But, unfortunately, it's very difficult for consumers to decipher *nutrition fact* from *nutrition marketing* – those lines have been dreadfully blurred.

GRAPEVINE: And is that any and all fat?

DR LIBBY: Anything from whole, real food. The bad fats are the ones found in processed foods – like in cakes and biscuits and muesli bars and fried food. All of those fats usually are damaged, and they have adverse consequences on human health. Whereas when you're getting fat from food the way it comes in nature, it gives your body what it needs.

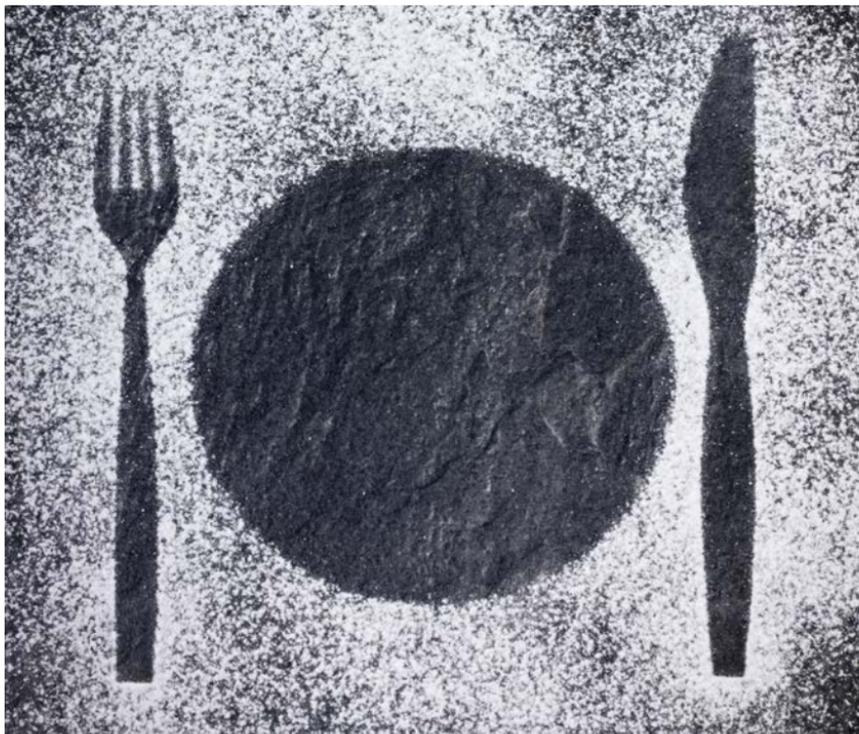
GRAPEVINE: So, getting back to sugar, how much of the sweet stuff do our bodies actually need?

DR LIBBY: When we're talking in the crude sense of sugars, for example, supplying every cell in the body with glucose (which the brain, kidneys and red blood cells must have) then we don't need very much. Again, there is conflicting science, but the main consensus is around 60 grams a day. However, we must understand (and there's lots of confusion around this, when people talk about sugar being bad) that all the starchy foods we eat are *also broken down into sugar (glucose)*. *When we consume bread, pasta, rice, potato, kumara, our digestive system breaks all of them down into glucose – in the same way as when we swallow lollies or biscuits or fruit.*

So when we say the body needs between 60 and 70 grams of glucose per day, we're including all starch and all sweet food.

GRAPEVINE: That doesn't actually leave much room for our sweeties! So how does this look for our diets?

DR LIBBY: Bear in mind, those figures are for people who are fairly sedentary and don't do a lot of exercise. But how does that look? When I spoke last week at a conference, I demonstrated how much actual sugar is in our food – and gave examples of what people perceive are relatively healthy meals. Breakfast, for example, was just 200mls of juice, some cereal with milk, a small pottle of yoghurt and a coffee – a fairly standard Kiwi breakfast, and one most people would think was okay. But in that meal alone there's about 115 grams of sugar – which is about 23 teaspoons to start your day! And that's just sugars – not including starch.



I then gave an example of an evening meal – a serving of meat and five fairly standard veggies, including potato, broccoli, beans, cabbage and cauliflower. And in that meal (including the potato), there were just two and a half grams of sugars, which is the equivalent of half a teaspoon of sugar!

The reason I demonstrated this was to show people that when we consume real food – as in whole food – the amount of sugars in it are very small, compared to processed food.

GRAPEVINE: Okay, we know fruit juices, for example, are high in sugar ... but do we also need to keep a check on how much *whole* fruit we eat, too?

DR LIBBY: The recommendations for fruit consumption in New Zealand suggest around two pieces a day. I've met people (I call them fruit-bats!) who eat, say, 15 pieces a day – but that's far too much. There are also people who don't process fruit very well due to their digestion being compromised in some way – so they wouldn't be okay with that. It's highly individual (which is why I don't like making blanket statements) but, for the majority, two pieces is fine.

An ordinary, medium-sized apple has about 20 grams of sugars – it's just naturally present in the fruit. Therefore, if you have two pieces a day, that's roughly about 40 grams of sugar, which is totally okay.

But if, on top of that, you then have some breakfast cereal, a couple of biscuits, some ice cream ... before you know it you're well over 200 grams (or more) of sugars a day.

So it's not the fruit that's bad (although we can over-consume it) – it's when people are adding all those processed foods on top of it.

GRAPEVINE: Why do so many of us seem to crave sugary food? Are we born with a sweet tooth?

DR LIBBY: Well, one theory points out that breast milk is sweet – naturally so! And for most babies it's their first food. So I think for some people, the 'sweet' taste triggers feelings of being loved, or being comforted.

Another reason we want it is because it's a fuel for the human body – it gives us energy, and is actually our *get-out-of-danger* fuel.

For the entirety of human history, *adrenalin* (one of our stress hormones) has communicated that your life is in

danger. But in 2015, your body is making adrenalin because of caffeine consumption, or because of your perception of pressure and urgency. It thinks it's got to stimulate you to get out of danger – so it gives you a fast-burning fuel to get you to safety! Which just happens to be glucose, not your body fat. So some people are craving sweet stuff to try and fill up that get-out-of-danger fuel tank.

GRAPEVINE: In your book, you mention the importance of muscle-mass in dealing with sugar. How does that work?

DR LIBBY: I'm so glad that you picked up on that – it's so important! Our muscles store glycogen, and that glycogen is the storage form of glucose. While we're sleeping, for example, we're not eating – but we still need fuel to continue to keep our brain, kidneys, red-blood-cells etc functioning. So we store glucose for use in times when there's no food available. And the bigger our muscles, the more room there is to store glucose.



Now, when the amount of glucose in your blood increases, your body knows that if nothing changes, those high levels will damage your vascular system – the lining of your blood vessels. So your body releases *insulin*, which comes along and grabs the glucose to get it out of the blood. The first place it takes it to store is in the muscles and the liver. Then the glucose that didn't fit in the muscles gets taken to your body's fat cells – which have an infinite capacity to expand in size. Which increases our body fat ... and our waistlines!

GRAPEVINE: So, should we all be joining the gym?

DR LIBBY: Well, not necessarily! If we look to pockets of the world where there are very healthy people who live to be over 100 – people who aren't having to be medicated and are still living very functional lives – the number one thing that comes out in the research of those populations is *consistency of motion*.

That doesn't mean we have to go to the gym ... unless that spins our tyres! But if you look at lots of us these days, we *avoid movement*. Lots of people, for example, get up in the morning, walk out of their house, get in a car, drive to work, park underneath their building ... they then get in a lift, go up to their office, sit at their desk for eight hours ... and then the process is reversed!

There's not a lot of motion going on in a day like that!

On the other hand, when we carry our groceries or our children, when we do manual labour, when we work in the garden, when we play sports – all of that is great for at least maintaining our muscle mass. Whereas, when we are sedentary, beyond the age of 30 we start

losing muscle mass every year ... unless we do something to stop it.

I like to encourage people: at least maintain your muscle mass where it is now – and, even better, build on it!

GRAPEVINE: You mentioned insulin earlier ... can you tell us a little more about its role?

DR LIBBY: Insulin was a really amazing hormone back in the days when we lived through famines, because its job was (and still is) to store energy for later. But, in modern times, most of us have access to food 24/7. Which obviously has beneficial – and negative – consequences! These days, we need to 'store energy for later' a lot less than when we used to live through famines.

It's also really important to understand that insulin is made in response to anything that *elevates* blood glucose levels. When we consume carbohydrate food, for example, the digestive system breaks it down into glucose, and that glucose then enters our bloodstream. Now some carbohydrates are broken down slowly, meaning the movement of glucose into the blood supply is gradual. Other carbs, however, are digested very quickly, which means glucose enters the blood quickly – which rapidly elevates those levels.

When glucose arrives in a big rush, we need a whole lot more insulin to quickly get it out of the bloodstream before it damages the vessels.

GRAPEVINE: What about our stress hormones? You mentioned that adrenalin releases glucose into our system as well ...

DR LIBBY: Absolutely! When you're feeling pressure or urgency – or when you have caffeine – you make adrenalin.

And, as I said before, those higher levels of adrenalin send a message: *“My life is in danger – I’ve got to get out of here!”* The trouble is, you’re often just sitting on your bottom at a computer, dealing with emails and deadlines while drinking coffee! And when you’ve thrown a few more coffees down your throat, and you’ve got 50 new emails and six new deadlines you weren’t expecting, most people in those scenarios just keep making adrenalin, adrenalin and more adrenalin!

Of course, if a tiger had jumped out in front of you and led you to make that adrenalin, you’d actually fight the fight – or run away! And the glucose that got mobilised to fuel your fight – or your escape – would be burnt off! But when you’re just sitting on your bottom at a computer, that glucose isn’t being used up. So your body starts to think, *“Gosh, we just released all this glucose into the blood, but it’s staying there! And they’re still making more and more adrenalin. So my life must still be in danger. Help – we need more fuel!”*

That glucose isn’t getting used, and it’s got to get out of your bloodstream and be put back into storage. Which is why some people can eat a pretty good diet, but because they’re stressed or having too much caffeine, it can lead to an excessive production of insulin.

GRAPEVINE: The effects of caffeine you’re describing here will go down like a lead balloon for lots of people!

DR LIBBY: Yeah, I’m sure! But let me soften it by saying caffeine is not the major thing – it’s the processed foods that lead to that excessive insulin. However, coffee has certainly become a huge part of our culture. Only 20 years ago in



New Zealand, tea was our major source of caffeine – not coffee. And although they both contain it (tea has less), caffeine behaves differently in the body when it comes from tea. There are other things in tea that buffer caffeine’s effects.

So I’m not saying, *“Don’t drink coffee!”* – because our metabolism for caffeine can be quite individualised. I just want people to be aware that caffeine can be another mechanism involved in this insulin picture.

GRAPEVINE: So how then do we manage our diets – and our sugar intake in particular?

DR LIBBY: One of the reasons I created my latest cookbook, *Sweet Food Story*, is that I realise people want sweet food. But there’s such a difference between choosing something highly processed from the supermarket – that has no nutritional benefit, will spike your insulin and make you want to eat a second serving – and getting your sweet-food-fix from something made with real, whole food. Because number one; you’re going to get

the nutrients that are in that whole food, plus number two; you're going to get the fibre which slows down the delivery of the sugar to your blood supply and helps you feel more satisfied ...

I could talk till I'm blue-in-the-face and say, "Don't eat sweet food!" But people are always going to want it! So I wanted to help people who find it hard to make good food choices – especially in the middle of the afternoon or after dinner. I wanted to give them the option of sweet food that actually serves their health, while they still get that 'delicious' factor on their taste buds!

GRAPEVINE: Okay. All of this is well and good. But processed foods are cheap – and often the whole foods, real foods, are so expensive! Lots of people just don't go there because of the expense. You know what I mean?

DR LIBBY: It's really tricky. I never want people to feel left out. However, I do feel that things need clarifying when it comes to affordability. I acknowledge that there are people in New Zealand who truly do not have the funds to allocate to eating wisely. But there are also families who use that as an excuse. They do have enough money – they just don't use their money

for healthier eating because it's not a priority.

For example, I couldn't care less if I didn't buy a new pair of shoes for the next few years if it meant I could eat like this. My priority is to nourish myself because I want great health! Someone might look at broccoli and say, "What? It's \$6 a kilo at the moment – I'm not paying that!" – but that same person might buy one or two takeaway coffees a day. They'll happily spend \$8 a day on coffee, but they won't pay \$6 for broccoli.

I think there has to be a conversation around priorities and the way people allocate their money.

GRAPEVINE: Got one last word of advice?

DR LIBBY: Most people aren't good at eating *less* of things – at eating *less* refined sugar, or whatever. If it was that easy, they would've done it already! So I want to encourage people: don't focus on eating *less* of things – focus on eating *more real food!* It's one of the biggest game-changers when it comes to people's health!

If you forget every other detail, and just eat food the way it comes in nature ... as often as you can ... that alone will change your health and life big-time! ❁



Remember Grapevine in your Will

We started Grapevine 33 years ago to "give Kiwi families a lift" ... to promote stable, loving relationships ... to tackle family hurts and headaches in a positive, helpful way. Each year we deliver 500,000 copies free-of-charge to homes all over New Zealand, funded entirely by gifts.

Your **BEQUEST** will keep working long after you've gone, ensuring Kiwi families will continue receiving encouragement and inspiration from Grapevine for decades to come. Please consider it.

Thanks so much – John Cooney (founder)

