

Ockham's Razor



Salt Matters — February 4, 2007

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Dr Trevor Beard is an Honorary Research Fellow at the Menzies Research Institute in Hobart. In this programme he discusses the effect of a salty diet on blood pressure.

Transcript

Robyn Williams: Are you one of those taking regular pills for high blood pressure? Those pills, along with various vitamins and painkillers, must be amongst the highest earners on the pharmaceutical companies' lists.

But why do we otherwise normal, healthy people, get hypertension? And don't forget, because our doctors won't let us, that hypertension is one of those factors predisposing us to heart disease, kidney problems and much else.

Well Dr Trevor Beard has been thinking about all this for many years. He's been pondering why most of us in Western countries are susceptible, while those who, for instance, live in the highlands of Papua-New Guinea, have sweet, benign, childlike blood pressures, as long as they avoid Western diets. So, what's going on?

Dr Beard is an Honorary Research Fellow at the Menzies Research Institute in Hobart.

Trevor Beard: There's a little town in Massachusetts called Framingham. The population in 1950 was 28,000. In 1950, Framingham started what was destined to become the world's longest-running study of the main risk factors for heart disease, stroke and high blood pressure.

They recruited over 6000 adults who were willing to keep turning up, every year, to supply and update full details about their diet and lifestyle; have a full medical examination; and have a few blood tests.

They were collecting data on the diet and lifestyle that can lead to illness, if you knew it would make you ill you might not do it perhaps. The whole aim was to collect data in advance of any sign of illness. In the event of illness later on, Framingham then had accurate data on the diet and lifestyle that preceded it.

The early data helped to establish cholesterol as an important risk factor for heart disease, and Framingham began to attract world attention.

Eventually the federal funding ran dry. But that was not the end of the study. For decades afterwards, public appeals raised all the money they needed to continue the study.

Fifty years later, in the year 2000, they were still seeing some veteran participants who had joined at the very beginning in 1950. You may well ask what the data from half a century could tell us that we didn't already know.

The answer was something quite startling: they found that people who survive to middle age have a 90% lifetime risk of getting high blood pressure before they die.

The salt industry has been saying that only one adult in six has high blood pressure, therefore the other five can eat as much salt as they like.

But the one in six figure is the prevalence that you find in a cross-section of the adult population. And a cross-section contains lots of young adults who are not old enough yet to have high blood pressure. It will be their turn later.

A few young people may die early with a normal blood pressure. For those who reach middle age, it is not one in six, it is 9 out of 10, who will get high blood pressure before they die.

In industrial societies blood pressure rises steadily with age, faster in some people, slower in others, but it rises inexorably in virtually everybody. I got interested in this when it happened to me.

I had spent two-thirds of my professional life in a general medical practice, and after specialising in public health, I discovered I had borderline high blood pressure.

I took it seriously because both of my parents had died of strokes, and my only sibling, an older brother, already had high blood pressure.

Ockham's Razor warns us, in a free translation from the Latin, don't let the contributory causes of a disease give you a blind spot for the one necessary cause.

For example, tuberculosis has contributory causes like poverty, malnutrition, overcrowding. But none of those can cause TB in the absence of the tubercle bacillus, the tubercle bacillus is the one necessary cause.

Salt looks like the necessary cause of high blood pressure. For instance, overweight and obesity can make it worse, but thin people also get high blood pressure. Over-indulgence in alcohol can raise blood pressure, but teetotallers can get high blood pressure. Lack of exercise, but even athletes get high blood pressure. Plenty of fruit and vegetables in the diet will lower your blood pressure for various reasons, including a potassium content; but chimpanzees eating nothing else except fruit and vegetables get high blood pressure if salt is added, and only if salt is added.

If salt turns out to be the one necessary cause, as seems likely, that will explain why the modern epidemic of high blood pressure is confined exclusively to populations that add salt to their food.

Food with added salt came so late in human evolution that we are not genetically adapted to it. It was only the Industrial Revolution about 10 generations ago, that made salt cheap and abundant enough for the lavish use we make of it today.

Dotted around the world in isolated habitats, about 20 tribal societies have lived right up to the 20th century without any technology for manufacturing salt. They've never discovered it. We call them 'salt free' societies, but of course they get the sodium and the chloride that they need from a natural diet. Everybody knows a balanced diet gives us all the nitrogen, potassium, calcium and phosphorus that we need and we just evolved on a diet that was giving us all the sodium and chloride that we needed.

Infants in 'salt free' societies get all the salt they need from breast milk, with no added salt, just as our own infants do. Older children and adults also thrive on a natural diet with no added salt in those societies.

'Salt free' societies have almost zero risk of dying with high blood pressure, and compare that with the salty Australian diet and lifestyle that gives us a 90% risk.

Stop there and think what that means. A diet that protected us like that would save the Australian government and taxpayers an enormous amount of money. We have abundant research evidence of that. I could do it myself. What other risk factors could I change?

I was already a thin man. I was already drinking alcohol in moderation. I already took exercise, cycling to work every day. I already ate lots of fruit and vegetables. My blood pressure rose with age, until I controlled my salt intake. Twenty-seven years later I still control my blood pressure, without medication, by controlling my salt intake.

Everybody needs to realise that salt matters. To find a website that tells you more, just type those two words into Google; Google gives you the web address. Those two words again: Salt Matters.

People who know better than anybody that salt matters, are patients who get the severe vertigo attacks of Meniere's Disorder. They have had first-hand experience of the most dramatic of all the salt-related health problems. Before they start controlling their salt intake, the severe giddy attacks make life unbearable while they last, and some victims with frequent attacks have told me they had literally contemplated suicide.

At the onset of an attack the room will suddenly start spinning violently. Patients find they are unable to stand, all they can do is lie on the floor. The slightest movement makes them start vomiting. Some make an agonising journey to hospital by ambulance, and some tell me they would rather die than endure that again.

Even when they recover they are seldom 100% well for several days. Some have to miss work for the rest of the week.

A study published in the United States in 1934 demonstrated unequivocally that the main trigger for the vertigo attacks is fluid retention due to a diet containing too much added salt. They found that most patients could abolish the vertigo attacks by controlling the excess salt in the diet well enough to remove the excess fluid in the body.

This was confirmed in London in the 1960s and I have confirmed it again and again in routine clinical practice at the Menzies Institute in Hobart from 1990 onwards. The American and British studies seem to have received scant attention. I only discovered them in a literature search when I was about to publish what I thought was a new way to control vertigo.

I stumbled on all this after a phone call from one of the Hobart ENT surgeons. Hearing I had a better way to control salt intake he rang me up with an interesting question: could patients with Meniere's Disorder control their salt intake well enough to prevent vertigo attacks without needing to take a diuretic.

Diuretics work by forcing the kidneys to excrete salt faster than normal. That is safe at a moderate salt intake. But a moderate intake is a balancing act between a salt intake that makes a diuretic safe, and a salt intake with a risk of vertigo. He also said the vertigo attacks in Meniere's Disorder are often surprisingly infrequent. Even without treatment there may be an interval between attacks of a month or several months.

Diuretics have to be prescribed in low doses to reduce long-term side effects. And low doses don't stop every attack. It seems far from ideal to prescribe a daily tablet that can have long-term side effects and doesn't always work.

Well, we found the short answer to that question was Yes, patients with Meniere's Disorder can control their salt intake well enough to prevent vertigo attacks without taking a diuretic. They just have to keep their salt intake below the level that causes fluid retention.

So the next question is how. And you won't believe this, but the Australian Dietary Guidelines have that effect. You just have to follow them.

The salt guideline is to choose foods low in salt.

Eat any fresh food; with rare exceptions they are all low in salt. Select processed foods by their sodium content. By law, every food label has to show sodium in milligrams per 100 grams. Low salt foods, again by law, must have no more than 120 milligrams per 100 grams.

That is the tedious bit, reading food labels, but it need not be. Australia needs the Traffic Light food labels that the UK has just introduced. You can choose low salt foods at a glance, they all have a green light.

With Traffic Light food labels, anyone can treat salt-related health problems: just eat any fresh food, and select processed foods that have green lights for salt.

Patients think it's a miracle when they abolish the deadly vertigo attacks just by choosing better food, without drugs or surgery or other treatment of any kind, and they are the most grateful patients I have ever had.

Some of them appear to have nominated me for an award, because I found myself elected Senior Australian of the Year 2006 for Tasmania. The official citation said it was for my work at the Menzies Institute. I don't know what else I have done there that would surprise anybody. If you ever want to follow this up, just remember those two words: Salt Matters and type them into Google.

Robyn Williams: So Google away. Senior Australian of the Year in Tasmania, 2006, Dr Trevor Beard. He's at the Menzies Research Institute in Hobart. And a fellow Taswegian did some of that groundbreaking work on chimps and salt in the Gabon, Professor Derek Denton, who, by the way, will be on In Conversation at length next Thursday at 7.40 pm after Movie Time on ABC Radio National. He'll be talking about consciousness.

Next week, Ockham's Razor comes from Melbourne, where Asperger's Syndrome rides again; the irrepressible Chris Nagle.

I'm Robyn Williams.