

# A sprinkling of doubt

Excess dietary salt is a killer and you should take any evidence to the contrary with a large pinch of the stuff, say **Franco Cappuccio** and **Simon Capewell**

SALT hidden in food kills millions of people worldwide. Reducing dietary salt is therefore important for public health; it is also one of the cheapest and easiest ways to save lives. So why are efforts to cut dietary salt being met with fierce resistance?

First the facts. Decreasing salt intake substantially reduces blood pressure, thus lowering the risk of heart attacks and strokes. An analysis of all the available evidence, published in 2007, suggested that reducing salt intake around the world by 15 per cent could prevent almost 9 million deaths by 2015. That is on par with the public health benefits of reducing cholesterol and stopping smoking (*The Lancet*, vol 370, p 2044).

Other analyses have concluded that cutting daily salt intake by 5 grams could reduce strokes by 23 per cent and cardiovascular disease by 14 per cent (*BMJ*, vol 339, p b4567; *Journal of Human Hypertension*, vol 23, p 363).

The benefits of salt reduction may also extend further. Links have repeatedly been reported between high salt intake and chronic kidney damage, stomach cancer and osteoporosis.

There is no doubt that our salt intake is excessive. A typical British adult consumes roughly 8.6 grams of salt per day. Americans consume even more, about 10 g, which is almost twice the recommended limit in the US. It is also over six times what the body actually needs.

According to US national dietary guidelines, adults should eat no more than 6 g of salt a day.



The World Health Organization recommends 5 g. Even this is in excess of bodily needs. The physiological “adequate intake” for an adult is only about 1.5 g.

US guidelines are being updated and the 2010 version is widely expected to recommend a lower salt intake. New UK recommendations, from the National Institute for Health and Clinical Excellence, are also awaited with interest.

This excess intake is not a matter of personal choice. Only about 15 per cent of the salt in our diets comes from our own salt shakers; the rest is added to foods before they are sold. Salt is added to make food more palatable, to

increase the water content of meat products and to increase thirst. All generate profit for the food and drink industry.

This hidden salt means it is important to read labels and buy foods that are low in salt. That, however, is not enough. It is fine for people with the education, income and time to read and understand labels and the energy to modify their behaviour. But real life is rather different for many of us. Hence the need for public health interventions.

**“Excess intake of salt is not a personal choice. Most of the salt in our diets is added to food before it is sold”**

Most people agree that even in free-market economies, governments have a duty of care. This is especially true for children, who are particularly vulnerable to high salt intake.

This is the ethical justification for public health interventions in salt consumption. Governments legislate to make public spaces smoke-free, and they mandate cholera-free drinking water. They should also aim to progressively reduce the salt hidden in food.

In the US, the New York City Health Department is doing exactly that. It is coordinating the National Salt Reduction Initiative, a coalition of cities, states and health organisations working to help food manufacturers and restaurants voluntarily reduce salt. Fifteen state health departments are already signed up. The goal is to reduce Americans’ salt intake by 20 per cent over five years. An authoritative analysis suggests that this may save tens of thousands of lives each year and avoid billions of dollars in healthcare costs (*The New England Journal of Medicine*, vol 362, p 650).

It can be done. Since 2004, the UK Food Standards Agency has been working with the food industry to reduce salt through clearer labelling and progressive reduction of salt so that consumers neither notice nor mind. As a direct result, average UK salt intake has fallen from 9.5 g to 8.6 g per day.

Other countries, notably Japan, Portugal and Finland, have done much better, reducing average



salt intake by 5 g or more per day via a combination of regulation, labelling, public education and collaboration with industry.

Earlier this month the US Institute of Medicine recommended government intervention to reduce salt intake. However, the food industry is fighting a bitter rearguard action against any such move. The salt industry's annual turnover is several billion dollars and it has no plans to downsize. Thus, in advance of the new US guidelines, articles have appeared in *The New York Times* and elsewhere claiming that the evidence for reducing salt is not clear-cut.

This controversy is fake. The evidence for salt reduction is clear and consistent. Most of the "contradictory research" comes from a very small number of scientists, most of whom are linked to the salt industry. However, it takes skill to spot misinformation and subterfuge. And so the confusion is successfully promulgated.

It is a familiar story. The tobacco industry spent decades denying that smoking caused fatal diseases. Their very successful strategies included accusations of scientific conspiracies, selective use of scientific evidence, and paying scientists to produce evidence to contradict the public health experts and confuse the public. In general, the food industry is more ethical, but it is far from squeaky clean.

Lives can be saved by cutting salt. How many depends on whether politicians choose to accept the evidence, or cave in to industry pressure instead. ■

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## One minute with... Jerry Zucker

The film director and producer talks about his bid to improve the way movies portray science

### How well do you think movies have represented science?

I think it is a mixed bag. Sometimes it has been great, sometimes I cringe. In some ways Hollywood has done science a real disservice, since the scientist is frequently played as a crazed megalomaniac out to create life at any cost. Then you have a movie like *The Core*, which was full of science babble. On the other hand you have *The X-Files*, in which one of the lead characters is a female scientist, as a result of which more women started choosing science as a career.

### You founded the Science and Entertainment Exchange in 2008. What's the idea behind it?

It came out of a conversation with the president of the National Academy of Sciences, who wanted to see if we could use our ties with Hollywood to communicate more and better information about science. The NAS thought the best way to get the word out was through documentaries, but that would be ineffective unless you're Michael Moore. We thought it would be better if we could act as a resource for the movie community, to interest them in science and help them with science-related issues.

### How do film-makers use your organisation?

If someone wants to know the facts, we can connect them to the people who can tell them. It's also a brainstorming resource. We hold small gatherings of entertainment people and scientists, such as physicist Brian Greene and neurologist Stanley Prusiner, to explore ideas. For example, if you're working on a science fiction script about sending astronauts to another galaxy, scientists can provide more interesting theories about how it might be done than screenwriters.

### What are your aims?

We're looking to cultivate an appreciation and a love of science. There are plenty of medical dramas that have doctors on set for accuracy – they stretch the limits quite a bit, but they make people watch the shows and they make medicine seem like a good profession. In a sense we want



### PROFILE

Jerry Zucker's films include *Airplane!* and *Ghost*. With his wife he started the Science and Entertainment Exchange, which recently worked on *Iron Man 2*, out this week.

to do the same with science. It is a little harder, as science is about solving problems rather than fast-paced action. But the more we can get the entertainment community fascinated by science, the more we'll get positive messages about science out there.

### Which movies have you helped out with?

This year we've helped with *Iron Man 2* and *Tron Legacy*, the sequel to the 1982 sci-fi film *Tron*. We're working on others, such as a script being developed by Roland Emmerich, who wrote *The Day After Tomorrow*, which has a strong genetics and bioweapons focus.

### Are there any similarities between what scientists and film-makers do?

They're both creative, require a certain imagination and both are problem-solving enterprises. When you're writing a screenplay you have to figure out how all the pieces are going to fit together. In general I have noticed that scientists and film-makers hit it off. They're fascinated by one another.

**Interview by Michael Bond**