

Sense about... science for celebrities / Sense About Science.

Contributors

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SENSE ABOUT...

SCIENCE FOR CELEBRITIES

People in the public eye are often drawn into promoting theories, therapies, and campaigns that make no scientific sense. This leaflet shows how easily some mistakes could have been avoided. Now it's possible to **check the facts** *before* going public. Hundreds of scientists from many fields are available to help you get it right for the public. It costs a phone call.

... healing by
touch alone...

... natural
is best...

... kids who drink the most
milk gain the most weight...

... vaccines overload
immune systems...

... what you put on your skin
goes into your bloodstream...

Check the facts. Call Sense About Science on



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WARNING! Mumbo jumbo is sometimes dressed up to sound 'scientific'

Gillian McKeith – television presenter
on the nutritional benefits of eating seeds

"...each sprouting seed is packed with the nutritional energy needed to create a full grown healthy plant."

Dr Steve Rawsthorne – Plant Scientist, John Innes Centre



This is a nice idea Gillian, but when we eat seeds we don't break down the stored products like a plant does, so we do not get the same balance of energy and nutritional components that the plant benefits from. A seed has stored proteins, starch and oil that are broken down when water is added to give it the energy and molecular building blocks to start the germination process and grow into a seedling. To become a fully formed plant the seedling then needs sunlight and more water.

Jenny Seagrove – actress
speaking about vivisection in the UK

"New technology has been discovered using microdosing of drugs that can be used instead of animals and primates."

Prof. Nancy Rothwell – Physiologist, Manchester Univ.



The mistake is understandable Jenny, but micro-dosing is a technique for measuring how small doses of drugs move around the body. It has not yet been properly validated, but in the future it may replace some animal tests. Unfortunately, if we want new medicines for diseases like cancer or cystic fibrosis, there are some cases where there are no alternatives to using animals.

Madonna – pop star

Dr Artur Spokojny, a Kabbalah follower, claims to have decontaminated Lake Glyboke, Chernobyl

"I mean, one of the biggest problems that exists right now in the world is nuclear waste... that's something I've been involved with for a while with a group of scientists – finding a way to neutralise radiation."

Dr Nick Evans – Environmental Radiochemist, Loughborough Univ.



Radioactivity cannot be 'neutralised', it can only be moved from one place to another until it decays away at its own rate. It comes in many different types: some last for billions of years, others decay away in a few minutes. There are no magical solutions.

Need to speak to a scientist?

... and what we put into it

Heather Mills McCartney – former model

“...every day there's a new report warning that obesity levels in children are out of control... The fact that those kids who drink the most milk gain the most weight should cause alarm bells to be ringing everywhere. It isn't and milk is still being pushed as essential for children.”

Dr Philip Coan – Physiologist, University of Cambridge



It is not true to say that children who gain the most weight are doing so because of milk consumption. A US study looked at drink consumption in 2-5 year olds over a three year period.¹ It found no link between increases in child weight and increases in drink consumption. In relation to milk, child weight was not linked to whether the children drank full fat, semi-skimmed or skimmed milk.

Dr Joanne Lunn – Nutritionist, British Nutrition Foundation



Milk is one of the most nutritionally complete foods and if people excluded milk and dairy products from their lives, they would miss out on many of the most important constituents of a healthy diet.

Joanna Lumley – actress

“We cannot go on force-feeding animals chemicals and growth stimulants the way we are. Why do you think cancer is roaring ahead at the moment?”

Prof. John Toy – Medical Director, Cancer Research UK



Cancer is not ‘roaring ahead’. It is more common mostly because people are living longer. It is essential that ‘cancer causing’ claims are based only on scientifically proven facts, not scaremongering. There is no definitive evidence that controlled food additives cause cancer. We do know that half of cancers are caused by lifestyle factors such as being overweight.

¹ O'Connor TM, SJ Yang & TA Nicklas 2006 Beverage intake among preschool children and its effect on weight status. Pediatrics 118, e1010-8

WARNING! Natural doesn't mean better

Elle Macpherson - model
on the benefits of organic food

"I feel happy that I can feed my family food that avoids unnecessary pesticides and harmful food additives."

Prof. Nick Price - Toxicologist



Pesticides are a necessary part of agriculture and residues will appear infrequently - on organic and conventional produce alike. However, permitted residue levels are so low that even regular eating of food containing pesticides at the maximum levels wouldn't do you any harm.

Ursula Arens - Dietitian, British Dietetic Association spokesperson



Elle, approved additives are not harmful for nearly all people. They have been assessed as safe for human consumption and their use is strictly controlled. In fact, additives can make food safer by, for example, stopping it going off too quickly.

Jamie Oliver - chef
on the benefits of organic food

"I want to cook with the best ingredients and have food the way it should be: healthy, tasty and grown with nature."

Prof. Vivian Moses - Biologist, King's College London



Jamie, we all like healthy and tasty, but what do you mean by 'grown with nature'? Not one of our crop plants or domestic animals exists in the wild: they have all been created by selective breeding over the past 10,000 years. Wheat, for example, doesn't exist in nature; we made it.

And nowhere on earth do crop plants exist in rows unless we put them there.

WARNING! If it sounds too good to be true, it usually is

Amanda Lamb - television presenter

"... he explained that he was targeting something called the 'shenmen' or heart point of my ear, which supposedly calms the mind... [I got to the airport] to find the whole place in chaos ... I suddenly realised how calm I felt."

Chris de Burgh - pop star

"... he was in serious pain, just below the knee, and I felt the area above had been traumatised. I started feeling and I'd say within 20 minutes, he was walking again. It took away the pain."

WARNING! Toxic effects depend on dose

David Baddiel – comedian

"If I can have this level of chemicals in my blood just from sitting on the sofa, watching TV and eating huge amounts of junk food, what hope is there for the rest of us?"

Melinda Messenger – model

"Why should I allow my body or my children to be filled with man-made chemicals, when I don't know what the health effects of these substances will be?"

Sharon Davies – world champion swimmer

"Everyday products in the home and the office contain hazardous man-made chemicals that harm wildlife, build up in our bodies and can interfere with our children's development."

Dr John Hoskins – Toxicologist



Away from the high doses of occupational exposure a whole host of unwanted chemicals finds their way into our bodies all the time. Most leave quickly but some stay: asbestos and silica in our lungs, dioxins in our blood. Do they matter? No! The most important thing is dose: one aspirin cures a headache, a hundred kills. The chemical baggage we carry is very small. It is only because of the great advances in analytical chemistry that we are able to detect it's there at all.

Prof. Anthony Dayan – Toxicologist



Hazardous chemicals, be they man-made or naturally occurring, should not be ignored and they aren't. The use and release of chemicals is subject to many regulations by governments and international bodies, and their stringent controls limit exposure to well below dangerous levels.

Dr Shaun Treweek – Health Services Researcher, Dundee Univ.



Amanda, are you sure that your calmness was due to the acupuncture? Chris, are you sure that the pain relief was due to your healing hands? To test this we need to do a randomised controlled trial, where the patients are randomly allocated to either the test therapy or a comparison therapy. Otherwise, you can't be sure that what happened wasn't due to chance.

Prof. Peter McNaughton – Pharmacologist, Cambridge Univ.



Sensation of pain is very subject to suggestion, so I am not surprised that Chris' friend could be made to 'feel no pain'. That does not mean that there was any change to the injury that caused the pain, but more likely a reduction in the extent to which he noticed the pain.