

## Health

# Spreading the organic word to Aussie doctors

**BFA nutritionist SHANE HEATON was invited as keynote speaker to the AIMA 11th International Holistic Health Conference, where he helped hundreds of doctors understand the importance of organic food to their health-compromised patients and the general public. Here is his presentation in full.**

A growing number of consumers, especially those dealing with chronic illness, are switching to organic food. A key motivation for consumers doing this is a simple belief that it is better for them.

But is it true? Official food agencies around the world are unanimous in claiming there is no evidence of a nutritional difference.

Yet a more careful and thorough review of the science comparing organic and non-organic foods reveals that collectively, the available evidence does indeed support the consumer belief and industry claim that organic food is safer, more nutritious and better for you than non-organic food.

## HIGHER NUTRIENTS

It is often claimed that "a large number of studies have found no difference in the nutrient content of organic and non-organic crops". It is true there have been more than a hundred studies comparing the nutrient content of organic and non-organic foods and the results are inconclusive.

This is because the majority of studies are of poor quality, being either agriculturally or analytically flawed. I reviewed the literature using clear validity criteria to ensure relevant nutrients were being compared in properly matched organic and non-organic crops. This eliminated 72% of comparisons as invalid.

The results of these spurious studies were either dramatic, inconclusive, non-significant or inconsistent, as would be expected, and served only to obfuscate the clear trend in the valid data that organic crops on average contain higher levels of trace minerals, vitamin C, and antioxidant phytonutrients.

Official food composition tables reveal that since the 1940s, mineral levels in fruits, vegetables, meat and dairy have declined substantially. Combine this with earlier picking, longer storage and more processing, and it is not surprising we may be getting fewer nutrients in our food than we were 60 years ago.

Because artificial fertilisation produces lush growth and swells conventional plants and produce with more water, there is more "dry matter" (that is, food), weight for weight, in organic food. Partly because of this and for other reasons too, there are higher levels of nutrient in organic produce.

Research by American nutritionist Virginia Worthington has confirmed that based on current dietary patterns, the differences can be enough to help you achieve the recommended

daily allowances for certain nutrients that you otherwise may not have.

We can expect also that phytonutrients, many of which are antioxidants involved in the plants' own defence system, will be higher in organic produce because crops rely more on their own defences in the absence of regular pesticide applications.

Evidence is emerging that confirms this expectation. Higher levels have so far been found of lycopene in organic tomatoes, polyphenols in organic potatoes, flavonols in organic apples, and resveratrol in organic red wine.

A recent review of the subject estimated that organic produce will tend to contain 10%-50% higher phytonutrients than conventional produce.

## LOWER PESTICIDE RESIDUES

Consuming more organic food certainly is not the only way to improve one's nutrient intake but it may be the safest.

It is regularly claimed that pesticide residues in foods are known to be safe on the basis of total diet surveys which find "the levels of pesticide residues in our food are very low and in all cases are within acceptable safety limits".

Monitoring programs consistently show around one in three of all non-organic food samples tested contain a variety of pesticide residues, while far lower levels are found in, and on, organic produce.

Rigorous safety assessments are claimed to confirm that pesticide residues are no threat to human health but consumers intuitively know this is a false assurance.

Many samples of fresh produce carry multiple pesticide residues, yet safety levels are set for *individual* pesticides. They do not take into account the cocktail effect of combinations of pesticides in, and on, foods.

And research is emerging confirming the potential for synergistic increases in the toxicity of pesticides up to 100-fold, resulting in reproductive, immune and nervous system effects not expected from individual compounds acting alone.

Israeli researchers have linked symptoms such as headaches, tremor, lack of energy, depression, anxiety, poor memory, dermatitis, convulsions, nausea, indigestion and diarrhoea with dietary intakes of pesticides.

Belgian research has found women diagnosed with breast cancer are six to nine times more likely to have the pesticides DDT or hexachlorobenzene in their bloodstreams compared with women who did not have breast cancer.

Hawaiian researchers following 8000 people for 34 years



have found that increasing consumption of fruit and juice (and the pesticide residues they carry) raises the risk of Parkinson's disease.

Dr Vyvyan Howard, toxico-pathologist at the University of Liverpool, Britain, suggests: "People are applying the precautionary principle to their own lives by purchasing food that has not been produced by industrial methods. From the simple stance of hazard avoidance, organically produced food is the best option that we have."

The British Medical Association appears to agree.

"Until we have a more complete understanding of pesticide toxicity," they say, "the benefit of the doubt should be awarded to protecting the environment, the worker and the consumer. This precautionary approach is necessary because the data on risk to human health from exposure to pesticides are incomplete."

#### **CHILDREN NEED IT MOST**

Children's immature and developing organs, brains, detoxification and immune systems, plus their larger intake of food per

kilogram of body weight, combine to make them even more susceptible to toxins than adults.

American toddlers eating mostly organic food have been found to have less than one-sixth the pesticide residues in their urine compared with children eating conventional foods, lowering their exposure from above to *below* recognised safety levels.

Elizabeth Gillette's landmark 1998 paper in the journal *Environmental Health Perspectives* showed how a combination of low-level environmental, household and dietary exposures caused subtle yet measurable developmental deficits in children.

Gillette compared children in two nearby isolated villages in Mexico: one in which pesticides were routinely used in their farming, and one in which they were not. Everything else was the same between these two villages – genes, diet, lifestyle, climate, culture, etc.

To assess childhood cognitive development, standard anthropological assessment tools were used, including eye-hand co-ordination, short-term memory and the ability to draw a person.

What the study found was impaired cognitive development in children from the village that routinely used pesticides, as demonstrated by these efforts by four- and five-year olds to draw a person.

The drawings on the left are by four- and five-year-olds from the village in the foothills, where pesticides were not used, while those on the right are by children of the same age from the village in the valley, where children were exposed to pesticide residues in their diet, homes and the environment.

In many Western countries, children and adults are similarly exposed to multiple sources of pesticides. In 1995, an Australian study of breast milk found infants regularly exposed to several pesticides at levels greater than the ADI.

In Canada, a direct correlation has been observed between breast-milk pesticide contamination and the risk of otitis media in Inuit infants.

## FOOD ADDITIVES

Artificial colourings and preservatives in food and drink are thought to contribute to hyperactivity in pre-school children. While many still contest this issue, a recent study in Britain found that the proportion of hyperactive children halved when additives were removed from their diets.

Many additives such as preservatives, artificial sweeteners, colourings and flavourings, monosodium glutamate, hydrogenated fats and phosphoric acid are prohibited in organic food production.

## ANTIBIOTIC RESISTANCE

Considering the growing problem of increasing antibiotic resistance in pathogenic bacteria, animal farming may be a much larger contributor to the problem than over-prescription of antibiotics by doctors.

While the use of antibiotics is severely restricted in organic farming, they are used extensively in non-organic farming to promote growth and prevent disease from decimating intensively reared and overcrowded farm animals.

As much as 60% of all the antibiotics used in Australia are given to farm animals, not people.

In Australia, the University of Queensland marine biologist Dr Simon Costanzo reported in the March 2005 issue of *Marine Pollution Bulletin* that antibiotics and antibiotic-resistant bacteria are common in the sewage and waterways of Brisbane, potentially posing a threat to human health and the environment.

The British Medical Association has warned that antibiotic resistance is "one of the major public health threats that will be faced in the 21st century", while the World Health Organisation has called for a reduction in their use in agriculture.

Better animal welfare standards in organic farming minimise the need for antibiotics and other veterinary drugs, which are used only when strictly necessary.

## BETTER HEALTH OUTCOMES

A recent review of controlled animal feeding trials found significant improvements in the health of animals fed organic feed. It concluded:

"Reproductive health, incidence and recovery from illness are sensitive measures of health status and should be given appropriate weight. Taking all of this into account, the available data is very strong with regard to the health benefits of organic feed and food."

Similar tests with humans are problematic, although evidence is emerging here too.

An early observational study revealed boarding-school students eating mainly organic food for three years experienced a "very marked decline" in colds and influenza, more rapid convalescence, excellent health generally, fewer sports injuries, greater resilience to fractures and sprains, clear and healthy skin, and improved dental health".

A recent Danish organic human three-week feeding trial with 16 subjects found significantly higher concentrations of the antioxidant flavonoid quercetin not only in the organic diets but also in the urine of those who ate organically, confirming increased absorption and systemic circulation.

## THE BOTTOM LINE

So is organic food better for you? In my opinion, yes. Decreasing one's toxin burden and increasing one's vitamin, mineral and antioxidant intake can significantly improve and restore health.

Can people afford it? I am certain of it.

Official household spending statistics in Australia and Britain reveal the average family spends five times more on junk food, take-away food, alcohol and tobacco than fruit and vegetables, and five times more on recreation than on fruit and vegetables.

To make healthier choices, they need encouragement and education. Health practitioners of every persuasion are on the frontline. I believe it is a false assumption that advocating organic food will reduce fruit and vegetable consumption due to the higher price.

Perhaps they will cut down on junk food, takeaway, alcohol and cigarettes. Some even report anecdotally that the better taste of organics encourages increase in fruit and vegetable consumption that was not achievable before.

Chris Ashton, of the British-based Nutritional Cancer Therapy Trust, says: "Those concerned with the fight against disease know that our bodies are designed to overcome disease processes before they become established. Our systems are readily disrupted by toxins and an absence of sufficient quantities of nutrients.

Recommending organic food is a simple way to reduce an individual's toxin burden of pesticides and food additives, increase their nutrient intake, and perhaps alter their consumption patterns away from less healthy choices.

Organic food is not a luxury. It is how food is supposed to be, and a valuable part of any regime intended to maintain, improve or restore health. ■