

Grain of truth

Wheat, rice, corn, oats ... good or bad for you? That depends on what form they take, writes JOANNA McMILLAN PRICE

A vegetarian diet is generally thought a healthy way to eat — if it's balanced, at least. Certainly, if you cruise the aisles of any health-food shop, you'll find a vast array of plant foods, including numerous grains and foods made from grains, but seldom anything that comes from an animal, the clear implication being the latter is not "health foods".

Research tends to support this widespread belief, suggesting vegetarians are less likely to be obese and have less chronic illness such as heart disease. High-fibre intakes from a diet high in plant food, including whole grains, are generally shown to be beneficial, while a high meat intake has been linked to increased risk of chronic diseases such as colon cancer.

Yet, on the other side of the coin, high-protein/low-carbohydrate diets such as Atkins tell us grains are pretty toxic to us, making us fat and causing or contributing to many of the chronic diseases afflicting the developed world.

No wonder so many of us are confused over what to eat and who to believe. So should we eat grains or not?

The argument against eating grains is primarily one of evolution. Genetically, we have changed little since our hunter-gatherer days. The best evidence shows that at that time, animal foods dominated the human diet. Plant foods, too, were consumed in large quantities, but mostly those that could be eaten with little preparation or cooking.



All grains require processing and/or cooking to be edible.

Grains are not easily harvested and can almost never be eaten direct from the plant — they require some kind of processing and/or cooking to make them edible. Grains did not, therefore, become major dietary players until the dawn of agriculture when humans learned how to grow and harvest crops to support the community.

This process started some 10,000 years ago and from this time grains became an increasingly important part of human diets everywhere. So much so that today grains provide the staple food for many communities worldwide. Indeed, from a purely environmental point of view, we can no longer feed the world's population on an animal-based diet — we need grains and other plant foods to sustain us.

In evolutionary terms, however, we're

talking about a very short period of time. There is therefore a valid argument that genetically we have not (yet) evolved to cope with the change from a predominantly animal-based to a more grain-based diet.

Yet there is a major flaw in this argument: while we have eaten grains for thousands of years, overweight and obesity have only become a major problem in the past 50 years. In fact, the exponential rise in obesity is only in the last 20 years. Perhaps the problem lies not in grains per se, but in what we do to them.

When humans started to eat grain foods, we would have ground it roughly between stones to crack the hard outer shell, added water to the resultant mix and then cooked it in some way. Over time, we learned how to use grain to make bread or porridge, or as a thickener in stews. We learned that grains

could plump out a meal, making it go a lot further relatively cheaply.

It's the same story today. Animal foods tend to be much more expensive, while grain foods are cheap and readily available. But we have now learned how to grind them, remove the tough outer husk and polish the grain down to just the starch-rich centre. We can then cook the polished grain to give a fluffy white rice, for example, or grind this starch centre to a fine flour to produce fluffy white breads. Or we take the fine flour and mix it with fat and sugar to make biscuits, cakes, crackers, breakfast cereals and so on.

You can see that, over time and with sophisticated food manufacturing techniques, we have moved further and further away from the grain in its natural state. In fact, all we do is strip the grain of almost all its fibre and micronutrient content and use only the energy-containing part: the starchy centre.

We can measure the effect of this processing on our body. When carbohydrate-containing foods such as grains are eaten, the food is digested and broken down in the intestine to release the individual sugars, principally glucose. These are then absorbed into the bloodstream where the glucose is transported to cells all around the body to be used as fuel or stored for later use. How quickly this happens varies, depending on the food.

This is the basis for the glycaemic index (GI). The GI compares foods, gram for gram of carbohydrate, by directly measuring the rise in blood glucose after eating the food. If we compare directly the GI of grains under increasing levels of processing — ie whole grains, cracked grains, wholemeal flour and so on — to fine flour, we see a step-wise increase in the glycaemic response.

While we have eaten grains for thousands of years, the change in the past 20-50 years has been a dramatic increase in the consumption of processed grains with a high GI. As a result, the rises and falls in our blood glucose levels today are far larger than in the past and our bodies are just not designed to cope with this.

As to whether or not grains are good for us, the answer is clearly dependent on what form the grains are in. The positive research supporting the role of grains in the diet is almost always using whole grains or minimally processed grain products. Similarly, the evidence for consuming low-GI foods grows, supporting the same conclusion.

In practice, this means fewer foods made from white flour, including bread, biscuits and cakes, and less polished white rice (at least choose a lower-GI variety). Instead, we can increase our range of grains focusing on those we can consume with minimal processing and/or that have a low GI.

Venture into the health-food aisle of your supermarket and you'll find many grains that fit the bill. While some may be new to you, interestingly they are almost always part of traditional diets from other parts of the world. Barley, thought to be one of the first grains cultivated, makes a good nutty base for a risotto-style dish. Bulgur is popular in Middle-Eastern dishes such as tabouli. Freekeh™ is an ancient Mediterranean grain with more fibre, protein and micronutrients than many others. Rolled oats (even Scotland has its healthy food!) make a nutritious breakfast as porridge or muesli. And quinoa (pronounced *keen-wa*), a tiny South American grain that was once the food of the Incas, has a high protein content, is nutrient-rich and can be used in a similar way to couscous.

In the bread aisle, look beyond your basic sliced white bread and be adventurous in trying a selection of wholegrain options: European-style grainy breads, rye sourdough, spelt flour breads, mountain bread based on barley, rye or corn, and traditional wholemeal flat breads are all far more nutritious choices.

Expand your culinary diversity beyond processed wheat and rice and the bottom line is grains can indeed be a nutritious and delicious part of your diet. We needn't look as far back as hunter-gatherer time for lessons from the past — we can learn much from the traditional diets of our contemporaries all around the world. ■

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