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Food Is Medicine Until It Isn't – Part I

In recent years, experts and the general public have seen their interest shift towards the brain-gut connection as a pivotal player in our health. Although the evidence in this arena of science only started piling up recently, humans have known for a long time that what we eat affects our overall health. In fact, the statement that "food is medicine" is documented as dating back to 400 B.C. when Hippocrates, an ancient Greek physician, would advise his patients to consume nutrient-dense foods to heal their ailments (Wegener, 2014). It is likely that the statement is even older as many peoples and cultures around the world hold beliefs passed down by multiple generations about food being the most potent medicine for all sorts of problems.

How We Went From Natural to Unnatural

When humans first started depending on agriculture, their lifestyles switched from nomadic to sedentary as they no longer needed to embark on daily adventures to locate and gather food (de Saulieu and Testart, 2015). After all, agriculture meant you had a steady and reliable food supply available in one place. With this new sedentary lifestyle, humans were able to allocate their energy to other activities like farming, building houses, and inventing innovative tools.

Today, the sedentary lifestyle is frowned upon for good reasons, but back when it first became a normal, it allowed our ancestors to evolve socially, intellectually, and culturally. Woefully, as all good things go, an excess of it does not equate to infinite gratification, and in other words, a plateau is inevitable.

Between the 18th and 20th centuries, people became more interested in participating in labour forces, leaving them very little time to care about their food (Silva, Sereno,

and do Amaral Sobral, 2018). This and other historical events led individuals to desire more convenient food sources, and so the food industry delivered people just this. Thus, processed foods grew in popularity, and even today, despite the terrible reputation that they get, they remain a huge part of the average individual's diet.

Processed Foods: Are They All Bad?

What counts as processed foods? The concept is not that complicated when you deconstruct it, but it does make many wonder "Why are these foods bad? What makes them so bad?" Processed foods are simply foods that are modified from their natural state. By this definition, cutting and boiling green beans makes them a processed food. However, does this mean that those greens beans are now unhealthy? Absolutely not.

There exist many processes by which natural foods can be converted into processed foods. This includes cutting, grinding, shredding, boiling, and heating – all of which are harmless as they rarely or significantly affect the nutritional value of your food. Besides those innocuous processes, other ones include chemical modifications (e.g., adding enzymes, preservatives, etc.), nutritional additions (i.e., adding vitamins and minerals), canning, dehydration, fermentation, emulsification, and many more! These are slightly more concerning as we have now modified our natural foods significantly.

Ring the Alarm! There's Chemicals in my Food!

With the rise of the Internet, information is becoming increasingly accessible to the general public. This is excellent news, but it also comes with a few downsides, one of which is mass panic. Notably, the word "chemical" is often thrown around when it comes to discussions about food, and it frequently evokes a lot of negative reactions from the general public. In essence, there is misunderstanding around the word "chemical" itself because it is rarely defined in popular media and used mostly in negative contexts.

To avoid any such confusions here, it is important to acknowledge that the term "chemical" merely describes any compound or substance found in the environment

that surrounds us, which includes food, water, air, and more. Chlorine, water, ascorbic acid (i.e., vitamin C), hydrogen peroxide, and formaldehyde are all examples of chemicals – some are harmless, while others come bearing bad news. The following sections of this article will focus on harmful chemicals found in our food.

The Bad Ones

Thanks to the work of scientists, many harmful chemicals have been identified. The following table lists common harmful chemicals found in foods that should be avoided:

Chemical Name	Health Concerns	Sources
Bisphenol A (BPA) and similar compounds	Endocrine (hormone) disruption; insulin resistance; diabetes; obesity	Ma et al., 2019 Vom Saal & Vandenberg, 2021
Mercury	Nervous tissue damage; fetal and child brain development	de Almeida Rodrigues et al., 2019
Polycyclic aromatic hydrocarbons (PAHs)	Risk of cancer; fetal development and pregnancy problems	Drwal et al., 2019
Nitrates and nitrites (AKA sodium nitrates and sodium nitrites)	Thyroid dysfunction; risk of cancer	Bernardo et al., 2021
Artificial food colouring	*Most evidence is pulled from animal studies which flag the following health concerns: thyroid dysfunction, risk of cancer, and nervous system dysfunction.	Dey & Nagababu, 2022
High-fructose corn syrup and	Diabetes; obesity; inflammation; heart disease	DeChristopher, 2022

other added sugars		
Sulfites	Allergic reactions; hypersensitivity; digestive troubles	D'Amore et al., 2020
Sodium benzoate	Gastrointestinal troubles (vomiting, diarrhea, nausea, etc.); neurotoxicity	Bruna et al, 2018

How To Avoid These: A Set of Realistic Tips

Besides avoiding the chemicals listed in the previous table, there are a couple more actionable steps you can take to set yourself up for success.

- **Remember that complicated ingredient names do not equal to harmful.** If you are concerned about a certain ingredient in your food, research that ingredient specifically to see if there is any reliable, expert evidence that can clear or confirm your concerns. Sometimes, this may mean asking an expert such as a health care provider or a registered dietitian.

- **Shop the perimeter of the grocery story, not the aisles.** This is an excellent rule of thumb that will allow you to skip the bulk of processed foods that most stores sell.

- **Cook your comfort foods at home.** Look, it is often unrealistic to claim that you will stop eating processed foods forever. Cravings are bound to occur, so instead of caving in and buying a burger at a fast-food chain, make a burger at home. This ensures you know exactly which ingredients are going into your food while getting the chance to satisfy your inner foodie.

- **Patience is key.** Giving up on processed foods can be a difficult journey as many of these are made with the goal of having you desire them more. Notably, foods high in sugar and fat often alter your taste buds to decrease your sensitivity to them, making you crave even sweeter and fat-heavy foods (this is

also why a strawberry may taste bland after eating a cookie). Fortunately, studies show taste buds can adjust to accommodate healthier diets (May and Dus, 2021).

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