When you read the labels on packaged food, do the long lists of bizarre ingredients make you wish you’d majored in biochemistry?

They’re not healthy choices. Conversely, when it comes to fruits, veggies, and grains, those that contain the most tongue-twisting phytochemical ingredients are actually the healthiest for you.

WHAT ARE PHYTOCHEMICALS?
In short, phytochemicals are plant-derived compounds. Julie Daniluk, holistic nutritionist and co-owner of The Big Carrot Natural Food Market in Toronto, says these chemicals protect plants from environmental stresses including insects and weather fluctuations. Some phytochemicals, such as anthocyanins in blueberries, are responsible for plants’ kaleidoscopic colour display. While phytochemicals are not essential nutrients and are not required by humans to sustain life, “it is becoming clear that they do infer a great number of health benefits to us as well,” says Daniluk.

HOW DO PHYTOCHEMICALS WORK?
There is mounting evidence that phytochemicals offer protection against several chronic diseases such as diabetes, cancer, heart disease, and Alzheimer’s. They wage their chemical warfare in a variety of ways. Acting as antioxidants: “Most phytochemicals are able to reduce the oxidative damage to our cells that can cause various diseases like cancer,” explains Daniluk. Polyphenols found in foods such as grapes and dark chocolate,
# Top 10 phytochemicals

Studies have shown that these 10 phytochemicals are particularly effective at keeping us healthy.

<table>
<thead>
<tr>
<th>Phytochemical</th>
<th>What it does</th>
<th>Where it’s found</th>
</tr>
</thead>
<tbody>
<tr>
<td>beta carotene</td>
<td>supports reproductive health; boosts immunity; tackles cancer</td>
<td>sweet potato, carrot, squash, cantaloupe, mango</td>
</tr>
<tr>
<td>lutein</td>
<td>fights age-related vision loss</td>
<td>kale, spinach, Brussels sprouts, egg yolk, broccoli, Swiss chard</td>
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<tr>
<td>sulforaphane</td>
<td>reduces cancer risk; inhibits bacterial growth</td>
<td>broccoli sprouts, broccoli, bok choy, cauliflower, kale</td>
</tr>
<tr>
<td>curcumin</td>
<td>diminishes inflammation and spread of cancer cells; may slow progression of multiple sclerosis</td>
<td>turmeric, curry powder</td>
</tr>
<tr>
<td>lycopene</td>
<td>battles prostate cancer and heart disease</td>
<td>tomatoes, red bell pepper, watermelon, red grapefruit, apricots</td>
</tr>
<tr>
<td>resveratrol</td>
<td>destroys cancer cells; curtails viruses; may even boost exercise performance</td>
<td>grapes, berries, peanuts, red wine</td>
</tr>
<tr>
<td>quercetin</td>
<td>helps combat cancer, heart disease, and respiratory disease</td>
<td>apples, capers, onion, citrus fruits</td>
</tr>
<tr>
<td>anthocyanin</td>
<td>lessens cognitive decline, urinary tract infections, and diabetes risk</td>
<td>berries, legumes, eggplant, red cabbage, red/blue grapes</td>
</tr>
<tr>
<td>epigallocatechin gallate (EGCG)</td>
<td>fights psoriasis and other inflammatory skin conditions, boosts memory</td>
<td>tea</td>
</tr>
<tr>
<td>allicin</td>
<td>lowers cholesterol; strong antibacterial/antiviral agent</td>
<td>garlic, onions, leeks</td>
</tr>
</tbody>
</table>
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EATING WELL
“There is mounting
evidence that
phytochemicals offer protection
against several chronic diseases.”

and carotenoids abundant in sweet potatoes and dark green leafy vegetables, are examples of phytochemicals with robust antioxidant activity.

Behaving as antibacterial agents: Phytochemicals such as allicin, which is found in garlic, have antibacterial properties.

Enzyme stimulation: Various phytochemicals have the ability to alter enzyme functioning in a way that helps fend off disease. According to Daniluk, a chemical called indole-3-carbonyl, found in cabbage, kale, and broccoli, stimulates enzymes that reduce the effectiveness of estrogen, thereby reducing the risk of breast cancer.

Regulating hormonal action: Some plant compounds, such as isoflavones present in soy, can directly alter how hormones (such as estrogen) behave in the progression of disease.

Altering DNA replication: There are even phytochemicals such as capsaicin, found in chili peppers, which can interfere with the replication of cell DNA to prevent the multiplication of cancer cells.

WHERE ARE PHYTOCHEMICALS FOUND?
“The best way to give your diet a phytochemical boost is to load up your grocery cart with more fruits and vegetables,” Daniluk says. At least 10 daily servings of produce will provide you with plenty of these disease fighters. Ensure that you eat varicoloured fruits and veggies since different pigmented produce play host to different chemicals.
"Plants have so many phytochemicals yet to be discovered that it is impossible to say that one is more important than another. The most important thing is variety," advises Daniluk. Whole grains, legumes, spices, herbs, and nuts also contain an admirable chemical cocktail. Ergo, fill your kitchen with more whole foods as opposed to the phytochemical-deficient processed stuff.

“When it comes to phytochemicals, the most important thing is variety.”

ORGANIC VERSUS CONVENTIONAL

It's no secret that pesticides and herbicides make it easier to grow food. However, this agricultural practice might negatively impact the amount of phytochemicals present in the veggies in your crisper. Part of the problem with pesticide use, says Daniluk, is that the plant does not have to fight off insects, reducing the need for its own phytochemical defence system. It's another reason to spend more time in the organic aisle.

As phytochemicals become a common news item, they are now available in supplement form. While a little extra boost of one phytochemical or another can't hurt, keep this in mind: supplements can never dish out the diversity of compounds that occur naturally in foods. What's more, as Daniluk says, "often the effect from the whole plant is greater than the sum of its parts. They work together in a synergy that is difficult to recreate."

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