News Release

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Phyto-protect your health

If somebody asked you to name ten vitamins and mineral and some food sources of them, you probably could do it. (I'll take your word.) And you understand fiber – what Grandmother called roughage. But as scientists study the beneficial, biologically active components of foods, they have uncovered a lot besides vitamins, minerals, and fiber. Let's take a look as some of these larger than life words so as you read about them, you can better understand their meaning.

Phytochemicals, meaning "plant chemicals," are the big news now. More than 4,000 have been identified. One huge class is the polyphenols, which include the now-celebrated flavonoids. These come in many forms and, true to their name, are often flavorants, such as the allicin in garlic.

Sometimes they are pigments, like the anthocyanidins that make cherries red and blueberries blue. Another category is the carotenoids, also pigments, adding color to tomatoes, carrots, and a host of other foods. Bete carotene, for instance, is an orange/yellow pigment that your body uses in its original form and also turns into vitamin A. Phytochemicals often give foods their distinctive smells and flavors. Limonoids, for example – there are 40 of them – give citrus fruits their underlying bitter, citrus-y taste.

The first job of phytochemicals is to benefit the plants. Some phytochemicals are antioxidants – that is, they protect cells from damage by free radicals, which are by-products for the processing of oxygen in living organisms. Like people, plants need antioxidants to survive in our oxygen-rich environment. Plan antioxidants stabilize cell chemistry and protect plants from the damaging effects of oxygen, sunlight, and other factors. We, in turn can use many of these antioxidants in the same way.

Some phytochemicals not only act as antioxidants, but also help prevent the formation of cancer-causing chemicals and/or suppress cancer development. Others may lower the risk of heart disease by reducing inflammation, inhibiting blood clots, or preventing the oxidation of killing fungi, bacteria, and viruses. Some of these may also be toxic to humans.

It would be naïve to think that simply because they are natural, all phytochemicals have positive effects. Edible plants can contain bad phytochemicals, which may, for instance, promote cancer in humans. As with many other things in nature, potential negatives may come in the same package with positives.

Is Organic Better? A recent preliminary study found that organically raised fruits and vegetables have more phytochemicals than conventionally raised produce, in which pesticides have been used. The reason for this, according to the researchers' theory, may be that if a plant has to depend on itself to fight off insects and other predators, it will produce higher levels of phytochemicals that act as pesticides. If the farmer provides the pesticides, the plant does not

need to mount its own defenses. Whether this is actually how it works, or if it would make any difference to the consumer, is unknown.

How to get the most phytochemicals The versatility of phytochemicals is one reason we keep advising that you base your diet on fruits, vegetables, and whole grains. Choose deeply colored foods whenever you can – they are always rich in phytochemicals. But don't forget the paler foods, such as garlic, onions, cauliflower, and celery. Tea has important and possible health-promoting phytochemicals; coffee probably does, too, since it is made from a bean.

You may wonder whether cooking and other forms of processing reduce phytochemicals, as they reduce vitamin C and some other vitamins. The answer is that this does not appear to be a problem. Indeed, cooking may boost the phytochemical content (as with the lycopene in cooked tomatoes). Still, it's always a good idea not to overcook vegetables and to cook them in a minimum of water.

Bioactivity index Scientists have come up with different scales for rating the antioxidant capabilities of fruits and vegetables. For instance, researchers from Cornell University have devised the "bioactivity index," taking into account not only antioxidant activity, but also the ability to suppress cancer cells. Here's how the fruits they studied measured up in order of bioactivity: cranberries, apples, lemons, strawberries, red grapes, peaches; bananas, grapefruits, pears, and oranges.

Among vegetables, spinach took the lead, followed by red peppers, broccoli, cabbage, carrots, and onions.

Among grains, corn was the winner, followed by wheat, oats, and rice.

Think of phytochemicals as a health bonus in foods you are already eating for their nutritional value and good taste. But be wary of phytochemicals in supplements. The same compounds that are healthful when supplied by foods may not be beneficial when put in pills.

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