

THE PHYTONUTRIENT

RED

Phytochemicals found in red foods

include: anthocyanidins, astaxanthin, carotenoids, ellagic acid, ellagitannins, fisetin, flavones, flavonols, flavan-3-ols, flavanones, luteolin, lycopene, proanthocyanidins, and quercetin.

These compounds possess anti-cancer, anti-inflammatory, cellular and DNA protective, and immune supportive benefits. They may also protect vascular health.



ORANGE

Phytochemicals found in orange foods

include: alpha-carotene, beta-carotene, beta-cryptoxanthin, bioflavonoids, carotenoids, curcuminoids, and naringenin. **These compounds possess** anti-cancer, anti-bacterial, cellular protective, and immune supportive benefits. They also support skin and reproductive health and contribute to overall reduced mortality.



YELLOW

Phytochemicals found in yellow foods

include: lutein, rutin, and zeaxanthin. **These compounds possess** anti-cancer, anti-inflammatory, cellular protective, and cognitive benefits. They also support skin, eye, heart, and vascular health.



PHYTONUTRIENTS

THE COLORFUL KITCHEN

The journey to wellness starts in the kitchen. I believe that. And some of the most nourishing, disease-preventive foods are the most colorful! Recall learning to 'Eat the Rainbow'? While it may sound like a childish phrase, it reminds us of the importance of a colorful plate for wellness promotion. Unfortunately, Americans don't consume enough. **The CDC estimates only 12.2% of adults meet the daily fruit intake recommendation, while just 9.3% of meet the daily vegetable intake recommendation!** We know that "poor diet quality is a leading risk factor associated with death and disability in the United States¹." But we can change that! **"Eating a diet rich in fruits and vegetables as part of an overall healthy diet CAN help protect against a number of serious and costly chronic diseases,** including heart disease, type 2 diabetes, some cancers, and obesity¹." So, plate up with plants!

CULINARY MEDICINE... DID YOU KNOW?

Remind yourself that wholesome food is a powerful protector and anti-dote to modern ills. For thousands of years, food has been prescribed therapeutically for patients all over the world seeking optimal wellness (i.e. Traditional Chinese Medicine, Ayurveda, etc.) **Culinary medicine is a modern way of conceptualizing the intersection between food and health.** It is an evidence-based field in medicine that blends the art of food and cooking with the science of medicine². It's "aimed at helping people reach good personal medical decisions about accessing and eating high-quality meals that **help prevent and treat disease and restore well-being**²." Culinary medicine seeks to "empower the patient to care for herself or himself safely, effectively, and happily with **food and beverage as a primary care technique**²." Cheers to that!

PLANT NUTRIENTS 101

Plants are a complex blend of health giving nutrients and 'non-nutritive' substances. Traditionally, they are water-rich, lower in calories, and higher in nutrients by volume when compared to other commonly eaten foods.

Macronutrients (carbohydrate, fat, and protein) provide energy, and most plant foods contain predominantly carbohydrate (including fiber), minimal fat, and low-moderate protein.

Micronutrients (vitamins & minerals) are helpers in the optimal functioning of the human body and essential to life. Most plants offer an abundant variety of vitamins and minerals. **Phytochemicals**



carbohydrates



protein



fats



vitamins



minerals



water

GREEN

Phytochemicals found in green foods include: catechins, chlorogenic acid, chlorophyll, epigallocatechin gallate, flavolignans, folates, glucosinolates, hydroxytyrosol, indole-3-carbinol, isoflavones, isothiocyanate, oleocanthal, oleuropein, phenolic diterpenes, phytosterols, phenols, phenylethylisothiocyanate, silymarin, sulforaphane, tannins, theaflavins, thearubigins, and tyrosol. **These compounds possess** anti-cancer, anti-inflammatory, hormone balancing, and cellular protective benefits. They also support brain, skin, heart and liver health.



BLUE/PURPLE/BLACK

Phytochemicals found in blue, purple, and black foods include: anthocyanidins, hydroxystilbenes, procyanidins, pterostilbene, and resveratrol. **These compounds possess** anti-cancer, anti-inflammatory, cellular protective, and cognitive benefits. They also support heart health.



WHITE/TAN/BROWN

Phytochemicals found in white, tan, and brown foods include: allicin, allyl sulfides, cellulose (fiber), lignans, lignins, sesamin, sesamol, tannins, terpenoids and theobromine. **These compounds possess** anti-cancer, anti-microbial, hormonal balance, and cellular protective benefits. They also support heart, liver, and gastrointestinal health.



are considered a class of 'non-nutritive' substances, found abundantly in plants. They are bioactive compounds commonly found in foods such as fruits, vegetables, grains, nuts/seeds, tea, & spices that exert protective or disease preventing effects in the diet. Typically, the brighter, richer, or darker the color of a food the more phytochemical dense it is.

ORGANIC OR NOT? CHECK OUT THE EWG.

Refer to recommendations from the Environmental Working Group when purchasing produce to reduce chemical exposure.

CLEAN 15: <https://www.ewg.org/foodnews/clean-fifteen.php>

DIRTY DOZEN: <https://www.ewg.org/foodnews/dirty-dozen.php>

SIMPLE WAYS TO PRACTICE COLORFUL EATING

- ✓ Make it your goal to try one new plant food (fruit, vegetable, nut, seed, legume, or whole grain) per week!
- ✓ Stock up on frozen fruits or vegetables for easy cooking. Some, like berries, tend to retain their phytonutrients when frozen.
- ✓ Keep fruits and vegetables where you can see them, so you'll remember to eat them!
- ✓ Keep a bowl or container of fresh cut vegetables on the top shelf of refrigerator, within easy reach. Keep a fruit bowl on kitchen counter, table, or desk at work.
- ✓ Pack fruit and vegetables with you to eat as a snack.
- ✓ Choose fruit for dessert (fruit kabobs, berry compotes, fruit salads, frozen fruit etc.) in place of more decadent treats.
- ✓ Prepare dishes where vegetables are the focus (i.e. soups, stir-fry, salads, roasted or grilled produce).
- ✓ Blends vegetables into soups, dips, and sauces.
- ✓ Swap mashed white potatoes for sliced carrots, turnips, or mashed cauliflower to vary your vegetable variety.
- ✓ Add vegetables to smoothies to cut sugar content of additional fruit.
- ✓ Add rinds of oranges or lemons and other fruits to water.
- ✓ Aim for at least 2-3 different colors at every meal.
- ✓ Be generous with your use of spices!

REFERENCES

1. <https://www.cdc.gov/nutrition/downloads/fruits-vegetables/2018/2018-fruit-vegetable-report-508.pdf>
2. La Puma J. (2016). What Is Culinary Medicine and What Does It Do?. Population health management, 19(1), 1-3.
3. Institute for Functional Medicine, The Phytonutrient Spectrum: Comprehensive Guide