How Many Different Plants Can You Eat? Dietary Richness Is Linked to Longevity

5 MIN READ

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Dietary biodiversity can unlock powerful metabolic benefits linked to health and longevity.

When it comes to eating for health and longevity, most of us know the basics: eat more plants, cut back on processed foods, and focus on whole, nutrient-rich meals. But a fascinating new study from a large European cohort reveals that the diversity of species on your plate matters just as much as what you eat.

Dietary Species Richness (DSR) is a measure of how many different biological species you consume in your diet over a year. Unlike simply counting food groups or calories, DSR counts the unique species, like the variety of fruits, vegetables, grains, nuts, meats, and fish that make up your meals. Think of it as how many different "kinds" of plants and animals you eat, rather than just how much.

This study, published in ***The American Journal of Clinical Nutrition***, analyzed blood metabolite profiles of nearly 8,000 middle-aged, cancer-free Europeans across nine countries. The researchers wanted to uncover the biochemical signatures linked to eating more biodiverse diets and what those might mean for long-term health.

They found that when you regularly eat a variety of plants (and rotate your proteins), your blood shows a "healthier" chemical pattern: steadier energy regulation, fewer inflammation signals, more protective plant compounds, and friendlier fat profiles. People with higher dietary species richness (meaning they eat more different plants, plus varied fish/eggs/meats if they include them) have healthier blood biomarker patterns. That pattern helps explain why diverse diets are linked with longevity over

time.

So…Eat More Plants, Live Longer?

Eat *more kinds* of plants, not just more volume. Diversity seems to be a longevity lever.

Why Biodiverse Diets Boost Longevity

The researchers examined 32 plant **polyphenols**, 128 metabolites, and 39 fatty acid isomers circulating in people's blood. They discovered that higher dietary species richness was associated with better health and longevity. Here's what stood out:

1. Amino Acids

Higher levels of essential amino acids like tryptophan and asparagine support healthy immune system function and metabolism:

2. Polyphenols

Polyphenols protect cells and support healthy aging. These compounds also promote gut microbiome health, enhancing systemic wellness.

- **Epicatechin and Catechin** are antioxidants with anti-inflammatory properties.
  Sources: Green and black tea, dark chocolate (70%+ cacao), apples, grapes, blueberries, blackberries.
- **Enterolactone** is linked to anti-oxidative and anti-inflammatory effects.

Sources: Flaxseeds (richest source), sesame seeds, whole grains, berries, cruciferous vegetables (broccoli, Brussels sprouts).

- **Kaempferol** is a flavonoid with powerful antioxidant benefits.
  Sources: Kale, spinach, broccoli, green beans, tea, apples.

3. Healthy Fats and Fatty Acids

Higher levels of beneficial omega fatty acids are critical for heart, brain, and metabolic health.

- **Omega-3 Fatty Acids (EPA, DHA)** reduce inflammation and support cardiovascular and cognitive function.
  Sources: Fatty fish (salmon, mackerel, sardines, anchovies, herring), flaxseeds, chia seeds, walnuts, algae-based supplements.
- **Omega-6 Fatty Acids** are essential for metabolism and immune function.
  Sources: Nuts (walnuts, almonds), seeds (sunflower, pumpkin), vegetable oils (safflower, sunflower, soybean), whole grains.
- **Avoid Trans-Fatty Acids (TFAs)**, which are found in ultra-processed foods and linked to increased cardiovascular risk.
  Sources: Partially hydrogenated oils in packaged snacks, fried fast foods, and some margarines.
  Note: Naturally occurring TFAs in dairy and meat are less harmful.
- **Phospholipids and Sphingomyelins** maintain cell membrane integrity and support brain and metabolic health. Higher levels are linked to lower risks of chronic diseases, including cancer.
- **Sources:** Eggs (especially yolks), organ meats (liver), fish and shellfish, soy lecithin, nuts, and seeds.

Interestingly, plant-based components of dietary diversity were the main driver of these beneficial metabolic changes, highlighting once again the importance of plant variety in your diet.

Challenge: How Many Plants Can You Eat This Week?

1) Choose a simple target

- **Starter:** 15 unique plants
- **Strong:** 25 unique plants
- **Super:** 30+ unique plants (our recommended target)

Herbs, spices, nuts, seeds, legumes, whole grains, fruits, veg, seaweeds, teas, and **fermented foods all count**. Animal foods don't count toward the plant tally, but rotating fish/eggs/meats is still beneficial.

2) Build a biodiverse plate (repeat at lunch or dinner)

- **Protein (rotate):** salmon, sardines, trout; tofu/tempeh; lentils/chickpeas; eggs; turkey.
- **Greens (mix):** arugula + spinach + bitter greens.
- **Fiber & crunch:** one bean + one whole grain + one nut or seed.
- **Color shot:** two different fruits or veg (e.g., blueberries + roasted carrots).
- **Herb & spice duo:** at least 2 per meal (e.g., turmeric + black pepper; oregano + basil).
- **Healthy fat:** extra-virgin olive oil or a handful of walnuts.

3) Shop the biodiversity way

Grab **o**ne new species per aisle: a new leafy green, a different bean, an unfamiliar

whole grain (farro, buckwheat), a new nut/seed (hemp, sesame), a different mushroom, a sea vegetable, and a new fermented food (kimchi, kefir). Rotate animal proteins weekly if you eat them: cold-water fish, pastured eggs/poultry, and occasional shellfish.

4) Upgrade snacks to species boosters

- Dark chocolate (70%+) with walnuts and raspberries
- Flax + sesame “seed sprinkle” over yogurt or salads
- Green/black tea swap for one coffee

5) Keep “ultra” in check

Ultra-processed foods can contain many ingredients yet still lack protective polyphenols and healthy fats. Choose whole-food versions most of the time; save packaged treats for true treats.

Quick reference: where to find the good stuff

- **Tryptophan:** turkey, eggs, salmon, tofu/tempeh, almonds, pumpkin seeds
- **Asparagine:** asparagus, soybeans, lentils, whole grains, dairy
- **Polyphenols (epicatechin/catechin):** green/black tea, dark chocolate, apples, grapes, berries
- **Enterolactone precursors:** flax, sesame, whole grains, crucifers
- **Kaempferol:** kale, spinach, broccoli, green beans, tea, apples
- **Omega-3s (EPA/DHA):** salmon, sardines, mackerel, herring; algae-based supplements
- **Plant omega-3 (ALA):** flax, chia, walnuts

Thinking about what you eat in terms of dietary species richness is an interesting take on past nutrition advice like: eat the rainbow.

Make It Fun (and Automatic)

1) The 3-2-1 Diversity Rule (daily)
Add 3 new plants, 2 herbs/spices, 1 fermented food to one meal.

2) Species Bingo
Make a 5×5 grid of plants you rarely eat (buckwheat, fennel, radicchio, nori, persimmon…). Aim for a "line" each week.

3) Color Roulette
Pick five colors to hit today (red, orange, yellow, green, purple). Each color must be a different plant.

4) Market Safari
Each shopping trip, adopt one new leaf, one new legume, one new grain, one new seed.

5) The Seed Sprinkle
Keep a jar with flax + chia + sesame + hemp. One spoon = four species on eggs, salads, yogurt, or soups.

Easy Wins You'll Actually Do

- **Tea swap:** one coffee ? green or black tea (polyphenols: epicatechin/catechin).
- **Berry + nut duo:** blueberries + walnuts on yogurt/oats.
- **Greens trio:** arugula + spinach + watercress under any protein.
- **Legume ladder:** Mon chickpeas, Tue black beans, Wed lentils, Thu edamame, Fri white

beans.

- **Grain rotation:** oats ? farro ? buckwheat ? quinoa ? barley.

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