The Nutrients You Need to Know

Joel Fuhrman, MD
Greater Risks of Serious Infections Today

Death Rate From Infections Has Doubled Since 1980

• More dangerous infections spread from around the world
• Travelers in contact with exotic and newly created microbes
• Schools and hospitals with antibiotic resistance bacteria
Future Concerns

“We are standing on the brink of a global crisis in infectious diseases”

Hiroshi Nakajima, Director-General of the World Health Organization
Incompetent immune function results from SAD nutrition.

• The nutritional status of the host is critical in permitting or preventing viral and bacterial infections.

• The modification of viruses into more virulent or dangerous forms are allowed by nutritional inadequacies in the host.

All SAD eaters are immune-suppressed
Nutritional incompetency enables AIDS to be transmitted.

- AIDS virus is significantly reduced and replication inhibited by immune system interference when the host's nutrition is excellent.

- Viral replication, and changes in the virus as it replicates, enables it to hide from our immune system surveillance and control. However, these structural modifications to the virus as it replicates only occurs in a nutritionally incompetent host.
Viruses mutate into different forms as they replicate

- RNA-based viruses such as influenza have mutation rates during replication of several orders of magnitude larger than those operating during replication of human cellular DNA.

- This results in the continuous generation of new mutant genomes with differing abilities and pathologies.
A harmless virus can become dangerous if deficiencies are present

- Flu can mutate and be able to cause more serious damage to the lungs
- Neuropathy (nerve damage) after a viral illness
- Heart damage after a viral illness
- Which missing nutrient is the cause of all this damage?
(CNA) Comprehensive nutritional adequacy

- A sufficient amount and variety of all known and unknown micronutrients are present
- Normally harmless viruses become highly virulent and dangerous → Nerve damage from virus when deficient in antioxidants
- Heart damage from virus when deficient in antioxidants
Cancer Largest Threat to a Person Life-Span

• Heart Disease is easy to prevent so not the largest threat to healthy eaters

• Lifetime risk of diagnosed with invasive cancer is 44% for men and 37% for women

• A new generation raised on processed, fake foods, fast foods and junk foods almost from birth

• So it is not good enough to avoid damaging influences, we must repair the damage that has already occurred.
Win the War on Cancer

More Medical Care Increases Risk of Cancer

• Antibiotics.
  **High use**
  25 prescriptions (17 years) → doubles risk of breast cancer

  **Low use**
  2 – 25 prescriptions (17 years) → 1.5 times the risk

• Hormones and cancer

• Drugs for autoimmune disease and cancer

• Do immunizations in the first 2 years of life cause adult cancer?
Vegetables Protect DNA

More Green Vegetables $\rightarrow$ Less DNA Methylation
Lower Risk of Cancer

Less Green Vegetables $\rightarrow$ More DNA Methylation
Higher Risk of Cancer
Indole-3-carbinol (I3C) and its metabolite 3,3 diindolylmethane (DIM) are especially protective against breast cancer and prostate cancer.

Recent studies show that these compounds enable interferon responsiveness, which serves as a potent stimulator to attack microbes such as viruses and even antibiotic resistant bacteria.
Cabbage and the Breast Cancer Gene

• Higher consumption of Chinese cabbage, bok choy, and turnips had a strong protective effect in women with the GSTP1 gene for breast cancer.

• Half as much cancer appeared in those with higher intake

Cruciferous Vegetables
Lower Risk of Cancer

• Eat a vegetable-based diet…
  not a grain-based one

• 57% reduction in colon cancer occurrence
  – Comparing high versus low consumption of
    cruciferous vegetables
  – in those with low GST activity

Greens Prevent and Resolve

- Cervical dysplasia
- Laryngeal papillomas
- Ordinary warts
- HIV (human immunodeficiency virus)
- HPV (human papilloma virus)
- Hepatitis.
Antioxidant Response Elements (ARE)

• NRF-2 proteins are transcription factors that bind to and activate the ARE segments of genes

• NRF-2 becomes activated (a normal function) when we eat green vegetables supplying ITCs

• When we don’t eat cruciferous greens the most important natural defense systems in the cell does not function.
Myrosinase-Glucosinolate System
Plant Cell Defense

- cell wall
- cell membrane
- vacuole

Myrosinase

Glucosinolates
ITC’s With Anti-Cancer Activity

- Sulforaphane
- Phenylethylisothiocyanate (PEITC)
- Allyl isothiocyanate
- Indole-3-carbinol
- 3,3-diindolylmethane (DIM)
Average glucosinolate intake in America
15 mg.

Average glucosinolate intake in Japan
112 mg

Recommended glucosinolate intake over
300 mg daily
Alpha Carotene and lutein is the blood marker for green vegetable consumption

Those with the highest serum α-carotene had a 39% decrease in risk of death compared to those with the lowest serum α-carotene.

Mushrooms are an integral part of the human immune system

- **Antigen-Binding Lectins (ABL)** – bind only to abnormal cells by recognizing a molecule on the surface of cancer cells which activates the body’s defenses calling them into action against that cell

- **Angiogenesis Inhibitors** – prevent abnormal cells from obtaining blood they need to replicate and grow

- **Aromatase Inhibitors** – prevent the enzyme aromatase from making too much estrogen, especially if excess fat on the body
Mushrooms Protect Against Breast Cancer

- Mushrooms reduce the risk of breast cancer

- Intake of mushrooms decreased the risk of breast cancer by 64%

- Aromatase inhibition by mushrooms


A mix of mushroom types is best

- **High anti-aromatase activity:**
  white button, white stuffing, cremini, portobello, reishi, maitake

- **Mild anti-aromatase activity:**
  shiitake, chanterelle, baby button
Natural Angiogenesis Inhibitors

Body fat and tumors inhibited

Mushrooms, onions, garlic, soy, cinnamon, berries, greens

Body fat and tumors promoted

Angiogenes is activators

Insulin, steroids, sweets
Onions and Cancer

Highest consumers of onions:

- 56% reduction of colon cancer
- 73% reduction of ovarian cancer
- 88% reduction of esophageal cancer
- 71% reduction of prostate cancer
- 50% reduction in stomach cancer

Onions and Cancer

Allinase

allinin $\rightarrow$ sulphenic acids

- Disulphides and trisulphides (lowers blood sugar)
- Chromium (lowers blood sugar)
- Flavonoids, such as Querciten
- Fructo-olligosaccharides $\rightarrow$ promote healthy bacteria

Sulphides and flavonoids also lower blood pressure, cholesterol and protect against heart disease.
Anti Cancer Onions

Most Powerful

- New York Bold
- Western Yellow
- Northern Red
- Shallots

Least Powerful

- Empire Sweet
- Western White
- Puverian Sweet
- Imperial Valley Sweet
- Vildalia
71 Countries Studied

Increase cancer
- Animal food
- Milk
- Sugar
- Alcohol
- Stimulants

Decrease cancer
- Sunshine
- Beans
- Onions
- Soybeans

Tomatoes reduce prostate cancer, cooked tomatoes protect even more.

- Lycopene reduces risk of pancreatic cancer, colorectal cancer, breast cancer, lung cancer

- 50% reduction in prostate cancer for higher intake


Insulin-like Growth Factor – 1 (IGF-1)
Low levels extend lifespan

- Decreased inflammation:
- Reduced oxidative damage:
- Stress resistance
- Insulin sensitivity
- Slows aging of the brain
Insulin-like Growth Factor – 1 (IGF-1)
High Levels Shorten Lifespan

- Double the risk of breast cancer.
- Promotes prostate and colon cancer
- Promotes cell division and spread of cancers
Amino Acid Content of Diet Controls IGF-1

• Almost totally dependent on animal protein intake and dairy products.

• Soy protein can raise IGF-1, but not like animal protein as it also raises IGF-1 binding protein.
The Nutrient Density Line

- Raw leafy green vegetables (100)
- Solid green vegetables (97)
- Non-green, non-starchy vegetables (50)
- Beans/legumes (48)
- Fresh Fruits (45)
- Starchy vegetables (35)
- Whole grains (22)
- Raw nuts & seeds (20)
- Fish (15)
- Fat-free dairy (13)
- Wild meats & fowl (11)
- Eggs (11)
- Red meat (8)
- Full-fat dairy (4)
- Cheese (3)
- Refined grains (2)
- Refined oils (1)
- Refined sweets (0)
Dr. Fuhrman’s Health Equation

• In physics a key formula is \( E = mc^2 \).

• In nutritional science the key formula is my health equation:

\[
H = \frac{N}{C}
\]

Health = Nutrients / Calories
My Nutritarian Food Pyramid

- **BEEF, SWEETS, CHEESE & PROCESSED FOODS**
  - Rarely

- **SEEDS, NUTS & AVOCADOS**
  - 10-40%

- **FRUITS**
  - 10-40%

- **EGGS, OIL, FISH & FAT-FREE DAIRY**
  - Rarely

- **WHOLE GRAINS & POTATOES**
  - 20% or less

- **BEANS/LEGUMES**
  - 10-40%

- **VEGETABLES**
  - 1/2 raw and 1/2 cooked
  - 30-60% of calories

*Excludes white potatoes.

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Cancer Cases

Pam Swesta

• In 1997 Pam suffered a collapsed lung with over 4 liters of fluid in her chest
• Pathology showed it was adenocarcinoma from ovarian cancer.
• Her CA-125, an ovarian cancer marker was also significantly elevated.
• She underwent chemotherapy followed by a hysterectomy and was told that she did not have long to live. Exceptionally rare for a person with metastatic ovarian cancer to the lungs to live more than two years.

Lee Gerstad

• Breast Cancer metastatic to the bones with bone scan (1995)
• Refused chemotherapy, given 6 months to live
• Made complete recovery, bone scan clear
Important Blood Work

• Vitamin D 25, hydroxy, the most important
• B12 and MMA methyymalonic acid
• Essential Fatty Acid profile (If not supplementing)
• CBC

– Remember, slightly higher TSH and lower WBC counts are normal in nutritarians
What I found in my research was that the exact same enhanced defense against cancer that results from superior nutrition also defends us against infections with viruses and bacteria.