



Mindful Nourishment: Integrating Nutrition and Supplements in Patient Treatment

Garrett P. Clark, D.O., M.S. (Med Ed).


LECOM Integrative Medicine

Medical Fitness & Wellness Center

Objectives:

- Review the U.S. Preventive Services Task Force recommendation guidelines on nutrition.
- Review and discuss HHS and USDA dietary guidelines to prevent chronic diseases.
- Discuss the role of dietary supplements.
- Review and discuss research regarding "GMO's" (genetically modified organisms) and their role in diet and nutrition.

Thomas A. Edison



The doctor of the future will give no medication, but will interest his patients in the care of the human frame, diet and in the cause and prevention of disease. ~

AZ QUOTES

NUTRITION ?

After a two year visit to the United States, Michelangelo's David is returning to Italy . . .



His proud sponsors were:



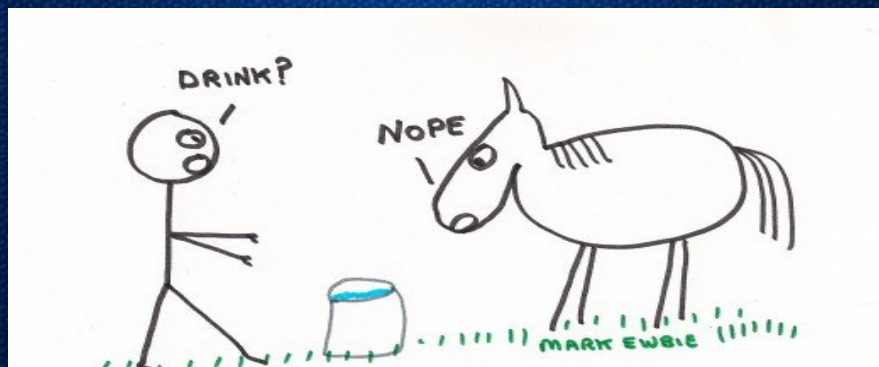
"Every time you eat or drink, you are either feeding disease or fighting it."
-Heather Morgan



U.S. Preventive Services Task Force Recommendations to combat obesity:

- Most effective interventions were comprehensive and were of high intensity.
- Behavioral interventions included multiple behavioral management activities, (group sessions, individual sessions, setting weight-loss goals).
- Improving diet & nutrition, physical activity, addressing barriers to change, active use of self-monitoring, & strategizing how to maintain healthy lifestyle changes.

Addressing barriers to change...



<https://media.licdn.com/mpr/AEEAAQAAAAAIAIAIDUyN2NKNWEXLTy4ZDEINGI2OS05NjklTQONTZIZTION2ExZg.jpg>

Specific recommendations fit into five guidelines:

1. Follow a healthy eating pattern across the lifespan.
2. Focus on variety, nutrient-dense foods, and amount.
3. Limit calories from added sugars and saturated fats, and reduce sodium intake.
4. Support healthy eating patterns for all.
5. Shift to healthier food and beverage choices.

<http://www.hhs.gov/about/news/2016/01/07/hhs-and-usda-release-new-dietary-guidelines-encourage-healthy-eating-patterns-prevent-chronic.html>



DIET SODA TOUGH ON THE BRAIN?

By AMERICAN HEART ASSOCIATION NEWS

New research suggests drinking at least one artificially sweetened soda a day greatly increases the risk of stroke and Alzheimer's disease, compared with less than one drink a week.

2.89 TIMES ALZHEIMER'S DISEASE RISK

2.96 TIMES STROKE RISK

Source: Stroke

Published April 20, 2017

The graphic features a central illustration of a human brain with a red, irregularly shaped area on the right side, possibly representing a stroke or a specific brain region. To the left of the brain are a red soda bottle and a red soda can. Below the brain, two red arrows point upwards. The left arrow contains the text '2.89 TIMES ALZHEIMER'S DISEASE RISK' and the right arrow contains '2.96 TIMES STROKE RISK'. The text 'By AMERICAN HEART ASSOCIATION NEWS' is at the top left, and 'New research suggests...' is below it. At the bottom left is 'Source: Stroke' and at the bottom right is 'Published April 20, 2017'.

Sugar- and Artificially Sweetened Beverages and the Risks of Stroke and Dementia

A Prospective Cohort Study

- **Results:** Higher recent and higher cumulative intake of artificially sweetened soft drinks were associated with an increased risk of stroke, all-cause dementia, and Alzheimer's disease dementia.
- Sugar-sweetened beverages were **not** associated with stroke or dementia.
- **Conclusions**—Artificially sweetened soft drink consumption was associated with a higher risk of stroke and dementia.

<https://doi.org/10.1161/STROKEAHA.116.016027> Stroke. 2017;STROKEAHA.116.016027 Originally published April 20, 2017

HHS and USDA New Dietary Guidelines to Prevent Chronic Diseases

- A variety of vegetables, including dark green, red and orange, legumes (beans and peas),
- Fruits, especially whole fruits
- Grains, at least half of which are whole grains
- Fat-free or low-fat dairy
- A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes, etc.
- Oils, (soybean, sunflower, olives, etc)

<http://www.hhs.gov/about/news/2016/01/07/hhs-and-usda-release-new-dietary-guidelines-encourage-healthy-eating-patterns-prevent-chronic.html>

HHS and USDA New Dietary Guidelines to Prevent Chronic Diseases:

- Consume less than 10 percent of calories per day from added sugars (sugars and syrups that are added when they are processed or prepared.)
- Less than 10 percent of calories per day from saturated fats. (butter, whole milk, meats that are not labeled as lean, and tropical oils such as coconut and palm oil).
- Less than 2,300 mg per day of sodium.



Should you supplement?

- Fruits and vegetables grown decades ago were far richer in nutrients than what we get today.
- Reasons:
 - modern agricultural methods have stripped nutrients from the soil.
 - “Each successive generation of fast-growing, pest-resistant [food] is truly less good for you than the one before.”
 - **GMO's**

<http://www.scientificamerican.com/article/soil-depletion-and-nutrition-loss/>

Landmark Study:

- University of Texas Department of Chemistry and Biochemistry in 2004:
- Studied U.S. Department of Agriculture nutritional data from both 1950 and 1999 for 43 different fruits and vegetables.
- Finding: “reliable declines” in the amount of calcium, phosphorus, iron, B complex, vitamin C, and other nutrients over the past half century.
- Reason: the preponderance of agricultural practices designed to improve traits (size, growth rate, pest resistance) **other than nutrition.**

<http://www.scientificamerican.com/article/soil-depletion-and-nutrition-loss/>

Million Dollar Questions: Should You Supplement? What to Supplement?



http://accelerate-motivate.com/wp-content/uploads/bfi_thumb/one-million-dollars-n2x5r12jp7wk946jgjdqin62xi390uacnb1514.jpg



<http://oma.drupal.ku.edu/sites/oma.drupal.ku.edu/files/images/galleries/in%20the%20news.jpg>

Vitamin D

- Fat-soluble vitamin
- Naturally present in a few foods, added to others.
- Produced endogenously when ultraviolet rays from sunlight strike the skin and trigger vitamin D synthesis.
- The role of vitamin D in bone health is well described.



<https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/>

Sunshine Vitamin

- Must undergo two hydroxylations in the body for activation.
- The first occurs in the liver [25(OH)D], aka calcidiol.
- The second occurs in the kidney 1,25-dihydroxyvitamin D [1,25(OH)₂D], aka calcitriol (physiologically active)



<https://integrativemedicine.arizona.edu/curriculum/modulePrint.html>

Sunshine Vitamin

- The International Osteoporosis Foundation (2010) recommended that average risk adults take 800-1000 IU per day of vitamin D3.
- Their Position Statement in 2010 recommended that high risk adults (e.g., osteoporosis, obese, little sun exposure, dark skin, etc.) be screened and supplemented to reach 30 ng/ml.
- Re-measure 25(OH)D at 3 month intervals to evaluate level.

<https://integrativemedicine.arizona.edu/curriculum/modulePrint.html>

Effect of Latitude on Vitamin D Levels.

Leary PF, Zamfirova I, Au J, McCracken WH

- **METHODS:** Osteopathic medical students were recruited from campuses in Bradenton, Florida, and Erie, Pennsylvania. Blood samples were drawn to measure total vitamin D levels.
- **CONCLUSION:** Latitude was found to be a statistically significant risk factor for vitamin D deficiency. Additionally, the findings suggest that persons with darker skin tone and, to a lesser degree, men and persons who are overweight or obese are also at increased risk for vitamin D deficiency.
- **Physicians should be cognizant of these risk factors when deciding whom to screen**

J Am Osteopath Assoc. 2017 Jul 1;117(7):433-439. doi: 10.7556/jaoa.2017.089.

Vitamin D:

- The safe upper limit is 4000 IU. (However, some patients will need higher doses to correct very low serum levels).
- Vitamin D deficiency has been associated with several clinical conditions, including cardiovascular disease, diabetes, and cancer. The strength of evidence for the associations is variable, complex, and updated regularly in response to research findings and international consensus.

<https://integrativemedicine.arizona.edu/curriculum/modulePrint.html>

Vitamin D Food Sources

Food	Serving Size	Vitamin D (I.U.)
Pink salmon, canned	3 ounces	530
Sardines, canned	3 ounces	231
Tuna, canned	3 ounces	200
Cow's milk	8 ounces	100
Orange juice fortified with vitamin D	8 ounces	100
Fortified breakfast cereals	1 serving (~1 cup)	40-50
Egg	1 ounce	20
Cod liver oil	1 ounce	1,360

Dietary Supplements: Navigating the Pharmacologic Influences of Nature's Medicine

Andrew J. Kubinski, MS, DO¹; Gregory W. Coppola, DO²

¹University of Pikeville Kentucky College of Osteopathic Medicine/East Tennessee State University Quillen; College of Medicine Kingsport Family Medicine Residency PGY1

²Lake Erie College of Osteopathic Medicine, Director, Integrative Medicine Fellowship Erie, PA; Attending Physician, Lake Erie College of Osteopathic Medicine Sports Medicine Fellowship; Mercyhurst University, Academic Medical Director/Team Physician, Department of Sports Medicine

Regarding multivitamins: “they are the most commonly used supplement, but a consensus statement by the United States Preventive Services Task Force (USPSTF) recommended against their daily use, unless a patient has a known vitamin or mineral deficiency.”

<https://ofpjournal.com/index.php/ofp/article/download/363/297>

Evidence for Commonly Used Supplements:

Multivitamin/mineral

- Do not use unless known deficiency
- Correct specific deficiency
- Do not have health benefit

Vitamin D

- Doses of Vitamin D3 1000-2000IU PO daily up to 10,000IU have been shown to be safe and effective
- Keep levels between 40-60nmol/L
- No consensus on routine screening for Vitamin D deficiency in asymptomatic, healthy adults
- Vitamin D receptor on a majority of cells in the body, checking vitamin D levels can be considered helpful especially in an area where the population does not receive adequate sunlight.

Omega-3 (DHA/EPA)

- SMASH (Salmon [wild pacific], Mackrel [spanish], Anchovies, Sardines, and Herring)
- 1-2g PO daily for cardiovascular benefits
- 2-4g PO daily anti-inflammatory benefits
- 4g PO daily for elevated triglycerides

<https://ofpjournal.com/index.php/ofp/article/download/363/297>

When to Consider Supplement Use / When to Screen for Deficiency:

- Results from different studies are still far from conclusive and the effects on longevity are not well defined.
- In industrialized countries, vitamin deficiencies seem to be related only to specific groups in the population: therefore, at the moment, it seems more advisable to target vitamin supplements for at risk groups:
 - Poor Diet, malabsorption issues, pregnancy, infancy
 - Area / Latitude, skin tone
 - Certain medications (PPI use for example.), etc.

<https://www.ncbi.nlm.nih.gov/pubmed/9167137>

What ARE GMO's?

- GMOs = “genetically modified organisms”
- Living organisms whose genetic material has been artificially manipulated through genetic engineering
- Creates often times unstable combinations of plant, animal, bacteria and viral genes that do not occur in nature or through traditional crossbreeding methods.

<http://www.nongmoproject.org/learn-more/>

GMO's:

- Genetically modified crops - the DNA is modified to introduce a new trait which does not occur naturally in the species.
- Ex: resistance to bugs, disease, or chemical treatments (e.g. resistance to a herbicide).
- They have the potential to contaminate forever.
- They increase herbicide use. Ex: Between 1996 and 2008, US farmers sprayed an extra 383 million pounds of herbicide on GMOs = **higher residues of toxic herbicides**. (linked with sterility, hormone disruption, birth defects, and cancer.)

<http://www.responsibletechnology.org/10-Reasons-to-Avoid-GMOs>
http://truthwiki.org/Genetically_modified_crops

① dominance
② segr.

Mendel and His Peas

1865

tall plant vs. short plant

Traits that Mendel observed:

plump vs. wrinkled pod round vs. wrinkled pea green vs. yellow pea green vs. yellow pod white vs. purple flower

The Spider Goat ?????!!!!

- Scientists breed goats that produce spider silk
- Researchers have developed a way to incorporate spiders' silk-spinning genes into goats.
- The silk protein from the goats' milk can then be used for a variety of applications:
 - making artificial ligaments and tendons
 - for eye sutures, and for jaw repair.
 - applications in bulletproof vests
 - improved car airbags.



<https://phys.org/news/2010-05-scientists-goats-spider-silk.html>

GMO Issues:

- Most developed nations do not consider GMOs to be safe.
- In more than 60 countries around the world, including all of the countries in the European Union, there are significant restrictions or outright bans on GMOs.

<http://www.nongmoproject.org/learn-more/>

GMO Issues:

- Polls show that most Americans want to know if the food they're purchasing contains GMOs.
- However, the biotech lobby has succeeded in **preventing mandatory labeling of the GMO foods they produce.**
- In the U.S., GMOs are in as much as 80% of conventional processed food.

<http://www.nongmoproject.org/learn-more/>

GMO Issues:

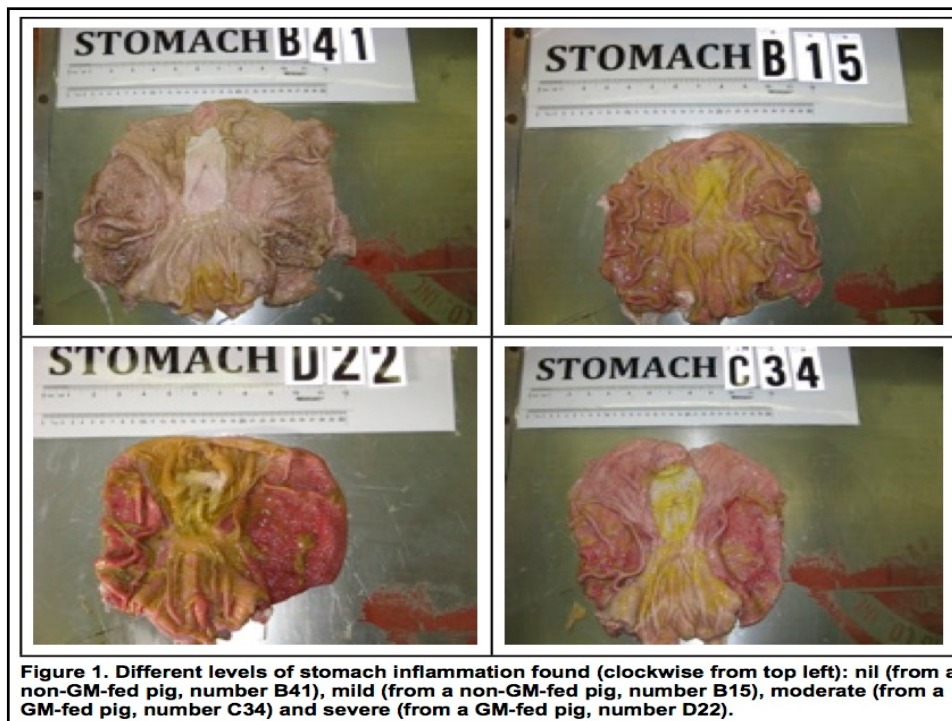
- Practically all commercial GMOs are engineered to withstand direct application of herbicide and/or to produce an insecticide.
- There is a growing body of evidence that connects GMOs with potential health problems, environmental damage, and violation of farmers' and consumers' rights.

<http://www.nongmoproject.org/learn-more/>

Long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM corn diet:

- Study showed a diet of GM feed **had a significant effect on inflammation.**
- This finding was statistically significant. GM-fed male pigs showed severe stomach inflammation at a rate of 4.0 times that of the non GM fed male pigs; and female pigs showed a rate of severe stomach inflammation that was 2.2 times the rate of the non-GM fed female pigs.

<http://www.organic-systems.org/journal/81/8106.pdf>



Study Conclusions:

- Pigs fed a GMO diet exhibited heavier uteri and a higher rate of severe stomach inflammation than pigs fed a comparable non-GMO diet.
- “Given the widespread use of GMO feed for livestock as well as in humans, this is a cause for concern. The results indicate that it would be prudent for GM crops to undergo long-term animal feeding studies preferably before commercial planting, particularly for toxicological and reproductive effects.”

<http://www.organic-systems.org/journal/81/8106.pdf>

Claim: Independent studies confirm that GM foods and crops are safe:

- Issues with the claim:
 - Food safety studies that are INDEPENDENT of the GMO industry are extremely rare.
 - Monsanto, was shown to be one of the most common funders of the studies in the GMO study database.
 - Other cases that “appear” to be independent research, are often, in fact, performed by universities that rely on GMO industry funding.

The Scientists:

- In 2009, 26 scientists prepared a formal grievance to the US EPA which read:
 - “No truly independent research can be legally conducted on many critical questions involving these crops.”

The claims that GMO foods are safe to eat are inaccurate.

- ✓ MANY peer-reviewed studies have found potential signs of toxicity and allergenic effects on the health of lab and farm animals fed GMOs.

The Science:

- Claims that Americans eat millions of GMO meals with NO ill effects are UNSCIENTIFIC.
- **NO HUMAN EPIDEMIOLOGICAL STUDIES HAVE BEEN DONE** to establish whether GMO foods may be affecting Americans' health.
- Because most GMOs are NOT labeled, there is no way of tracing any effects.

The Science:

- Most animal feeding studies on GMOs are short-medium term studies.
- LONG-TERM, multi-generational studies are needed, as these are often suggestive of harmful health effects.
- Long-term studies are **not currently required** by GMO regulators anywhere in the world.

The Nicolia Review:

- As evidence of GMO safety, Nicolia et al cite animal feeding studies that are too short to show long-term health effects.
- The longest studies cited are **90-day studies on rodents.**
- Short-term studies are appropriate to identify acute toxicity, **but do not provide valid evidence regarding the long-term safety of GMOs.**
- Effects such as cancer, severe organ damage, reproductive issues, teratogenicity, and premature death, can be reliably detected only in long-term and multigenerational studies.

The Debate is Over???



As Dr. Steven Novella notes in Neurologica:

“[T]his data is observational, meaning the authors are looking at data collected out there in the world and not part of any controlled prospective experiment.”

<http://www.forbes.com/sites/jonentine/2014/09/17/the-debate-about-gmo-safety-is-over-thanks-to-a-new-trillion-meal-study/>

Making Sense:

- “The vast majority of the research on genetically modified (GM) crops **suggest** that they are safe to eat.
- Yet not all criticisms of GM are so easily rejected, and pro-GM scientists are often dismissive and even unscientific in their rejection of the counterevidence.
- A careful analysis of the risks and benefits argues for **expanded safety testing of GM crops.**”

<http://www.scientificamerican.com/article/the-truth-about-genetically-modified-food/>

He's one of the busiest men in town. While his door may say *Office Hours 2 to 4*, he's actually on call 24 hours a day.

The doctor is a scientist, a diplomat, and a friendly sympathetic human being all in one, no matter how long and hard his schedule.

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE

DOCTORS in every branch of medicine—113,597 in all—were queried in this nationwide study of cigarette preference. Three leading research organizations made the survey. The gist of the query was—What cigarette do you smoke, Doctor?

The brand named most was Camel!

The rich, full flavor and cool mildness of Camel's superb blend of costlier tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're not—well, try Camels now.

Your "T-Zone" Will Tell You ...

T for Taste ...
T for Throat ...
 that's your proving ground for any cigarette. See if Camels don't suit your "T-Zone" to a "T."

CAMELS Costlier Tobaccos

beecreative.co.uk

THROAT DOCTORS VOTE OLD GOLD BEST FOR YOUR THROAT

Old Gold CIGARETTES

Not a Cough in a Carload

AGAIN, I TESTED the 4 leading cigarette brands with a group of throat specialists. "Doctors," I said, "the names of these cigarettes are covered up. Don't try to guess which is which. Just smoke them—and tell me which cigarette is easiest on the throat."

"They all that . . . And again, OLD GOLD won by a big majority."

(Quoted) ROBERT REFLEY, Doctor of "Believe It or Not"

Tested the best for taste and throat comfort.

"These doctors know what harsh tobacco does to throat membranes. They voted for O. G. because its clean, cool, filtered cigarette substance is like honey to the throat. The one's like O. G.'s taste is smooth. Its throat easy when . . . even when the name is covered up."

CERTIFIED PROOF!
 "I have verified that this Old Gold is the most soothing and easiest on the throat of any cigarette ever covered by the name 'Old Gold'."—Robert R. Refley, M.D., M.P.H., Director of the Department of Otolaryngology, New York

There is no Old Gold Cigarette Smoking . . . Tuesday at 8:45 P. M., Thursday at 8:30 P. M., Friday Standard Time . . . (Time varies between countries.)

- King James noted the potential for tobacco related health problems, 1604.
- 1st report in the medical literature suggesting link between tobacco and lung cancer published in 1912.
- Formal studies showing a link published in the late 1920's.



https://en.wikisource.org/wiki/A_Counterblast_to_Tobacco
<http://boards.straightdope.com/sdmb/showthread.php?t=619679>

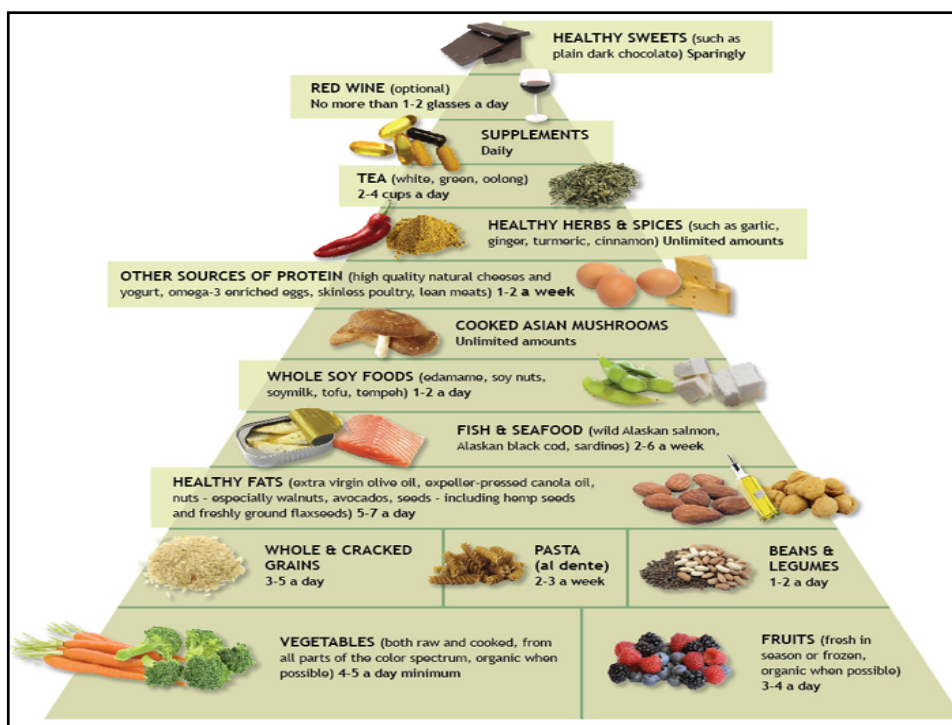


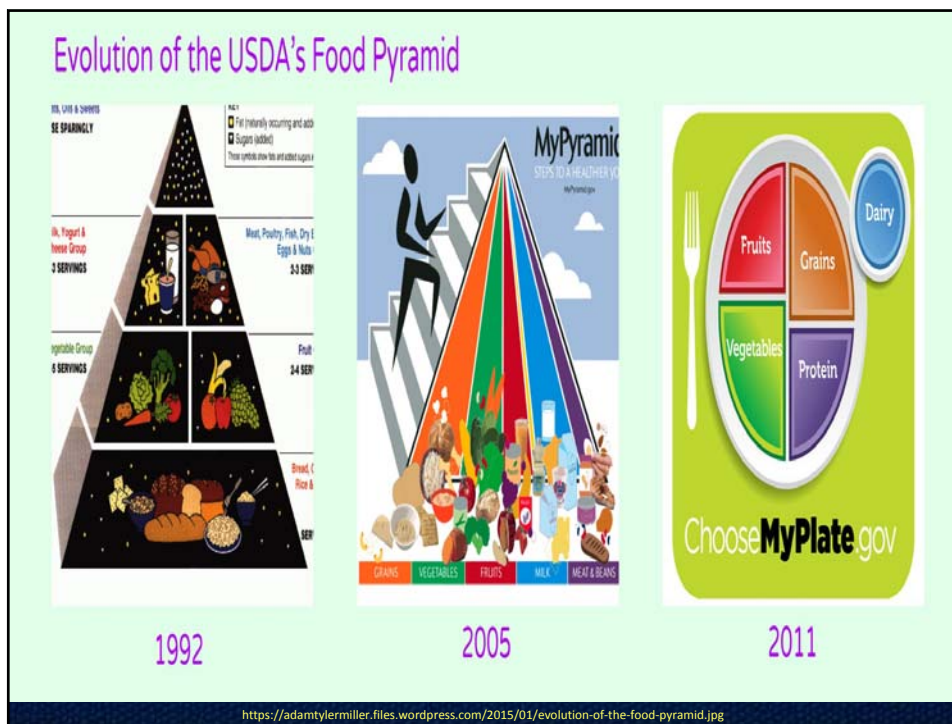
On January 11, 1964, the Surgeon General of the U.S. Public Health Service, released the first report of the Surgeon General's Advisory Committee on Smoking and Health.

(That's over 3 centuries from King James!)

Partial / Total GMO Bans:

- Italy
- Austria
- France
- Germany
- Luxembourg
- Portugal
- Greece
- Spain
- Egypt
- Algeria
- Switzerland
- Norway
- Australia
- New Zealand
- Thailand
- Philippines
- Saudi Arabia
- Brazil
- Paraguay

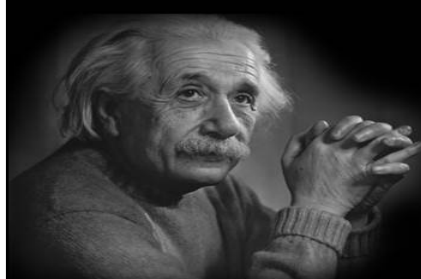




Wrap Up:

1. Decrease (preferably eliminate) the consumption of processed foods.
2. Natural whole foods are preferable over supplements.
3. Daily multivitamin supplement may be prudent if unable to adhere to HHS and USDA dietary guidelines. Supplement others per individual need and screen at risk individuals.
4. If given the choice, limit consumption of GMO-derived foods until better safety data and long-term studies are obtained.

WHEN THE SOLUTION IS SIMPLE, GOD IS ANSWERING.



Albert Einstein
German Theoretical-Physicist
(1879-1955)

QuoteHD.com

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- Originally published April 20, 2017
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- <http://www.forbes.com/sites/jonentine/2014/09/17/the-debate-about-gmo-safety-is-over-thanks-to-a-new-trillion-meal-study/>
- <http://www.hhs.gov/about/news/2016/01/07/hhs-and-usda-release-new-dietary-guidelines-encourage-healthy-eating-patterns-prevent-chronic.html>
- <http://www.scientificamerican.com/article/soil-depletion-and-nutrition-loss/>
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