

An Apple a Day...

An Exploration of the Facts, Fictions, and Unknowns of Nutrition

Mini Med School

4 May, 2021

Alexandra Jamieson and Nicole Cameron



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Faculty of Medicine



University
of Victoria

let's talk  science

Introductions and Disclosures

- About Mini Med School
- About the optional survey

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- We are medical students
- This talk is intended for your entertainment and education, and is not meant to replace advice from your family physician or another health care professional

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- Due to the nature and timing of this discussion, you may experience hunger during this presentation
- Thank you for joining us for our first talk of the series!

Introductions and Disclosures

- All pictures used are free stock photos or photos available under a Creative Commons license unless otherwise noted
- Miss Jamieson is not affiliated with the vitamin/supplement company Jamieson

Agenda

- Basics of Digestion
- Building Blocks of Food
- Dietary Confusion and Information Overload
- Things Change: Evaluating Nutritional Advice
- A Brief Exploration of Food Research
- Best Bets: Food Guides and Evidence-Based Eating
- Q & A and Intermission

Agenda Cont'd

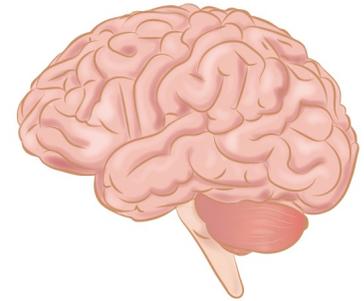
- The Nutrition Label
- Common Myths and Misconceptions
- Food and Drugs
- Fashionable Diets
- You Are an Ecosystem
- Food Sensitivities and Sensitivity Testing
- Different Diets for Different People
- Reading Recommendations
- Q & A and Closing Remarks

Without further ado...



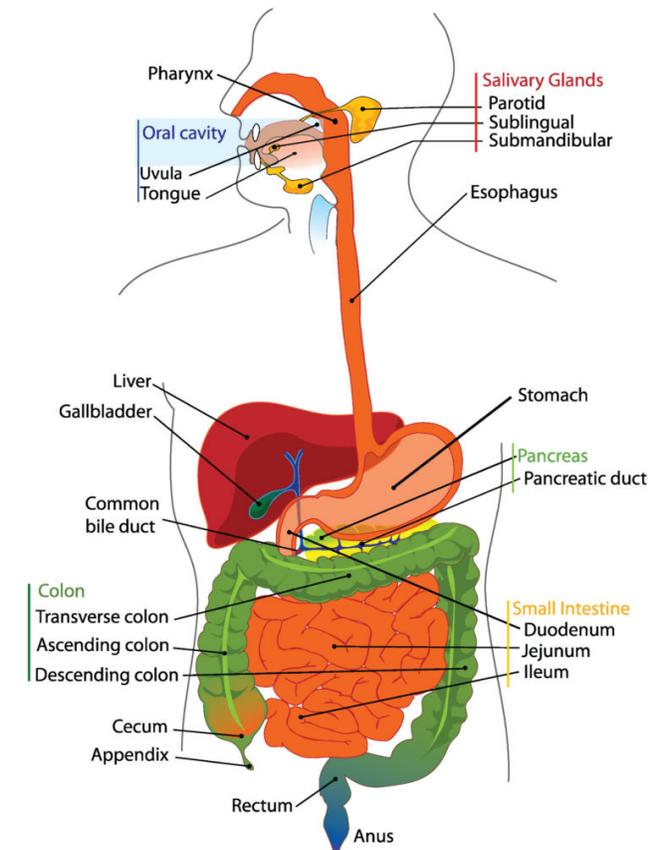
Appetizer: The Basics of Digestion

- Digestion starts in the brain – the central nervous system
 - Thoughts and smells trigger the release of digestive enzymes
 - Our gut also has its own nervous system, the enteric nervous system
-
- These systems communicate with each other
 - Mood and digestion are linked in ways we do not fully understand
 - Bowel disorders and mood disorders often occur together



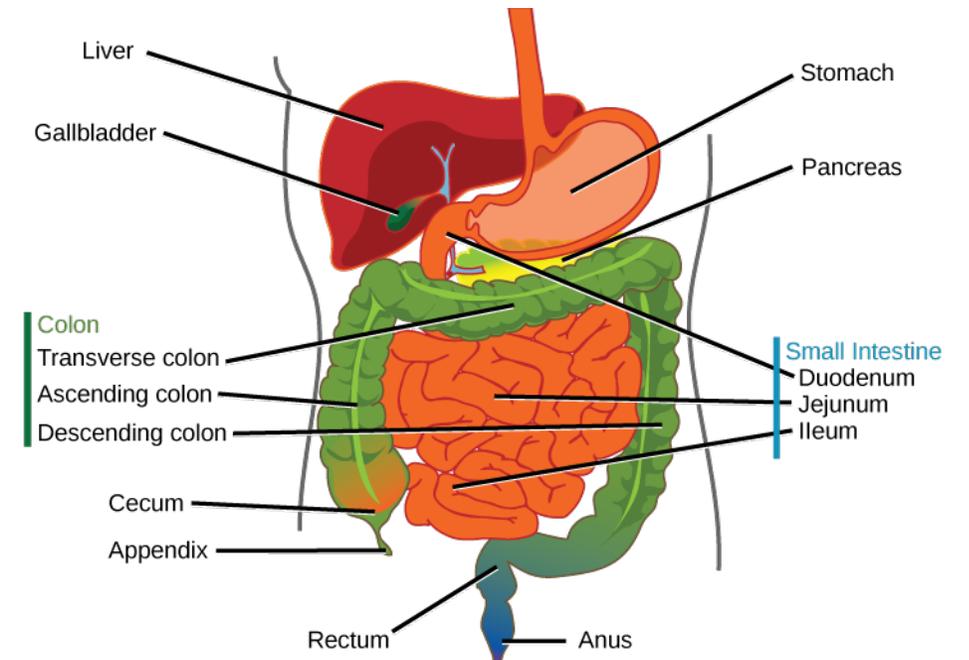
The Basics of Digestion

- In the mouth, digestion begins, as enzymes in our saliva begin to break food down (crackers and amylase)
- Chewing mechanically breaks food down and leads to the formation of a bolus
- Rhythmic pulsations of smooth muscle around the esophagus move the bolus down to the stomach in a process called peristalsis
- In the stomach, the bolus churns with acids and proteases, breaking it down



The Basics of Digestion

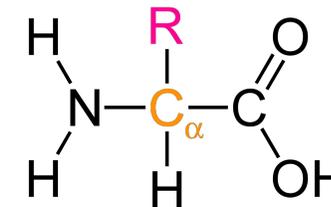
- The small intestine is the major site of nutrient absorption in the digestive tract
- The pancreas secretes many crucial digestive enzymes directly into the small intestine
- Bile from the gallbladder is also secreted into the small intestine to aid in the digestion of fat
- In the large intestine, water and electrolytes are reabsorbed



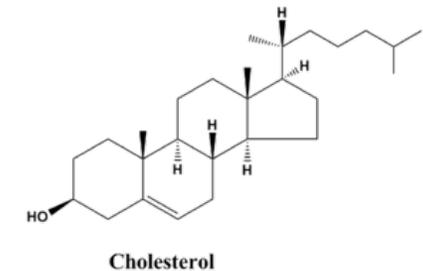
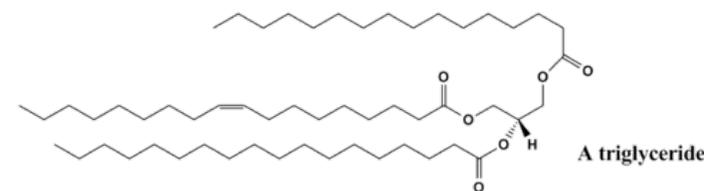
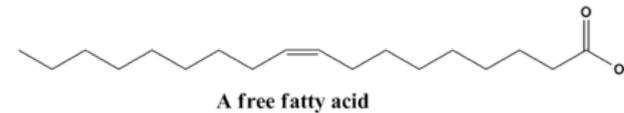
The Building Blocks of Food

- Components of food, simplified:

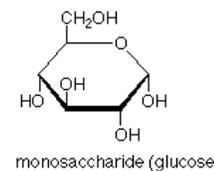
- Water
- Dietary fiber
- Pre- and pro-biotics (to be discussed later)
- **Macronutrients**
 - Protein
 - Essential amino acids (vs non-essential)
 - Lipids / fats
 - Carbohydrates (starch and sugars)
- **Micronutrients**
 - Vitamins
 - Minerals
 - Phytonutrients



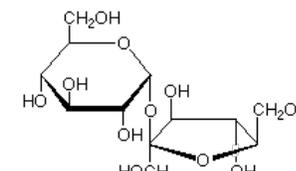
amino acid



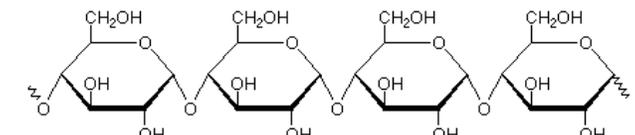
Cholesterol



monosaccharide (glucose)



disaccharide (sucrose)



polysaccharide (amylose starch)

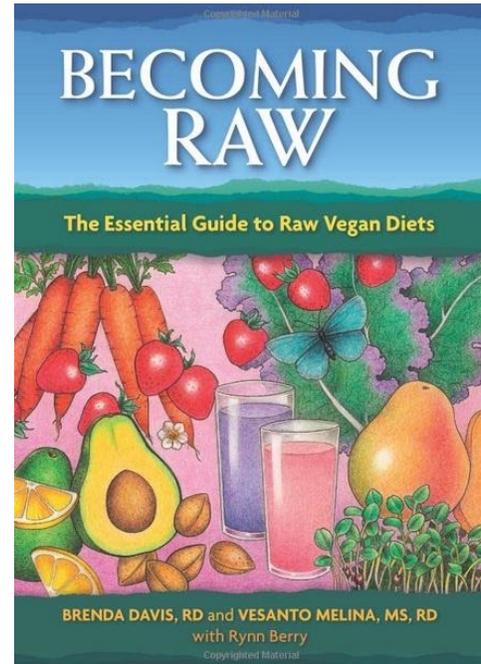
The Building Blocks of Food

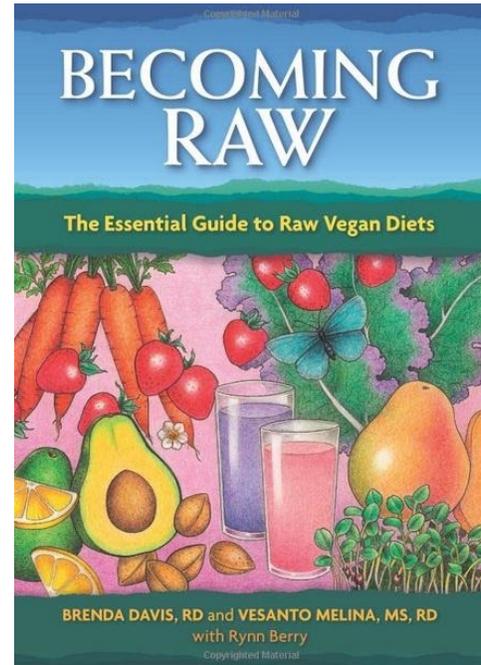
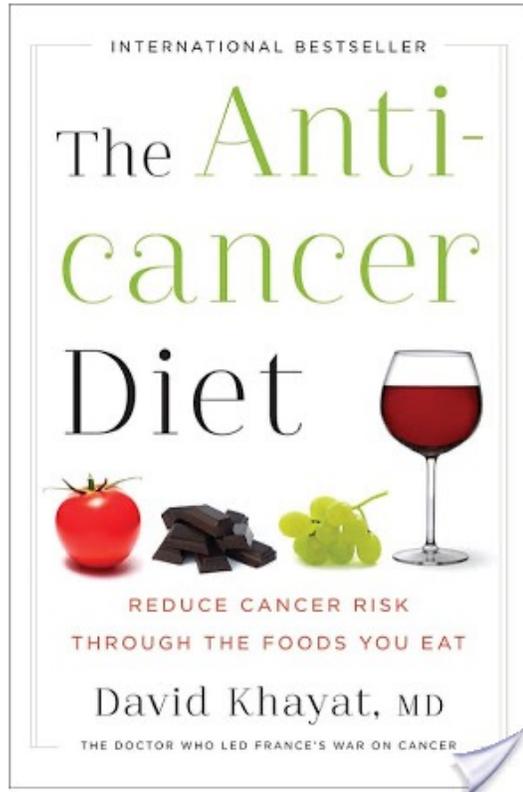
- Components of food, simplified:
 - Water
 - Dietary fiber
 - Pre- and pro-biotics (to be discussed later)
 - Macronutrients (protein, fat, carbohydrates)
 - Essential amino acids (vs non-essential)
 - Micronutrients
 - Vitamins
 - Minerals
 - Phytonutrients

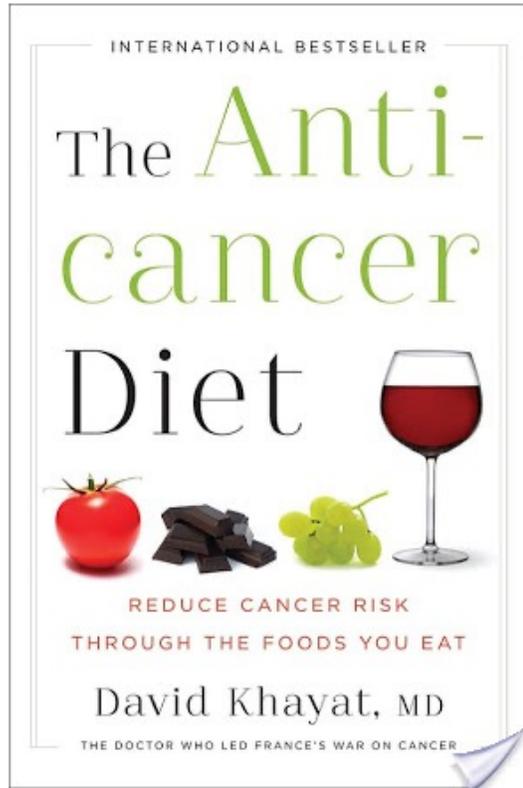
It's all very well until you try to figure out what you should be eating.



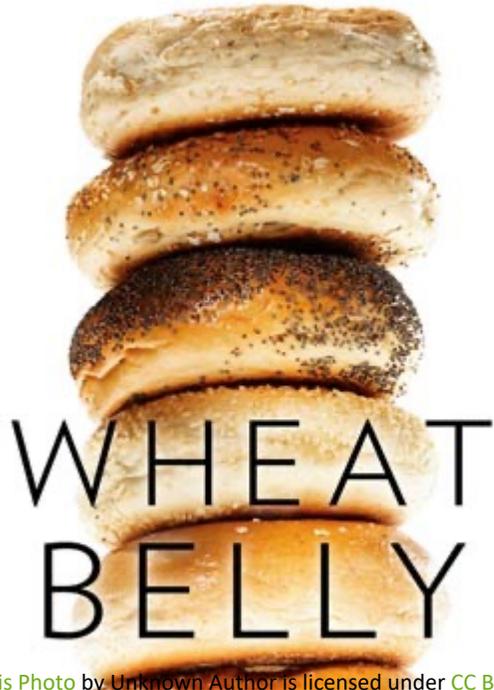








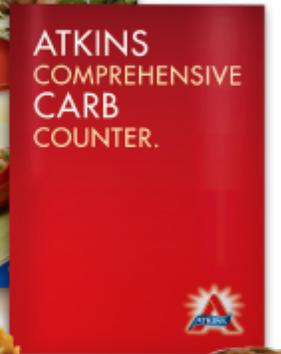
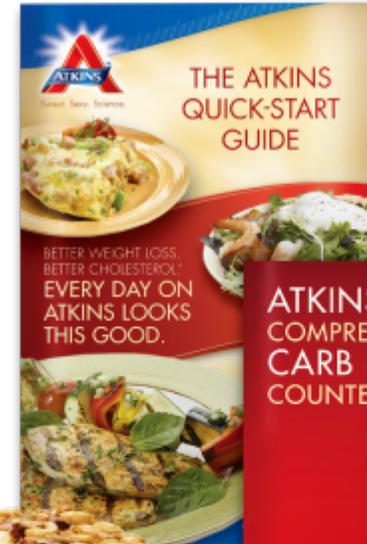
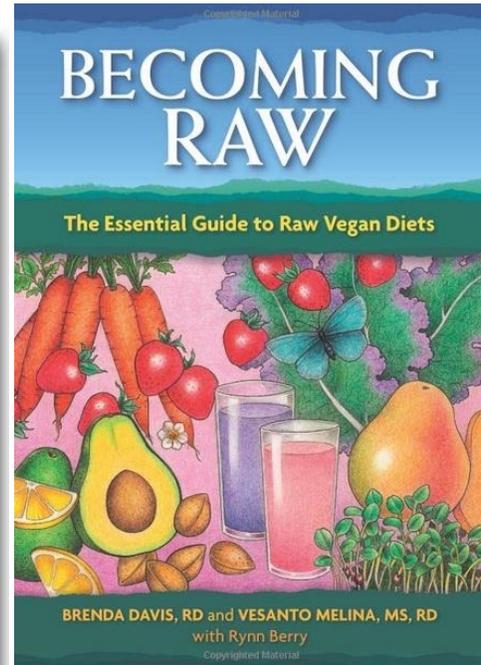
LOSE THE WHEAT, LOSE THE WEIGHT,
AND FIND YOUR PATH BACK TO HEALTH

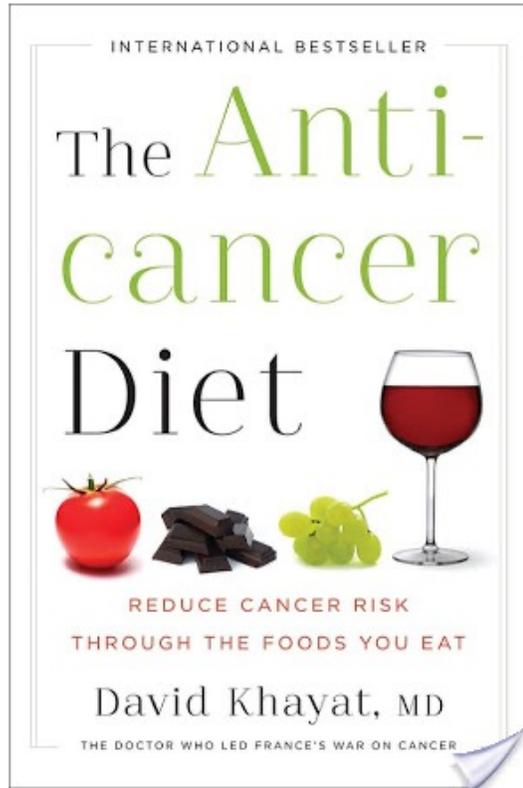


WHEAT
BELLY

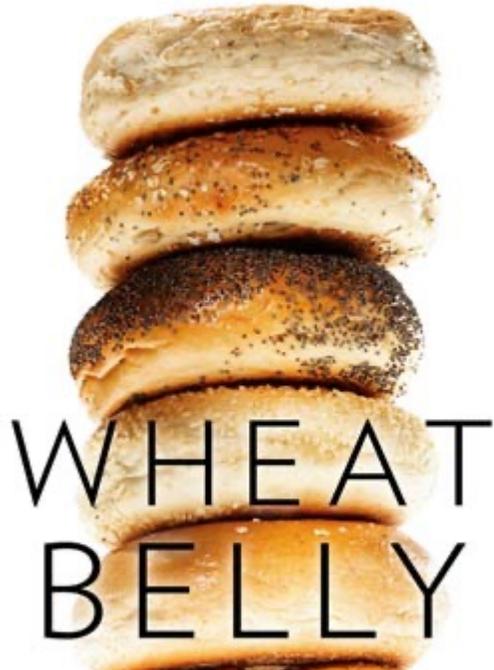
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WILLIAM DAVIS, MD

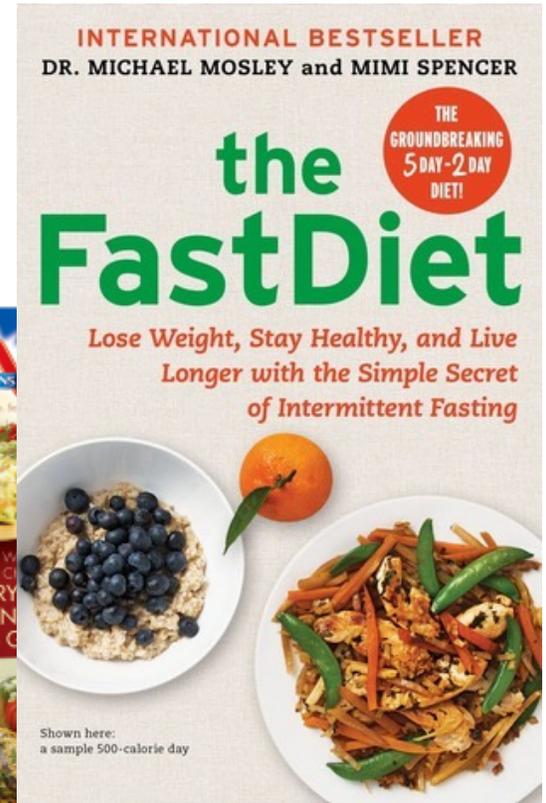
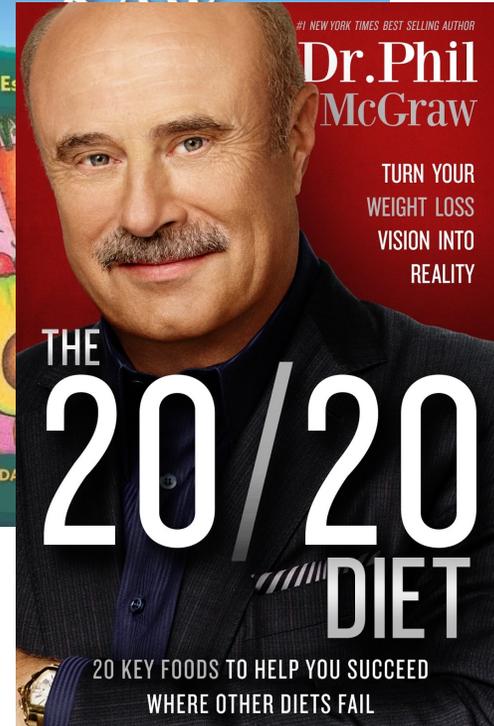
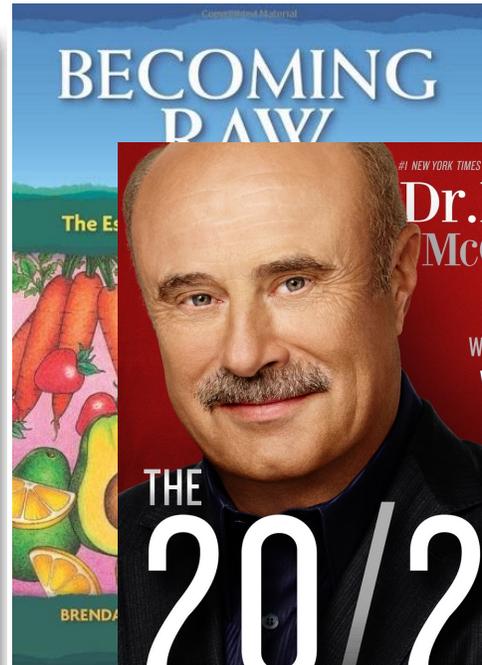




LOSE THE WHEAT, LOSE THE WEIGHT,
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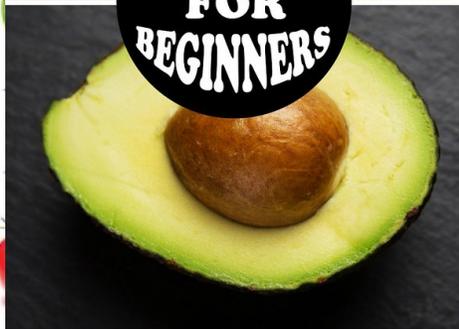


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WILLIAM DAVIS, MD





**KETO
FOR
BEGINNERS**



LOWCARBALPHA

David Khayat, MD

THE DOCTOR WHO LED FRANCE'S WAR ON CANCER

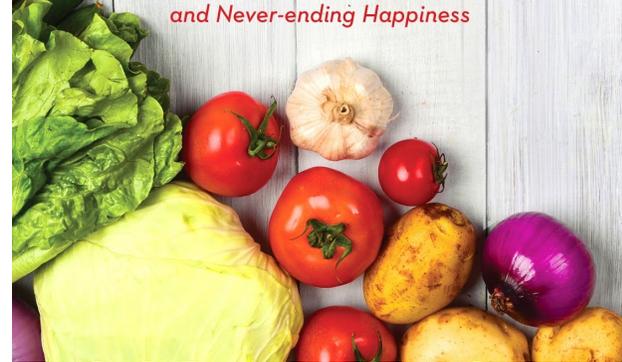


VEGAN

Go Detox

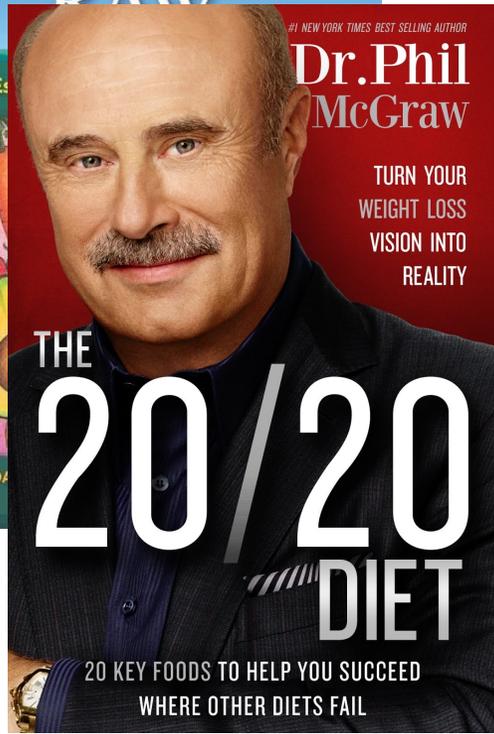
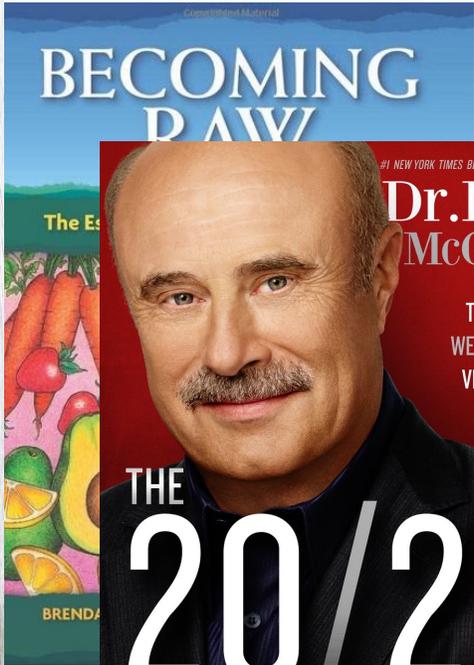
**ALKALINE
DIET**

*Top 32 Alkaline Recipes for
Rapid Weight Loss, Ultimate Health
and Never-ending Happiness*



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WILLIAM DAVIS, MD



INTERNATIONAL BESTSELLER
DR. MICHAEL MOSLEY and MIMI SPENCER

THE
GROUNDBREAKING
5 DAY-2 DAY
DIET!

**the
FastDiet**

*Lose Weight, Stay Healthy, and Live
Longer with the Simple Secret
of Intermittent Fasting*



Shown here:
a sample 500-calorie day





VEGAN

Eating egg yolks leads to two-thirds of the plaque buildup you'd see in a smoker's arteries, study shows

BY RYAN JASLOW
AUGUST 15, 2012 / 1:23 PM / CBS NEWS



South Beach Diet
the (unofficial) South Beach

COMING
RAW

INTERNATIONAL BESTSELLER
DR. MICHAEL MOSLEY and MIMI SPENCER

THE
GROUNDBREAKING
5 DAY-2 DAY
DIET!

the
Diet

Healthy, and Live
Simple Secret
Intermittent Fasting

DAILY HEALTHPOST
**Sugar
ADDICTION**



**KILLS
MORE PEOPLE THAN
ILLEGAL DRUGS**

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**SUGAR
DETOX**

Beat Sugar Addiction, Overcome
Sugar Cravings, Lose Weight,
Increase Energy And Feel Great!

NATHALY SANDFORD

DIET

Top 32 A
Rapid Weight
and Never

Bestselling author
DAVID ORTNER

**THE THREE DAY
JUICE
CLEANSE**
for weight loss

Includes meal plans and recipes!

This Photo by Unknown /
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WILLIAM

#1 NEW YORK TIMES BESTSELLER

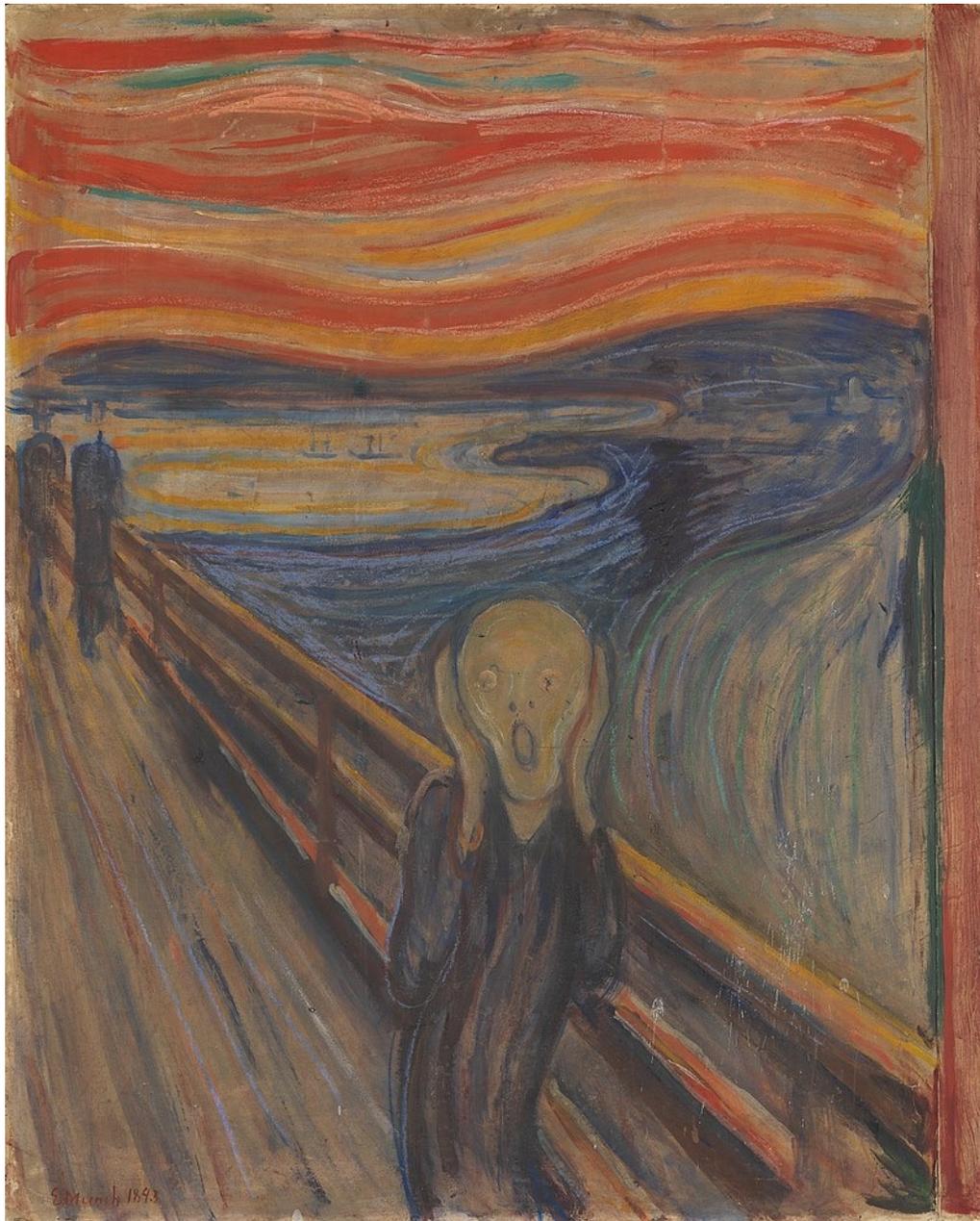
Dr. F. McC

THE
20/2
DIET

20 KEY FOODS TO HELP YOU SUCCEED
WHERE OTHER DIETS FAIL







Dietary Confusion – Information Overload

- There is so much conflicting information in literature, including research and journalism, about nutrition. Why?

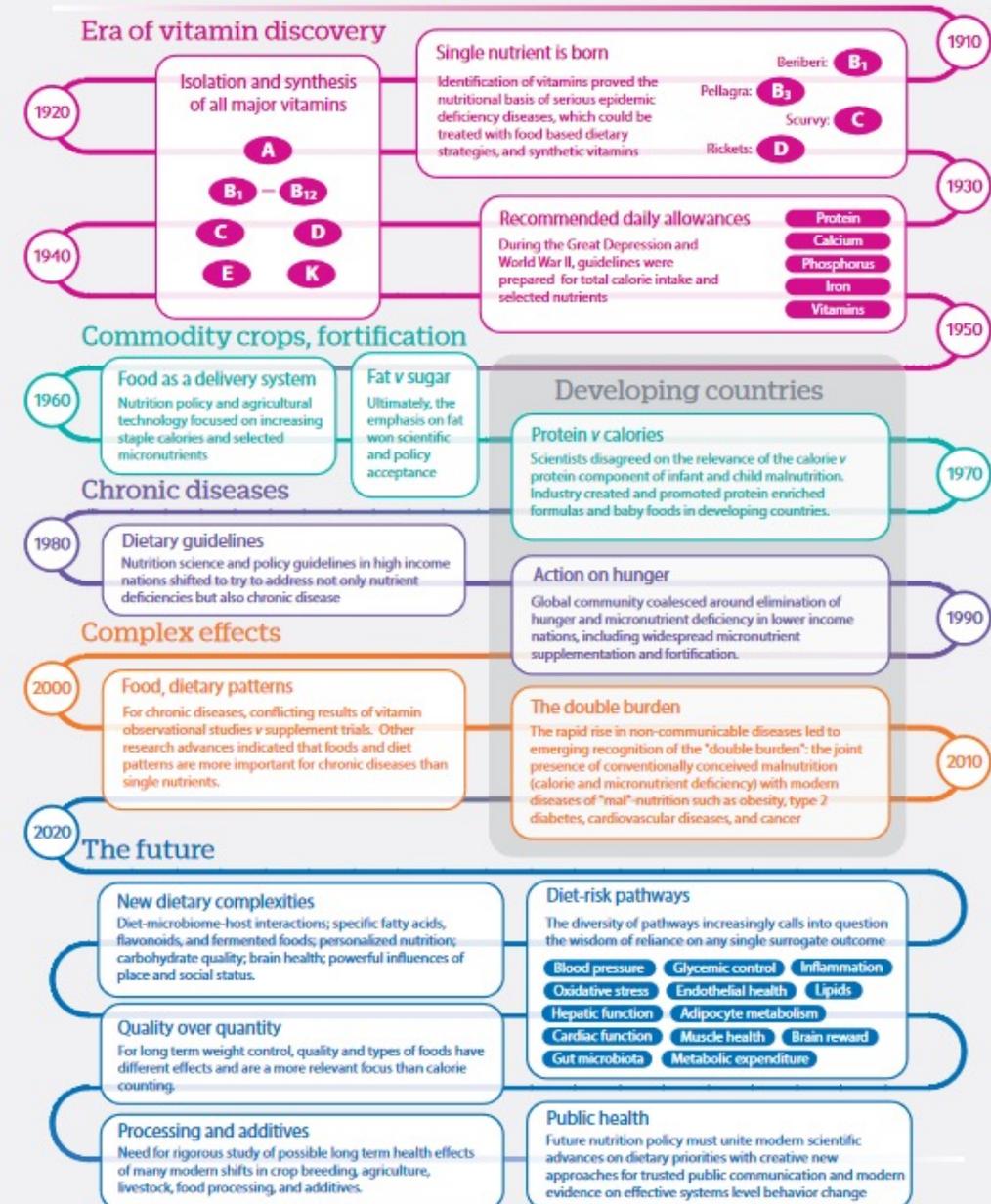
Dietary Confusion – Information Overload

- Why is there so much conflicting information in literature, including research and journalism, about nutrition?
- Common problems:
 - Small studies
 - Many confounders
 - Lab vs real world
 - Time constraints
 - Mice vs men
 - Conflicts of interest
 - Poor reporting
 - Clickbait
 - Profit potential

Things Change

- Mozaffarian D, Rosenberg I, Uauy R. History of modern nutrition science—implications for current research, dietary guidelines, and food policy BMJ 2018; 361 :k2392 doi:10.1136/bmj.k2392
- <https://www.bmj.com/content/361/bmj.k2392>
- Visual summary of the many changes in how food and nutrition have been understood over the past 100+ years

While food and nutrition have been studied for centuries, modern nutritional science is surprisingly young. This timeline shows how developments in the early 20th Century have persistently shaped our understanding of the field, at times limiting our knowledge of the complex links between dietary patterns and health.



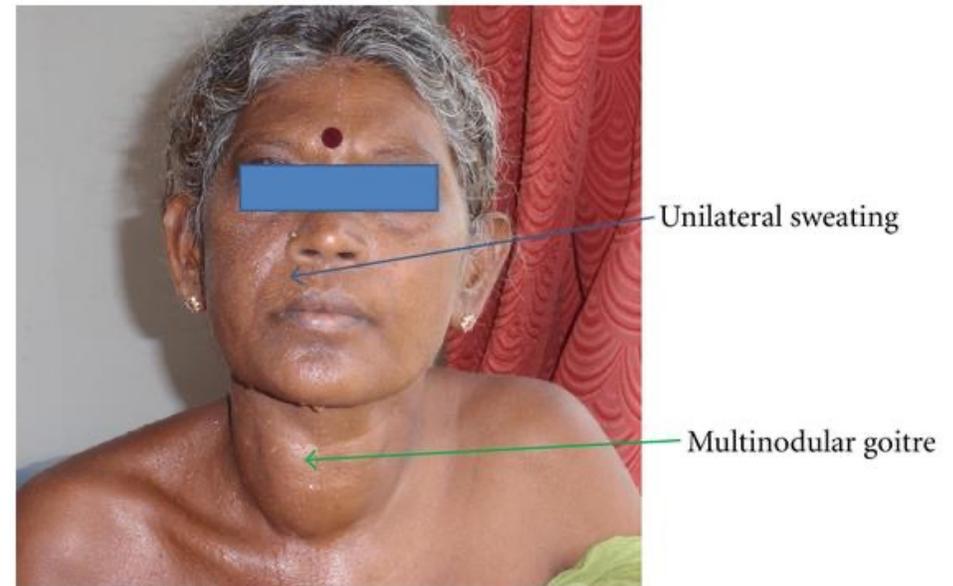
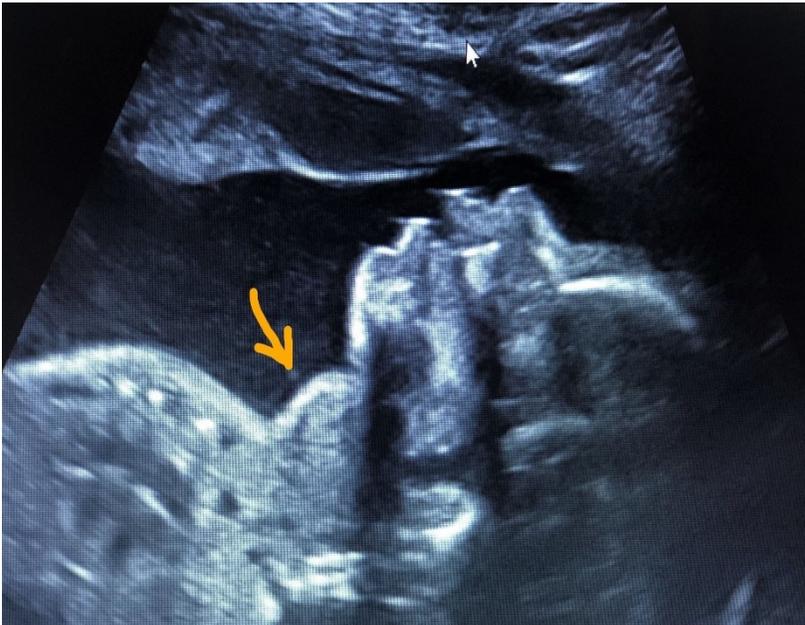
Food Research and Policy

- We have long recognized that dietary deficiencies can be problematic
- Food fortification, like vaccination, is one of the great public health initiatives of the past century:
- 1920s - iodization of salt
- 1930s - fortification of milk with Vitamin D
- 1940s - enrichment of flour and bread
- 1980s - calcium added to many products

The History of Food Fortification in the United States: Its Relevance for Current Fortification Efforts in Developing Countries
Author(s): David Bishai and Ritu Nalubola Source: Economic Development and Cultural Change , Vol. 51, No. 1 (October 2002), pp. 37- 53 Published by: The University of Chicago Press Stable URL: <https://www.jstor.org/stable/10.1086/345361>

Food Research and Policy

- 1920s - iodization of salt



Food Research and Policy

- 1930s - fortification of milk with Vitamin D

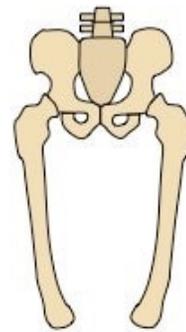
Figure 2. Photograph of a patient with rickets showing bowing of the legs (A) with classical radiological findings (B). of rickets.



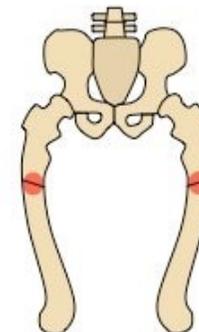
(A)



(B)



**Normal
bones**



Rickets



Example of Rickets

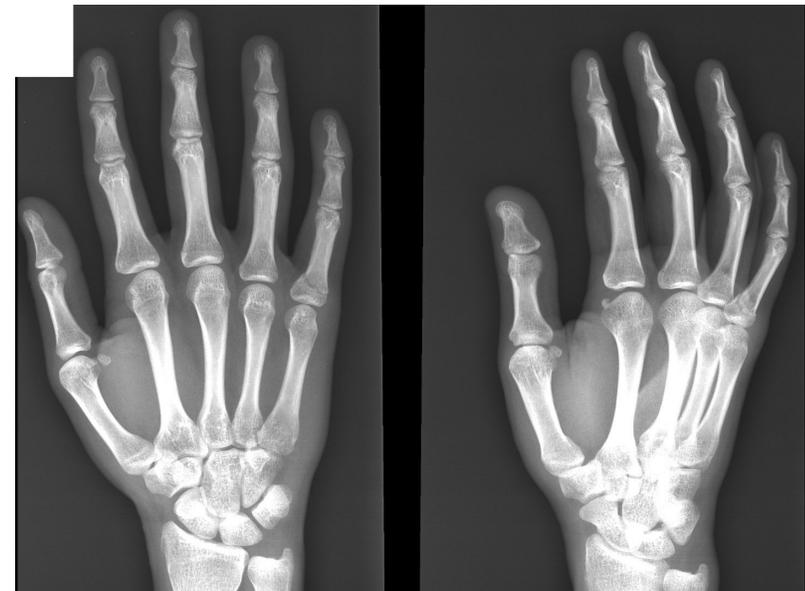
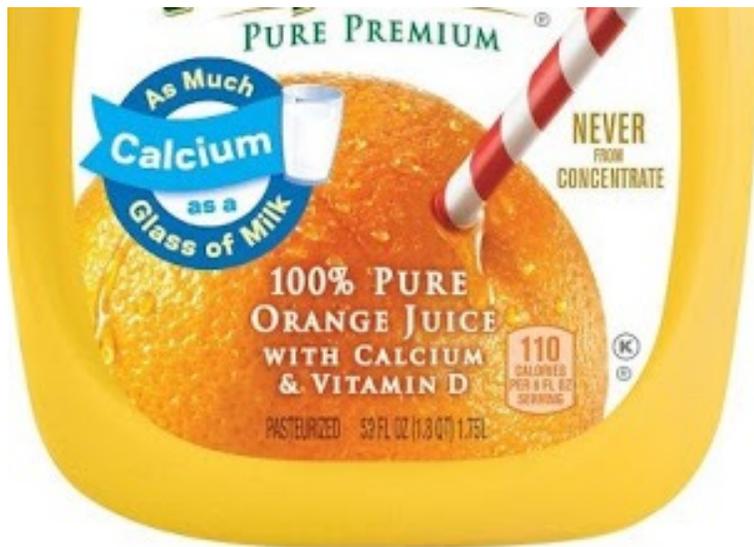
Food Research and Policy

- 1940s - enrichment of flour and bread



Food Research and Policy

- 1980s – calcium added to many products



Food Research and Policy

- Not *food* but *water* – fluoridation, since 1945.
- Worth mentioning that water can supply us with trace levels of minerals



<https://www.cdc.gov/fluoridation>

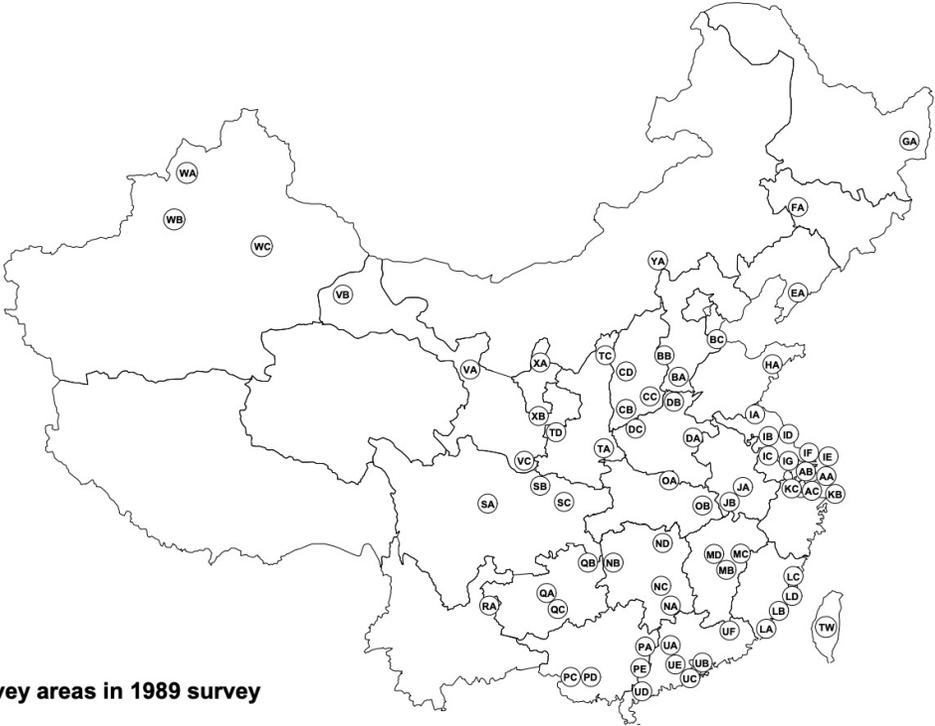
Food Research

Major studies:

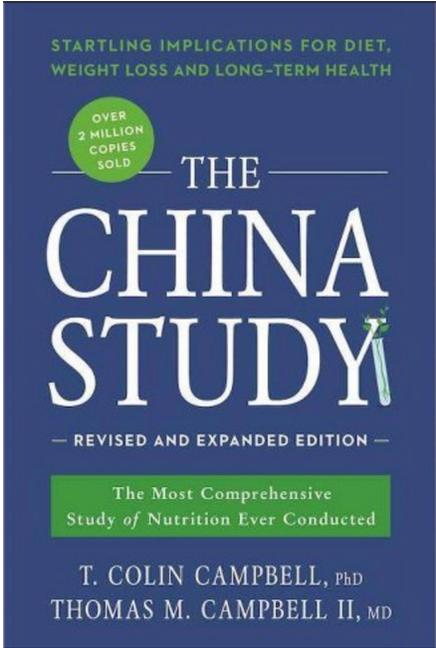
- China Study
- Nurses' Health Study
- Blue Zone studies
- Carbohydrate/fiber studies
- Microbiome studies

Food Research

The China Study



Survey areas in 1989 survey



Food Research

The Nurse's Health Study



**Breast
cancer**

**Coronary
heart disease
(CHD) & stroke**

Colon cancer

Hip fracture

**Cognitive
function**

Eye disease

<https://www.nurseshealthstudy.org/>

Also of Note: the Mediterranean Diet

Mediterranean Diet Pyramid

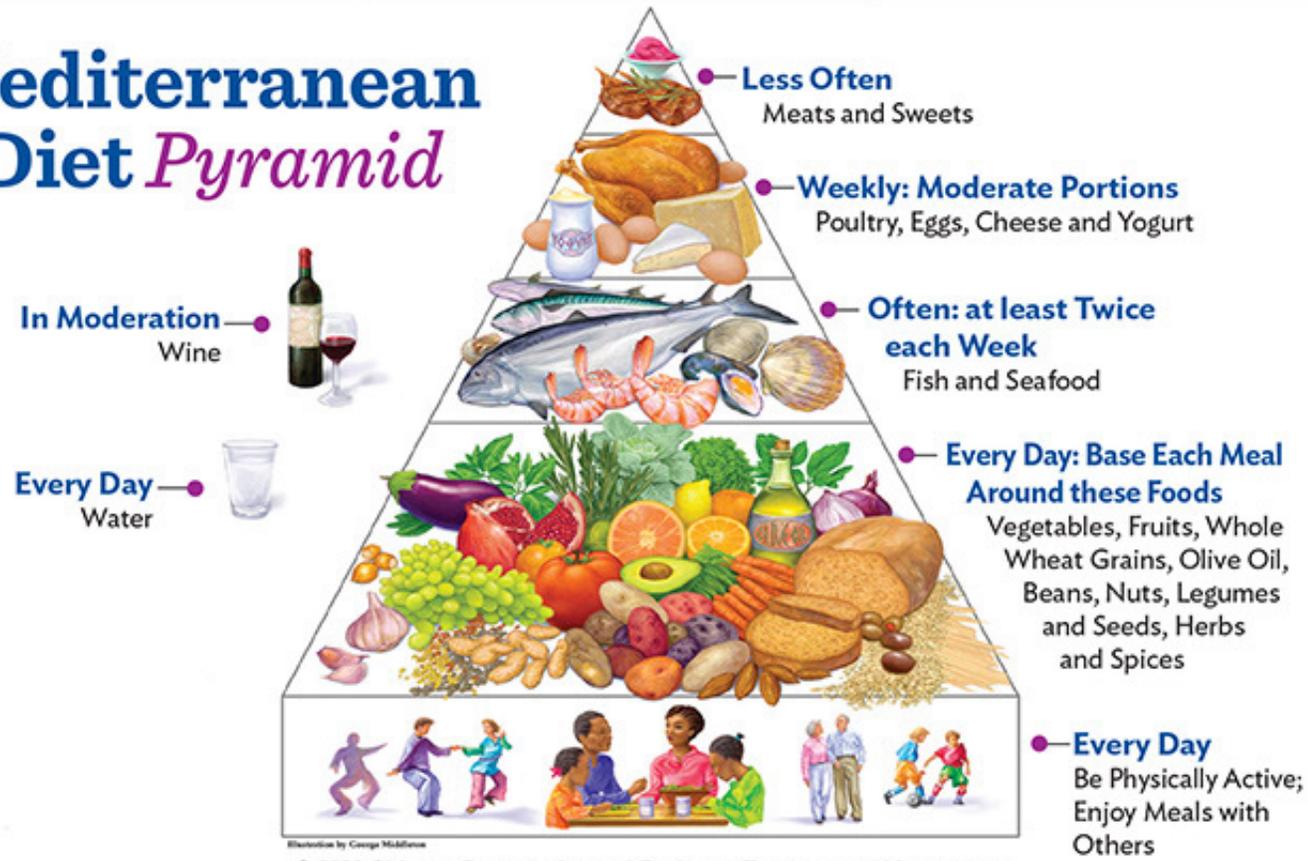


Illustration by George M. Hoffman

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Food Research

Blue Zone Studies



BLUE ZONES™ FOOD GUIDELINES

MONTHLY

Retreat from meat: Blue zones centenarians eat about 2 oz or less about 5x per month

Reduce dairy

WEEKLY

Slash sugar: Consume only 28 grams (7 teaspoons) of added sugar daily

Eliminate eggs:
No more than 3 per week

Go easy on fish:
Fewer than 3 oz, up to 3 times weekly

DAILY

Snack on nuts:
About 1-2 handful a day

Drink mostly water: About 7 glasses / day; coffee, tea, and wine in moderation

 eat often with family and friends

Daily dose of beans: Half-cup to one cup / day

Go wholly whole: Single-ingredient, raw, cooked, ground, or fermented, and not highly processed

95-100% plant-based



Food Research

Carbohydrate and Fiber Studies

- Carbohydrates are an important part of a healthy diet



Food Research

Microbiome Studies



Food Guides

- A look at Canada's Food Guide and at national food guides from the US, the UK, Australia, and New Zealand

The Old Canada Food Guide (2007-2018)

Recommended Number of Food Guide Servings per Day		Children			Teens		Adults			
		2-3	4-8	9-13	14-18	19-50	51+			
Age in Years	Sex	Girls and Boys		Females	Males	Females	Males	Females	Males	
Vegetables and Fruit		4	5	6	7	8	7-8	8-10	7	7
Grain Products		3	4	6	6	7	6-7	8	6	7
Milk and Alternatives		2	2	3-4	3-4	3-4	2	2	3	3
Meat and Alternatives		1	1	1-2	2	3	2	3	2	3

What is One Food Guide Serving?

Look at the examples below.



Fresh, frozen or canned vegetables
125 mL (½ cup)



Leafy vegetables
Cooked: 125 mL (½ cup)
Raw: 250 mL (1 cup)



Fresh, frozen or canned fruits
1 fruit or 125 mL (½ cup)



100% Juice
125 mL (½ cup)



Bread
1 slice (35g)



Bagel
½ bagel (45 g)



Flat breads
½ pita or ½ tortilla (35 g)



Cooked rice, bulgur or quinoa
125 mL (½ cup)



Cereal
Cold: 30 g
Hot: 175 mL (¾ cup)



Cooked pasta or couscous
125 mL (½ cup)



Milk or powdered milk (reconstituted)
250 mL (1 cup)



Canned milk (evaporated)
125 mL (½ cup)



Fortified soy beverage
250 mL (1 cup)



Yogurt
175 g (¾ cup)



Kefir
175 g (¾ cup)



Cheese
50 g (1 ½ oz.)



Cooked fish, shellfish, poultry, lean meat
75 g (2 ½ oz.)/125 mL (½ cup)



Cooked legumes
175 mL (¾ cup)



Tofu
150 g or 175 mL (¾ cup)



Eggs
2 eggs



Peanut or nut butters
30 mL (2 Tbsp)



Shelled nuts and seeds
60 mL (¼ cup)

Make each Food Guide Serving count...

wherever you are – at home, at school, at work or when eating out!

- ▶ **Eat at least one dark green and one orange vegetable each day.**
 - Go for dark green vegetables such as broccoli, romaine lettuce and spinach.
 - Go for orange vegetables such as carrots, sweet potatoes and winter squash.
- ▶ **Choose vegetables and fruit prepared with little or no added fat, sugar or salt.**
 - Enjoy vegetables steamed, baked or stir-fried instead of deep-fried.
- ▶ **Have vegetables and fruit more often than juice.**

- ▶ **Make at least half of your grain products whole grain each day.**
 - Eat a variety of whole grains such as barley, brown rice, oats, quinoa and wild rice.
 - Enjoy whole grain breads, oatmeal or whole wheat pasta.
- ▶ **Choose grain products that are lower in fat, sugar or salt.**
 - Compare the Nutrition Facts table on labels to make wise choices.
 - Enjoy the true taste of grain products. When adding sauces or spreads, use small amounts.

- ▶ **Drink skim, 1%, or 2% milk each day.**
 - Have 500 mL (2 cups) of milk every day for adequate vitamin D.
 - Drink fortified soy beverages if you do not drink milk.
- ▶ **Select lower fat milk alternatives.**
 - Compare the Nutrition Facts table on yogurts or cheeses to make wise choices.

- ▶ **Have meat alternatives such as beans, lentils and tofu often.**
- ▶ **Eat at least two Food Guide Servings of fish each week.***
 - Choose fish such as char, herring, mackerel, salmon, sardines and trout.
- ▶ **Select lean meat and alternatives prepared with little or no added fat or salt.**
 - Trim the visible fat from meats. Remove the skin on poultry.
 - Use cooking methods such as roasting, baking or poaching that require little or no added fat.
 - If you eat lunch meats, sausages or prepackaged meats, choose those lower in salt (sodium) and fat.

The chart above shows how many Food Guide Servings you need from each of the four food groups every day.

Having the amount and type of food recommended and following the tips in *Canada's Food Guide* will help:

- Meet your needs for vitamins, minerals and other nutrients.
- Reduce your risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis.
- Contribute to your overall health and vitality.

Oils and Fats

- Include a small amount – 30 to 45 mL (2 to 3 Tbsp) – of unsaturated fat each day. This includes oil used for cooking, salad dressings, margarine and mayonnaise.
- Use vegetable oils such as canola, olive and soybean.
- Choose soft margarines that are low in saturated and trans fats.
- Limit butter, hard margarine, lard and shortening.



Enjoy a variety of foods from the four food groups.



Satisfy your thirst with water!
Drink water regularly. It's a calorie-free way to quench your thirst. Drink more water in hot weather or when you are very active.

* Health Canada provides advice for limiting exposure to mercury from certain types of fish. Refer to www.healthcanada.gc.ca for the latest information.

<https://www.canada.ca/en/health-canada/services/canada-food-guide/about/history-food-guide/eating-well-with-canada-food-guide-2007.html>

Canada's Food Guide

- The food guide formerly known as the Canada Food Guide
- Underwent a considerable revision in 2019
 - Goals:
 - to assist Canadians in applying Food Guide recommendations
 - “to ensure alignment with most current evidence on topics such as sodium, saturated fat and sugars”
- Most obvious change: from 4 to 3 food groups



<https://food-guide.canada.ca/>

Canada's Food Guide

- Increased emphasis on plant-based foods
- Unsaturated > saturated fat, as before
- Recommends only infrequent consumption of processed foods and foods with high levels of added sugar, salt, and saturated fat
- Limit alcohol (H2O recommended)
- Eat a variety of foods



<https://food-guide.canada.ca/>

Food Guides

- New focus on how you eat, not just what you eat:
 - Cooking frequently
 - Eating socially
 - Enjoying your meals
 - Consulting food labels
 - Being critical of food advertising
 - Listen to your body (eat slowly, be aware of hunger, fullness)



Be mindful of your eating habits



Cook more often



Enjoy your food



Eat meals with others



Use food labels



Limit highly processed foods

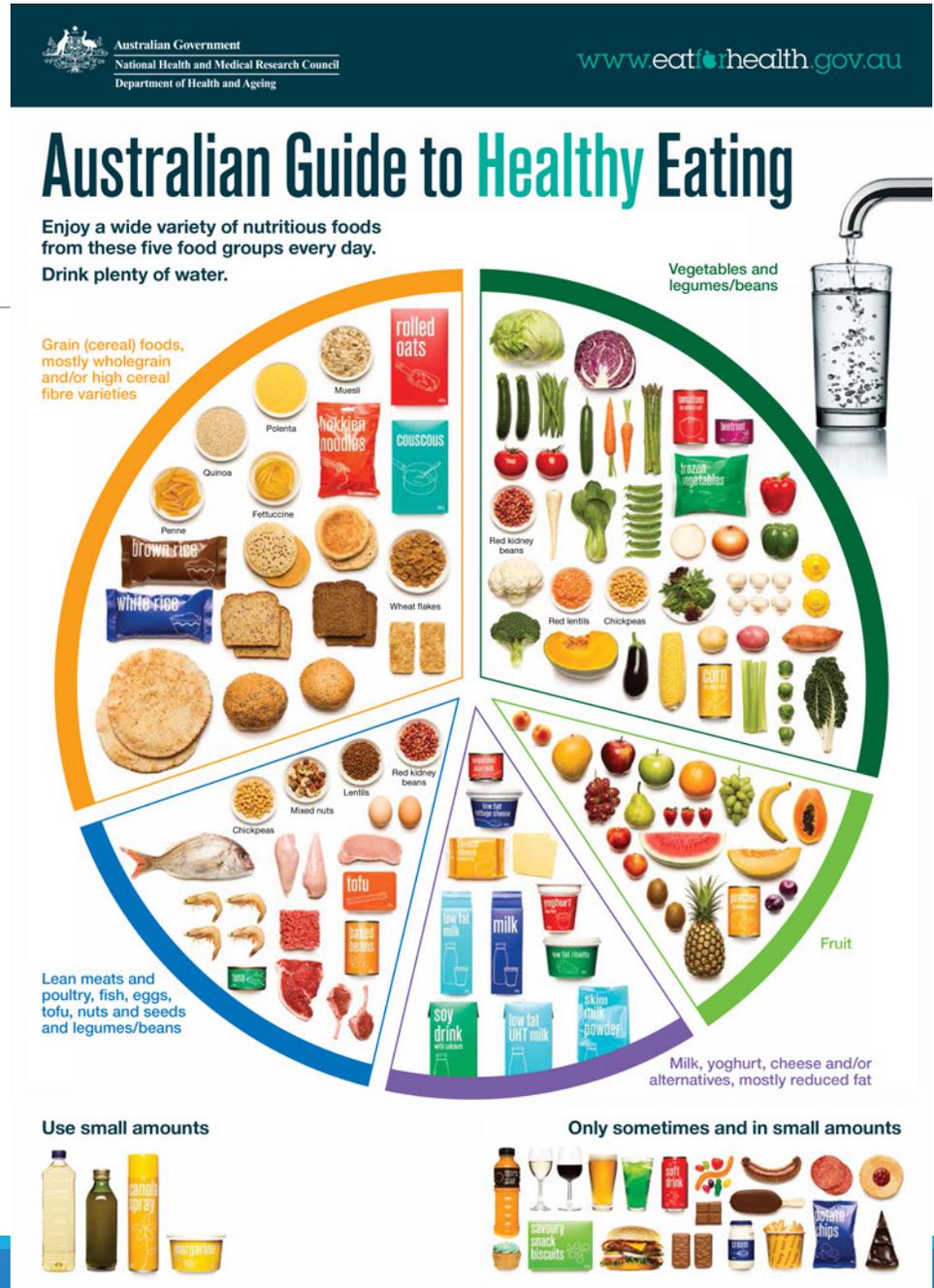


Marketing can influence your food choices

How does it compare?

- Australia

- Australian Guide to Healthy Eating / “Eat for Health” – similar
- In this representation, the Australian guide maintains a separation between dairy and protein (like in the old Canada Food Guide)
- Allocates a little more space to dairy/protein and to grains.
- Fruit is distinct from veg and is allocated less space.
- Guidelines also include promotion of physical activity, breastfeeding and of the safe storage and preparation of food
- As in Canada’s Guide – limit added sugars/salt/sat fat, alcohol, drink water, eat a variety of foods



How does it compare? – New Zealand

- New Zealand takes a markedly less pictorial approach, and its summary guidelines for adults run 164 pages, but the principles are similar to those of Australia’s national food guide.
- Charming physical activity recommendation: the “snacktivity”

Enjoy a variety of nutritious foods, including:



Plenty of vegetables and fruit



Grain foods, mostly whole grain and those naturally high in fibre



Some milk and milk products, mostly low- and reduced-fat



Some legumes, nuts, seeds, fish and other seafood, eggs or poultry, or red meat with the fat removed.

Legumes include lentils, split peas, chickpeas and cooked dried beans (eg, red kidney beans, baked beans).



<https://www.health.govt.nz/your-health/healthy-living/food-activity-and-sleep/healthy-eating>

<https://www.healthed.govt.nz/>

How does it compare?

– The UK

- The Eatwell Guide
- Catchy “5 A Day”
- 6-8 cups fluid a day – tea is perfectly acceptable
- Highly consistent with the other food guides so far
- Provides general caloric recommendations by sex



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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How does it compare? – The USA

There are 4 overarching Guidelines in the 2020-2025 edition:

- Follow a healthy dietary pattern at every life stage.
- Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.
- Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.
- Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

There are Key Recommendations supporting the 4 Guidelines, including quantitative recommendations on limits that are based on the body of science reviewed. The Guidelines recommend:

- Limiting added sugars* to less than 10% of calories per day for ages 2 and older and to avoid added sugars for infants and toddlers;
- Limiting saturated fat to less than 10% of calories per day starting at age 2;
- Limiting sodium intake to less than 2,300mg per day (or even less if younger than 14);
- Limiting alcoholic beverages* (if consumed) to 2 drinks or less a day for men and 1 drink or less a day for women.

And follow these three key dietary principles:

1

Meet nutritional needs primarily from nutrient-dense foods and beverages.



2

Choose a variety of options from each food group.



3

Pay attention to portion size.



<https://www.dietaryguidelines.gov/>

What Do These Diets Share?

- Emphasis on a plant-focused diet centred around whole grains, vegetables, legumes, and fruits.
- Encouragement to eat a diverse array of foods.
- Increasingly, a recognition that food is best enjoyed in company and that good food *and* physical activity are both important to a healthy lifestyle.
- A preference for seafood and moderate amounts of poultry and dairy over red meat.
- Lighter consumption of added sugars and processed foods.
- Not restrictive – no ‘bad’ or ‘good’ foods, just some to enjoy less often and others to enjoy more frequently.

Evaluating Nutritional Advice

- You are likely to encounter new information about diet almost daily, in conversation and in print
- Be open to new ideas, but also be open to challenging them
- Evaluate the source's reliability
- Consider 'moving up the food chain' or finding the original source of information
- Credentials? Peer-review? Funding?
- Assess the source's intentions
- If it sounds too good to be true...
- Always consult your doctor or a qualified health professional prior to making drastic changes to the way you eat.

Q&A

- Ask us anything, within reason!
- What we can't answer now, we may be able to find out.

Intermission

Agenda Cont'd

- The Nutrition Label
- Common Myths and Misconceptions
- Food and Drugs
- Fashionable Diets
- You Are an Ecosystem
- Food Sensitivities and Sensitivity Testing
- Different Diets for Different People
- Reading Recommendations
- Q & A and Closing Remarks

The Nutrition Label

- The information on a nutrition label is based on the serving size. Compare the serving size to the amount of food you want to eat then adjust the nutrition information accordingly.
 - Tip: If the serving size is in grams and you are not sure how many grams you eat, look at the total grams of the package, estimate what portion of the package you eat, then calculate accordingly.
- Judge if the food contains a little or a lot of a particular nutrient by looking at the % Daily Value column
 - 5% or less = a little
 - 15% or more = a lot
- Choose foods that are lower in sugar and saturated fat and have little to no added sodium
- Tip for selecting high fiber packaged foods: 5:1 ratio – hard to find!
 - Total carbohydrates divided by fiber ≤ 5 (eg. 25g carbohydrates/5g fiber = 5)

The Nutrition Label

ORIGINAL

Nutrition Facts Valeur nutritive	
Per 250 mL / par 250 mL	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 110	
Fat / Lipides 0 g	0 %
Saturated / saturés 0 g + Trans / trans 0 g	0 %
Cholesterol / Cholestérol 0 mg	
Sodium / Sodium 0 mg	0 %
Carbohydrate / Glucides 26 g	9 %
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	
Protein / Protéines 2 g	
Vitamin A / Vitamine A	0 %
Vitamin C / Vitamine C	120 %
Calcium / Calcium	2 %
Iron / Fer	0 %

NEW

Nutrition Facts Valeur nutritive	
Per 1 cup (250 mL) pour 1 tasse (250 mL)	
Amount Teneur	% Daily Value* % valeur quotidienne*
Calories 110	
Fat / Lipides 0 g	0 %
Saturated / saturés 0 g + Trans / trans 0 g	0 %
Carbohydrate / Glucides 26 g	
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	22 %
Protein / Protéines 2 g	
Cholesterol / Cholestérol 0 mg	
Sodium 0 mg	0 %
Potassium 450 mg	10 %
Calcium 30 mg	2 %
Iron / Fer 0 mg	0 %

*5% or less is a little, 15% or more is a lot
*5% ou moins c'est peu, 15% ou plus c'est beaucoup

Calories is larger and stands out more with bold line below →

mg amounts are shown [

New % Daily Value footnote →

Serving size stands out more and is more similar on similar foods ←

Daily Values updated ←

New % Daily Value for total sugars ←

Updated list of minerals of public health concern [

Myths and Misconceptions

- TRUE or FALSE: Certain foods can burn fat.

Myths and Misconceptions

- TRUE or FALSE: Certain foods can burn fat.

- **FALSE.**

Myths and Misconceptions

- TRUE or FALSE or IT HELPS BUT IS NOT ENOUGH: An apple a day keeps doctors and medical students away.

Myths and Misconceptions

- TRUE or FALSE or IT HELPS BUT IS NOT ENOUGH: An apple a day keeps doctors and medical students away.
- **It helps.** Apple skins in particular are a good source of antioxidants. Aim for at least “5 A Day” of fruit and veg.

Myths and Misconceptions

- TRUE or FALSE: You can change the pH of your body with food.

Myths and Misconceptions

- TRUE or FALSE: You can change the pH of your body with food.
- **FALSE.**

Myths and Misconceptions

- TRUE or FALSE: Food is more than fuel.

Myths and Misconceptions

- TRUE or FALSE: Food is more than fuel.

- **TRUE.**

Myths and Misconceptions

- TRUE or FALSE: Alcohol consumption is beneficial to your health.

Myths and Misconceptions

- TRUE or FALSE: Alcohol consumption is beneficial to your health.

• **THE JURY'S OUT.**

Myths and Misconceptions

- What about supplements?

Myths and Misconceptions

- Supplements are a topic all their own
 - A large and poorly-regulated industry
 - Inconclusive evidence
 - Some supplements may adversely affect your wallet
 - Too much of a good thing?
- Older adults *may* benefit from taking calcium and **vitamin D**, and perhaps vitamin B12
- Vegetarians, and more particularly vegans, may need calcium, **vitamins D and B12**, zinc, and iron
- Proceed with caution and communicate with your health care provider.



Myths and Misconceptions

- And caffeine?

Myths and Misconceptions

- Caffeine will be discussed more during our “Sleep” talk later this month – stay tuned!
- Key points to be aware of:
 - Both tea and coffee are good sources of antioxidants
 - Tea is a substantial source of fluoride
 - Tea is best separated from your iron-rich meals or multivitamin
 - Caffeine may somewhat decrease calcium absorption, but a little added milk is enough to offset this
 - Moderation in all things, as usual

Food and Drug Interactions

- Culprit #1: the grapefruit
- A refreshing yet antisocial breakfast fruit
- Good to eat if you are taking an iron supplement
- Less so alongside many common medications
- Why
 - Furanocoumarins and a flavonoid, naringin (also found in significant levels in some other citrus fruits)
 - Cytochrome P450 4A3 inhibition in intestine and liver
 - Can increase or decrease drug effects depending on how drug is metabolized; generally, increase
 - More rarely, can inhibit transporters, decreasing drug absorption



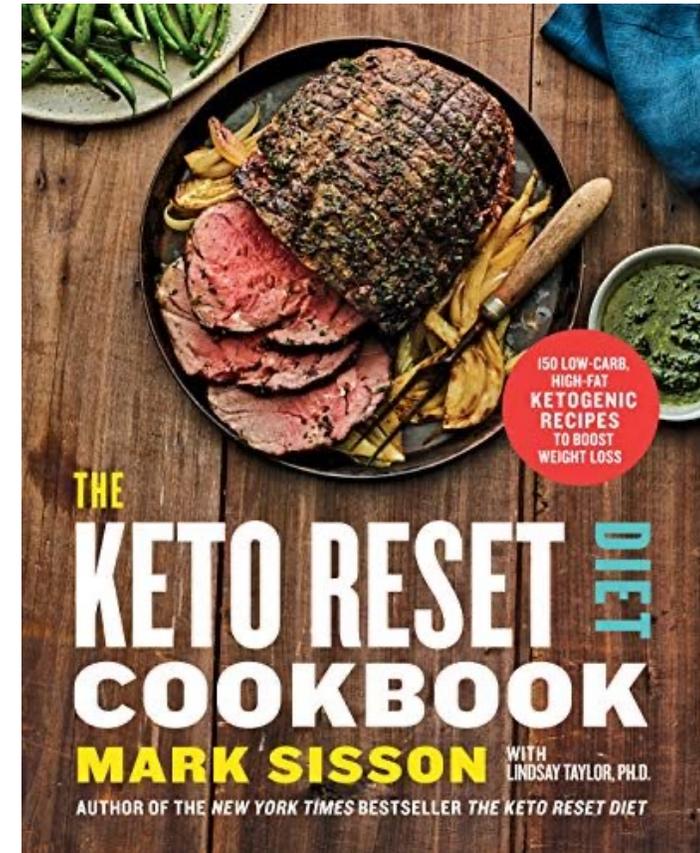
Fashionable Diets

- Keto/Atkins
- Juice cleanses
- Detoxes



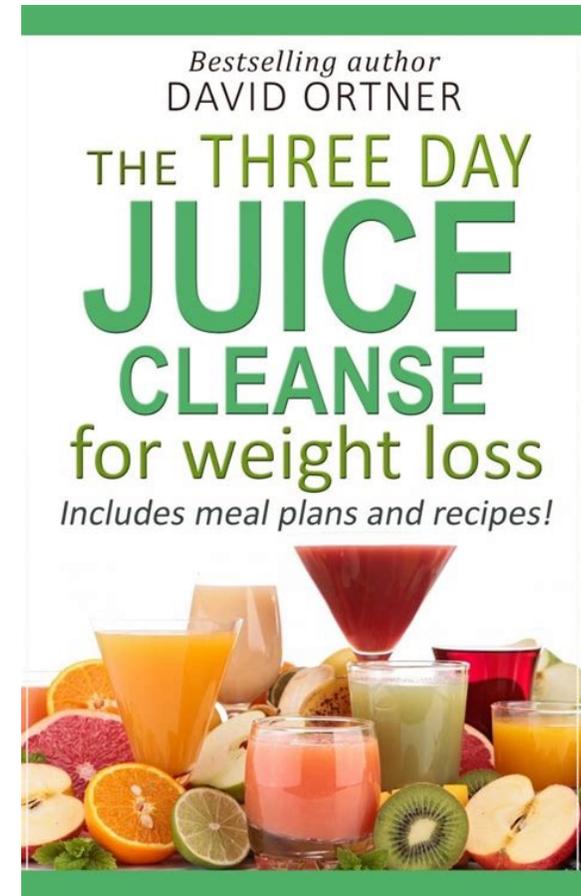
Fashionable Diets

- Keto/Atkins



Fashionable Diets

- Juicing/juice cleanses



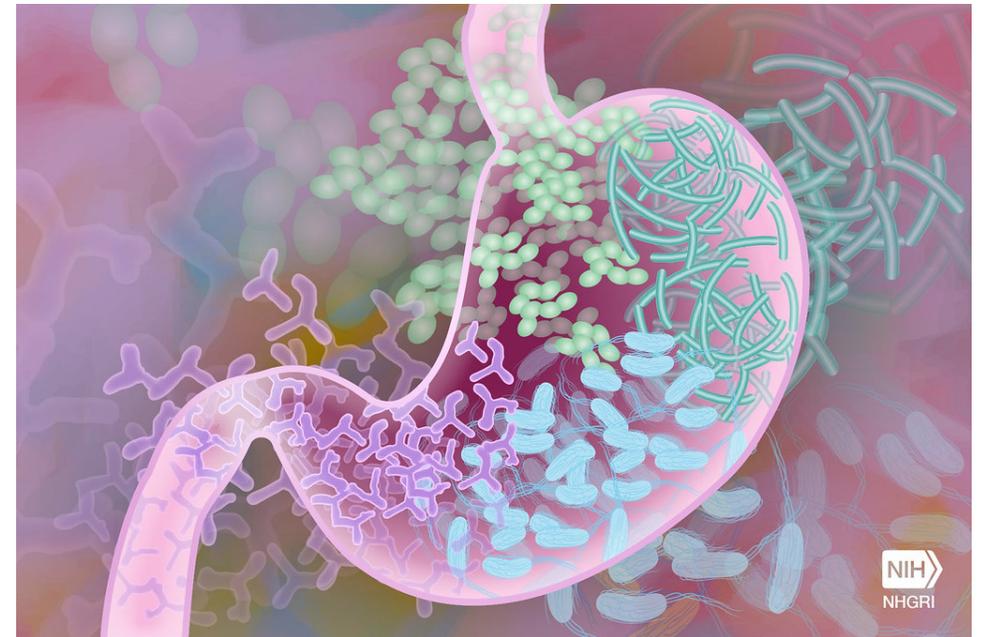
Fashionable Diets

- Detoxes



You Are an Ecosystem

- A fascinating new area of research – the microbiome
- There are an estimated 10 microorganisms in your body for every human cell
- Probiotics are your “gut flora”: bacteria and yeasts
 - Usual suspects include *Lactobacillus* species
 - They first colonize you at birth
 - The population’s composition changes based on
 - Diet, stress, medications, health, antibiotics
 - A healthy community crowds out GI pests
 - GI function, but also immune system, weight
 - Possible links with mood and cognition



You Are an Ecosystem



- Ideally, like vitamins and nutrients, probiotics are obtained from whole foods
- Kefir and yogurt labelled as containing live cultures; cheese
- Cultured coconut milk yoghurts and “water kefir” are available for those who do not consume dairy
- Kimchi, unpasteurized sauerkraut
- Miso and tempeh from soy



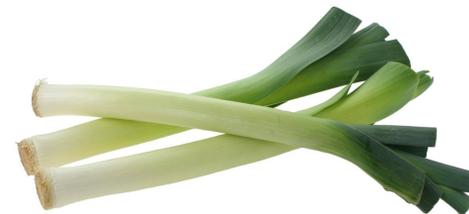
You Are an Ecosystem



- Prebiotics are what the gut flora like to eat

- fibers and sugar alcohols that we can't digest but that the probiotics can, e.g. inulin

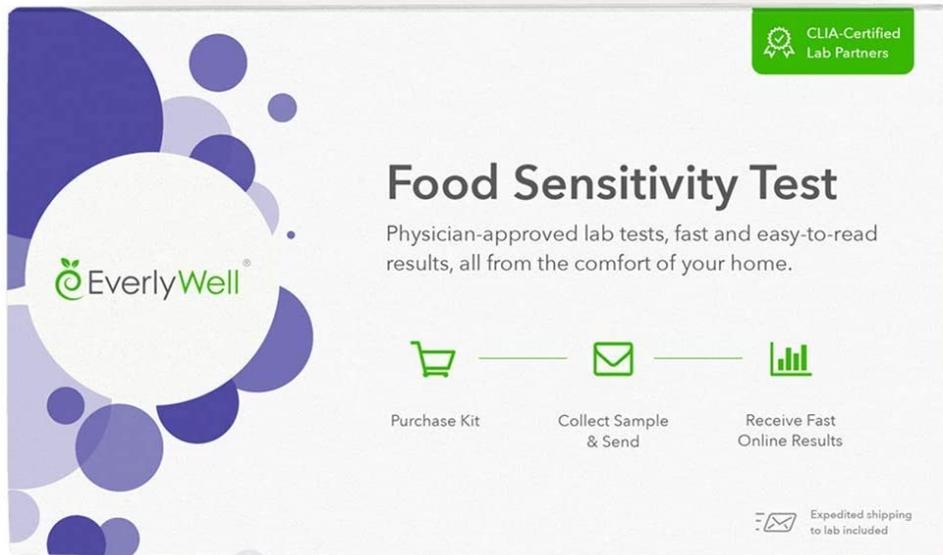
- e.g. Good sources: garlic, onions, asparagus, chicory, Jerusalem artichokes, legumes, bananas



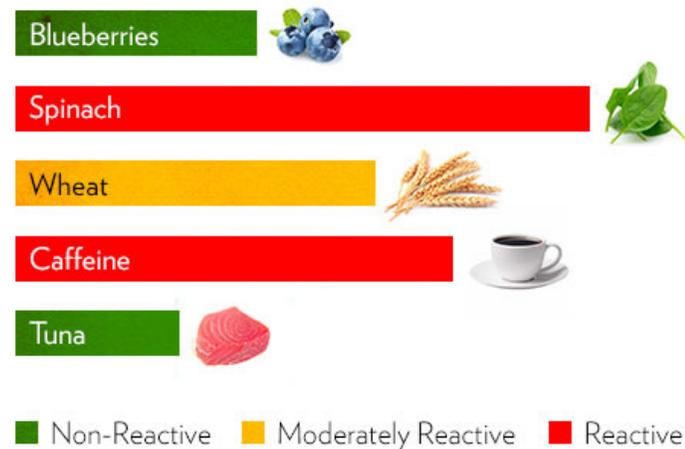
Food Sensitivities and Sensitivity Testing

- IgG Food Panel Testing

- (we are not talking about validated tests for lactose intolerance (e.g. hydrogen breath tests) or formal testing for Celiac disease.)



The image shows a white box for the EverlyWell Food Sensitivity Test. On the left, there is a large white circle with the EverlyWell logo. To the right of the circle, the text reads "Food Sensitivity Test" in bold, followed by "Physician-approved lab tests, fast and easy-to-read results, all from the comfort of your home." Below this, a three-step process is shown with icons: a shopping cart for "Purchase Kit", an envelope for "Collect Sample & Send", and a bar chart for "Receive Fast Online Results". In the top right corner, a green badge says "CLIA-Certified Lab Partners". In the bottom right corner, a small icon of a mail envelope says "Expedited shipping to lab included".



Is your food making you sick?

Even "healthy" foods can cause sensitivities.

Food Sensitivities and Sensitivity Testing

THE MYTH OF IGG FOOD PANEL TESTING



EAACI
EUROPEAN ACADEMY OF ALLERGY
AND CLINICAL IMMUNOLOGY



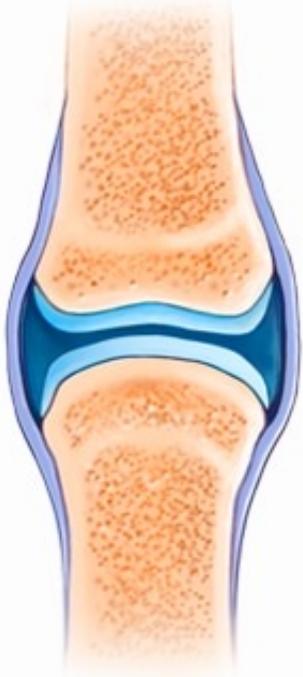
Canadian Society of Allergy and Clinical Immunology
Soci t  canadienne d'allergie et d'immunologie clinique

Different Diets for Different People

- Arthritis
- Breast cancer
- Diabetes
- IBS
- Celiac disease
- Future?

Different Diets for Different People

- Arthritis



Healthy joint



Osteoarthritis



Rheumatoid arthritis



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Gout

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<https://www.mayoclinic.org/diseases-conditions/arthritis/symptoms-causes/syc-20350772>

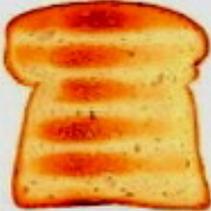
Different Diets for Different People

- Breast cancer



Different Diets for Different People

- Diabetes

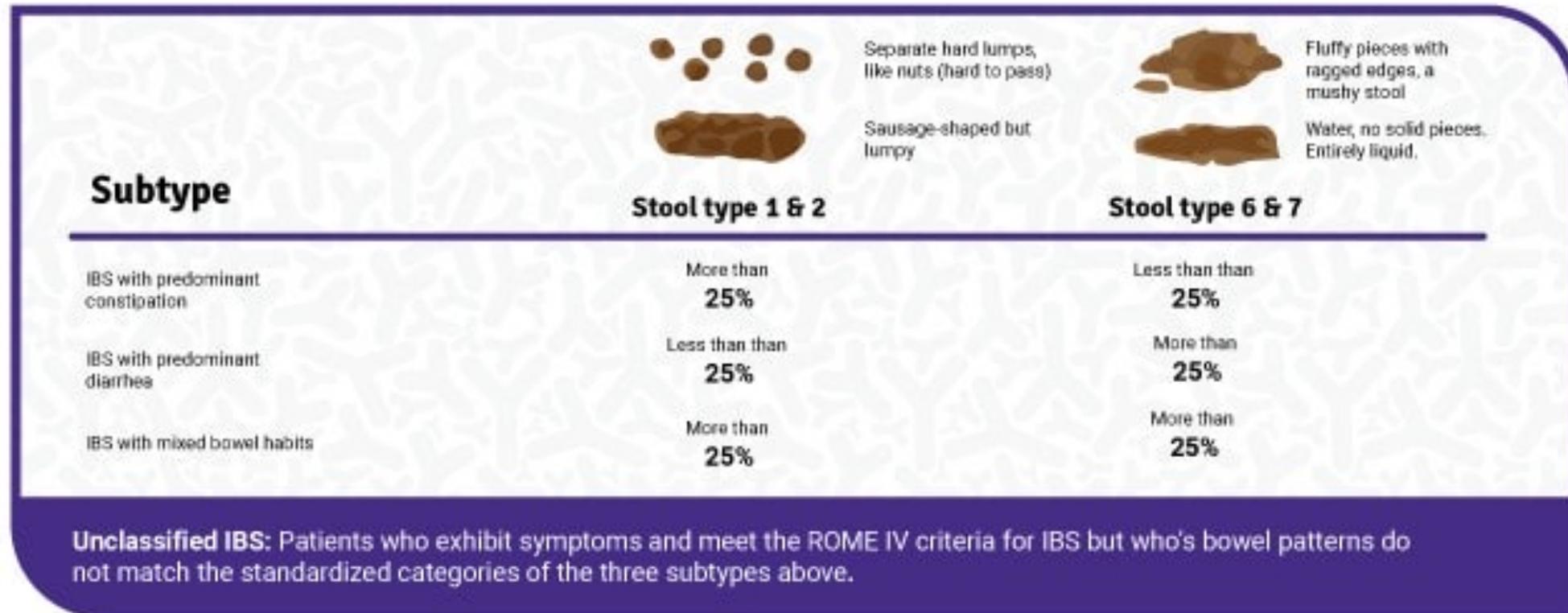
GLYCEMIC INDEX CHART Low Glycemic (55 or Below) High Glycemic (70 or Higher)									
									
SNACKS	G.I.	STARCH	G.I.	VEGETABLES	G.I.	FRUITS	G.I.	DAIRY	G.I.
Pizza	33	Bagel, Plain	33	Broccoli	10	Cherries	22	Yogurt, Plain	14
Chocolate Bar	49	White Rice	38	Pepper	10	Apple	38	Yogurt, Low Fat	14
Pound Cake	54	White Spaghetti	38	Lettuce	10	Orange	43	Whole Milk	30
Popcorn	55	Sweet Potato	44	Mushrooms	10	Grapes	46	Soy Milk	31
Energy Bar	58	White Bread	49	Onions	10	Kiwi	52	Skim Milk	32
Soda	72	Brown Rice	55	Green Peas	48	Banana	56	Chocolate Milk	35
Doughnut	76	Pancakes	67	Carrots	49	Pineapple	66	Yogurt, Fruit	36
Jelly Beans	80	Wheat Bread	80	Beets	64	Watermelon	72	Custard	43
Pretzels	83	Baked Potato	85	Onions	75	Dates	103	Ice Cream	60

Glycemic Index values obtained from www.lowglycemicdiet.com, www.nutritiondata.com and www.diabetesnet.com

<http://www.international-diabetes-association.com/what-they-talk-about-glycemic-index-foods/>

Different Diets for Different People

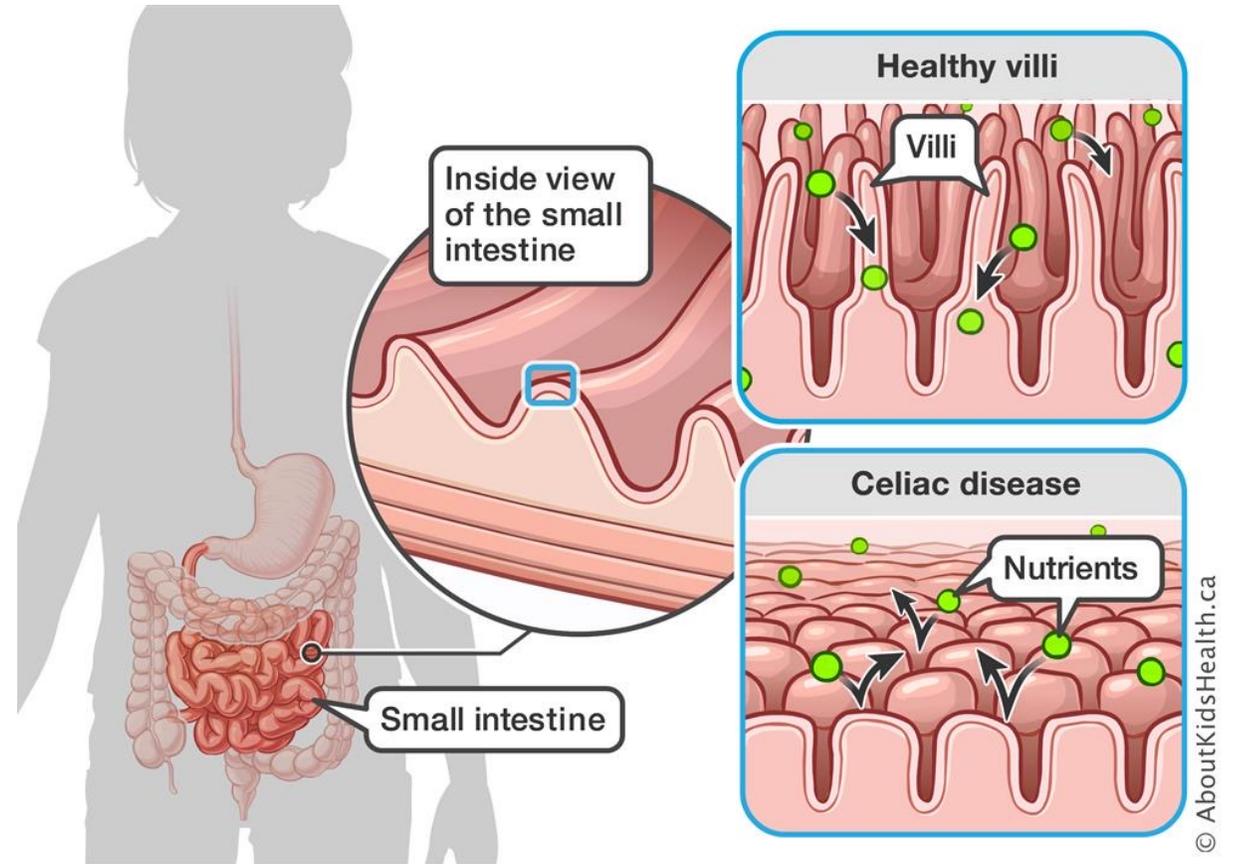
- Irritable Bowel Syndrome (IBS)



<https://cdhf.ca/digestive-disorders/irritable-bowel-syndrome-ibs/what-is-irritable-bowel-syndrome-ibs/>

Different Diets for Different People

- Celiac disease



<https://www.aboutkidshealth.ca/Article?contentid=816&language=English>

Different Diets for Different People

- Future?

Different Diets for Different People

- Future?
 - Personalized diets?

Different Diets for Different People

- Future?
 - Personalized diets?

 NutraIngredients.com

Personalised nutrition startup offers microbiome insights and

...

Taking this, alongside their demographic information and dietary preferences, BIOMES provides a nutrition plan, as well as recommendations ...

Jan. 25, 2021



Different Diets for Different People

- Future?
 - Personalized diets?

 NutraIngredients.com

Personalized

 WebMD

...

Taking this

BIOMES |

Jan. 25, 2019

Article: Are Personalized Diets Ready for Prime Time?

But a personalized diet based on his own gut microbiome offered a ... Earlier this year, a new study about personalized diets made headlines.

Sep. 19, 2019



Different Diets for Different People

- Future?
 - Personalized diets?

 NutraIngredients.com

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Jan. 25, 20

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Sep. 1

 Science News

Personalized diets may be the future of nutrition. But the science isn't all there yet

One big player may be the friendly bacteria and other microbes in people's guts. Sign Up For the Latest from Science News. Headlines and ...

Sep. 30, 2019



Take home points

- Everything in moderation is still good advice
- Evaluate your sources of information
- Focus on what you can add to your diet, not just what to restrict or remove
- Enjoy your food



Reading Recommendations

- From your local library (available at GVPL and likely at other library systems throughout the province; also available for purchase at many bookstores):
 - *Academy of Nutrition and Dietetics Complete Food and Nutrition Guide*, 5th Ed, Roberta L. Duyff
 - *The China Study*, T. Colin Campbell and Thomas C. Campbell II
 - *In Defense of Food*, Michael Pollan: "Eat food. Not too much. Mostly plants."
- Online:
 - HealthLinkBC: <https://www.healthlinkbc.ca/healthy-eating>
 - Canada's Food Guide: <https://food-guide.canada.ca/en/>
 - The Government of Canada – Nutrition Labels: <https://www.canada.ca/en/health-canada/services/understanding-food-labels.html>
 - The Nutrition Source – Harvard School of Public Health: <https://www.hsph.harvard.edu/nutritionsource/>
 - The Food Medic: <https://thefoodmedic.co.uk/>
 - Google Scholar
 - To access this talk and others, go to <https://www.uvic.ca/medsci/people/instructors/gair-jane.php> or search for “Dr. Jane Gair”
- Phone:
 - 811 (or 711 for hearing impaired) to be connected to a Registered Dietician
- Always keep your wits about you!

Q&A

- Comments, questions, or concerns about what you just heard? About the talk series?

Closing Remarks

- Thank you to Dr. Jane Gair, our supervisor for this activity, and to Julia De Pieri, our classmate, who will be delivering several of the talks in this series

Closing Remarks

- Thank you to Dr. Jane Gair, our supervisor for this activity, and to Julia De Pieri, our classmate, who will be delivering several of the talks in this series
- Thank you for attending today!