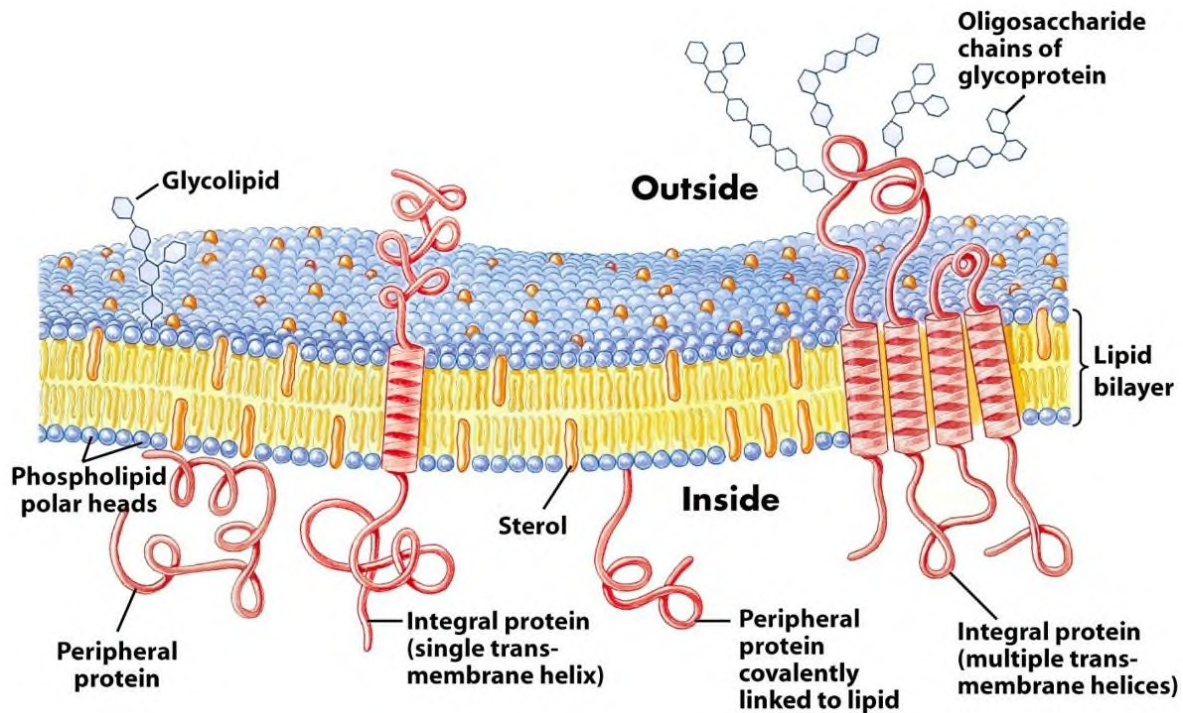




Good Fats / Bad Fats

Educate Yourself: Do we need dietary fat?



What exactly are lipids?

Lipids: Another word for "fats." **Lipids** can be more formally defined as substances such as a fat, oil or wax that dissolve in alcohol but not in water.

Lipids or Dietary Fats are required for the following functions in the body:

(adapted from Brownstein p. 22)

- Proper brain function & nerve conduction
- Healthy cell membrane integrity
- Efficient energy production
- Hormone production
- Skin health
- Protection of key organs
- Nutrient absorption, including protein & minerals

Good Fats / BAD Fats

Good Fats		Ok, but not great	Bad Fats	
Traditionally used fats and oils Not highly processed		Refined traditional fats Label says "refined"	Polyunsaturated Refined, Bleached, Deodorized	Trans Label says "hydrogenated"
All Purpose	Caution with heat	Limited use	Don't Eat	
Olive oil	Walnut oil	Refined peanut	Soy oil	Fake whip cream
Avocado oil	Flax oil	Refined Avocado	Sunflower oil	Fake butter spreads
Peanut oil	Sesame	Refined Coconut	Safflower oil	Store-bought pastries
Butter/Ghee	Walnuts		Canola oil	Chicken nuggets
Tallow & Lard	Seeds		Corn oil	Margarine
Cocoa butter	Fatty fish		Cottonseed oil	Shortening
Mac nut oil	Artisanal grapeseed		Hydrogenated oil	Restaurant fried foods
Coconut oil			Refined palm	Most chips & crackers
Almond oil				Most protein bars
			Mostly in restaurants:	Most salad dressings
			Grapeseed oil	Most granola & cereal
			Ricebran oil	

Another way to look at the above information is by % Linoleic Acid. Lower is better!

Sourcing olive oil carefully is very important.

Can we trust avocado oil?



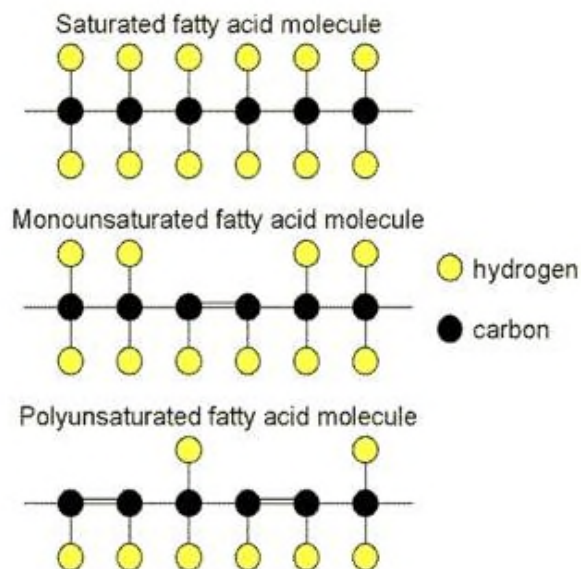
Cooking Oils	% Linoleic Acid (LA) Average Value (Range in Parentheses)
Safflower	70%
Grape seed	70%
Sunflower	68%
Corn	54%
Cottonseed	52%
Soybean	51%
Rice bran	33%
Peanut	32%
Canola	19%
Olive oil	10% (3% - 27%)
Avocado	10%
Lard	10%
Palm oil	10%
Tallow (CAFO)	3%
Butter (CAFO)	2%
Coconut oil	2%
Tallow (Grass Fed)	1%
Butter (Grass Fed)	1%

Next: Why is this so important?

Let's discuss WHY we should make those choices

Fats are technically known as Fatty Acids:

- Saturated Fatty Acids (SFA)
 - Not prone to becoming rancid when from a natural source
 - Provide structure to cells
 - Often **solid** at room temperature
 - **VERY** stable and **anti-inflammatory**
- Monounsaturated Fatty Acids (MUFA)
 - Healthy when in their natural form
 - Use in moderation
- Polyunsaturated Fatty Acids (PUFA): the omega-3 and omega-6 oils
 - These are “use with caution,” or **very, very** bad.



Now – What Shall We Eat?

Saturated Fatty Acids (SFA) – Very Important for Good Health, But Only Natural Ones!!

The number of carbons is important:



Most are even numbered:

More carbons = a more stable molecule
 6 – 12 carbons: MCT (medium chain triglyceride) oil
 14-carbons: butter
 16-carbons: coconut oil, palm oil, some animal fats
 Coconut oil is best for “oil-pulling”
 18-carbons: coco butter, some animal fats



****Fat-soluble vitamins and hormones** are best absorbed when present with at least 3-5 grams of dietary fat. Optimal for absorbing vitamin D is 11 grams.

<https://examine.com/faq/how-much-fat-do-i-need-to-absorb-vitamin-d/>

Benefits of MCT Oil

Buy one that comes packaged in glass

Supports healthy brain function	Supports healthy gut function
Supports energy – fuel for mitochondria	Maintains healthy cholesterol levels
Supports weight loss	Naturally elevates mood



Dr Axe: <https://www.youtube.com/watch?v=tQxKHG2zcWo>

New evidence shows that odd-chain saturated fatty acids (C15:0) have broad health benefits in humans.

Trace amounts are found in whole fat milk and grass-fed butter.
You only need 1 – 2 Tbsp / day



Benefits of Odd-Chain SFAs

Repairs mitochondrial function	Reduces proinflammatory states
Lowered cholesterol and glucose <i>in vivo</i>	Attenuated anemia <i>in vivo</i>
Attenuated inflammation <i>in vivo</i>	Attenuated NASH <i>in vivo</i> *

*Nonalcoholic steatohepatitis, or NASH, is the most severe form of nonalcoholic fatty liver disease (NAFLD) See Venn-Watson reference, Scientific Reports May 18, 2020

BAD Saturated Fat: seed oils that have been chemically combined with hydrogen to become fully saturated – solid at room temperature. All of these fats like Crisco and margarine are rancid fats. VERY inflammatory.

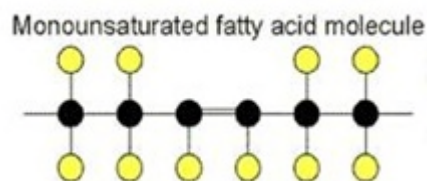


Crisco Ingredients: Soybean Oil, Fully Hydrogenated Palm Oil, Palm Oil, Mono And Diglycerides, TBHQ and Citric Acid

Monounsaturated Fats (MUFA) – Good – if Raw – in Moderation

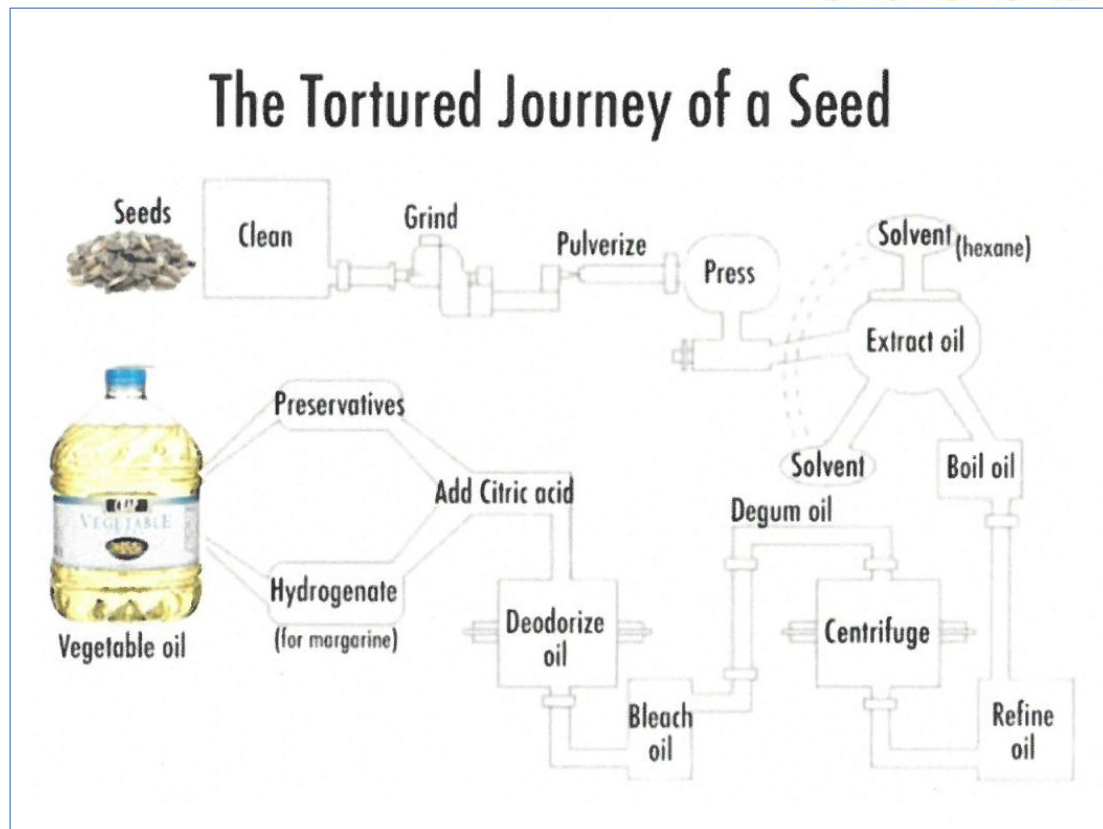
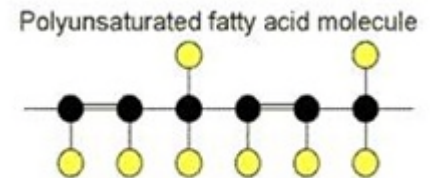
Olives, olive oil, avocado, seeds, nuts and nut butters

Nuts and seeds are a combination of MUFA and PUFA. They are good for us (in moderation), IF the nuts and seeds are raw! But ... what do the squirrels eat just before they go to sleep for the winter? Additionally, most nuts and seeds are high in oxalate.



Polyunsaturated Fatty Acids (PUFA) – the Omegas – Either DEADLY or Beneficial

**First the Omega 6 Fats. Most are DEADLY.
NOTE: “VEGETABLE OIL” does not come from Vegetables.**



The above graphic tells us that all of this crap in the Hateful Eight graphic is more properly called Industrial Seed Oils.

Originally, they were used in paint or as grease and oil used to lubricate machinery.



Why Are the Hateful Eight Dangerous?

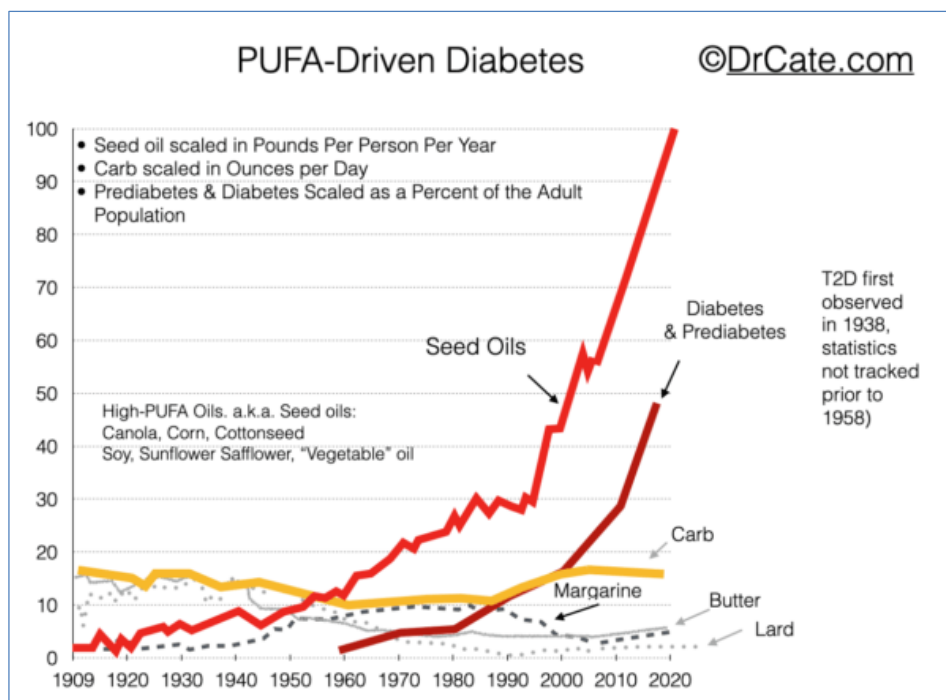
Linoleic Acid / PUFA / LA whatever you call it, these fats are RANCID and act as MITOCHONDRIAL POISONS

These oils are easily oxidized – due to the fact that there are so many open carbons. Once oxidized, they become rancid which causes damage and inflammatory changes at the cell level.

Then when these rancid oils are heated (think French Fries), something called 4-hydroxynonenal (4HNE) cyclic aldehydes are created. 4HNE aldehydes are extremely toxic.

Also important:

Seed oils are high in omega-6 linoleic acid, which is a precursor to endocannabinoids like AEA and 2-AG. These compounds appear to stimulate appetite, contribute to weight gain, and cause the "munchies." !!!!!



Other Diseases Linked to PUFA Consumption

Autoimmune diseases of all kinds	Cancer, especially breast and prostate
Cardiovascular disease: heart attacks, stroke, arrhythmia	Blood pressure elevation (related to decreases in Nitric Oxide)
Mitochondrial dysfunction, leading to low energy	Inflammation and release of inflammatory cytokines
Damage to intestinal bacteria	Brain disorders, mood disorders
Macular degeneration	Osteoporosis

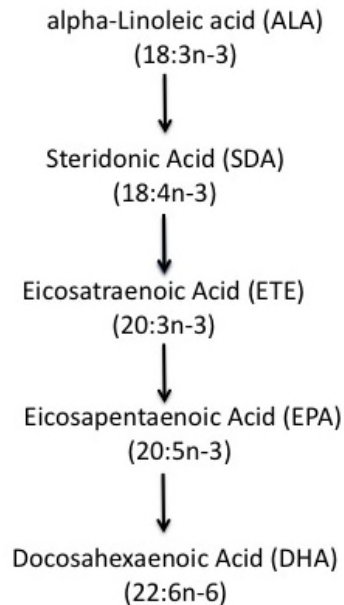
The Worst Offenders Are Found In:

Deep Fried Foods (French Fries / Tortilla and Potato Chips / Donuts / Some Nuts and Seeds / Many More ...), Salad Dressings (first ingredient is typically soybean oil), Mayonnaise and other sandwich spread items.

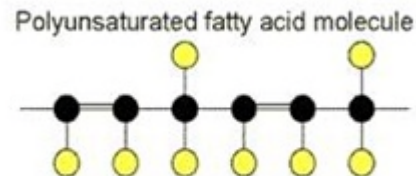
The Other PUFA: Omega-3s.

ANTI-inflammatory – especially when first using them

Omega-3 Fatty Acids



ALA OM3 – found in plant sources.



EPA and DHA – ESSENTIAL Fatty Acids
found in fish and algae

A nice picture, but is what you're seeing actually true?



Adequate Animal-Based Omega 3s Can Prevent or Positively Impact:

ADD / ADHD	Cardiac Arrhythmia	Dyslexia	Neuropathy
Alzheimer's Disease	Cardiac Sudden Death	Emphysema	Postmenopausal
Arthritis	Childhood Asthma	Endometrial Cancer	Bone Loss
Asthma	Cholesterol Levels	Eye Health, especially infants	Postpartum Depression
Atherosclerosis	Chronic Fatigue	Hostility	Premature Birth
Autism	Chronic Inflammation	Insulin Resistance	Prostate Cancer
Bipolar Disorder	Colon Cancer	Intelligence	Psoriasis
Blood Clotting	Crohn's Disease	Kidney Disease	Raynaud's Disease
Blood Pressure	Cystic Fibrosis	Lupus	Rheumatoid Arthritis
Brain Function	Dementia	Macular Degeneration	Schizophrenia
Breast Cancer	Depression	Memory Loss	Triglyceride Levels
Bronchitis	Diabetes	Migraine Headache	Ulcerative Colitis
Cancer	Dry Skin	Multiple Sclerosis	

Omega-3 Fats and Your Health: Are you DEFICIENT??

Do you have an omega-3 deficiency?? How many of these apply to you?

- ☐ I have soft, cracked, or brittle nails
- ☐ I have dry, itchy, scaling, or flaking skin
- ☐ I have hard earwax.
- ☐ I have dandruff.
- ☐ I feel aching or stiffness in my joints.
- ☐ I am thirsty most of the time.
- ☐ I am constipated (have fewer than two bowel movements a day).
- ☐ I have light-colored, hard, or foul-smelling stools.
- ☐ I have depression, ADHD, and/or memory loss.
- ☐ I have high blood pressure.
- ☐ I have fibrocystic breasts.
- ☐ I have premenstrual syndrome.
- ☐ I have high LDL cholesterol, low HDL levels, and high triglycerides.
- ☐ I have two or more conditions from the Fish Oil Can Prevent list.
- ☐ I have chicken skin (tiny bumps on the backs of arms or on the trunk).

Adapted from: Mark Hyman, MD The UltraMind Solution Companion Guide

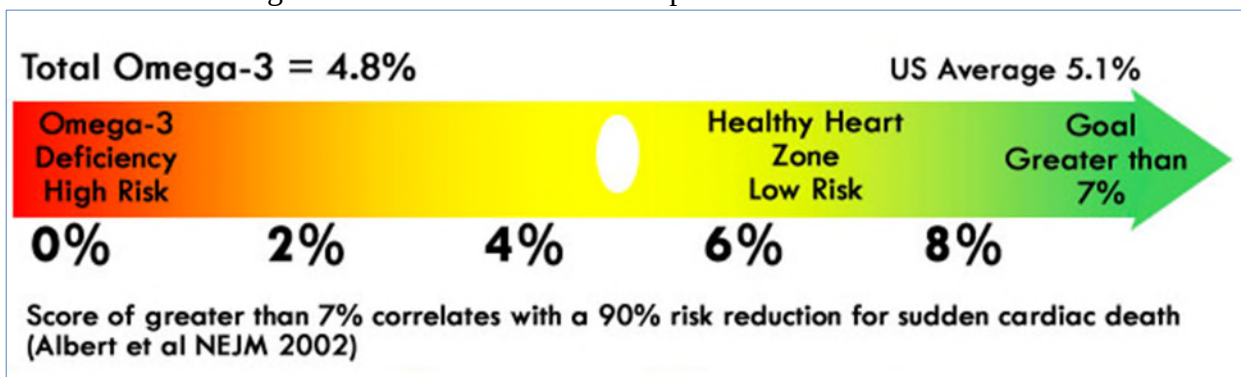
Get tested! This is from a Quest Diagnostics blood draw

Ideal ranges can be confusing.

- o Omega 6 / 3 ratio should be as low as possible.
- o EPA / Arachidonic Acid ratio should be high
- o Arachidonic Acid is a precursor to various bioactive molecules involved in inflammation, pain and appetite dysregulation
- o EPA and DHA are the Omega 3's

Test Name	In Range	Out of Range
OMEGA 3 AND 6 FATTY ACIDS, PLASMA		
OMEGA 3 (EPA+DHA) INDEX		10.0 H
OMEGA 6/OMEGA 3 RATIO		2.3 L
EPA/ARACHIDONIC ACID RATIO		0.8 H
ARACHIDONIC ACID		4.9 L
EPA		3.8 H
DHA		6.2 H

This is from an Omega-3 test available online. The person who tested was at 4.8%.



Where are the Omega 3 and 6 fats in YOUR diet?

Item	3 to 6 Ratio	Food Item	3 to 6 Ratio
Canola oil	1:22	Almonds/butter	1:28
Corn oil	1:83	Cashews/butter	1:44
Cottonseed oil	1:256	Chia seeds	1:3
Flaxseed oil	1:4	Peanuts/butter	1:176
Grapeseed oil	1:690	Pecans	1:21
Peanut oil	No OM 3	Pine nuts	1:300
Safflower oil	1:186	Pistachios	1:52
Sesame oil	1:138	Pumpkin seeds	1:119
Soybean oil	1:8	Sesame seeds	1:96
Sunflower oil	No OM 3	Sunflower butter	1:503
Walnut oil	1:4	Walnuts	1:4

Adapted from Brownstein, p. 69, 73

Don't forget about the OM-6 we get from from pork and poultry! Monogastric vs multigastric!

See the next page for more information about nuts ...

It's all about **BALANCE**.
The ratio of OM-3 to OM-6 should be 1:2 or 1:3.

Can you guess the OM-3 to OM-6 ratio of the typical American??

NUTS		PROTEIN	CARB	FIBER	Sat. Fat	Mono Fat	ω-3 Fat	ω-6 Fat	Calories
	ALMOND	6.0	6.1	3.5	1.1	8.8	0.2	3.4	163
	BRAZIL	4.1	3.5	2.1	4.3	7.0	0.05	5.8	186
	CASHEW	5.2	8.6	0.9	2.2	6.7	0.2	2.2	157
	PEANUT	7.0	4.5	2.4	1.9	6.8	0	4.4	159
	HAZELNUT	4.2	4.7	2.7	1.3	12.9	0.24	2.2	178
	MACADEMIA	2.2	3.9	2.4	3.4	16.7	0.06	0.36	204
	PECAN	2.6	3.9	2.7	1.8	11.6	0.28	5.8	196
	PISTACHIO	5.8	7.8	2.9	1.6	6.8	0.71	3.7	159
	WALNUT	4.3	3.9	1.9	1.7	2.5	2.5	10.7	185
	PINE	3.8	3.7	1.0	1.4	5.3	0.31	9.4	188

<https://www.greatnuts.com/nut-nutritionals-simplified/>

Herbalifeline - our Fish oil: An easy way to increase omega-3's!



High-Tech Fat: Prolessa Duo!

Conjugated Linoleic Acid (CLA) to bust belly fat, comes from dairy products and micro-encapsulated palm and oat oils help you feel fuller longer!



Fat Release: For when you know you've

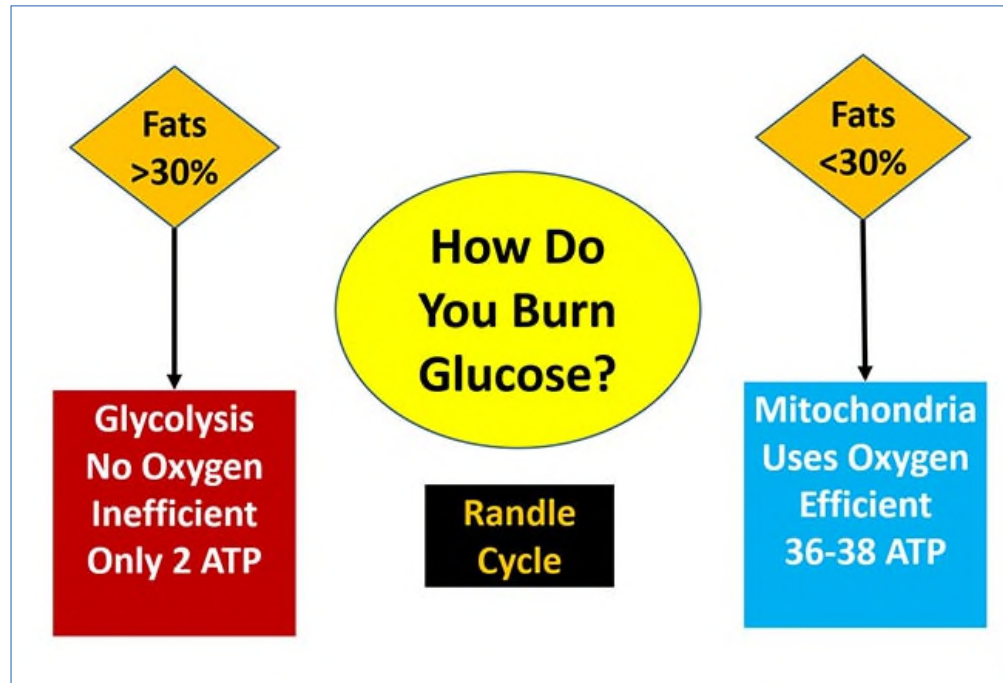
made some poor decisions!



Fat Release is specially formulated with Litramine[®], a patented cactus fiber ingredient derived from prickly pear. When ingested with foods containing fats, Litramine[®] forms a fat-fiber complex with a portion of the fats in the food. The fat-fiber complex cannot be digested or absorbed and is naturally eliminated from the body. Litramine[®] also reduces a portion of fat calories from being absorbed when taken with a meal containing fats and promotes a feeling of fullness.*

Now ... How MUCH Fat Should We Eat?

Here's that Randle Cycle again!



Eating greater than 30% of your intake as fat is detrimental to energy production. Remember that Dietary Fat is not equal to stored body fat.

The Randle cycle involves a competition between glucose and fatty acids for oxidation and uptake in muscle and adipose tissue. It works by:

- **Inhibiting glucose oxidation:** When fatty acid oxidation is intense, the body reduces the uptake and use of glucose in muscle.
- **Adapting to nutrient availability:** The Randle cycle fine-tunes fuel selection based on nutrient availability. For example, when there are more fats, the body shuts down glucose burning to burn the fats instead.
- **Conserving glucose for the brain:** In the absence of food, the Randle cycle conserves glucose for the brain.
- **Enhancing glycogen synthesis:** After eating, the Randle cycle enhances glycogen synthesis in muscles.

The only way to accurately calculate this is by using a food journal system.

Take Action:

1) Examine your diet. What types of fats are typical for you??

- a) Where are the sources of Omega-6's?: _____
- b) What TYPE of Omega-6's are they? _____
- b) Are there any Omega-3's in your diet? _____
- c) What TYPE of Omega-3 are they? _____
- d) What percentage of your total calories comes from fat sources _____

2) Make some positive changes!

- a) Test your fish oil. Does it pass the test?? _____
- b) Clean out the pantry and fridge! Throw out any cooking oils, Crisco, margarine.
- c) Buy Organic Grass-Fed Butter! It may seem expensive, but you only use a little and it is more satisfying than using fake butter.

Resources for Further Study:

- Bikman, Ben PhD The Randle Cycle: How Your Body Chooses Between Glucose and Fat,
<https://www.youtube.com/watch?v=OlsjnLMANDQ>
- Brownstein, David; Shenefelt, Sheryl (2014, Healthy Living) *The Skinny on Fats*.
- DeLauer, Thomas interviews Dr Ben Bikman. *Fat Cell Scientist Reveals How to Lose Fat & Keep it Off Without Ever Restricting Diet* . <https://www.youtube.com/watch?v=HpANUygnSho>
- DiNicolantonio, James and Mercola, Joseph (2018, Hay House) *Super Fuel*.
- Dr Axe: <https://www.youtube.com/watch?v=tQxKHG2zcWo>
- <https://chriskresser.com/how-too-much-omega-6-and-not-enough-omega-3-is-making-us-sick/>
- Fallon Morrell, Sally (2017, Grand Central) *Nourishing FATS; Why We Need Animal Fats for Health and Happiness*.
- Fung, Jason (2016, Greystone) *The Obesity Code: Unlocking the Secrets of Weight Loss*.
- Gornoski, David (2024, December 4) *The Hidden Link Between Seed Oils and America's Fentanyl Crisis*, guest editorial published by Robert Malone, MD.
- Hyman, Mark (2016, Little, Brown) *Eat Fat, Get Thin: Why the fat we eat is the key to sustained weight loss and vibrant health*.
- Lerche, Benedict Mai (2024, BiochemNordic) *How to Boost Metabolism with Food*.
- Mercola, Joseph (2017, Hay House) *Fat for Fuel*.
- Shanahan, Catherine (2020, Flatiron Books) *The Fatburn Fix: Boost Energy, End Hunger and Lose Weight by Using Body Fat for Fuel*
- Teicholz, Nina (2014, Simon & Schuster) *The Big Fat Surprise; Why Butter, Meat & Cheese Belong in a Healthy Diet*.
- Venn-Watson, et al (May 18, 2020) Scientific Reports on Nature.com *Efficacy of dietary odd-chain saturated fatty acid pentadecanoic acid parallels broad associated health benefits in humans: could it be essential?*