Gentle Nutrition: Understanding Fats

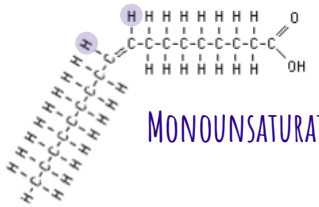
Dietary fat is an macronutrient that is essential for life

- Fats are often labeled as "good" or "bad", but its not this simple!
- Most foods contain different types of fats
- It is recommended that most of the fats you eat be unsaturated, but it's okay to eat a variety of fats

Types of Dietary Fats:

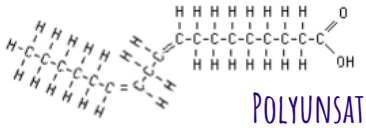
Unsaturated Fat

- Typically liquid at room temperature
- Two kinds of unsaturated fat:
  - Monounsaturated: have one ("mono") unsaturated carbon bond
    - Food Sources: canola/olive oils, avocado, peanut & peanut oil, cashews etc.
  - Polyunsaturated: have more than one ("poly," for many) unsaturated carbon bonds
    - Food Sources: corn, almonds, walnuts, pecans, sesame seeds, sunflower, safflower, soft tub margarine etc.



Cis: H are on the SAME side of the double bond= LESS stackable

Monounsaturated Fat (MUFA)



Less Stackable

Polyunsaturated Fat (PUFA)

Omega-3 Fats

PUFAs characterized by a double bond on the 3rd carbon

ALA

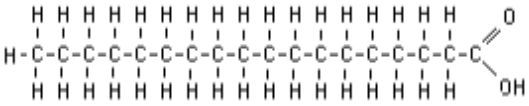
- Short chain fatty acid
- Body can not make its own, must get from food
- Antioxidant properties
- Small amounts of ALA can be converted to EPA & DHA in the body
- Food Sources: flaxseed/ oil, chia seeds/ oil, hemp seeds/oil , canola oil, soybeans/ oil, avocado/ oil, walnuts etc.

EPA & DHA

- Long chain fatty acid
- Body can not make its own = must get from food
- Supports mental health
- Supports healthy immune system
- Food Sources: Fatty fish (fresh/canned salmon, herring, mackerel, sardines, halibut, & light tuna etc.), algae

Saturated Fat

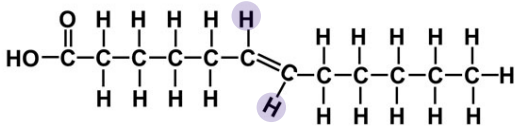
- Fat molecules that are "saturated" with hydrogen molecules
- Typically solid at room temperature because the molecules easily "stack"
  - Plant Sources: cocount/oil, palm/oil, vegetable shortening
  - Animal Sources: butter, cheese, meat/poultry/egg yolks, chocolate, lard



Very Stackable

Trans Fat

- Created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid
- Also known as: "partially hydrogenated oils"
  - Food Sources: fried food, bakery items, shelf-stable products etc.



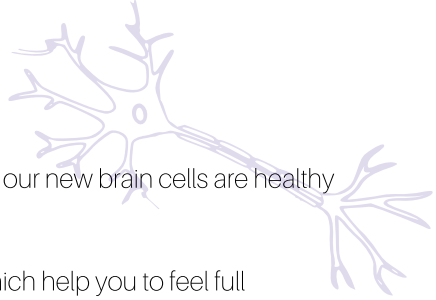
Trans: H are on OPPOSITE sides of the double bond= MORE stackable

The Facts On Fat:

- Lipids (scientific name) are made up of fatty acids and glycerol
- Adipose tissue = connective tissue, the storage form of fat (triglycerides)
- Body Fat = the body mass that is not composed of lean muscle, water, bones or vital organs.
- To maximize body functioning/metabolic potential we need a dietary fat intake of 25-35%
- Our body needs between a reserve of adipose tissue, between 20-30% of total body mass
- We break down dietary fat and convert it into fatty acids for metabolism and energy cycles
- Eating less than 45 grams of fat per day is associated with increased levels of depression

Benefits of Dietary Fats:

- Provide Energy & Energy Storage:
  - Preferred source of fuel for the heart and the liver
  - Muscles use fat for energy at moderate to low intensity activity
- Support Brain Function and Mental Health:
  - The brain is 60% fat and cells are constantly regenerating, getting enough fats ensures our new brain cells are healthy
- Promote Satiety (fullness), Satisfaction and Appetite Regulation:
  - Slow gastric emptying, intestinal transit and cause the release of appetite hormones which help you to feel full
  - Enhance the taste and texture of food, which increases satisfaction with eating
  - Release leptin which acts on the brain to increase or decrease appetite
- Essential for Growth, Development and Daily Functioning of Body Systems:
  - Help to make hair soft & shiny and keep skin moisturized
  - Enhance the absorption of fat soluble Vitamins A, D, E, K
  - Aid in nerve conduction as neurons are coated in fat
  - Make up all cell membranes
  - Are a precursor for sex hormones, cortisol, bile acids, and vitamin D
  - Aid in regulating blood pressure, heart rate, blood clotting, nervous system, immune & inflammation response, & allergic reactions



Functions of Body Fat:

- Aid in body temperature regulation and insulation
- Protect and cushions vital organs/ intestines and helps protect from injury
- Skin protection, softening, & flexibility
- Hormone regulation: cholesterol, prostaglandins, menstrual cycle, & reproductive hormone levels
- Stored energy reserve used during extended exercise and when there is restricted food intake

If you don't get enough:

- More likely to be hungry soon after eating and experience less satisfaction with food
- Think about food more often and feel like you're eating all the time
- Struggle with glucose instability and poor energy levels
- Absorb less vitamins A, D, E, and K,
- Have dry skin, brittle hair and nails

References:

- Dietitians of Canada/ Unlock Food.ca
- Nutrition Counselling in the Treatment of Eating Disorders (Marcia Herrin, Maria Larkin)
- Sick Enough: A Guide to the Medical Complications of Eating Disorders (Jennifer L. Gaudiani)

Gentle Nutrition: Understanding Carbohydrates

Carbohydrates are the body's main source of fuel

- Carbohydrates (carbs)are often labeled as "bad", but its not this simple!
- Our brain and body need carbohydrates to survive

Types of Carbohydrates:

Sugar

- Sweet, short-chain carbohydrates found in foods.
- Examples are glucose, fructose, galactose and sucrose.

Starch

- Long chains of glucose molecules, which eventually get broken down into glucose in the digestive system.

Fibre

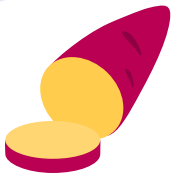
- Indigestible carbohydrate (can not be used for energy)
- Acts as a food for bacteria in the gut
- Helps to move food through digestive tract.

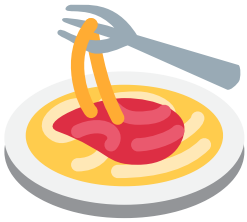
Simple/Refined

- Sometimes these foods are highly processed and contain lower levels of fibre, antioxidants, vitamins, and minerals
- Broken down quickly and provide a quick release of glucose (energy) into the bloodstream
- This rapid increase in blood sugar may cause mood changes and may leave you feeling less satiated
- Food Sources: fruits & fruit juices, baked goods, soda, dairy products, white bread, syrups, ketchup etc.

Complex/ Whole

- Minimal/ no processing
- Contain higher levels of fibre, antioxidants, vitamins and minerals
- Absorbed more slowly by the body so they provide stable energy
- Help to keep you feeling full for longer, improve energy levels and prevent headaches/ fatigue
- Food Sources: whole grain bread, sweet potato, whole wheat pita, whole wheat pasta, oats, barley, bulgur, quinoa, couscous, whole grain crackers, beans & legumes, vegetables etc.





The Facts On Carbohydrates:

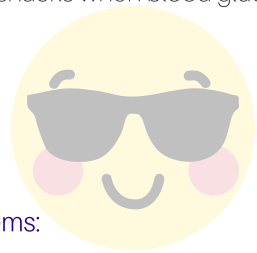
- A macronutrient made of carbon, hydrogen and oxygen
- Provide quick energy as they are digested and transported into cells faster than proteins or fats
- Broken down into glucose --> bloodstream --> used by brain, muscles, and nervous system for energy
- Our brains cannot store glucose so they need a constant supply
- Our bodies resist storing carbs as fat since it is used preferentially by our body functions
- For maximum functioning and metabolic potential, your body needs a carb intake of 50- 60% of your total daily intake
- One gram of carbs supplies your body with the same amount of energy as one gram of protein

Benefits of Carbohydrates:

- Provide Energy:
  - Preferred source of fuel for the brain, central nervous system cells, and the muscles (i.e. skeletal, smooth and cardiac muscles)
  - Carbs are stored in the muscles as glycogen and used when exercising = serve as the major source of energy during exercise
  - Serve as the only energy source for red blood cells & under anaerobic (without oxygen) conditions

- Spare Protein:
  - Ensures that the protein you eat will be used to build and repair muscle tissue rather than for energy
  - Prevents your body from breaking down muscle tissue to use for energy

- Regulate Blood Glucose:
  - Carbs stored in the liver are released in between meals and snacks when blood glucose levels start to drop
  - Help to maintain normal blood glucose levels
  - Keeps you feeling well
  - Maintains your energy, focus, concentration and mood

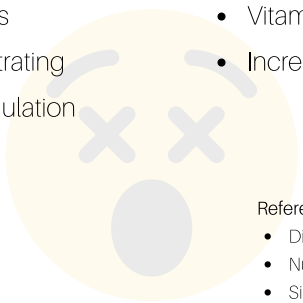


- Aid in Healthy Digestion & Optimal Functioning of Body Systems:
  - Provide Fibre, Vitamins and Minerals
  - B vitamins are co-factors in metabolism and necessary for metabolism to happen
  - Fibre in carbs adds bulk to the stool and can help prevent constipation along with adequate fluid intake (*note if you are not eating enough good overall or not drinking enough fluids, fibre can actually make constipation worse)
  - Fibre in carbs also feeds the beneficial bacteria in the GI tract which in turn helps to regulate your immune system and decrease inflammation
  - Fibre binds and removes cholesterol from your blood which helps to lower your cholesterol levels and improve heart health
  - Forms the backbone for DNA and RNA

- Improve Mood & Overall Feeling:
  - Fibre in carbs help you feel full as fibre takes longer to be digested and absorbed (*note if you're malnourished, consuming lots of high fibre foods won't be beneficial)
  - Not feeling overly hungry helps you to avoid "hangry" moments
  - Carbs cause a release of serotonin which can help increase your emotional energy, improve your mood, and may help you sleep better

If you don't get enough:

- Headaches
- Fatigue, dizziness
- Muscle weakness
- Difficulty concentrating
- Poor emotion regulation
- Nausea
- Constipation
- Bad breath
- Difficulty sleeping
- Vitamin and mineral deficiencies
- Increased risk for chronic diseases



References:
- Dietitians of Canada/ Unlock Food.ca
- Nutrition Counselling in the Treatment of Eating Disorders (Marcia Herrin, Maria Larkin)
- Sick Enough: A Guide to the Medical Complications of Eating Disorders (Jennifer L. Gaudiani)

Gentle Nutrition: Understanding Protein

A protein is a macronutrient made out of amino acids. There are 20 different amino acids and when combined together in different combinations, they form a protein.

The Facts On Protein:

- Proteins are made up of amino acids (AA), which are the building blocks of protein
  - Non-Essential AA: can be made in your body
  - Essential AA: can not be made in your body and have to consumed through food
  - Sometimes when your body is injured or malnourished some of the nonessential AA can become conditionally essential
- For maximum functioning and metabolic potential, your body needs a protein intake of 15-20% of your total daily intake
- One gram of protein supplies your body with the same amount of energy as one gram of carbohydrate

Types of Protein:

Complete Proteins:

- Contain all of the 9 essential amino acids
- Mostly animal based proteins
- Food Sources:
  - Beef, Pork, Poultry, Fish & Shellfish, Milk, Yogurt, Eggs, Soybeans, Tempeh, Tofu

Incomplete Proteins:

- Do not contain all of the 9 essential amino acids
- Found in plant-based protein, they make complete proteins when you eat a variety of plant-based proteins
- Food Sources:
  - Beans & Legumes, Nuts & Seeds

Benefits of Protein:

- Provides Energy and Satiety:
  - If you're not eating enough food then protein will be used for energy instead of for muscle repair
  - Delays gastric emptying and helps you to feel fuller longer
- Builds, Repairs & Supports Bodily Systems:
  - Building block of DNA, muscles (smooth, skeletal, cardiac), tissues (i.e. organs) and neurotransmitters
  - Adequate protein intake helps muscles to maintain their strength and function and repair tissues
  - Used to make enzymes for many different functions (I.e digestion, metabolism etc.)
  - Used to make antibodies and supports a healthy immune system
  - Aids in blood clotting and wound healing
  - Part of some hormones (i.e. insulin, growth hormone etc.) and these hormones aid in different roles throughout the body including maintaining blood glucose levels, growth, ovulation, and thyroid function
  - Transport oxygen, fats, vitamins, and minerals throughout the body
  - Regulates systemic inflammation
  - Serves as a storage form of high energy to replenish muscle ATP

If you don't get enough:

- Feel weak
- Become sick more often
- Slow Wound Healing
- Brittle hair and nails, Hair loss
- Edema (fluid retention)
- Prone to stress fractures

References:
- Dietitians of Canada/ Unlock Food.ca
- Nutrition Counselling in the Treatment of Eating Disorders (Marcia Herrin, Maria Larkin)
- Sick Enough: A Guide to the Medical Complications of Eating Disorders (Jennifer L. Gaudiani)