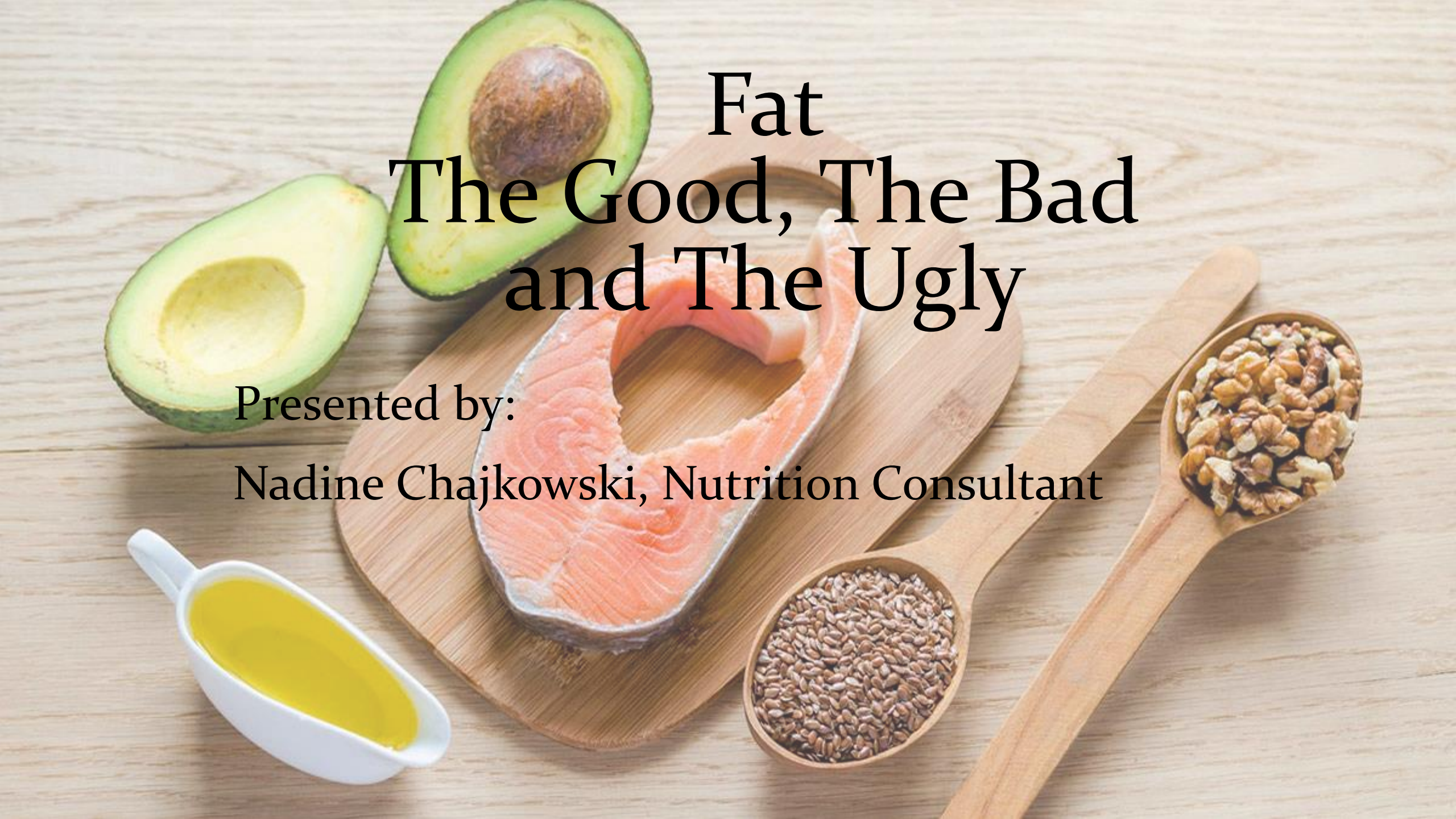

Fat
The Good, The Bad and The Ugly

Presented by:

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Topics for Today

- Brief history on how we got to where we are with our beliefs around fat
- Why does the body need fat and cholesterol
- Different types of fats
- The duties of LDL and HDL
- How Oxidized LDL is created and why it is really BAD
- Differences between white and brown fat in your body
- Why sugar is the real criminal in the body

Brief History on Fat -1950's and 60's

- In early 1950's Ansel Keys was starting to make a connection between rich white men with high cholesterol and their risk for heart attacks.
- In 1955 President Eisenhower had a heart attack and this gave Ansel Keys the "ammunition" he needed
- Harvard University linked sugar to heart disease
- The sugar industry was told to fund its own studies to refute these findings
- Sugar industry pointed the finger at fat as the culprit
- Saturated fat was almost exclusively used at this point

Brief History of Fat – 1970's

- Ansel Keys, nutrition researcher raises his voice even louder than in the 1950's
- He pointed the finger at saturated fat as the exclusive culprit to the negative health changes taking place
- He cherry picked his information and only used those studies that proved what his message was
- There were many cultures that offered a complete opposite message and research that offered a complete opposite view and he willfully ignored those

Brief History of Fat – 1980's, 1990's, 2000's

- Ansel Keys was so successful that saturated fat was removed from fast food and processed foods
- The food industry revamped their foods to remove saturated fat and instead use unsaturated fats
- Unsaturated vegetable fats were now being called healthy
- Heart disease, cancer, obesity, Alzheimer's to just name a few all begin to rise
- By the 2000's all of the diseases are exponentially rising especially obesity and diseases of the brain
- Today in February 2019 there is still a pervasive belief that saturated fat is the demon and determinantal to our health

Why does the body need fat and cholesterol

- Lets look at babies and children to answer this
- Breast milk is predominately saturated fat
- Babies need copious amounts of saturated fat to let their brains develop and grow
- Babies need saturated fat to create and to surround each and every cell with a strong boundary
- Growing children need saturated fat to help their brains develop strong and healthy
- Fat is a great fuel source and keeps children satiated and gives them lots of energy

Why does the body need fat and cholesterol

- Now from the perspective of adults
- Cholesterol is SO IMPORTANT that the body creates 75% of what the body needs every day
- The remaining 25% comes from the food we eat
- Cholesterol and good fat is imperative for optimum brain function
- Cholesterol and good fat is imperative for healthy cells and healthy cell membranes
- Good fats are an excellent fuel source for adults

Different types of Fats

- Saturated fat
- Medium Chain Triglycerides
- Trans fat
- Unsaturated fat
  - Monounsaturated fat
  - Polyunsaturated fat
    - Omega-3 fatty acids
    - Omega-6 fatty acids
    - Omega-9 fatty acids

Saturated Fat

- Sources of saturated fat are:
  - milk, cream, cheese, butter and meat
  - Poultry and fish have less saturated fat than red meat
  - Tropical oils, such as coconut oil, palm oil, and cocoa butter.
  - Some margarines
  - Shortening

Other Food Sources of Saturated Fat

- Foods with tropical oils:
  - many prepared snack foods
  - in non-dairy foods, such as coffee creamers and whipped toppings
- Foods made with butter, margarine, or shortening
  - cakes, cookies, and other desserts
- Other places butter is used
  - Butter on steamed veggies
  - Butter in coffee

Medium Chain Triglycerides (MCT's)

- MCT's are primarily found in coconut and palm oil
- To get MCT's out the oil goes through a process of fractionation
- MCT's are incredibly important for healthy brain function
- MCT's are also a great way to get your body in ketosis
- MCT's are part of saturated fat and can not be found by themselves in nature. MCT's are a man made extraction.

Trans Fat

- Trans fat are not found naturally in nature. They are created by a process called hydrogenation.
- Hydrogenation increases the shelf life of fat and makes the fat harder at room temperature, just like saturated fat is solid at room temperature.
- Harder fat makes crispier crackers and flakier pie crusts.
- Trans fat can raise your cholesterol and is the worst of the worst for bad fats
- On labels you find the words hydrogenated, partially hydrogenated, fractionated and more and those are the oils you want to stay far far far away from

Sources of Trans Fat's

- You can find it in:
  - Processed foods
  - Snack foods, such as chips and crackers
  - Cookies
  - Some margarine and salad dressings.
  - Foods made with shortening and partially hydrogenated oils

Unsaturated fat

- There are two main types of unsaturated fat
  - Monounsaturated fat
  - Polyunsaturated fat
  - There are three types of polyunsaturated fat
    - Omega-3 fatty acids
    - Omega-6 fatty acids
    - Omega-9 fatty acids

Unsaturated fat - Monounsaturated

- This is considered a good fat to include into the diet and can be found in:
  - Avocado
  - Nuts
  - vegetable oils
    - Canola
    - Olive
    - peanut oils
- Eating foods that are high in monounsaturated fats may help lower your LDL and raise HDL.

Unsaturated fat - Polyunsaturated

- Polyunsaturated oils are primarily found in
  - vegetable oils such as
    - Safflower
    - Sunflower
    - Sesame
    - Soybean
    - corn
- Polyunsaturated fat is also the main fat found in seafood

Polyunsaturated fat - types

- There are three types of polyunsaturated fat
  - Omega-3 fatty acids
  - Omega-6 fatty acids
  - Omega-9 fatty acids
- Omega 3 and 6 must come from the diet which is why they are called Essential Fatty Acids
- Omega 9 can be created by the body and can come from the diet. As it is created by the body it is deemed as a non essential fatty acid.

Polyunsaturated fat – Omega 3

- Sources of Omega 3:
  - soybean oil
  - canola oil
  - Walnuts
  - Flaxseed
  - Also found in fatty fish and shellfish as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)
    - Salmon
    - Anchovies
    - Herring
    - Sardines
    - Pacific oysters
    - Trout
    - Atlantic mackerel
    - Pacific mackerel

Polyunsaturated fat – Omega 6

- Sources Omega 6:
  - mostly in liquid vegetable oils like:
    - soybean oil
    - corn oil
    - safflower oil.

Polyunsaturated fat – Omega 3 and 6

- Omega 3 and 6 can directly impact your bodies inflammation and LDL and HDL levels.
- Omega 3 and 6 must be consumed in a 1:1 ratio
- Canadians and Americans are consuming Omega 3 to 6 in a ratio of 20 to 30 :1. That means so 20 or 30 times more Omega 6 than Omega 3
- Omega 6 is an essential fatty acid however when consumed in quantities that are over the 1:1: ratio with Omega 3, inflammation is caused
- Inflammation is “fire” in the body and those fires need to be put out, enter LDL and HDL

The duties of LDL and HDL

- LDL and HDL are types of cholesterol created by the body to help with:
  - Keeping the brain healthy
  - Reduce inflammation in the body
  - Major component of all cell membranes
  - Used to make essential molecules such as hormones and bile acids
  - Helps transport fat soluble vitamins in the body

LDL and HDL

- LDL and HDL are neither good nor bad, they each have a different function
- When not being used to help create hormones, etc… LDL is also used in the body to decrease inflammation.
- Think of LDL as the fire fighter, the bigger the fire the more fire fighters needed. The difference between LDL and firefighter is the LDL is consumed in the reaction to reduce inflammation.
- If inflammation is high LDL in the blood will be high

LDL and HDL Con't

- LDL puts out the fires and HDL circulates to pick up the used LDL to bring it back to the Liver to be revitalized.
- If there isn't enough HDL to pick up the used LDL then a problem starts to occur and inflammation can go unchecked causing havoc and eventual disease.
- Example: An alien from space sees car accidents and ambulances at every scene and determines that ambulances must be causing the accidents and flies away to tell his people.
- LDL is the ambulance and researches found LDL in plaques and made the error that LDL causes arterial plaques and labeled it "bad" cholesterol

Oxidized LDL is created and Why it is really BAD

- Oxidation of LDL occurs when free radicals bump into them.
- Free radicals are unstable molecules that bump into healthy tissue and into LDL and damage it and creates inflammation.
- Free radicals create more free radicals which creates more inflammation
- LDL is the fire fighter to reduce inflammation and when it becomes oxidized it now becomes part of the problem and causes inflammation.
- LDL comes in all shapes and sizes however the smaller ones are more prone to oxidation and are the ones that can cause the most damage

Oxidized LDL

- Not only does oxidized LDL contribute to the problem of inflammation
- Oxidized LDL damages and embeds itself into the endothelium lining of the arteries, making it thinner and less elastic.
- This is very dangerous as the arteries most likely affected are those that are directly related to the heart
- When the endothelium lining is damaged plaques start to appear to toughen up the area and ends up making the artery hard.

Body Fat

- There are two types of body fat
  - White/Yellow
  - Brown
- White/Yellow fat is the stuff you don't want, it usually forms in the thighs, hips, belly and around the internal organs.
- White fat is usually considered an organ as it has receptors for cortisol, growth hormone and insulin
- White fat also creates a type of estrogen and leptin
- Brown fat is the stuff you do want. This fat is metabolically active and is stored in the muscles
- Want to create more brown fat, you must have good high quality sleep practices, a clean diet and exercise is required as well.

Why Sugar is the bad guy not fat

- In the 1950's the sugar industry pointed the finger at fat as the culprit to heart disease.
- What we know today is that a diet high in processed sugar causes inflammation
- Our bodies are designed to run on fat
- Fat is a very clean burning fuel – hence the popularity of the Keto Diet or getting the body into ketosis
- Sugar is a very "dirty" fuel meaning there are more metabolic wastes created which cause more free radicals which causes more inflammation.

Thank You

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