

Health Benefits of Olive Oil

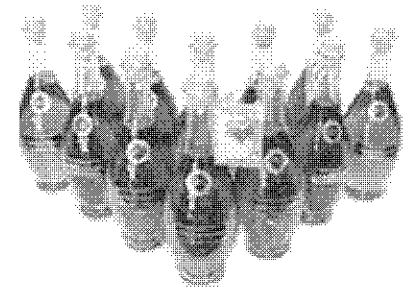
UC Davis

Sensory Evaluation of Olive Oil

April 5, 2008

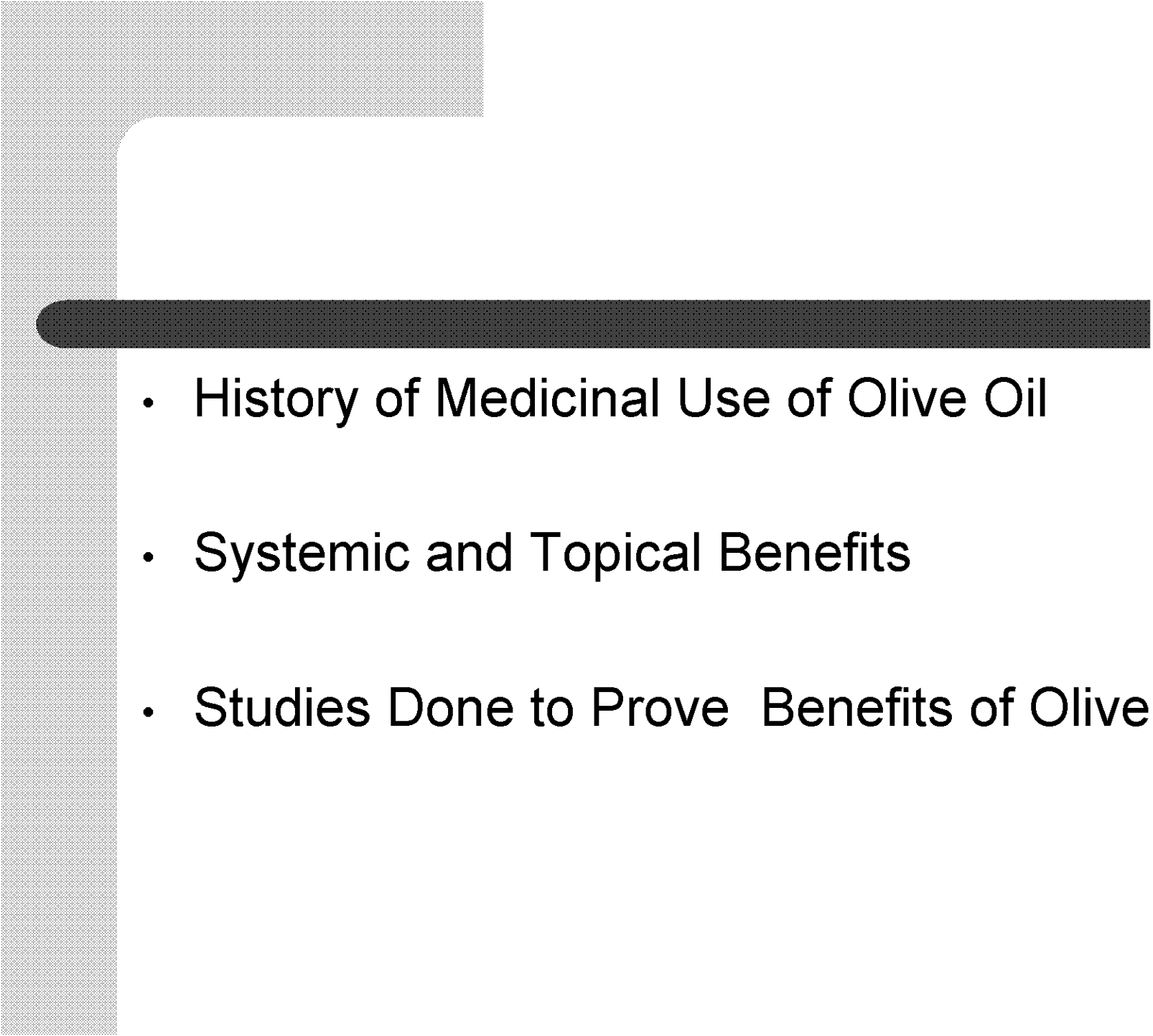
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- History of Medicinal Use of Olive Oil
 - Systemic and Topical Benefits
 - Studies Done to Prove Benefits of Olive Oil

What is in Olive Oil?

- Squalene
- Phenols
- Vitamine K
- Vitamin E
- Oleocanthal
- Antioxidant
- Chlorophyll (Green)
- Carotenoids (Yellow red)

What Makes Olive Oil Healthy?

- Maintain suppleness of skin, muscles and abrasions.
- It soothes dry skin from effects of sun and wind
- Aid in digestion
- Promotes hair growth
- Prevent heart disease
- Prevent diabetes
- Prevents certain cancers
- Lowers bad cholesterol
- Lowers blood pressure
- Relieving aching muscles

Ancient Greeks

- Hippocrates, the father of medicine Ancient Greeks believed that Virgin Olive Oil is beneficial to human health and recommended it for afflictions such as:
- Dermatological problems
- lacerations and burns
- Gynecological diseases
- Inducement of vomit
- Ear infections
- Birth control
- According to the code established by the father of medicine, Hippocrates, olive oil was held beneficial for over 60 therapeutic uses.

Mediterranean Diet

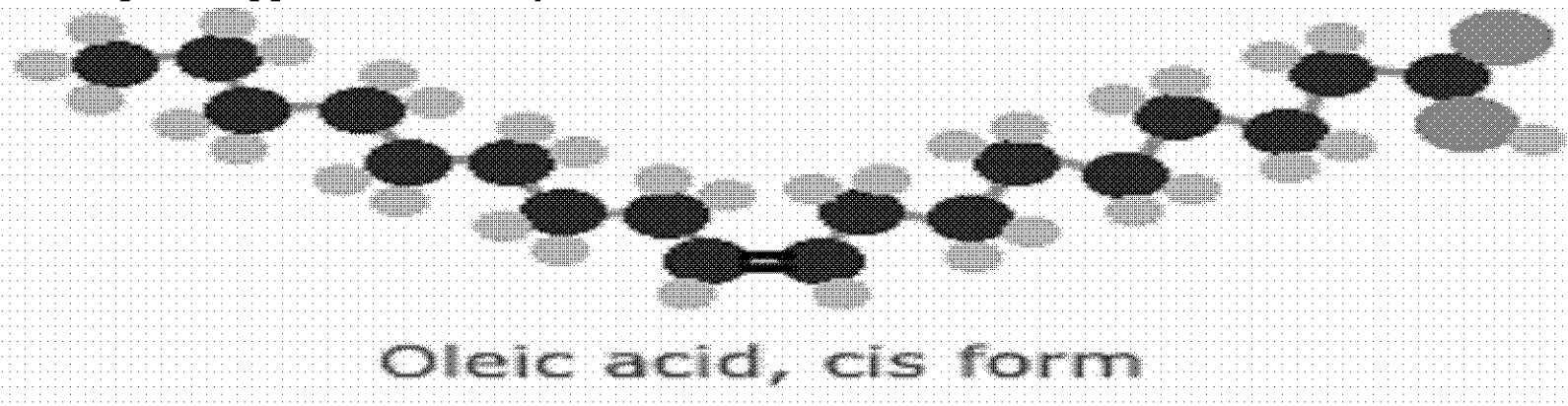
- The greatest exponent of monounsaturated fat is olive oil, and it is a prime component of the Mediterranean Diet.
- Olive oil is a natural juice which preserves the taste, aroma, vitamins and properties of the olive fruit. Olive oil is the only vegetable oil that can be consumed as it is - freshly pressed from the fruit.
- The beneficial health effects of olive oil are due to both its high content of monounsaturated fatty acids and its high content of antioxidative substances.
- Studies have shown that olive oil offers protection against heart disease by controlling LDL ("bad") cholesterol levels while raising HDL (the "good" cholesterol) levels. (1-3) No other naturally produced oil has as large an amount of monounsaturated as olive oil -mainly oleic acid.

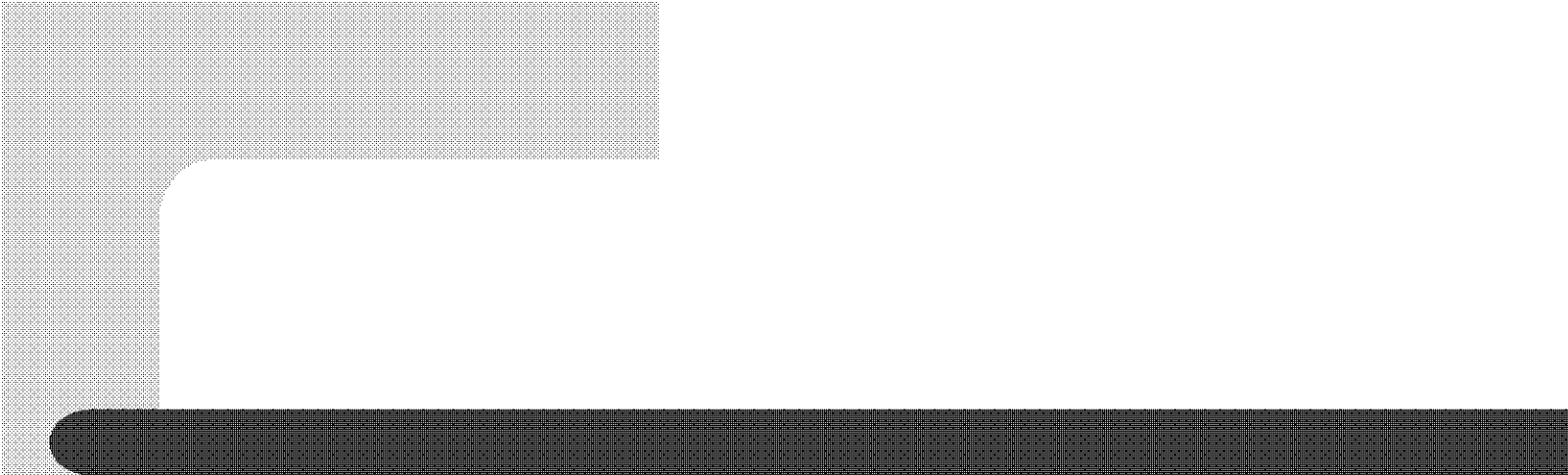
Olive Oil Per Capita Consumption

- Greece 26.1 liters (½ liter/wk)
- Spain 15.0 liters
- Italy 13.5 liters
- EU 5.4 liters
- Australia 1.2 liters
- USA 0.6 liters

Oleic Acid (cis form)

- Oleic acid is a common fatty acid found in most animal and vegetable fats. It contains one double bond (at the bottom of the "v"). Note that each of those carbon atoms is linked to only one hydrogen atom, instead of two.

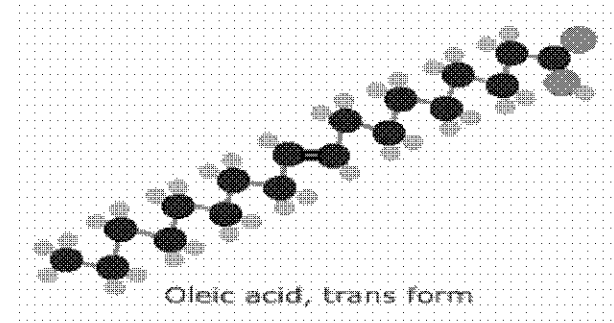


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- Fatty acids can be short, medium, or long—containing anywhere from 4 to 28 carbon atoms in the chain. Butyric acid contains 4 carbon atoms and is saturated with hydrogen atoms.
 - The omega-3 called docosahexaenoic acid (DHA), which is commonly found in fish oil, contains 22 carbon atoms and 6 double-bond kinks, making it extremely polyunsaturated.
 - Because unsaturated fats have this "kink" or bend, the molecules do not stack together easily—so they stay fluid at room temperature. Some mono-unsaturated fats, such as olive oil, will solidify when cooled in the refrigerator.
 - Poly-unsaturated fats, which have more double-bonds and therefore more bends in their physical structure, stay fluid even when refrigerated.

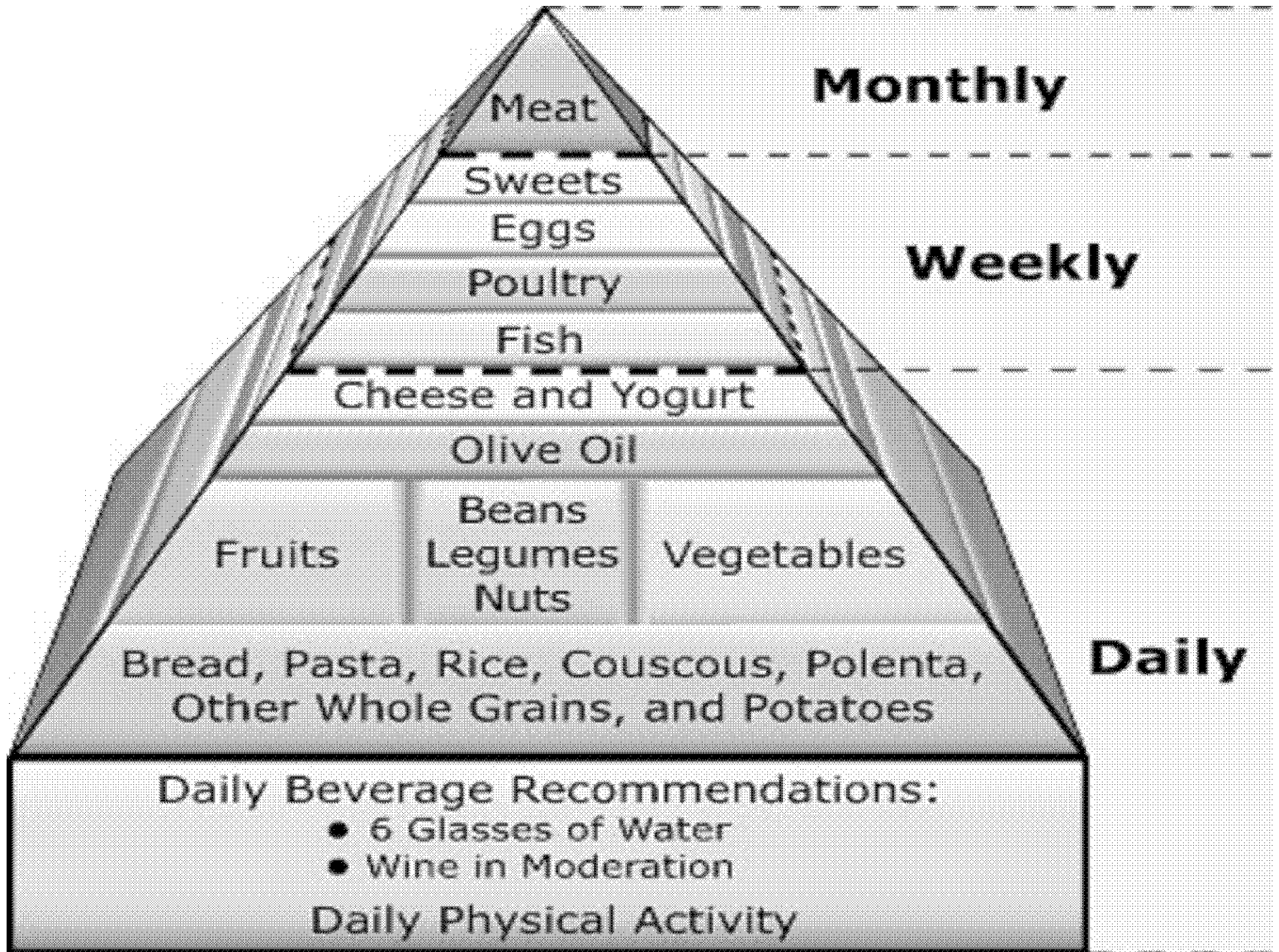
Oleic Acid

- When plants or animals make unsaturated fats, they mostly build this kinked "cis" form.
- However, food manufacturers discovered that bubbling hydrogen through polyunsaturated oils created "partially hydrogenated" fats that were less vulnerable to becoming rancid than the original oils and therefore had a longer shelf life.

Oleic Acid (trans)

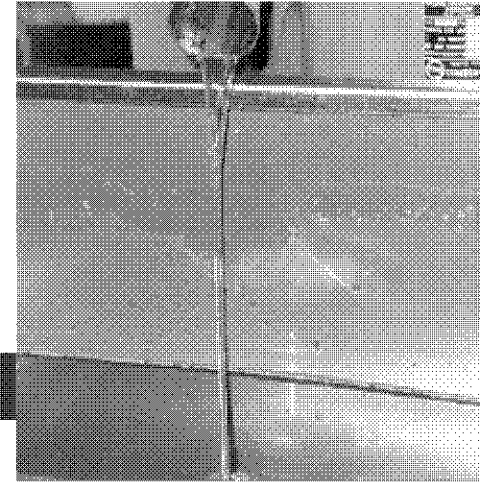


- These partially hydrogenated margarines and shortenings are now present in almost all baked goods and commercial peanut butter.
- This hydrogenation process also converts the bent "cis" form to a straightened "trans" form, which looks like this:





Olive oil's health benefits



- Olive oil is a natural juice which preserves the taste, aroma, vitamins and properties of the olive fruit.
- Olive oil is the only vegetable oil that can be consumed as it is - freshly pressed from the fruit.
- The greatest exponent of monounsaturated fat is olive oil, and it is a prime component of the Mediterranean Diet.

LDL vs. HDL

- The beneficial health effects of olive oil are due to both its high content of monounsaturated fatty acids and its high content of antioxidative substances.
- Studies have shown that olive oil offers protection against heart disease by controlling LDL ("bad") cholesterol levels while raising HDL (the "good" cholesterol) levels.
- (1-3) No other naturally produced oil has as large an amount of monounsaturated as olive oil -mainly oleic acid.

Type of fat	Monounsaturated	Polyunsaturated	Saturated	Other elements
Olive oil	74 %	8 %	14 %	4 %
Canola oil	59 %	30 %	7 %	4 %
Peanut oil	46 %	32 %	17 %	5 %
Corn oil	24 %	59 %	13 %	4 %
Soybean oil	23 %	58 %	14 %	4 %
Sunflower oil	20 %	65 %	10 %	5 %
Safflower oil	14 %	75 %	6 %	5 %
Walnut oil	23 %	63 %	9 %	5 %
Palm kernel oil	11 %	2 %	81 %	6 %
Palm oil	37 %	9 %	50 %	4 %
Coconut oil	6 %	2 %	86 %	6 %
Butter	30 %	4 %	62 %	4 %
Shortening	30 %	37 %	29 %	4 %
Tallow (rendered fat of cattle or sheep)	42 %	4 %	50 %	

So why does olive oil lower blood pressure?

- **One possible reason is its polyphenol content.**
- **Polyphenols are potent antioxidants which help arteries dilate, thereby reducing blood pressure.**
- **Ten grams of extra-virgin olive oil contains five mg of polyphenols; sunflower oil has no polyphenols.**

Diabetes Benefits

- **Diabetes Benefits From Olive Oil**
- People living with diabetes have to work hard to keep their blood sugar, also called blood glucose, levels under control. One way to do so is to eat a diet that is fairly low in carbohydrates. Because people with diabetes are also at an elevated risk of developing heart disease, they are advised to limit their intake of dietary fat.

Oleic Acid

- **Oleic Acid** - oleic acid (omega 9) makes up 55 - 85 percent of the fatty acids in olive oil. Don't confuse this with the amount of **free** oleic acid which is the main factor used to determine the grade of the olive oil and the lower the better. It's great for your skin - read about common oils used in soaps and how they can do so much more than just clean your skin. Oleic acid aids in keeping our arteries supple and helps prevent cancer

Polyphenols

- **Heart Health and Cholesterol** - extra virgin olive oil is high in polyphenols (a powerful antioxidant) and monounsaturated fat which contributes to lowering bad cholesterol.

Blood Pressure

- **Blood Pressure** - Studies now indicate that extra virgin olive oil may help to lower blood pressure. Patients were able to reduce or eliminate the need for medications when olive oil was consumed on a regular basis.

Alzheimers

- **Alzheimers** - this disease is associated with the clogging of arteries caused by cholesterol and saturated fat. Replacing other fats with olive oil will reduce the risk.

Gallstones

- **Gallstones** - Olive oil promotes the secretion of bile and pancreatic hormones naturally and lowers the incidence of gallstones.

What Is Oleocanthal and How Can It Help You?

- An article published by Philadelphia researchers in the September 2005 issue of *Nature* identified a compound in olive oil called oleocanthal that has anti-inflammatory action. Their studies revealed that this compound can act like ibuprofen and other anti-inflammatory medications.

Inflammation Benefits From Olive Oil

- Inflammation within the body may occur in response to cigarette smoking or eating large amounts of saturated fat and trans fat.
- In overweight or obese people, excess fat from fat cells can float through the bloodstream and cause inflammation.
- Inflammation can help the body, it can also hurt.

Inflammation

- **Certain dietary fats cause more of an inflammatory response than others.**
- **Trans fat and the saturated fat in animal foods stimulate inflammation.**
- **To a smaller extent, polyunsaturated fat in foods such as safflower oil, sunflower oil, and corn oil trigger inflammation, as well.**

Again, this is where olive oil helps.

- **Olive oil's phytonutrients -- in this case phenolic compounds called squalene, beta-sitosterol, and tyrosol -- don't cause the inflammation that other fats do.**

Cancer prevention

- **Cancer** - researchers at the University of Oxford believe that olive oil may be just as effective in the prevention of colon cancer as fresh fruits and veggies. A diet rich in olive oil has been shown to reduce the incidence of colon., breast and skin cancers.

