



ORIGINAL RESEARCH PAPER

Health Science

ALKALINE DIET: AN ANSWER TO MOST MODERN SO CALLED "LIFESTYLE DISEASES": PART II

KEY WORDS: Visible Fat, Life Style Diseases, Diabetes, Hyper Lipidemia, Alkaline Diet, Acidic Diet, Olive, Omega 3, Omega 6, Healthy Living, Smoking Point, Dha, Docosahexaenoic Acid

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ABSTRACT

As in my last article, published on May 1, 2018, I mentioned that Alkaline Diet is one of my favorite topics and covered the topic of Milk, why shouldn't one consume milk; however, one can consume Curd / Yoghurt & Cottage Cheese / Paneer, even though they leave an acidic ash behind. Because any diet should not be just 100% alkaline, it should always be in the ratio of Alkaline: Acidic – 80:20. Hence, we should be choosing appropriate acidic food also to consume

In this article, I am covering the topic on the myths & reality on consumption of Visible Oil / Fat in different forms with various scientific research links in the end of the paper.

I would also conclude the article by a case where in a 17 year old female, due to disturbed eating pattern how she was suffering from problems like hyperlipidemia, hypothyroidism, in turn affecting her menstrual cycle with total amenorrhea, and how an alkaline diet, without the intervention of any medicine, could bring all her processes back to normal cycle from a disturbed cycle. Already, the topic of Alkaline Acidic Environment within the body has been touched upon in my previous article hence; I would directly start with the reality on consumption of Visible Fat

However, I would like to reiterate on the food, that I generally ask my patients to avoid or reduce. The list is as below:

1. Milk (can continue with Curd and Paneer) – ([https://www.worldwidejournals.com/international-journal-of-scientific-research-\(IJSR\)/issues.php?m=May&y=2018&id=81](https://www.worldwidejournals.com/international-journal-of-scientific-research-(IJSR)/issues.php?m=May&y=2018&id=81) – search for Vidushi / Alkaline)
2. Wheat & wheat products
3. Rice & rice products
4. Oil / Ghee / butter / Visible Fat in any form
5. Reduce Dal and Non Veg food to twice a week (both included – also depending upon the age and exercise module) and
6. Processed foods

Introduction

Fat is an essential part of our diet. However are cooking oils / visible fat also important? They are & will always be a topic of debate, and trying my level best to present the same in an uncomplicated manner and Layman Language with practical examples, which could be tried at home too.

Discarding oil / visible fat (not invisible fat) can make a gigantic difference to our body and health, hence positively worth trying. Let us read here about some of the realities of these visible fats, question ourselves and then decide as to what is the reality, whether the benefits presented to us is the reality or just an advertising gimmick? All facts are being put to my readers rather than saying what is right or wrong & then to every one of you to decide.

Visible Fat in any form

When we talk of fat, we read / hear about the following terminologies: MUFA (mono unsaturated fatty acid), PUFA (poly unsaturated fatty acid), trans-fat, saturated fat; comparison of various oils stating this oil is healthy; this fat is good, other fats being bad; one cooking oil / visible fat is made to look like a hero while all others villain. Some say, we should have at least 2 teaspoons of visible fat, is it really true? Have we ever questioned whether these claims are really true or are we just blindly following them because they give a good taste to our food?

Having said the above please note that no one is advocating for a fat-free diet, however awareness on what kind of healthy fat should be included in the diet & what is the requirement of the body, these facts are being put up here & emphasizing the need for the essential fatty acids is very small.

What is the requirement of fat for the body?

We definitely need fat; however there is a difference between visible and invisible (unprocessed) fat. We are not classifying fats into mono unsaturated or poly unsaturated or trans-fats at the moment. We are just simply saying "Fats & Oils (Visible & Invisible Fat)". Let us concentrate on the proven facts first:

- Many claim we need to have atleast 2 teaspoons of oil a day else the fat soluble vitamins will not get dissolved. **The reality is; an individual needs only a small amount of fat to ease**

the vitamin absorption; requirement being as little as 5 or 10 nuts, or a small handful of any seeds, or a couple of avocados,

it will facilitate absorption of Fat Soluble Vitamins. There have been researches to prove that for absorption of Vitamin D low to moderate amount of fat is required than lots of it with specifications like total intake of 11 grams of fat leads to higher absorption of Vitamin D (16% higher) than the intake of 35 grams of fat.

Research done by science on Fat in their Natural Form

- Oil is a highly refined junk food full of fat and calories while being deficient of almost all cardinal nutrients
- One tablespoon of oil has the same amount of fat as a Snickers bar and 2 tablespoons of olive oil have three times more saturated fat than a 113 gram piece of white meat chicken, **something new to know?**
- The PUFA's, like Omega-3 and Omega-6, are vital for our health. Many nuts and seeds, green vegetables and legumes, contain these essential fatty acids – **free or visible fats and oils are not required for them to be a part of our diet**
- Both Omega-3 and Omega-6 fatty acids are required in the ration of 1: 1 or 1: 2 (being the best). However, in the past century or may be more, the ratio has shifted drastically to 16:1
- This excess of Omega-6 fatty acid build up in the cell membranes and contributes to inflammation; an underlying factor in most common diseases like cardiovascular disease, cancer, diabetes, arthritis and others.
- **Only plants make these essential fatty acids, Fish too get it from algae. Scientists who have done research claim it**
- **The National Academy of Sciences says "humans need only 1/4 of a teaspoon (women) to 1/3 of a teaspoon (men) of fat per day".**
- Anything for that matter, be it Carbohydrate, Protein or Fat, it is a part of food in totality, then only it is unprocessed, harmless & in its natural form. It may be fruit, vegetable, nuts, seeds, or whatever; they are not individual substances. The human body reacts differently when consuming a whole food in comparison to its derivative oil
- Example: Ingesting an olive versus the olive oil: the fat in the fruit is in an unrefined form in the whole plant & it binds to the plant fiber thus limiting the fat absorption in body. Additionally, when one eats food in their whole form, they can even attract the extra fat that is there in the blood hence

making it possible for them to be eliminated from the circulation

Research done by Science on Fat in their Processed Form

- We are aware pure white sugar is extremely refined, same goes with refined oils too. The difference between the two is only that one is just carbohydrate and the other is just fat
- Any oil available in the market has its original source from a complete food like nut, seeds, fruits, vegetables, just like how sugar is from the sugar cane plant.
- To obtain one teaspoon of sugar, about 3 feet of sugarcane has to be processed. . Similarly, to get one tablespoon full of olive oil, about 24 pitted green olives are used. **Question yourself, can you eat so many olives in one go?**
- The end product i.e. the highly refined oil is just 100% fat calories with no nutritional value.
- We hear a lot about DHA (docosahexaenoic acid) these days. It is a primary structural part of human brain, skin and retina. The original source is photosynthetic & heterotrophic microalgae and is manufactured from alpha linolenic acid (ALA – from plants). With respect to the essential fatty acids and their transformation to DHA, **it is necessary to realize that these nutrients work in a highly unified and harmonious environment to show their effect on human health.** Hence, when separated from other nutrients in the whole food as an individual, this process is not possible anymore
- Oil can easily convert a high-carbohydrate or high-protein platter into a high-fat one
- **Example:** olive oil (and most other oils) per tablespoon have 120 calories and 14 grams of fat while offering only minuscule amounts of any other nutrient

Let us consider the following points:

- **How cold pressed oils and refined oils are different from each other**
- **Are any of them actually better to be consumed than the other?**

What is refined oil?

Refining is meant to increase the shelf-life and heat durability of the oil. The process of 'refining' involves high heat and the use of chemicals. This takes away most of the natural nutrients.

Refined To Destruction

To extract oil, the seeds are first pulverized / squeezed mechanically. For less 'juicy' sources taking out of the oil, one has to use hexane to achieve maximum produce of the oil. The oil is further distilled and balanced using caustic soda based on the free fatty acid content. Additionally steps like bleaching, degumming, and dewaxing follow. Concluding step is to deodorize the product which involves passing superheated steam in excess of 200 - 500 degrees under high pressure.

Also, to be kept in mind trace amounts of hexane remain and they are carcinogens according to the Environmental Protection Agency

Heating the natural oil to such high temperatures alters the natural substance in unfavorable ways stripping off the natural nutritional value like a different form of fatty acid - Polycyclic Aromatic Hydrocarbons, which are carcinogenic in nature. The high heat also causes a small amount of trans-fatty acids also to be formed It is now a "plastic / modified fat".

The other option of taking out oil is by using a method called **"Expeller pressing"**. This is a mechanical procedure of removing oil using a machine called an expeller. No heat is added to the process; however heat can be generated because of mechanical action on the nut –resulting in high temperatures that alter the chemical composition of the oil.

After exposing oil to such high temperatures, **preservatives** are used to prevent the oil from becoming unstable. Toxicological

studies say it is better to avoid these preservatives. The scientists say that the process is so deadly that it turns 1% of the oil to be TOXIC

What is in store with the cold pressed oils? Just concentrating on the fact that even cold pressed oils contain considerable amount of saturated fat; **Canola oil is 6.7% saturated fat; olive oil is 14% saturated fat.** When saturated fat enters the liver, human body produces more cholesterol leading to atherosclerosis. Oil raises the LDL (which is considered as bad cholesterol).

Some advertising / promotions / hypes that we read about:

- Olive oil will protect you from a heart attack / does not promote inflammation / will lower your "bad" LDL cholesterol

Truth:

- All high-fat diets promote inflammation
- If one was to consume "cup of fresh vegetables, it would include about just 25 calories and practically no saturated fats. However, by just adding 1 teaspoon full of olive oil the dish is converted to 65 calories, 62% of these calories coming from olive oil with 10% saturated fat.
- **While "The American Heart Association" recommends not have more than 5% to 7% of calories from saturated fat.**
- Hence, regularly consuming even cold pressed oils can lead to weight gain and obesity
- Additionally, Olive oil is a very poor source of omega 3s

Attention needs to be paid to how the perception of olive oil being 'heart-healthy' evolve. Let us get into the reality

- We are aware that originally Olive oil comes from the Mediterranean region, being a part of their diet
- This kind of a diet involves healthy whole grains, fruit, organic lean meat and fresh vegetables, at the same time avoiding all processed food & have always lead a physically active lifestyle.
- The reason olive oil was chosen was because it was **locally grown and its easy availability.**
- **Thus they lead a better health more because of whole package of healthy lifestyle, and not just olive oil alone**

We hear a lot about smoke point; let us understand what that is exactly.

Once oil is heated on the gas, after sometime, as the temperature goes up, smoke is seen. This is called smoking point of the oil and is different for different oils, hence will mixing of 2 oils be healthy?

After the smoking point is reached, the triglycerides would first split to form fatty acids and glycerol; glycerol further breaking down to producing fumes and unhealthy free radicals.

We hear people ask "Which oils are the best to use?"

The bottom line is "Minimum is the best", as the current diet incorporates a plenty of invisible fat. For example: nuts, fish, meat, eggs, dairy products etc. Hence, further supplementing the food with extra visible fat will be in excess of everyday requirement.

Harmful effects of Visible Fat / Evident Reality

- Visible Fat can cause Inflammation
- Most oils offer a high magnitude of Omega-6 fatty acids which promotes inflammation and causes reduction in the conversion of plant-based Omega-3 fats (called alpha-linolenic acid) into the active forms of Omega-3s called EPA and DHA by about 40 %
- It is evident that inflammatory substances in the blood promote plaque growth, plaque rupture, and clot formation, hence increasing the risk of heart attacks
- **Visible Fat is just Fat & Calories: as discussed above**
- **Reheated or recycled oils are harmful:**
- There is substantial proof that oils when reheated contain harmful substances like acrolein, (found in cigarettes and plastics), trans-fats, reactive oxygen species and other products. They are collectively termed **NFC or neo-formed contaminants:** and are products of repeated heating

- Scientifically proven that polyunsaturated fats can easily go rancid at room temperature, **it is actually anticipated that vegetable oils available in the market may be already damaged**, even when used for first time cooking as they have been subjected to high temperatures.

- Visible Fat can cause Type 2 Diabetes**

We are aware that type 2 diabetes is a lifestyle disease, one of the contributing factors being overweight. Dr. Neal Barnard explains in his new documentary "What The Health", too many carbohydrates is not the reason for diabetes to occur – but it is because of excess of fat inside the muscle cells.

The excess fat build-up inside of the cells creates toxic fatty breakdown products and free radicals and tends to block insulin-signaling process; causing blood sugar levels to go up, hence diabetes occurs eventually. If one is able to get rid of excess fat, it would still be able to transport sugar in blood to the cells for energy.

- Oil can increase Cancer Risk**

According to the National Institutes of Health, "when cooking or frying with oil it to suppresses our immune system with a marked decrease in cytokine, tumor necrosis factor-alpha and interferon-gamma due to oxidation happening". This damages the bodies' potentiality to stop the growth of cancer cells

- Oil can cause Cardiovascular Disease as discussed above Favorably, the arteries can heal if we avoid these visible fat foods.** The current recommendation from the American Heart Association is "to limit our intake of saturated fat to no more than 6% of calories – the less the better".

The fact to understand is that visible fat makes the blood grow thick and hence blood flow decreases for upto 6 hours to about 56% after eating a fatty meal

The question is what if we use oil in moderation? As said by Dr. Esselstyn's says: "THEN YOU MIGHT ONLY HAVE A MODERATE HEART ATTACK"

Practical / Naked Eye Viewing

Consider our blood vessels like a water pipe that is there in our homes. Try discharging oil down into the drain. There would be a hindrance in the pipe, slowing the flow, making the pipe sticky from within. A similar thing happens in our blood vessels too. The oil causes the red blood cells to stick and form a lump, thereby limiting the ability to absorb and deliver oxygen to our cells. Or for that matter, you can try the same experiment with a strainer at home too

Methods / Research Methodology / Material / Case Presentation

This is the case of a 17 year old girl who came to me in 2016 with amenorrhea (menstruation only on consumption of hormonal pills) and grade III obesity. Her gynecologist had sent to me only for weight loss, however I assured her, that if she follows the diet well, all her complaints would be fine and she would not have to consume any hormonal pills for menstruation

When she came to me, her aldosterone and cholesterol levels were high, associated with other complaints like weakness and headache. We know what happens when aldosterone is high; high aldosterone level increases reabsorption of salt and loss of potassium from kidneys, hence resulting in electrolyte imbalance, though blood pressure at this stage was normal

Alkaline Diet changes followed over a period of one year, bought all the levels to normal, helped her reduce the weight and today, she does not have to take any hormonal pills for her menstruation. Her menstruation is perfectly alright

Research Results & Discussion

Consuming high acid forming diet creates a stress on the organs

because they need to work harder for the maintenance of internal environment within the body. For example: kidneys to eliminate the excess acid from the body, adrenal glands must secrete the hormone aldosterone. It is important as it helps to maintain the blood pressure by regulating the amount of sodium being sent in the blood and helps indirectly in maintaining the electrolyte balance and blood pH

Just like how humans when overworked, become fatigued, same is the situation with the organs. The organs too under constant pressure, become overworked and exhausted and hence compromised functioning

Therefore, providing the best nutritional environment for the body is extremely important for the success of healthy state of self, which means following a 80:20 (alkaline:acid) ratio of diet

Literature Review & Conclusion

Have we ever questioned, why once considered old aged diseases are seen in children as small as new born or in adolescence? We need to understand that the foundation for heart disease or diabetes is laid in childhood or even the womb, when pregnant mothers consume a high fat diet.

Hence if we wish our future generation to have a healthy future rather than them living on medications, we definitely need to give this a thought.

From the above discussion, it is clear, that to positively benefit the body with appropriate fat, we require only a small handful of nuts containing fat in a combined form, rather than teaspoons of visible fat. So let us see how to avoid & replace oil

- Cooking
- Vegetable broth / water should be used instead of visible fat, when cooking the vegetables. They could be steamed or baked instead.**
- Oil can be replaced with lemon juice, pureed beans, pureed tomato, yoghurt, for the dressings**
- However remember, it should be one step at a time**
- Reduce the intake of animal products and try and find plant-based solutions for them
- Start cooking without visible fat,
- Eat as many whole foods
- Spray oil rather than pouring oil
- No oil has definite superiority over the other. The best approach in choosing the oil for consumption is to use **"oil of the soil – i.e. of the local produce & naturally available"**

Discarding oil does not mean we are consuming a fat-free diet. Nuts and seeds are an apparent point of supply. Some vegetables like corn, beans, lentils, green leafy vegetables, cabbage, mangoes, and potatoes also contain some amount of fat, being a great source of Omega 3 necessary for our body.

Also, one tablespoonful of nuts like almonds, walnuts or 2 tablespoonfuls of seeds like sesame, pumpkin, sunflower or flaxseeds gives our daily dose of healthy omega fats, nothing more is required.

Fat through diet is not the only source of cholesterol for the body, the human body itself makes about 70% of the cholesterol required and rest 30% of cholesterol required from external sources – **a large portion is manufactured from carbohydrates**

Key to living Healthy

There are communities like citizens of Okinawa who live good amount of healthy robust years even though they do not use olive oil. They do this by eating a lot of fiber-rich, straight-from-the-earth foods, with plenty of fruits, vegetables, whole grains, and beans, and low servings of animal meat, usually seafood or lean meat

Understanding Nature

Read nature, understand nature. If one follows nature, they will never go wrong in consumption of right quantity of food (macro nutrients).

For example: flax seeds are obtained from a plant called *Linum usitatissimum*, belonging to family *Linaceae*. Musk melon seeds come from the fruit Musk melon and so on.

All seeds have their origin from plant and they are high in proteins and essential fatty acids (fat), also are enriched with vitamins having different health benefits some of them to be described are:

- They help to make the bones stronger
- Protection from diseases like diabetes by regulating insulin secretion
- Makes the heart healthy by providing the essential fatty acids (fat) in the right proportion
- Helps to increase the immunity
- Helps to maintain weight

Nature shows us in what quantities we need fat and proteins in comparison to carbohydrates. Separate the pulp and the seeds, sundry the seeds, weigh the seeds of one fruit against the pulp of that one fruit and we will have the answer to the ratio of Carbohydrates, Proteins & Fats required by Human Beings

I hope this article will help my audience to choose the fat in the diet wisely and help them to lead a healthier life. Any questions are welcome. You can email me on dr.vidushi.agrawal@gmail.com

Also, my next article will highlight on "how visible fat and why water should used in everyday life in the beneficial way", which will be published soon after this article.

Acknowledgement

I am grateful to my patient, who has permitted me to use her reports for the benefit to be shown to people how alkaline diet can improve and bring back to normal even the hormonal problems, without intervention of any medication

I understand that just one case alone cannot prove things, however, every paper I write, one case in every paper will be presented covering different areas of Modern Life Style Diseases, trying to show the efficacy of Alkaline Acidic Diet. The diseases will be different but the diet will be the same – Alkaline: Acidic diet in the ratio of 80: 20

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