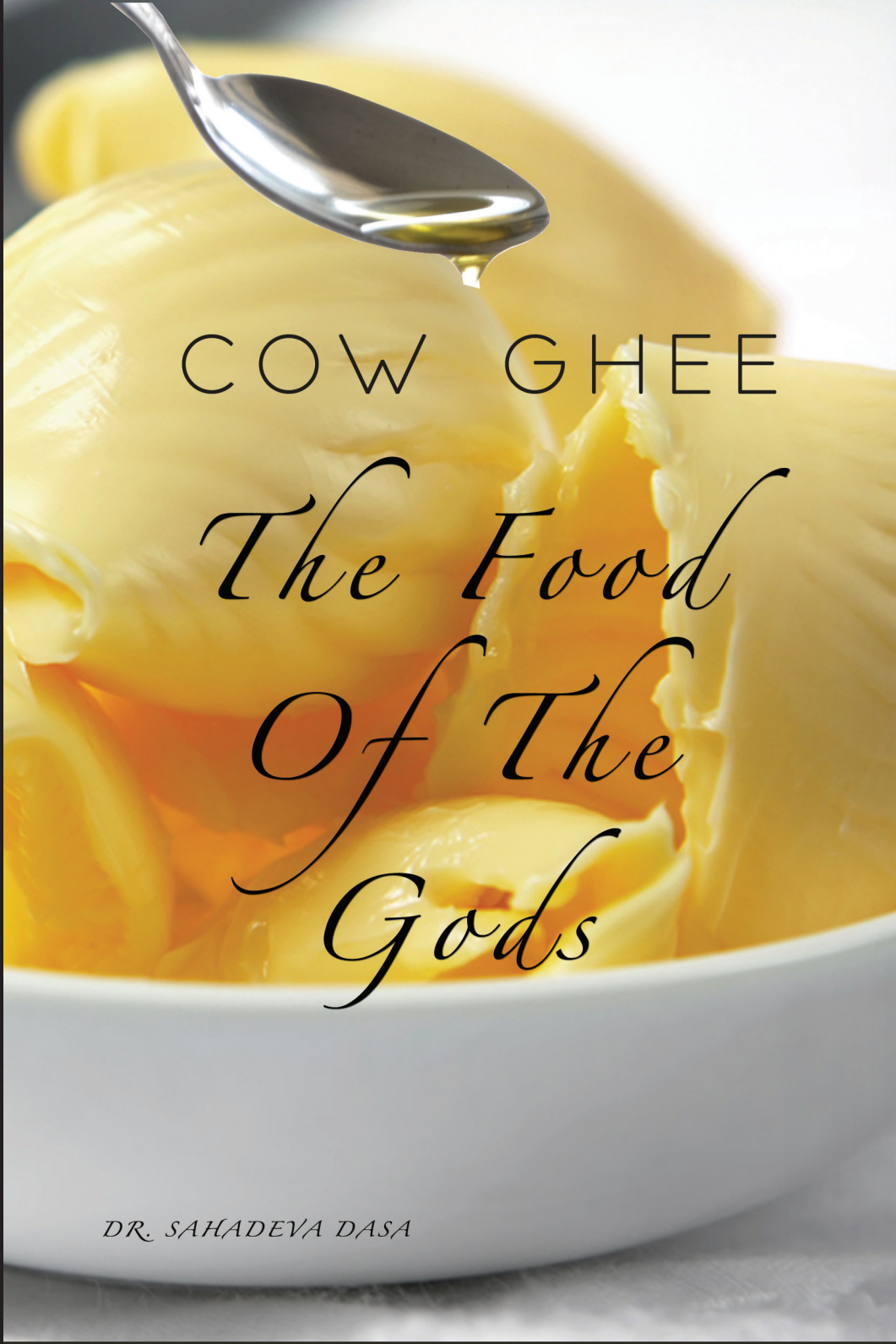

COW GHEE

The Food Of The Gods

DR. SAHADEVA DASA

Cow Ghee

The
Food of The Gods

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Soul Science University Press

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Dedicated to….

His Divine Grace A.C.Bhaktivedanta Swami Prabhupada

"Churn curd and you get butter and Buttermilk. So again you take buttermilk with chapati and everything, not a single drop is lost. Then the butter, you melt it, convert into ghee and store it, it will stay for years. So not a drop of milk can be wasted. And this butter, because in the village they are eating so much milk products, they do not require butter or ghee. Maybe little, so that is stored. They go to the city. The city men they require, especially. Ghee is very important thing in the city. So they purchase. So in exchange of that money, whatever they want, they purchase in the city and come back. By simply maintaining the cows, their economic problem is solved. Simply maintaining the cows. And to maintain cow there is no difficulty. The boys.... Just like Krishna, as a boy, was taking the cows, the calves, in the fields. They are grazing here and there, and coming back they're giving milk. Only one attendant required to take them into the pasturing ground and bring them back home. You don't require to give them food even. Simply take care, they give milk, and with milk you make so many preparations. Yes?"

~ Srila Prabhupada (Conversation -- June 10, 1976, Los Angeles)

By The Same Author

Oil-Final Countdown To A Global Crisis And Its Solutions
End of Modern Civilization And Alternative Future
To Kill Cow Means To End Human Civilization
Cow And Humanity - Made For Each Other
Cows Are Cool - Love 'Em!
Let's Be Friends - A Curious, Calm Cow
Wondrous Glories of Vraja
We Feel Just Like You Do
Tsunami Of Diseases Headed Our Way - Know Your Food Before Time Runs Out
Cow Killing And Beef Export - The Master Plan To Turn India Into A Desert
Capitalism Communism And Cowism - A New Economics For The 21st ` Century
Noble Cow - Munching Grass, Looking Curious And Just Hanging Around World - Through The Eyes Of Scriptures
To Save Time Is To Lengthen Life
Life Is Nothing But Time - Time Is Life, Life Is Time
Lost Time Is Never Found Again
Spare Us Some Carcasses - An Appeal From The Vultures
An Inch of Time Can Not Be Bought With A Mile of Gold
Cow Dung For Food Security And Survival of Human Race
Cow Dung – A Down To Earth Solution To Global Warming And Climate Change
Corporatocracy - You Are A Corporate Citizen, A Slave of Invisible And Ruthless Masters
Working Moms And The Rise of A Lost Generation
Glories of Thy Wondrous Name
India A World Leader in Cow Killing And Beef Export - An Italian Did It In 10 Years
As Long As There Are Slaughterhouses, There Will Be Wars
Peak Soil – Industrial Civilization, On The Verge of Eating Itself
If Violence Has To Stop, Slaughterhouses Must Close Down
(More information on availability on DrDasa.com)

Preface

According to a study published in The Lancet, we are living in a sick world. Over 95% of the world population has health problems, with over a third having more than five ailments. Just one in 20 people worldwide (4·3%) had no health problems in 2013.

The findings come from the largest and most detailed analysis to quantify levels, patterns, and trends in ill health and disability around the world between 1990 and 2013.

Happiness lies first of all in health. Failing on health front means we fail on every other front.

Here is the cause of our downfall. We think we are too smart and so we have thrown the traditional knowledge out the window. But if we are so smart, why do we find ourselves in such a terrible predicament today? Our species is facing a barrage of extraordinary and complex problems for which we have no feasible solutions.

The irony is that these problems exist because our cleverness, our being so smart, created them. Our activities, clever as we have thought them to be, are the causes of the problems, which, collectively, threaten the very existence of humanity! Irony is, we are only smart enough to create the problems, but we're not smart enough to fix them.

Some one has rightly said, "In the end, cockroaches would prove to be more intelligent than humans if humans destroy themselves. Intelligence is really a survival skill for the entire species and that which survives proves intelligent on a species level."

Our greatest failings have been in the areas of food and health. This is because, out of arrogance, we have chosen to ignore the collective wisdom of countless generations. Instead, we have chosen to follow the fallible wisdom of modern doctors and unscrupulous food companies. We have reposed our trust in nutritionists, supplement makers and celebrities, rather than our moms and grandmoms.

This book discusses the vital role of ghee or clarified butter in maintaining the health and vitality of the human race. Only recently we have 'discovered' that dairy fats are bad for us. But for thousands of years, countless civilizations have survived on them. Civilizations tends to get rid of foods that are harmful, and that the dairy fats made it through these civilizations, conveys some truth in the matter.

Dr. Sahadeva dasa
1st October 2015
Secunderabad, India

1.

Ghee

An Introduction

Ghee is a class of clarified butter that originated in ancient India and is commonly used in South Asian cuisines, traditional medicine, and religious rituals.

Ghee is prepared by simmering butter, which is churned from cream, and removing the liquid residue.

Traditionally, ghee is always made from the milk of cows, which are considered sacred, and it is a sacred requirement in Vedic yajña and homa (fire sacrifices), through the medium of Agni (fire) to offer oblations to various deities.

Fire sacrifices have been performed for thousands of years and ghee is used as an oblation. All important ceremonies such as marriage, funerals etc. require ghee. Ghee is also necessary in Vedic worship of Deities with aarti (offering of ghee lamp) and for Panchamrita) where ghee along with honey, milk, and curd is used for bathing the Deities.

In the Mahabharata, the kaurava were born from pots of ghee.

Culinary Uses

Ghee is widely used in Indian cuisine. All over India, rice is prepared or served with ghee. In Rajasthan, ghee is eaten with baati. All over north India, people dab roti with ghee. Thousands

of varieties of sweets are prepared with ghee. Punjabi cuisine prepared in restaurants uses large amounts of ghee. Naan and roti are sometimes brushed with ghee, either during preparation or while serving. Ghee is an important part of Punjabi cuisine and traditionally, the parathas, daals, and curries in Punjab often use ghee instead of oil, to make them rich in taste. Different types of ghees are used in different types of cooking recipes; for example, ghee made from cow's milk is traditionally served with rice or roti or just a generous sprinkle over the top of a curry or daal (lentils), but for cooking purposes, ghee made from buffalo's milk is also used.

Ghee is an ideal fat for deep frying because its smoke point (where its molecules begin to break down) is 250 °C (482 °F), which is well above typical cooking temperatures of around 200 °C (392 °F) and above that of most vegetable oils.

Clarified Butter Vs. Ghee

Ghee, although a type of clarified butter, differs slightly in its production. The process of creating traditional clarified butter is complete once the water is evaporated and the fat (clarified butter) is separated from the milk solids. However, the production of ghee includes simmering the butter along with the milk solids so that they caramelize, which makes it nutty-tasting and aromatic.

According to Ayurveda, ghee is traditionally made in a way rather different than clarified butter. To make real ghee, one must obtain raw milk, then boil it, let it cool to 110 °F (43 °C), and add curd (Indian yogurt) cultures. After letting it set, covered at room temperature for around 12 hours, the curd is then churned using ancient methods to obtain this specific type of cultured butter. This butter is finally used to simmer into ghee.

Traditional Medicine

Ayurveda considers pure unadulterated ghee to be sāttvik or in the "mode of goodness", when used as food. It is the main ingredient in some of the Ayurvedic medicines, and is included under catuh mahā sneha (the four main oils: ghrta, taila, vasā, and majjā)

along with sesame oil, muscle fat, and bone marrow. Ghee is used preferentially for diseases caused by Pitta Dosha. Many Ayurvedic formulations contain ghee, for example, Brāhmi ghrta, Indukānta ghrta, Phala ghrta, etc.

Though eight types of ghee are mentioned in Ayurvedic classics, ghee made of cow's milk is claimed to be excellent among them. Further, cow's ghee has medhya (intellect promoting) and rasāyana (vitalizing) properties. Ghee is also used in Ayurvedas for constipation and ulcers. Vechur cow Ghee produced using Vechur cow's milk, is famous for its high medicinal values due to the presence of A2 beta-lactalbumin protein and higher arginine content which is good for the health of convalescing people.

In Sri Lankan indigenous medical traditions (Deshīya Cikitsā), ghee is included in pas tel (five oils: ghee, margosa oil, sesame oil, castor oil, and butter tree oil).

Nutrition

Like any clarified butter, ghee is composed almost entirely of fat, 62% of which consists of saturated fats; the nutrition facts label found on bottled cow's ghee produced in the United States indicates 8 mg of cholesterol per teaspoon.

Indian restaurants and some households use partially hydrogenated vegetable oil (also known as vanaspati, dalda, or "vegetable ghee") in place of ghee because of its lower cost. This "vegetable ghee" contains trans fat. Trans fats have been shown to increase the risk of coronary heart disease. In India, the sale of fake ghee is rampant. Ghee is also sometimes called desi (country-made) ghee or asli (genuine) ghee to distinguish it from "vegetable ghee".

A 15-year-old boy pulled from ruins 5 days after the powerful April 2015 Nepal earthquake survived on nothing but a can of ghee.

The market size of ghee in India will double its size from US$60 billion (INR 3.84 trillion) to US$115 billion (INR 7.36 trillion) by 2016. India is the world's largest producer of ghee and also its largest consumer.

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2.

Ghee

Outside The Indian Subcontinent

Several communities outside the Indian Subcontinent make ghee. Egyptians make a product called samna baladi meaning "local ghee". Samna Baladi is usually made from water buffalo milk and is white in color. Also, during the process, the darkened milk solids that get separated are considered a delicacy called morta. When samna is made from cow milk, it is often yellowish.

Tesmi (in Tigrinya language) is the clarified butter prepared in the country of Eritrea. The preparation is similar to that of ghee but the butter is oftentimes combined with garlic and other spices found native to the area. Tesmi is staple ingredient in Eritrean cuisine. In Ethiopia, niter kibbeh is made and used in much the same way as ghee, but with spices added during the process that result in distinctive tastes.

Moroccans (especially those of the Amazigh ethnic group, known to Westerners as "Berbers") take this one step further, aging spiced ghee for months or even years, resulting in a product called smen.

In northeastern Brazil, an unrefrigerated butter very similar to ghee, called manteiga-de-garrafa (butter-in-a-bottle) or manteiga-da-terra (butter of the land), is common.

It is also widely used in Europe. For example, Wiener Schnitzel is traditionally fried in a version of ghee known as Butterschmalz.

In Switzerland as well as bordering areas, butter was rendered in the old days to preserve the product for several months without refrigeration. "Boiled Butter", as it is commonly called, is used extensively to finish a typical dish of roesti, the Swiss version of hash browns. It gives the dish its perfect flavor. This product is also used in baking of various pastries and cakes as a substitute for fresh butter to enhance the flavor of the products.

Among Nilotic pastoralist communities in the African Great Lakes region, such as the Nandi, Tugen, and Maasai communities, ghee and flocculated byproducts (kamaek) from ghee-making were traditionally used as cooking oil.

It is also traditionally used in Russian cuisine and is known as toplenoe maslo.

How Do You Say Ghee In Different Languages

The word ghee comes from Sanskrit and has several names around the world.

Sanskrit: ghrit, ghritam
Marathi/Konkani: tūp
Bengali: ghi
Punjabi: ghio
Hindi: ghī
Gujarati: ghi
Maithili/Nepali: ghyū
Urdu: ghī
Odia: ghiô
Kannada: tuppa
Malayalam: neyy
Tamil: ney
Sinhalese: Ela-ghitel or Ghitel,
Telugu: neyyi
Somali: subag
Arabic: samna, samneh
Pashto language: Ghwaree
Persian: roghan-e heiwâni

Kurdish: řün-i Dan
Georgian: erbo
Indonesian: minyak samin
Malay: minyak sapi
Hausa: man shanu
Brazil: manteiga clarificada
English: butter Oil, clarified butter, drawn butter
French: beurre clarifié, beurre noisette
German: ausgelassene butter, Butterschmalz, geklärte butter
Portuguese: manteiga de garrafa
Somali: subaag
Spanish: mantequilla clarificada

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3.

Smen

An Indicator of Familial Wealth

Version of Ghee From Africa and Middle East

Smen (also called sman, semneh, or sminn) is salted fermented butter, an important cooking ingredient most common in North African and Middle Eastern cuisines. It is produced using the butter made from the milk of sheep, goats or a combination of the two. The butter is brought to boiling point for about 15 minutes, then skimmed, strained into a ceramic jar called a khabia, and salted before it curdles. Thyme is often added to it to provide a yeast and enzyme starter. Other plants or fruits can be used. The result is then aged, often in sealed containers. It is then traditionally buried in the ground for temperature stability purposes, just like cheese is left to mature in underground caves because they have cooler and more stable temperatures.

It is similar to ghee and niter kibbeh, but has a characteristically strong, rancid, and cheesy taste and smell. Matured smen is very similar in taste to blue cheese because likewise it is a high-fat form of cheese. The older the smen, the stronger—and more valued—it becomes. Smen is increasingly difficult to find due to its increasing replacement by peanut oil, a nonnative culinary element introduced from Senegal and other West African countries.

Smen made during winter is believed to be more fragrant than those made during a warmer season. In constant warm weather, closer to the temperature where butter becomes liquid, smen

matures very slowly. In lower temperatures, one month is considered an acceptable time to start using the smen in cooking, although its flavour will not be strong. In a constant warm weather, like in equatorial countries, it can take up to 4 months to develop the equivalent amount of flavour.

Smen holds great cultural significance, particularly as an indicator of familial wealth. As such it will often be used as a token of honor for esteemed visitors to a household, akin to other cultures' customs such as using the "fine china" or serving an especially prized wine.

Berber farmers in southern Morocco will sometimes bury a sealed vessel of smen on the day of a daughter's birth, aging it until it is unearthed and used to season the food served on that daughter's wedding.

In Israel and Yemen, Jews prepare a special version of semneh which is smoked with aromatic herbs inside of a gourd in order to impart deeper flavour and aid in preservation.

The smell is considered especially magnificent: a particularly aged pot of the family smen may be brought out of the cellars for honoured guests to sniff. The smen represents the riches of the house.

In Lebanon, samneh is made from butter that has been boiled until the fat in the pan is as transparent as a tear (dam'at el-eyn). It is then taken off the heat and left to settle before being carefully strained through a fine sieve into sealed containers where it will keep for a year or more. Ethiopia has a spiced version, nit'r k'ibe.

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4.

Ghee Is Life

And A Sacred Symbol of Auspiciousness

by Peter Malakoff

As the Ganges has poured down through the valleys and plains of India for thousands of years, so has ghee flowed through all aspects of the Indian culture. In the Ayurvedic wisdom, homes, religions and kitchens of India, ghee is a sacred symbol of auspiciousness. As an esteemed article of everyday use, it provides nourishment and healing.

In India, ghee has been highly regarded for so many things, for so long, that one can never exaggerate its glories. The milk of cows is considered to possess the essence or sap of all plants, and ghee is the essence of milk. According to a Vedic analogy, ghee is hidden in milk, like the Supreme Lord in the cosmic creation. Through the introduction of Agni (fire) in milk, by the friction of churning, butter appears. This butter is then heated over fire and the most concealed part of milk - ghee appears.

The Vedas call ghee the 'foremost and the most essential of all foods'. Ghee is a central element in the Vedic culture. The great theme of the Vedas is yajnas (fire sacrifices) and ghee is an essential offering in such fire sacrifices. Agni is the mouth of the Gods and they are fed through this offering of ghee. The Mahabharata says,

"From ghee flows the sustenance of all the worlds". The God Agni, the first word and deity of the Rig Veda is known as Hutabhu (the devourer of ghee).

The association of ghee with light and brilliance is found in many passages of the Vedas. In fact, the Sanskrit word for ghee is Ghritam. It comes from the root 'ghr', which means to shine. The ingestion of ghee is offering the finest of fuels into the fire of digestion (Agni). Ghee increases the sattvic qualities of life both in ourselves and in our environment (the Gods are the elemental rulers of the cosmos). It allows body and mind, both subtle and gross, to burn with a refined brilliance. Ghee increases dhi (intelligence) refines the buddhi (intellect) and improves the smrti (memory). Ghee also builds the aura, makes all the organs soft, and increases rasa (the internal juices of the body).

Ghee increases ojas, which is the underlying basis of all immunity and the essence of all bodily tissues. Dr. Vasant Lad writes, "As ghee is the pure essence of milk, in the same way ojas is the pure essence of the dhatus". Maya Tiwari calls ghee the "single most ojas-producing food on earth".

Although ghee kindles or increases the digestive fire (Agni), on which all nutrition depends, it does so without aggravating Pitta, the elemental functioning of fire within the body. In fact, ghee cools the body and balances all the Agnis in the body.

Because of its superb penetrating qualities ghee has the ability to carry a substance deep into all seven dhatus. Ghee is used as a yogavahi (carrier) for herbs and bhasmas (ashes) of gemstones, heavy metals and even certain toxins. Ghee also causes secretions and liquification in the dhatus that dissolve wastes, allowing the doshas to carry away 'ama'. The ingestion of ghee is used in Panchakarma to first penetrate into and then dissolve ama in the dhatus, allowing the wastes to be then carried to the intestinal tract and expelled.

Sneha is a Sanskrit term meaning to express by touch, love and caring. Sneha is the feeling and knowing that someone cares for you and that you are being comforted and cherished. The Ayurvedic

texts talk of four substances for Snehana (the application of oily substances on the body): They are Taila (Oil,) Vasa (animal Fat), Majja (bone marrow) and Ghrita (ghee). Of these, Ghrita (ghee) is considered superior. Ghee softens and strengthens, protects and nourishes the skin. Ghee increases the overall strength, luster and beauty of the body.

Until recently, men gave ghee massages on the street. Ghee was almost always the preferred substance for the skin, however, since it is more expensive than oil, it has come to be used for internal purposes only. It is still used externally for the old and young. Mothers in India massage their babies with ghee. Sometimes when a sick person can not sleep, rubbing ghee on his feet and temples soothes his agitation. It is considered one of the best substances for Abhyanga (self-massage).

Abhyanga bypasses the digestive system and allows the qualities of ghee to penetrate directly into the deeper tissues. It is said that sixty per-cent of what is placed on the skin is absorbed into the body. We literally 'eat' what we put on our skin. Ayurveda suggests that if we would not eat something, we should not use it on our skin.

In ancient India, wells full of ghee were made and saved for times of war, especially for those who suffered wounds. When a surgeon

Once, I accidentally got some sandalwood oil in my eye. It burned intensely, and I was unable to wash it out with a variety of eyewashes. I spent hours in pain and finally remembered to try ghee. Almost immediately, the ghee pacified the burning and the eye irritation ceased.

Just recently, a friend of mine who is a yoga instructor had a pressure cooker blow up in his face, giving him second and third-degree burns. He immediately put some ghee on his face and went to the emergency room. The doctors told him that he would be scarred for life, that the burns would take several months to heal and that he should take steroids because the body shuts down the production of testosterone after burns. He declined to take the steroids and continued to apply the ghee, twice daily. After six days he was completely healed without scarring.

~ Peter Malakoff

cuts open a body, he only does so, knowing that the body will be able to heal itself. The surgeon cannot heal. Ghee magnifies Ropana (healing), and its effectiveness in facilitating recovery from wounds is celebrated. In Ayurveda, when a person has a chronic peptic ulcer or gastritis, ghee is used to heal the ulcer inside the intestinal tract. Ghee works wondrously on bedsores for the elderly or debilitated. It can also be applied for broken bones and bruises. It is highly effective for all sorts of skin rashes. It is also used on burns from both fire and chemicals.

Ghee is an exquisite Rasayana (rejuvenative substance, giver of Rasa-juice) and is known to contribute to longevity. In Ayurveda, long life is correlated with good Agni and good Kapha. I have mentioned how ghee increases Agni. Ghee also has the qualities of being heavy, slow, oily, liquid, dense, and soft. It is these qualities of Kapha that help build the body, unit by unit. Ghee, in a very sure and steady way, slows the aging process.

Ghee has the quality of snigda (oiliness, unctuousness). It is smooth, lubricating and nurturing. Ghee makes the voice soft and melodious. Ghee is Guru (heavy). It mildly increases the qualities of Kapha and decreases Pitta and Vata, which are both light. In moderation, ghee balances all the doshas. Ghee has the quality of mrdu (softness). In Ayurvedic Panchakarma treatments, ghee is the oil used on the eyes. In Netra Basti, (eye-bath) a small dam is built around the eyes and filled with warm ghee. Then, the patient opens his eyes to its soothing softness. After that treatment, one sees the world though a soft diaphanous curtain of love and loveliness.

In India, ghee is made from both Cow and Buffalo milk. You can tell the difference because Buffalo ghee is white and Cow ghee is yellowish Also, the ghee of a Cow is in liquid form at body temperature. The ghee of a Buffalo is still slightly solid. Buffalo milk and ghee are more tamasic (dulling), while Cow milk and ghee are believed to be more sattvic (pure and purifying). Cow ghee is used in lamps in temples and pujas all over India. The light of a ghee lamp

is the most beautiful and brilliant of all lights. The light of burning ghee is said to ward off negativity and evil influence.

Ghee is the most refined end product of milk. When making ghee, there is a concentration of all the qualities of the milk. This includes, antibiotics, hormones (rGBH), chemical pesticides, etc. For this reason, always use organic and the best milk/butter possible.

When a cow is milked, there is whole milk. If you let this milk sit for a while, cream rises to the top. Then the cream is skimmed off and churned. After a while, and all of a sudden, as a result of the Agni of churning, the fat globules begin to stick to each other and form butter. What is left over is buttermilk. When we boil the butter, after all the moisture is boiled off and the milk solids have sunk to the bottom of the pot, we are left with ghee.

In America today, very little butter is churned the old-fashioned way. Most modern dairies, even many organic ones, no longer churn their cream to make butter. In a typical dairy, the cream is pushed (extruded) through a fine mesh screen in which the heavier and larger molecules of butter are held on one side of the screen while the smaller molecules of buttermilk pass through. I asked an Vaidya (Ayurvedic Teacher) about what difference this process of extrusion makes. He said that butter made without churning is lacking in some quality of Agni. He went further in his consideration saying that the home-based Indian culture churns their cream with a hand churn, rolling it back and forth between their hands. This back-and-forth action imparts a particular balancing quality to the ghee, instead of the one-way action of a gear driven churn. It is in the subtle qualities of a substance that we find sattva.

There is one very important difference in the way ghee was and is made in India. The Indians start out with milk from a cow, just like in America. But, they do not let the cream rise to the top and skim it off as we do in the West. Instead, and here comes the key difference- they culture the milk with yogurt, allowing it to sit for four to five hours, just before it becomes completely soured. Then they churn the whole milk. From that point on, the process is more

or less the same. It is better to culture and churn the whole milk rather than culturing just the cream.

This culturing with yogurt introduces another form of Agni into the whole process of refining the milk into butter and then ghee.

In modern day India, it is very difficult to find high quality, pure cow ghee. The commercial milk, cream and butter are homogenized and pasteurized, and now even ultra-pasteurized, a process whereby milk is heated to a higher temperature than pasteurization for a shorter period of time. This kills and destroys various living substances/enzymes in the milk thus prolonging shelf life. Ultra-pasteurized milk can be stored for months without refrigeration. In other words, it's a lifeless, dead substance. Ultra-pasteurized milk is refrigerated in America because people would not trust un-refrigerated milk. According to the Ayurvedic Vaidyas, all these factors (homogenization, pasteurization, ultra-pasteurization) increase the Vata (air and ether, destructive, catabolic, drying, rough) qualities in what was originally a very Kapha (earth and water, building, oily, tonifying, anabolic) substance. Some of these processes, like homogenization, make the milk, and thus the cream and butter, indigestible. One of the things you can look for in milk and cream is the sticky quality (picchila), one of the gunas of Kapha. The milk or cream will literally stick to the glass it is poured into. This quality will be much reduced in highly processed milk products.

In America, as in India, there is a similar theme to the story. Although organic dairies are appearing all over the country, many of them make their butter by extrusion. Furthermore, they homogenize and ultra-pasteurize their milk. Another very important consideration to mention is that milk comes from cows and the general treatment of cows in America is not very good. This is another reason to purchase milk and butter from small family farms, which tend to treat their animals better. Also, try to purchase your milk and butter from a dairy that grazes its cows on growing green grass, not only on hay and silage, even if they are organic.

Making of Ghee

Once you obtain butter by churning yogurt, heat it in a stainless steel or enamel pot, bringing it to a boil. It is best to make your ghee in stainless steel heavy pots, rather than aluminum because of toxicity from the aluminum. Also, avoid thin stainless steel because a heavier pot will distribute the heat of the fire more evenly, surrounding the ghee. Try to use heat from fire rather than an electric range (This is again in the realm of subtlety and sattva that I referred to earlier). There is a quality of Agni that lends itself and pervades a substance cooked on flame not present when butter is cooked on electricity. I do not entirely understand the difference between the heat of a fire and the heat of an electric range and I asked several Vaidyas about it in India. They simply said that fire was a superior (more sattvic) way to cook food.

It is clear to me that it is important to create and enjoy a beautiful and positive environment when making ghee. This subtle quality of ambiance is in line with cooking ghee on the flames of fire, it makes a difference. Once the butter begins to boil, reduce the flame to the lowest point at which the butter will continue to boil. As it boils, moisture evaporates off and it will begin to clarify and the butter will turn from cloudy yellowish liquid to a more golden color. Whitish cloudy milk solids will rise to the top and sink to the bottom. Do not stir. After a half hour to an hour and half to several hours, depending on the amount and the size of the pot and the amount of ghee compared to the flame, your ghee will be ready. The ghee will be a clear beautiful golden color with a wonderful smell. The moment ghee is ready is critical and lasts only a short time. If the ghee is cooked too little, moisture will remain in the ghee and it will lack in exquisite taste and qualities. Also, because of the moisture, it will tend to spoil or sour. If ghee is cooked too much, it will burn, turn slightly darker and have a certain nutty flavor. This does not ruin the ghee at all, but it is to be noticed, so that over time you will capture the 'perfect' ghee to be experienced between these two 'extremes'. After the ghee is ready, skim off the top light crust

of whitish milk solids. (These and the heavier ones at the bottom of the pot are traditionally used to make sweets. Children in India love them and always plead with their mothers to have the leftovers when ghee is made.)

Then, pour the golden, sweet-smelling liquid through layered cheesecloth to catch any last impurities, into a bottle, leaving the slightly burned milk solids (caramelized lactose) on the bottom of the pot you cooked it in (ghee contains no lactose or milk sugars). Do not close the glass jar into which you pour the hot ghee until it comes to room temperature so that no moisture from condensation forms on the inside of the jar. Moisture spoils ghee, allowing a mold to grow which will sour the ghee. This is the reason that you always use a clean and dry spoon to take your ghee out of its container. For a similar reason do not refrigerate your ghee. First of all, it is not necessary. but, most importantly, condensation will form inside the jar as you take it back and forth between a refrigerator and a warm room.

Making ghee is a beautiful and peaceful experience. The sound of softly boiling butter, the pouring of the thick golden liquid into bottles, the wonderful smell that permeates the space.

The older the ghee, the better its healing qualities. 100-year-old ghee is greatly valued in India and fetches a very high price. Such ghee was often kept in Temples in large vats and families would pass on aged ghee to their next generation to be used as a medicine. (This older ghee is not taken internally).

Time And Season

According to Maya Tiwari, the traditional Vedic day for making ghee is on Purnima (the full moon). The moon represents Soma, the Mother and nurturing and all the best qualities of milk and butter are energized on this day.

The quality of ghee will change as the time of year and the diet of the cows change. Not all cows are given green pastures to graze on. Even those that are allowed to graze in the fields often do not do so all year round. Many dairy farmers, even organic ones, feel

that too much grass in the diet gives a undesirable or grassy taste to the milk. Also, in winter, there are many days when the cows are not able to go out to pasture and there is more hay, silage and legumes in their diet. This will noticeably change the quality of their milk, butter and ghee. The more cows graze in the fields on grass, the more yellow is the ghee. This 'yellow' is the result of an increase of beta-carotene in the butter. This is why dairies began to color their butter- to fool those who remembered the color of butter from cows fed on growing green grass. I have noticed that there is a sweeter taste to the ghee when there is more grass in their diet.

Ghee is nourishing and healing, steady and dependable and always supportive of life and living. Ghee brings the excess of blessing and goodness wherever and whenever it is appreciated and used. An ancient scripture summarizes it best: Ayurghritam (Ghee is life).

(Though ghee is a benevolent substance, there are cases where its use is contraindicated. People with obesity should be frugal in their use of ghee and those with high ama, acidity, dyspepsia and fever should not take ghee at all).

Source

by Peter Malakoff for Light on Ayurveda: Journal of Health, June 20, 2005

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5.

Butter Gods

On The Roof of The World

Yak Butter - A Daily Staple In The Mountains

Yak butter is butter made from the milk of the domesticated yak. It is a staple food item and trade item for herding communities in south Central Asia and the Tibetan Plateau. Many different countries have communities of herders who produce and consume yak's dairy products including cheese and butter – for example, China, India, Mongolia, Nepal, and Tibet.

Whole yak's milk has about twice the fat content of whole cow's milk, producing a butter with a texture closer to cheese. Milk is much more plentiful in summer than winter; turning fresh milk into butter is a way to store calories for later use.

Yak's milk is first allowed to ferment overnight. The resulting yogurt-like substance is churned for about an hour by plunging a wooden paddle repeatedly into a tall wooden churn until butter forms.

Fresh yak butter is preserved a number of ways, and can last for up to a year when unexposed to air and stored in cool dry conditions. It can be wrapped in a cloth or big rhododendron leaves.

In these communities, life still revolves around the yak, which the people have herded and placed at the center of their culture for thousands of years.

For example, Tibetans are warmed by yak-dung fires and lit by yak-butter lamps; they eat yak butter, cheese, and yoghurt; they use yaks for transport and weave clothing, blankets, shelters, and even boats out of yak hair. The dependence in so many ways upon their particular animal herd is typical of pastoralists, the original "butter eaters," the world over.

A few times a year, they go to market to trade their butter for corn and other things they need.

Yak Butter Uses

Yak butter tea is a daily staple dish throughout the Himalaya region and is usually made with yak butter, tea, salt and water churned into a froth. It is the “Tibetan national beverage” with Tibetans drinking upwards of sixty small cups a day for hydration and nutrition needed in cold high altitudes. Sometimes rancid butter is used which gives the tea a different taste.

Melted yak butter may be mixed, in roughly equal proportions, with roasted barley flour (tsampa). The resulting dough, mixed with dates or sesame seeds, is used for welcoming guests. It can also be stored for later use and then melted into hot water, to which salt or sugar has been added.

Keeping Warm And Oiled

Fat discourages insects and fat keeps you warm. Many travelers who have lived among pastoral societies in cold climates, like the Mongols and Tibetans, have described how these people spent their lives coated in grease, usually butter, which might turn black and rancid before anyone seemed to mind. People have always enjoyed oiling their bodies, and hot water for washing was not commonly available until very recently.

Yak butter is used in traditional tanning of hides. Other non-food uses include fueling yak-butter lamps, moisturizing skin, and the traditional butter sculptures for Tibetan New Year. Such yak-butter sculptures may reach nearly 10 meters in height.

The 15th day of the first month is a a high point of the Great Prayer Festival (Smom-lam), and the day of the fabulous "Butter lamp day." This festival was started by Tsong kha-pa in the first Smom-lam in 1409. In his dream, all beautiful flowers and trees appeared in front of Buddha. He commissioned monks to make flowers and trees with colored butter.

Butter Sculptures

Tibetan monks have made intricate, colored butter sculptures as part of a tradition that is as old as Buddhism. In Lhasa, they continue to carve fantastic flowers, animals, birds and plants for December's Butter Lamp Festival, and place them on a street lit with hundreds of lamps that burn butter. One sculpture takes up to six months to complete, as it is part of the path to enlightenment, upon which the monks create a positive collective world karma to overcome epidemics, hunger, and war.

The Festival of the Butter Gods

Earlier, every year, at Kumbum, half a million pilgrims, representative of the Buddhist world from Siberia to modern Sri Lanka, and from the Russian Pamirs to the Pacific, took part in the festival and were themselves part of the pageantry. After the Chinese occupation, the festivities seem to have been scaled down.

In 1942, one of the last descriptions was made of the Festival of the Butter Gods in Tibet. What Harrison Forman, writing for the Canadian Geographic, saw was one of the world's most magnificent religious celebrations, a particularly splendid example of which took place annually at the monastery he visited, Kumbum Gomba.

The festival drew participants from all across Asia, and continued for many days, with songs and dancing, masked theatre, a huge market, the Questioning of the Lamas, chanted prayers, and music accompanied by cymbals, drums, gongs, flutes, oboes, and brass trumpets up to twenty feet long. The climax of the whole celebration was the night-long display of the Butter Gods.

Immense panels of bas-reliefs representing Buddhist deities and mythical subjects had been carved in yak butter by scores of lamas, supervised by a guild of artists acclaimed as among the finest in the Buddhist world. They had taken months to make the figures, which were multicolored, as much as three meters (10 ft.) tall, and amazingly intricate, with every hair, even' realistic detail of the design on their "silken" clothes, every bead in their elaborate jewelry meticulously carved and molded in butter. Some of the tableaux included hundreds of lively figures in action. The monks had had to work in the cold, and often suffered from frozen hands and feet during the winter weeks of work. Every year the sculptures were entirely different.

The crowd surged forward to gaze at the butter figures in the flickering light of thousands of yak-butter lamps. As the night passed the butter began to melt in the heat. By dawn it was all over: the temporary is intrinsic to the nature of festivals. The sacred occasion had passed, and the special manifestation of the gods was finished for that year.

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6.

The Emergence of Dairy Butter

In Early America

In early America, dairy work included milking, making cream and butter, and also the sophisticated art of making cheese. In Europe it was always done by women. The word "dairy" is from Middle English dey - a female servant. The dairy was associated with the house as opposed to the lands; "inside" has always been female in the Western imagination, and "outside" male, so that the man's place was in the public eye while the woman's was at home. Also, milk was perhaps considered self-evidently a woman's affair.

History records that a primary object of keeping cows was to supply the needs of the family for milk and butter. Butter was produced almost universally in olden times because it was more essential in the diet of most people.

As communities expanded and frontiers were pushed back with the growth of the nation, many families were gradually forced to procure their supplies of milk and butter from farmers located in their vicinity. Then, as populations became more congested, and as cities sprang up, butter making on farms became more and more important. As the larger cities developed, important tracing areas also developed resulting eventually in the establishment of Boards

of Trade and later in Mercantile Exchanges in New York and Chicago, for example.

The farm production of butter began to assume definite shape at least as early as 1791 as Willard stated in 1871 that "Orange County located 50 miles north of New York City had for 80 years devoted its chief attention to butter making and the production of fresh milk for the New York City Market." "Dairy butter," as this product made on the farm was called, made up for sale was oftentimes collected as "pats," "balls," or "rolls."

This was particularly true in the Philadelphia market which long enjoyed high reputation for fine dairy butter. It was not uncommon for such "Philadelphia butter" to sell at a dollar per pound and even higher where the prevailing market prices were around 20 cents per pound or less. This fine Philadelphia butter was defined as:

> "Our idea is that butter -- such butter as would give a man an appetite to look at, to smell of and taste of -- is as far removed from an oily, fatty, or tallowy substance as possible... a firm, fine- grained article, of rich golden color, sweet, nutty aromatic smell and unctuous taste, put up in pound or half-pound lumps, whether square or round, and which, when opened out from its moist, then white linen wrapper, invites both the senses of smell and taste."

Source

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7.

Butter Making In Europe

Domain Of The Farm Wives

Before the onset of industrial revolution, butter making was largely the province of the farm wife. A "cool hand" was the term used for giftedness in butter-making: kneading butter required swift, firm movements and a low temperature. When a farmer from an English county like Cheshire, famous for its dairy produce, sought a wife, he chose brawn over delicacy every time. In one village it was traditional for a young girl to lift the immensely heavy lid of the parish chest with one hand, to show how desirable she was.

She first skimmed the cream from the surface milk allowed to "set" in shallow bowls or pails. The cream was then usually churned in the old familiar wooden cooper-made dash churn invariably referred to as an instrument of torture by those who, as boys, had to operate them. Other forms of churns were introduced from time to time, such as rocker churns, swing churns, circular churns with revolving paddles and square box churns swung by diagonal corners -- none of them, however, becoming sufficiently popular to displace the dash churn until the barrel churn was later developed for factory use.

These farm wives of earlier days often used their butter as barter at the general stores in small country towns or trading centers in exchange for merchandise needed at home. The more enterprising

storekeepers would encourage those ladies whose products they recognized as being of superior quality, to use different types, and incidentally ever-increasing sizes, of containers as packages for their product. Wooden pails holding five or ten pounds were used as well as earthenware crocks. Bradley butter boxes of circular construction with wooden slip covers and made of spruce or maple-veneer were popular in New England and New York State in the 1880's. Also, tapered spruce tubs were used to some extent on farms. Wooden containers thus came into general use, as other materials were not generally available such as paperboard, for example. Woodworking was extensive in those earlier days and as a matter of fact, the first utensils used on farms making butter were mostly made of wood.

While some store proprietors encouraged farm wives to pack their product in tubs, Bradley boxes and the like, most of the farm butter brought into the general store was in the form of "pats" or "rolls." As a matter of fact, butter "rolls" became known as cash-weight rolls. As more and more farm butter was produced, local markets could not consume it all locally and therefore it was shipped to renovating plants located in central points. The best butter was sorted out and reworked, packed and sent to the market under various trade names. The poorer grades were sent to renovating plants where the butter was melted, and the butterfat was mixed with skim milk and reworked. The renovating plant was placed under Federal supervision and required a special license. Adulteration of butter became a menace and to further confuse the public, colored oleomargarine was offered for sale as butter.

At this time, butter bought at the grocery store came in two categories: "dairy," made by the farmer's wife or "creamery," made by the factory or plant. No matter how small, the cream cheques provided many farmers' wives with a bit of "pin money" for desired purchases.

Source
Butter Through The Ages, Web Exhibits
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The Virginia Housewife: Or, Methodical Cook, Mrs. Mary Randolph [1824, 1838]

Food From Our Founding Fathers, Helen Newbury Burke

Food in Colonial and Federal America/Sandra L. Oliver

Home Life in Colonial Days/Alice Morse Earle

A Revolution in Eating: How the Quest for Food Shaped America/James E. McWilliams

8.

Pristine Valleys And Prized Cows

A Timeless Civilization Survived on Butter And Cheese

By Dr. Weston A Price

In order to study the possibility of greater nutritive value in foods produced at a high elevation, as indicated by a lowered incidence of morbidity, including tooth decay, I went to Switzerland and made studies in two successive years, 1931 and 1932.

I selected Loetschental Valley, made up of a community of two thousand people who have been a world unto themselves. They have neither physician nor dentist because they have so little need for them; they have neither policeman nor jail, because they have no need for them.

Practically all the human requirements of the people in that valley, except a few items like sea salt, have been produced in the valley for centuries.

These people have never been conquered, although many efforts have been made to invade their valley.

It has been the achievement of the valley to build some of the finest physiques in all Europe. This is attested to by the fact that many of the famous Swiss guards of the Vatican at Rome, who are the admiration of the world and are the pride of Switzerland, have been selected from this and other Alpine valleys.

Notwithstanding the fact that tuberculosis is the most serious disease of Switzerland, according to a statement given to me by a

government official, a recent report of inspection of this valley did not reveal a single case.

The valley has a fine educational system of alternate didactic and practical work. All children are required to attend school six months of the year and to spend the other six months helping with the farming and dairying industry in which young and old of both sexes must work.

No trucks nor even horses and wagons, let alone tractors, are available to bear the burdens up and down the mountain sides. This is all done on human backs for which the hearts of the people have been made especially strong.

I arranged to have samples of food, particularly dairy products, sent to me about twice a month, summer and winter. The samples were found to be high in vitamins and much higher than the average samples of commercial dairy products in America and Europe, and in the lower areas of Switzerland.

Almost every household has goats or cows or both. In the summer the cattle seek the higher pasturage lands and follow the retreating snow which leaves the lower valley free for the harvesting of the hay and rye.

The milk constitutes an important part of the summer's harvesting. While the men and boys gather in the hay and rye, the women and children go in large numbers with the cattle to collect the milk and make and store cheese for the following winter's use. This cheese contains the natural butter fat and minerals of the splendid milk and is a virtual storehouse of life for the coming winter.

They recognize the presence of Divinity in the life-giving qualities of the butter made in June when the cows have arrived for pasturage near the glaciers. These people gather together to thank the kind Father for the evidence of his Being in the life-giving qualities of butter and cheese made when the cows eat the grass near the snow line.

This worshipful program includes the lighting of a wick in a bowl of the first butter made after the cows have reached the luscious

summer pasturage. This wick is permitted to burn in a special sanctuary built for the purpose. The natives of the valley are able to recognize the superior quality of their June butter, and, without knowing exactly why, pay it due homage.

The nutrition of the people of the Loetschental Valley, particularly that of the growing boys and girls, consists largely of a slice of whole rye bread and a piece of the summer-made cheese (about as large as the slice of bread), which are eaten with fresh milk of goats or cows.

Meat is eaten about once a week, if at all.

The sturdiness of the child life permits children to play and frolic bareheaded and barefooted even in water running down from the glacier in the late evening's chilly breezes, in weather that made us wear our overcoats and gloves and button our collars.

One immediately wonders if there is not something in the life-giving vitamins and minerals of the food that builds not only great physical structures within which their souls reside, but builds minds and hearts capable of a higher type of manhood in which the material values of life are made secondary to individual character.

When one has watched for days the childlife in those high Alpine preserves of superior manhood; when one has contrasted these people with the pinched and sallow, and even deformed, faces and distorted bodies that are produced by our modern civilization and its diets; and when one has contrasted the unsurpassed beauty of the faces of these children developed on Nature's primitive foods with the varied assortment of modern civilization's children with their defective facial development, he finds himself filled with an earnest desire to see that this betterment is made available for modern civilization.

Each valley or village has its own special feast days of which athletic contests are the principal events. The feasting in the past has been largely on dairy products. The athletes were provided with large bowls of cream as constituting one of the most popular and healthful beverages, and special cheese was always available.

Source

Nutrition and Physical Degeneration

by Weston A. Price (Author), Price-Pottenger Nutrition Foundation (Editor)

Swiss Tradition in Black and White, By Marlies Bugmann

The Management of the Dairy in Switzerland, Tr. , with Observations, by R. F. Delap, Charles Lullin

9.

Butter Is As Old As History

Butter – the everlasting delight of the gourmand, the faithful ally of the culinary arts, the constant symbol of good living.

Through time and across the globe, butter has had a sacred quality. From the ancient Fertile Crescent to the present day, butter has symbolized the powerful, life giving and sacred, the good, the happy, the healthy and pure. It has sustained lives, cultures and civilizations for millennia.

Butter is a culinary treasure as old as King Tut's tomb. "She brought forth butter in a lordly dish" (Judges 5:25). A jug of wine, a loaf of bread – and butter! Pure butter is produced today essentially as it was in King Tut's time, though butter made of milk from cows instead of camels or water buffaloes.

Butter is one of the world's oldest known foods. Archeological finds confirm that the usage of butter in current in human society for thousands of years. Timeless Vedas repeatedly refer to this superfood.

The Bible is interspersed with references to butter, the product of milk from the cow. Not only has it been regarded from time immemorial as a food fit for the gods, but its use appears to have been divinely recommended and its users promised certain immunities against evil. Butter was the only food ever defined by an Act of the U.S. Congress prior to the enactment of the Food, Drug and Cosmetic Act of 1938.

It is generally believed the English word butter originates from the bou-tyron, Greek for "cow cheese", however it may have come from the language of cattle-herding Scythians.

Little is known of the part which butter played as an article of commerce in ancient times. In the first centuries butter was shipped from India to ports of the Red Sea. In the 12th century, Scandinavian butter was an article of oversee commerce. The Germans sent ships to Bergen, in Norway, and exchanged their cargoes of wine for butter and dried fish. It is interesting to note that the Scandinavian king considered this practice injurious to his people, and in 1186 compelled the Germans to withdraw their trade. Toward the end of the 13th century, among the enumerated wares of commerce, imported from thirty-four countries into Belgium, Norway was the only one, which included butter. In the 14th century, butter formed an article of export from Sweden. It may be fairly inferred that butter making in north and middle Europe, if not indeed in all Europe, was introduced from Scandinavia.

Butter has special significance in the Scandinavian countries. Especially in the Norwegian household, in olden days it was traded like currency and thus became a yardstick of people's worth. Land value was measured in butter. Trolls and withces were appeased with butter.

In ancient Rome, butter was also valued cosmetically. Not only was it used as a cream to make skin smooth, but Greeks and Romans massaged it into their hair to make it shine.

Much esteemed for its perceived healing properties, butter was also used in poultices to fight skin infections and burns. The ancient Egyptians even valued it as a cure for eye problems.

During the T'ang Dynasty in China, clarified butter represented the ultimate development of the Buddha spirit. The ancient Irish, Scots, Norsemen and Finns loved and valued butter so much they were buried with barrels of it.

Christian missionaries travelling in central Siberia in 1253 mentioned a traditional fermented drink, kumyss, which was served with generous lumps of butter floating in it.

In Northern Europe, in centuries past, butter was credited with helping to prevent kidney and bladder stones as well as eye maladies. (This was probably thanks to butter's vitamin A content.)

Sailors in Elizabethan times were guaranteed 1/4 lb of butter a day in their rations, and it was an old English custom to present newlyweds with a pot of this creamy delight as a wish for fertility and prosperity.

The Hunza tribe, who live in the remote Himalayan range between Pakistan, India, and China, are famed for their lifespans of 115 or more. Their vitality has been attributed to a culture-rich diet of butter, kefir and yogurt, along with plenty of whole grains.

Butterfat consumption among Masai warriors, who consider vegetable foods as fodder for cattle, can reach one and one half pounds per day. Yet these people do not suffer from heart disease.

It was not long before the golden liquid reached the Middle East and quickly gained popularity.

In medieval times, in Norway, the king was due taxes at Yule time. Included in his demands were one bucket of butter from every household. In the days of Norway's World War II barter economy, butter emerged as one of the most coveted "units of currency". It played an important role on the table too, and as a decoration at celebrations and weddings, molded into large, lavishly decorated pyramidal sculptures. Traditional Norwegian butter molds are displayed today in a number of museums.

Some of the commonest archaeological finds in Ireland are barrels of ancient butter, buried in the bogs. The Norsemen, the Finns, the Icelanders, and the Scots had done the same: they flavored butter heavily with garlic, knuckled it into a wooden firkin, and buried it for years in the bogs-for so long that people were known to plant trees to mark the butter's burial site. The longer it was left, the more delicious it became. A further advantage was doubtless the

safety of supplies from robbers, or enemies in wartime. Most of the Irish archaeological specimens date from the seventeenth and early eighteenth centuries. Although some of our sources imply that bog butter turned red, the firkins in the Irish National Museum contain "a grayish cheese-like substance, partially hardened, not much like butter, and quite free from putrefaction" because of the cool, antiseptic, anaerobic, and acidic properties of peat bogs.

John Houghton, an Englishman, writing on dairying in 1695, speaks of the Irish as rotting their butter by burying it in bogs. This burying of butter in the peat bogs of Ireland may have been for the purpose of storing against a time of need, to hid it from invaders, or to ripen it for the purpose of developing flavor in a manner similar to cheese ripening.

Archeologists found a deposit of butter buried in peat bogs found wrapped in a skin in County Leitrim, and another packed in a tub with perforated wooden handles in County Tyrone, Ireland. It is believed possible that the practice of burying butter in Ireland ceased about the end of the 18th century and that many of the specimens which have been found are of far greater antiquity (11th to 14th century). The large number of specimens found, some of which weighed over 100 pounds, suggests that the burying of butter must have been a widespread practice in Ireland. Similar deposits of buried butter were also discovered in Finland.

Various other methods of packaging butter have been found mentioned in a variety of sources. A news item in the December 4, 1907 issue of the New York Produce Review and American Creamery tells of a traveler in Central Africa in 1872 being offered butter wrapped in leaves and then covered with a layer of cow dung which upon drying kept air from the butter.

Source

Michael Douma, WebExhibits.org, Institute for Dynamic Educational Advancement

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10.

A 21St Century Look At Ghee

A Heavenly Nectar Or Heart Disease Risk Factor?

By Joanna Webber

Cow ghee promotes memory, intellect, power of digestion, semen, ojas, kapha and fat. It alleviates vata, pitta, toxic conditions, insanity, consumption and fever. It is the best of all the unctuous substances.[1]

Introduction

In an ancient Indian tradition, newborns are given ghee and honey impregnated with special mantras[2]. A daily dose helps with nourishment, digestion, assimilation, elimination and increasing sattva (purity). Ghee is sweet in taste, cold in nature and has a sweet aftertaste. It is considered soothing, soft, and oily. However, due to varying predominance of the panchamahabhutas (Ayurvedic elements), ghee from different animal's milk has different properties. Buffalo milk is colder, oilier and heavier and more effective at inducing sleep. However, it is also channel blocking whereas cow's milk is not. Sheep's milk is hotter and can aggravate Pitta.

Cow's milk and its ghee are viewed as most wholesome, a view supported by modern analysis[3]. On a calorific basic, cow's milk is superior in protein, fat, carbohydrates, vitamins and minerals. Buffalo milk also has a higher PH (acidity) buffer value, density, viscosity and

fat globule size making it harder to digest[4]. Throughout life, ghee is considered nectar-like for living according to Ayurvedic principals.

The Benefits Of Ghee In The Ayurvedic Diet

Caraka could not have been clearer when he wrote: "if the gastric fire is kindled by fuel in the form of ghee, then it cannot be suppressed, even by too heavy food"[5]. Considering Ayurveda's emphasis on wholesome food, ghee's role in increasing agni (digestion) helps explain its importance. Without proper agni no benefit can be gained from food, and ama (undigested matter) accumulates. One or two teaspoonfuls of ghee daily not only provides nourishment itself but increases the capacity to nourish.

Cow ghee's properties also make it an excellent pacifier of aggravated Vata and Pitta doshas. For example, ghee aids in the elimination of waste products due to it having both a laxative and diuretic effect on the body (due to its sweet taste). Its oily nature is also helpful in ensuring Vata dosha moves in a downward motion. Ghee's properties act to keep the digestive tract lubricated, alleviate hardness in bowels and reduce flatulence and bloating- all symptoms of aggravated Vata. What is truly special is that ghee flames the digestive fire without aggravating Pitta dosha. Instead, it balances the different types of agnis found in the body, the main type of which is correlated with digestive enzymes.

Ghee nourishes all dhatus (tissues), ojas (essence of tissues) and breast milk, as well as promoting strength, normalising the blood and lymph. In Ayurveda, it is the sweet taste which stimulates anabolic activity due to the predominance of the earth element. Beyond being sweet, ghee's proportion of the panchamahabhutas is very similar to ojas, the body's life force. Ghee's nourishing property and similarity to ojas help explain its importance in the Ayurvedic monthly pregnancy regime, as well as for under nourished individuals.

Beyond a preference for warm food, Caraka's second guiding principal is that food must be unctuous. Such oily food is not only delicious but also helps move Vata downwards, and lubricate the

digestive tract. Non-oily foods, such as rice, vegetables and pulses, are only considered to nourish in combination with ghee. For example, pulses eaten with out ghee are likely to aggravate Vata, causing flatulence. Although fats contain twice as many calories as carbohydrates they also keep hunger satisfied three times as long. Adding ghee to plain dishes of rice and dhal is clearly important in the feelings of satisfaction that arise after eating recipes, such as kitchadi. Ghee also provides a soothing and cooling effect in the digestive tract, helping to offset the irritant effect of hot spices and chillies.

Ayurvedic recipes use ingredients that work well together. However, any avirudda (incompatible) items would be taken care of by ghee as an added ingredient[6]. As well as helping other ingredients to 'get along', ghee helps eliminate and neutralise toxins, such as bacterial contamination. Such is ghee's effect that Caraka describes Amrta ghee as "ambrosia for curing all types of poisons"[7]. Ghee is also yogavahi (takes on the properties of other substances) and diffuses added spices throughout the food. Thanks to superb penetrating qualities, ghee also carries such substances deep into the body's tissues. Interestingly, ghee's rate of absorption (digestibility coefficient) is calculated at 96%, the highest of all oils and fats. This justifies its place in both Ayurvedic recipes and medicinal formulations, where the digestion, absorption and delivery of other ingredients is crucial[8].

Ghee And Cardiovascular Disease (CVD)

In this age of 'fatism', Ayurveda's views can appear contradictory but ghee has been used for millennia in Indian diets without any reported adverse effects of health. One must scrutinise ghee through the modern scientific lens to look for rationale for it's recommendation from cradle to grave. All fats, especially saturated fats, have been widely vilified by modern health authorities. This can be traced back to the Lipid Hypothesis of the 1950's, which stated heart disease was due to high intakes of saturated fats. It suggested favouring polyunsaturated fats would improve health

though growing evidence suggests the Lipid Hypothesis was wrong. Most of the earlier studies focused on cholesterol levels as an indicator of CVD risk but recent studies indicate that the more specific culprit is oxidised low density lipoprotein cholesterol that leads to atherosclerosis[9].

Ghee, consisting of 65% saturated fat, was an easy target. One Lancet study explored the high frequency of atherosclerosis in Indian immigrant populations. It found substantial amounts of harmful cholesterol oxides were found in ghee, but not in butter. This implies cholesterol in butter is oxidised in making ghee. The author stated one need only eat 1g of ghee daily for there to be a harmful effect on arteries[10]. When the experiment was repeated however, no cholesterol oxides were detected in ghee[11]. The authors felt that by the time ghee's cholesterol oxidises, it is no longer considered edible (3-4 months storage at ambient temperature). It is also thought oxidation may be prevented due to ghee's considerable level of antioxidants.

Beyond the issue of whether ghee contains harmful types of cholesterol or not, its fatty acid content is also important. It's saturated fat is primarily (89%) short chain fatty acids, compared with longer chains in other animal fats, such as beef fat. It is the longer chain fatty acids that are associated with blood clotting and thrombosis. Short chains are not only easier to digest, but help hormone production and strengthening cell membranes. They also have anti-microbial properties, protecting against harmful micro-organisms in the digestive tract. Beyond there being no clear evidence linking ghee with CVD risk, it seems it may even help prevent it. Studies in both rats and humans have shown that ghee can lower serum cholesterol levels.[12] This is thought to be due to ghee increasing the secretion of biliary lipids, an important route for the excretion of excess cholesterol[13]. It is logical to assume that the high incidence of atherosclerosis in Indian immigrant populations was due to another factor. However, it would be another two decades before the focus shifted to the role of polyunsaturated fats.

Dangers Of Synthetic Fats

Much of the earlier research into saturated fats failed to differentiated between true saturated fats (such as butter and ghee) and synthetically generated 'trans' saturated fatty acids. Most fats naturally occur in their 'cis' form which matches fat receptors in each cell. Modern processing (heating, hydrogenation, bleaching, deodorising) turns 'cis' fats into 'trans' fats which no longer fit. Instead they disrupt cellular metabolism. 'Trans' fats have been linked with CVD and many other health problems. Since these artificial fats are a recent dietary addition it is reasonable to question if they are digested or form ama. Just as in the West, where lard and butter have largely been replaced by vegetable shortening and margarine, cow ghee has been largely replaced by cheaper, hydrogenated vegetable ghee. Only one study could be found which looked at both ghee and trans fats in the Indian diet[14]. This compared urban and rural populations and found that only diets with both ghee and trans fats were significantly associated with CVD. The issue of trans fats in food is slowly addressed by both governments and the global food industry.

As well as saturated fats, ghee consist of 25% monounsaturated fat (also found in olive, mustard oil) and a relatively low 5% polyunsaturated fat (also found in sesame, sunflower, groundnut oil). Monounsaturated fats are generally agreed to be a healthful form of fat consumed in moderation. The Lancet study cited above was carried out over 20 years ago when saturated fats were vilified as unhealthy and polyunsaturated fats (PUFAs) as healthy. There is now increasing evidence linking PUFAs with CVD, cancer, immune system dysfunction, depressed learning ability, impaired growth and obesity. Part of the explanation lies is modern food processing techniques, with oils often being rancid, oxidized or chemically tainted with high levels of free radicals. Another issue is how fats are used in the cooking process. PUFAs are highly unstable due to the presence of unsaturated double bonds, which create free radicals when heated. In contrast, ghee is an ideal cooking fat as

it is predominantly saturated. All such fats are deemed as superior to polyunsaturated fats for frying as they stand up better to high-heat uses than most oils in bottles. Ghee is a star performer in this respect, with a smoke point of 190 C (due to the removal of water and protein) compared with 120 C for butter. The smoke point determines when oil burns, generating oxidation and free radicals. Ghee is hence one of the safest fats to fry with. It also has the added benefit of a long shelf-life without refrigeration, thanks to a low moisture content and inherent anti-oxidative properties.

The real 21st Century villains: Free Radicals?

Free radicals are "almost perfect candidates for the honour of casual villain in the biochemical drama of degenerative diseases"[15]. They are known to damage DNA, RNA, proteins, enzymes, membranes, eventually causing death. Beyond CVD, they are now thought to play a significant role in rheumatoid arthritis, inflammatory gut disorders, connective tissue disorders, strokes, acute renal necrosis, cancer, Parkinson's, Alzheimer's, dementia, diabetes and the ageing process. It is more likely the Indian immigrant's increased CVD risk was due to them eating double the amount of PUFAs than the control group. Ironically, the ghee they did eat could have conferred a protective effect. Not only does ghee appear to help lower serum cholesterol levels, but it also contains anti-oxidants (Vitamins A and E) which prevent free radical damage. The colour of ghee is dependant on its beta-carotene content (a precursor of Vitamin A) with a paler colour indicating lower levels of this potent anti-oxidant[16]. Within the body, Vitamins A and E are only bio-available when taken with fats. Beyond ghee, only one other edible fat contains Vitamin A in the form of fish oil. Ghee is thus an ideal delivery vehicle, especially for lacto-vegetarians. It serves to take anti-oxidants to cell membrane and cell structures made of fat , protecting against free radical damage.

Omega Fatty Acids in Ghee

Despite the potential health problems associated with poor quality PUFAs, they are also vital in providing the essential Omega fatty acids now famed for their health giving anti-oxidant properties. Ghee contains linoleic acid, an Omega-6 oil and alpha-Linoleic acid, an Omega-3 EFA. Both are also found in another nectar like substance, breast milk. EFAs are only used for energy if present in excess, generally play the role of stimulating metabolism. Correlations with ghee's effects of increasing agni are of great interest in this regard. Despite their benefits, there are dangers associated eating the wrong ratio of Omega-6 to Omega-3. These include CVD, mental disorders (ADHD, depression, MS and Schizophrenia), and inflammatory diseases. Most of us eat more Omega-6 than 3 but ghee provides both in an ideal ratio of 1:1.

Conclusions

Ayurvedic wisdom is unequivocal that cow ghee is an important part of a healthy diet. However, being a science of individualisation, even a food as wholesome of ghee is not always considered healthy. It is contraindicated with kapha aggravation and should be used very sparingly by the overweight. One should also alter intake throughout one's life and the seasons in accordance with Rtucarya (seasonal modifications). Taking ghee in Autumn helps prevent Vata aggravation but excess intake in Spring is contraindicated due to the potential for kapha aggravation.

Caraka's Samhita was also written when pollution was not an issue. Pesticides are known to bio accumulate up the food chain and are stored in fat, emphasising the importance of using organic butter to make ghee. How dairy is processed is also as issue, with both pasteurisation and homogenisation affecting digestibility. New foods not described by the Acharyas, such as artificial fats, must also be scrutinised from the Ayurvedic perspective. Examining ghee through the modern lens supports the role it plays in an Ayurvedic diet. It can be viewed as a healthy saturated fat which

contributes to promoting healthy cell membranes and strong bones; and enhancing immunity.

It appears that the dramatic increase in poor quality PUFAs and artificial fats are the likely suspects in explaining growing health problems in India and other countries. Such substitutes more traditional fats are not only more likely to be rancid, oxidized or chemically tainted with high levels of free radicals but they create free radicals in the cooking process itself. More fundamentally, ghee's role of increasing agni whilst also containing protective anti-oxidants ensures it a central role in the process of life. Borrowing an analogy from Erasmus, health is a balance between the oxidation of foods (fire) to produce energy by means of free radical reactions, and anti-oxidants which keep free radicals (sparks) from damaging cells[17]. Ghee plays a key role in both functions.

By Joanna Webber, June 29, 2009

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11.

Ghee

An Ideal Food For The Yogi

By Joanna Johnston, Ayurvedic Yogi

He who begins the practise of yoga without controlling the diet suffers from many diseases and does not make progress in yoga". (Gheranda Samhita 5/16)

It should not come as a surprise that ghee is very important for the yoga practitioner. Ghee seen as the ideal sattvic (pure) food, purifying the mind, awakening knowledge and developing intuition. Ancient Yogis used ghee to helps move towards Yoga's aim of stilling the mind, via the promotion of both physical and mental purification. Ancient texts give dietary guidelines for the Yogi, with ghee coming first in lists of 'do's'. It is advised "sweet and nourishing food should be mixed with ghee and milk, nourishing all dhatus [tissues] and be pleasing and suitable." (Hatha Yoga Pradipika, C1/62-63). Ghee is contrasted with prohibited foods which are too bitter, sour, pungent, salty, dry, and burning. Foods such as garlic, chillies and onions are seen as too irritating and stimulating, interfering with the subtle effects of Yoga. Yogis who have been practising for some time become especially sensitive to such foods.

In contrast, milk and ghee "take care of the nervous system and prepare it to withstand the heightened activity when it takes place" (Desai, 1990). Even the preparation of ghee is considered helpful

in inducing a pure mind as by maintaining a clean appearance and calm mind during its preparation it becomes "one of the most healing food sadhanas when performed with grace." (Tiwari 1995: p182). Ghee's ability to increase the physical element of fire is also used by Yogis on breaking a fast. For example, ghee with a light soup is very helpful in rekindling the digestive fire (agni) (Charaka Samhita, Chikitsa Sthana 15/ 206).

Ghee And Spiritual Development

"The subtle part of churned curds rises up and becomes butter. The subtle part of food when eaten rises up and becomes mind". (Chandogya Upanishad 6/6/1).

Both milk and ghee are of vital importance to the yogi. To explain this importance the special relationship between food and the mind must be appreciated. Just as butter is made from the subtle part of milk ", food when eaten becomes threefold, its gross form is stool, its middle flesh, its subtlest mind". Both Yoga and Ayurveda believe that the mind and body can affect each other so it is impossible to look at ghee's effects on the body and mind in separation. Beyond basic nutritional needs, food also forms the mind. Yoga and Ayurveda emphasise a pure vegetarian diet to encourage the development of spiritual awareness.

However, Yoga goes beyond Ayurveda in considerations of spiritual development. Take the analogy of the body as a chariot, the soul as the owner of the chariot, the intellect as the driver, the mind as the reins of the horses, the five senses as five horses and, finally, the world as the arena for the chariot (Katha Upanishad, 3/ 4-10). Ayurveda's focus is on using the reins wisely so the chariot stays on the track, whereas Yoga's aim is to take the owner to the destination. It is not possible to experience inner joy, a steady mind and sense control with an impure mind.

Ghee's ability to purify the mind is also known in Ayurveda, where tonics for the mind contain ghee. Indeed, the Ayurvedic sage Sushruta describes divine remedies (divya rasayana) which lead to

total mental transformation and supernormal powers usually only achieved by advanced yogis (Bhavamisra: Bhavaprakasha, Chi 8: 1-6). Unfortunately, such these formulations are no longer known so we must continue with our yoga! However, ghee taken daily in the diet will help practising Yogis in strengthening the mind and purifying intellect (buddhi). The aim of yoga is to reach "the state when the buddhi is in its ultimate perfection and purity.... and final liberation takes place" (Dasgupta, 1997).

How Does Ghee Promote Mental Purification?

"With ghee let those that purify our ghee purify us" (Yajurveda 1/2/1).

Yogic practises such as pranayama, hatha yoga (asanas), mudras (hand gestures), bandhas (energy locks), meditation, brahmacharya (abstinence), and ahimsa (non-violence) all lead to the creation of physical heat in the body. This is more than physical heat as it is a pranic, mental, or spiritual heat, psychic in nature. It is also known as 'tapas'(to burn, create heat or to produce energy). Just as ghee is offered in fire ceremonies due to its effect of increasing the fire, Yogis use ghee to increase purifying heat in both body and mind. Just as a burnt seed becomes incapable of reproducing, when the mind is totally pure it becomes incapable of producing more reincarnations and liberation takes place. However, too much heat can be harmful, and ghee is recommended in pranayama to prevent the mental heat causing physical burning sensations. Practitioners of pranayama are advised to take milk and ghee daily by Swami Sivananda in his 'Science of Pranayama'.

And Physical Purification?

To purify his mind, the Yogi must also look to purifying his body. Yoga has 6 detoxification practises of dhauti, basti, neti, trataka, nauli and kapalbhati. Dhauti involves evacuating large quantities of water through the bowels, swallowing a long strip of cloth, or regurgitating the contents of the stomach. Basti involves sucking air or water into the large intestine and expelling it. Neti involves

cleaning the nasal passages with warm salt water, a soft thread, ghee or milk. Nauli involves isolation and churning of abdominal muscles, and kappalabhati is sucking air or water in through the nose. Such practises clean the body's tracts allowing prana to flow during asanas and pranayama. However, both ghee and milk are important in restoring balance. For example, both help maintain the body's mucous lining which would otherwise be washed away. They also neutralise acidity and heat in the stomach, created by these practises. There are many similarities between these Yogic cleansing techniques and Ayurvedic detoxification (panchakarma). Both clean body and hence the mind. However, only the Yogi cleansing techniques have a specific spiritual effect with neti said to bestow clairvoyance alongside balancing kapha dosha. (Gheranda Samhita 1/33).

Summary

Ghee's importance in yoga is reflected by extensive classical references in the traditional yogic diet, cleansing practices, and sacred rituals. Ghee is itself sacred, being the essence of the sacred cow, and in its act of increasing heat. All the rituals described in the Vedas would be inauthentic without it.

Ghee is ideal for the yogi on many levels, as a food, mental tonic, and to aid pranayama and Yogic detoxification techniques. It acts on all three bodies perceived by Yoga Philosophy: the physical body, made up of food, through nourishment, increasing digstive fire (agni) and protecting; the astral body, made up of the vital, mental and intellectual sheaves, through purifying intellect; and through its effect of increasing psychic heat, it also acts subtly on the causal body made up of the bliss sheath. However, ghee and milk should only be consumed in moderation as both have the potential to aggravate kapha. Even the purest foods are dulling (tamasic) if taken in excess.

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12.

India - A Butter nation

Gone Rancid

When everybody and their nutritionists are crying hoarse about cholesterol, Indians are consuming butter and ghee, like there's no tomorrow.

India accounts for almost half of the world's total butter consumption. And this is very official, as it comes from the UN's Food & Agricultural Organisation (FAO).

The FAO's definition of butter also includes its variants like ghee. According to the FAO, India consumed 2.3m tonnes of butter (including ghee) in the fiscal ended April '02, of a total global consumption of 5.5m tonnes — a whopping 41% of the total butter consumption in the world. India's butter consumption went up from 1.5m tonnes in fiscal '01 to 2.3m tonnes in fiscal '02 — an increase of 53% in just a year.

Research agency ICRA points out that while North India accounts for 52% of the total local butter consumption, West India for 18% and Eastern India 21%. South India accounts for 10%.

Not surprisingly, while many in the world are switching to alternatives like margarine, In India companies are increasingly entering the butter market.

Recently, Nestle entered the butter market, and Britannia also dipped its finger into the butter dish. The late entry of such big FMCG companies into this segment signifies the lucrativeness of this market.

According to Amul's Vipul Mittal, "The consumption of butter has improved significantly in smaller towns, as increase in income levels has created a whole new class of butter consumers in the country. Then proliferation of refrigerators at home and improvement in availability of cold chain in the country have also led to spike in butter consumption in the country."

The ICRA report on dairy industry notes that the National Sample Survey (NSS) data indicates that as households climb up the income ladder, there is a re-allocation of expenditure towards milk and milk products.

Analysts add that there is a distinct tendency for Indians to use an excess of butter and ghee in their preparations and this was something typical to India.

Interestingly, while Indians are dipping their parathas in butter, the world is saying cheese. While Europe accounts for 42% of the world's total cheese consumption, the US consumes 32% of the total cheese production at 12m tonnes.

In whole milk powder, China is the biggest consumer in the world, with 24% of total consumption in this category, followed by the EU (19%).

Source : Times of India, Chaitali Chakravarty & Prasenjit Bhattacharya, TNN Sep 7, 2002

How Is Ghee Being Adulterated?

By Maneka Gandhi , The Bihar Times, 18 Jul 2009

Some years ago it was discovered that owners of Vanaspathi oils were putting cow and pig lard into the oil. There was a furor which died down after a few months and no one knows till today what happened to the Jains who owned the enterprise – but I have

little doubt that they got off and a few bureaucrats and policemen were left richer.

Ghee is clarified butter, sacred to the gods. On June 13, 2009, a ghee manufacturing unit was raided by the health officers and police of Agra. Hundreds of tins of ghee were found in the Jharna nullah locality. The so called ghee was being manufactured from animal fats boiled in huge iron cauldrons. "25 big drums, 150 tins and four furnaces, knives and country pistols were recovered from the site" a police official said. "Animal hides of cows, monkeys, donkeys, horses and dogs hanging by the trees and bones littered showed the scale of manufacturing being carried out clandestinely for years."

Now comes the interesting part – "Police said at least 50 people must have been working there in the sheds but none could be caught, probably because the information about the raid was leaked to them."

Agra Municipal corporation's animal husbandry department Chief B.S. Verma said that residents of the locality had complained for years about the spurious manufacturing unit but the department could not find the unit.

TV channels have aired footage filmed at other ghee manufacturing plants. The footage confirmed that across India animals were being rendered and their fat added to ghee. The ghee plants had dead animals all around, animal fat boiling in big drums and slabs of fat hanging from the ceilings.

Members of ISKCON collected samples of commercial ghee in Pune and sent them to be tested at the Anatech Laboratory and research centre in Bangalore. The tests based on the Fancier-Transbraned Infrared spectrum Replication showed beyond a doubt that the ghee contained slaughtered animal fats. This laboratory which has analyzed hundreds of ghee samples said that even Nestle ghee was adulterated with about 5% vegetable oil fats. They said that most ghee, including Amul, was a mixture of cow and buffalo milk

Unfortunately most labs in India do not have the equipment to test. They can simply say that the ghee is adulterated. Why is ghee

being adulterated? Firstly, because there is no milk. India prides itself on being the world's largest producer of leather, so all the cows are being killed off rapidly to service the hundreds of leather units in Chennai, Kanpur and Kolkata – which kill lakhs of cows and calves. Recent raids have found that only 30% of the "milk" we drink, is milk. The rest is a mixture of soap, urea, earthworm fat, oil and whiteners. So if there is no milk, how does one get the ghee? 450,000 tonnes of ghee are supposedly made every year, 80% of which is eaten and the rest offered to the gods in rituals that include marriage and death. This is an impossible figure – the actual ghee would be less than a quarter.

The second reason is that milk products like ghee only have a 5% profit margin so the only way to be profitable is to use animal fat.

If you insist on ghee, make your own, from the milk of your own cow.

13.

Butter To Gutter Fat

Advancement of Civilization

China's food safety problems have no better symbol than the illegal and utterly disgusting problem of gutter oil. Gutter oil is a term used in China, both Mainland and Taiwan, to describe illicit cooking oil which has been recycled from waste oil collected from sources such as sewer drains and slaughterhouse waste. The issue is frequently found in China; however, the issue is not limited to China, Southeast Asia is also a problematic area in this regard. It is packaged and resold as a cheaper alternative to normal cooking oil. Another version of gutter oil uses discarded animal parts, animal fat and skins, internal organs, and expired or otherwise low-quality meat which is then cooked in large vats in order to extract the oil. It is estimated that up to one in every ten lower market restaurant meals consumed in China is prepared with gutter oil.

Cooking oil is used heavily in Chinese food, so some street vendors and hole-in-the-wall restaurants buy this cheap, black market oil. Enterprising men and women will go through dumpsters, trash bins, gutters and even sewers, scooping out liquid or solid refuse that contains used oil or animal parts. Then they process that into cooking oil, which they sell at below-market rates to food vendors who use it to cook food that can make you extremely sick.

A video, produced by Radio Free Asia, shows in excruciating detail how a couple of gutter oil vendors go about their work. It starts with the couple scooping sewage out of the ground, and it ends with unwitting Chinese consumers chowing down on the end product

Health Effects

Gutter oil has been shown to be very toxic, and can cause diarrhea and abdominal pain. There are also reports that long-term consumption of the oil can lead to stomach and liver cancer as well as developmental disabilities in newborns and children. Testing of some samples of gutter oil have revealed traces of polycyclic aromatic hydrocarbons (PAH), dangerous organic pollutants capable of causing cancer with long-term consumption. There is also potential for gutter oil to contain aflatoxins, highly carcinogenic compounds produced by certain molds. Zeng Jing of the Guangdong Armed Police Hospital said about gutter oil "Animal and vegetable fat in refined waste oil will undergo rancidity, oxidation and decomposition after contamination, and produce toxic substances such as arsenic. It will cause indigestion, insomnia, liver discomfort and other symptoms".

Additionally, some reported an earlier incident in Taiwan in the 1960s, where "Trench Oil" was imported from Japan to Taiwan and then used in food processing.

In September 2012, an ongoing investigation into the suspected use of gutter oil as a raw material in the Chinese pharmaceutical industry was revealed. A massive scandal involving 240 tons of gutter oil in Taiwan affecting hundreds of companies and thousands of eateries broke in September 2014, some of which may have been exported overseas.

Source

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14.

Why We Were Wrong About Ghee

By Niraj Raj Patel, M.D.

Growing up, I thought that ghee was dangerous. Uncles and aunties would say, "We're cutting back on ghee," or, "We don't use that stuff anymore, it's so bad for you." I wondered why ghee got such a bad rap, and soon I learned everyone's doctors had been urging them to drop ghee because something called saturated fats – which ghee has in abundance – causes heart attacks.

'Desis,' it turned out, were susceptible to heart attacks. Someone from our community had a heart attack almost every month, or so it seemed then, and sometimes an uncle we knew would die from it. So finding what caused heart attacks was a really big deal. Now fast forward to today, and here's a new thought. What if we were wrong about ghee? What if eating ghee, or using ghee to cook food, never caused heart attacks?

Research in the past decade strongly suggests that ghee was not the problem. If we were wrong about ghee, we were not alone. At the same time Indian-Americans were dropping ghee, Americans were dropping butter (from which ghee is made) for margarine, a processed oil product. The replacement of butter, which had been eaten traditionally throughout America's history, was part of the bigger phenomenon of Americans adopting a low-fat diet.

The motivating factor was the "lipid hypothesis." Research since the 1950s led experts to believe that diets high in cholesterol and saturated fats would cause coronary heart disease, the kind that led to heart attacks. Although the science was not complete or entirely convincing, the idea that lipids (or cholesterols) cause heart attacks became accepted as fact. In the 1970s, the U.S. government, the American Heart Association, the American Cancer Society and other groups, hoping to slow down the rise in heart disease, began a massive campaign to convince us to stop eating foods containing a lot of fat. This is why your doctor told you to drop ghee.

We listened: just as Indian-Americans stopped eating ghee, Americans replaced their high-fat foods. According to the USDA, less dietary fat is consumed per American today than in 1965. During the same period, the per capita consumption of refined grains, a source of easily digestible carbs (something I'll return to soon), went up. Here's the thing. The percentage of Americans who had obesity and diabetes went up, too. And the prevalence of coronary disease and heart attacks stayed the same, even though it was predicted that these two rates should come down as people ate less fat.

Experts had to admit they were wrong. One prominent researcher at the Harvard School of Public Health, which once advocated the lipid hypothesis, wrote in a famous 2001 review in the Journal of the American College of Nutrition, "It is now increasingly recognized that the low-fat campaign has been based on little scientific evidence and may have caused unintended health consequences." At the same time, evidence was accumulating that easily digested carbohydrates were the main thing in our foods that were increasing our risk of heart disease and diabetes.

A 2008 study in the New England Journal of Medicine explained that people on a low-carb diet (which is high in fat including saturated fat) had the best cholesterol levels. On the other hand, people with the worst cholesterol levels were eating a low-fat (and high-carb) diet. This is exactly opposite what early experts

predicted. Whether food companies knew it or not, their scientists replaced dietary fats and added processed foods like high fructose corn syrup and plain old white sugar into packaged snacks, frozen meals, and popular drinks like soda. Companies catering to the Indian-Americans market did the same thing.

Like us, food companies began using oils that were sometimes harmful, namely hydrogenated vegetable oils containing trans fats, a food particle now banned in places like New York and San Francisco because the science is so convincing that trans fats more than any other component in food promotes heart disease. Yet very little evidence associates saturated fats with coronary heart disease.

This is why I want to set the record straight on ghee. I want to make sure our community has a better understanding of how what we eat influences our health. After all, South Asians who immigrated to the West (like my own parents) have among the highest rates of heart disease and diabetes, even higher than whites and other Asian groups as a 2006 study in the cardiology journal Circulation explained. I know this sounds strange considering that we eat little red meat and lots of vegetables. But part of the problem is what we cook our vegetables in: oils not meant for the high temperatures and prolonged heat typical of Indian cooking. Ghee has a smoke point – the temperature at which oils break down and produce harmful cell-damaging oxidants – of almost 500˚F, which is higher than most cooking oils. This means that ghee tends to stay longer in its original form under heat.

Also I have noticed that greasy residue usually comes right off when cooking with ghee. Oil is different. In various kitchens I've been to, previous oil cookers had left this sticky goo all over everything, and it was so hard to clean it off. Makes me wonder what it does to the inside of the human body, so now I generally avoid oil cooked foods offered to me although I have never cooked with it personally. Oil is best left uncooked such as on salad.

Instead of avoiding ghee and saturated fats, we should avoid easily digestible carbohydrates that come in white rice, white sugar, white potatoes, and refined wheat (or maida in Hindi) used to make breads like chapatti. I describe why in greater detail in "The Healthy Indian Diet," but for now I want to express that according to the scientific evidence, ghee is not dangerous as we all thought. It is okay to eat ghee or to use it for cooking – with the stipulation "all things in moderation" and is part of the plant-based diet incorporating spices.

It is funny that it took so much research for us to realize that ghee, a part of Indian cooking for as long as people were on the subcontinent, is not bad for us. A civilization tends to get rid of foods that are harmful, and that ghee made it through our civilization conveys some truth on the matter. As the famous food writer Michael Pollan explained, the best teacher of what's healthy is not the food companies (because it is motivated to profit from cheap food that is often unhealthy), government (too often misguided and pulled in different directions by industry), or nutrition scientists (some admit their research techniques are flawed). The best teacher of what is good to eat is our historical culture, and as he put it, culture is a fancy word for mom and grandmother.

Source
Niraj "Raj" Patel, M.D.
India-West, Jun 27, 2014

15.

Lowfat Diet "Scientifically and Morally Indefensible"

Cardiologist Recommends Grassfed Butter

By Sarah, The Healthy Home Economist

Dr. Dwight Lundell MD is a cardiologist who beat the drum of lowfat diet and cholesterol lowering drugs to prevent heart disease for over 25 years.

He has performed over 5,000 open heart surgeries and trained with prominent "opinion maker" physicians who considered any deviation from the recommended therapy of severely limited fat intake and cholesterol lowering meds to reduce heart disease risk complete heresy that could possibly result in a malpractice lawsuit.

Dr. Lundell now admits that this long held notion is wrong. Not only is it completely and utterly wrong, it is also scientifically and morally indefensible.

Following the recommended mainstream diet low in saturated fat and high in grain based carbohydrates has created an epidemic of obesity and diabetes "the consequences of which dwarf any historical plague in terms of mortality, human suffering and dire economic consequences".

By following the recommended lowfat diet, Dr. Lundell says that people are unknowingly causing "repeated injury to their blood vessels". This repeated injury, day in and day out, is what is causing rampant inflammation across all population groups which has resulted in the epidemic of heart disease, diabetes, and obesity.

Inflammation - The True Cause of Heart Disease

Dr. Lundell explains that a slow paradigm shift which identifies inflammation as the true cause of heart disease is occurring.

He goes on to say that the conventional lowfat diet which warns against saturated fats and promotes polyunsaturated vegetable oils as a healthier alternative is the biggest culprit in causing chronic and deadly inflammation.

Unless inflammation is present in the body, cholesterol is unable to accumulate in plaques in the blood vessels causing heart attacks and strokes. In an inflammation free body, cholesterol moves freely and causes no health problems.

In other words, it is inflammation caused by a lowfat diet that causes cholesterol to become trapped in the body. Cholesterol lowering drugs have been a dismal failure to eliminate or reduce the problem as 25% of the population now takes statin drugs and yet more Americans than ever will die of heart disease this year.

How One Innocent Donut Causes Deadly Inflammation

Dr. Lundell explains the deadly 3 step process of how eating a simple donut or sweet roll causes a cascade of inflammation in the body:

Step One: Refined Grains and Sugar Consumption Spike Blood Sugar

"Imagine spilling syrup on your keyboard and you have a visual of what occurs inside the cell. When we consume simple carbohydrates such as sugar, blood sugar rises rapidly. In response, your pancreas secretes insulin whose primary purpose is to drive sugar into each cell where it is stored for energy. If the cell is full and does not need glucose, it is rejected to avoid extra sugar gumming up the works.

When your full cells reject the extra glucose, blood sugar rises producing more insulin and the glucose converts to stored fat.

What does all this have to do with inflammation? Blood sugar is controlled in a very narrow range. Extra sugar molecules attach to a variety of proteins that in turn injure the blood vessel wall. This repeated injury to the blood vessel wall sets off inflammation.

When you spike your blood sugar level several times a day, every day, it is exactly like taking sandpaper to the inside of your delicate blood vessels."

Step Two: Omega 6 Vegetable Oils Produce Cytokines

It's not just the refined grains and sugar in the donut causing spiking and crashing blood sugar that is the problem. Dr. Lundell continues by describing additional inflammation caused by the rancid omega 6, polyunsaturated oils (usually soybean) in the donut:

"That innocent looking goody not only contains sugars, it is baked in one of many omega-6 oils such as soybean. Chips and fries are soaked in soybean oil; processed foods are manufactured with omega-6 oils for longer shelf life. While omega-6s are essential -they are part of every cell membrane controlling what goes in and out of the cell — they must be in the correct balance with omega-3s.

If the balance shifts by consuming excessive omega-6, the cell membrane produces chemicals called cytokines that directly cause inflammation. "

Step Three: Excess Weight Pours Out Pro-Inflammatory Chemicals

The final nail in the coffin for producing exorbitant levels of inflammation when that innocent looking donut is consumed is the excess weight that most Americans are carrying:

"To make matters worse, the excess weight you are carrying from eating these foods creates overloaded fat cells that pour out large quantities of pro-inflammatory chemicals that add to the injury caused by having high blood sugar. The process that began with a sweet roll turns into a vicious cycle over time that creates heart disease, high blood pressure, diabetes and finally, Alzheimer's disease, as the inflammatory process continues unabated."

Ditch the Lowfat Diet and Get Off the Inflammation Freight Train

Dr. Lundell counsels that mainstream medicine has made "a terrible mistake" by advising people to avoid saturated fats in favor of vegetable oils. This flawed and dangerous recommendation is a

direct contributor to the epidemic of inflammation that is plaguing the Western world in the form of obesity, diabetes, heart disease, and numerous other ailments.

Dr. Lundell advises to leave manufactured vegetable oils and other processed foods behind and return to the whole, unprocessed diet of our ancestors.

As for the ideal fats in the diet, Dr. Lundell recommends olive oil and grassfed butter. He says the science that saturated fat causes heart disease is non-existent and the science that saturated fat raises blood cholesterol as very weak.

Given that inflammation and not cholesterol causes heart disease, any concern about saturated fats in the diet is nothing short of "absurd" according to Dr. Lundell.

Further Reading

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16.

Refined Vegetable Oils And Fats

Leave Them on the Shelf

Oil and fat have always been an essential part of the human diet because of the energy they provide. Obtaining oil and fat from plants is a characteristic of many ancient cultures. Oil presses dating back as far as 3500 B.C. have been found and Indian Ayurvedic texts refer to a number of oils which are good for health. Chinese sources from 2800 B.C. show that soy and hemp plants were used to produce oils. In the late 1800s, archaeologists discovered a substance that they concluded was originally palm oil in a tomb at Abydos dating back to 3,000 BCE.

As vegetable oils and fats were goods in short supply, they gained an almost mythical reputation and were of immense commercial importance. Edible oils along with salt were among the first goods to be traded over long distances. A large part of the prosperity of the ancient cultures of the Mediterranean was based on the production of olive oil, the first widely used vegetable oil in Europe.

The basis of the industrial revolution was actually an agricultural revolution. Historically, edible vegetable oil is one of the dietary pillars, along with grains and sugar, on which any civilization stands.

Essential Foods

High-quality fats and oils are one of the most essential foods to consume every day. They are needed for your brain and nervous system, for energy production and for making most of the body's vital hormones. Children, in particular, absolutely require plenty of quality fats which are needed for development of the brain and nervous system. Quality fats are also essential for transporting all vitamins, minerals and hormones in and out of every one of the body cells.

The right amount and types of high-quality fats and oils do not drive up one's insulin level, create insulin resistance and make one fat, as do sugar and carbohydrates. They also do not rob the body of minerals, as does eating sugars and many starches.

The idea of avoiding all high-quality fats because they may make you fat, or that quality fats clog your arteries, is one of the worst nutritional errors of our time.

Industrialization Of Edible Oils

A horrible dietary change has been the substitution of cheap soy, corn and other vegetable oils for the traditional fats used for cooking and frying. These oils are very harmful because they are highly processed.

While butter, olive oil and other pressed oils have been around for millennia, Procter and Gamble researchers were innovators when they started selling cottonseed oil as a creamed shortening, in 1911 in USA. Ginning mills were happy to have someone haul away the cotton seeds.

In their book, The Happiness Diet, authors Drew Ramsey and Tyler Graham narrate the events which changed the world's diet forever by introducing processed vegetable fats in it.

Procter and Gamble researchers learned how to extract the oil, refine it, partially hydrogenate it (causing it to be solid at room temperature and thus mimic lard), and can it under nitrogen gas. It

was cheaper, easier to stir into a recipe, and could be stored at room temperature for two years without turning rancid.

Procter and Gamble filed a patent application for the new creation in 1910, describing it as "a food product consisting of a vegetable oil, preferably cottonseed oil, partially hydrogenated, and hardened to a homogeneous white or yellowish semi-solid closely resembling lard. The special object of the invention is to provide a new food product for a shortening in cooking." They came up with the name Crisco, which they thought conjured up crispness, freshness, and cleanliness.

Convincing homemakers to swap butter (and lard) for a new fat created in a factory would be quite a task, so the new form of food needed a new marketing strategy. Never before had Procter and Gamble - or any company for that matter - put so much marketing support or advertising dollars behind a product.

They hired the J. Walter Thompson Agency, America's first fullservice advertising agency staffed by real artists and professional writers. Samples of Crisco were mailed to grocers, restaurants, nutritionists, and home economists. Eight alternative marketing strategies were tested in different cities and their impacts calculated and compared.

Doughnuts were fried in Crisco and handed out in the streets. Women who purchased the new industrial fat got a free cookbook of Crisco recipes. It opened with the line, "The culinary world is revising its entire cookbook on account of the advent of Crisco, a new and altogether different cooking fat." Recipes for asparagus soup, baked salmon with Colbert sauce, stuffed beets, curried cauliflower, and tomato sandwiches all called for three to four tablespoons of Crisco.

Health claims on food packaging were then unregulated (and misleading, as they are now), and the copywriters claimed that cottonseed oil was healthier than butter for digestion. Advertisements in the Ladies' Home Journal encouraged homemakers to try the new fat and "realize why its discovery will affect every family in America."

The unprecedented product rollout resulted in the sales of 2.6 million pounds of Crisco in 1912 and 60 million pounds just four years later. It also helped usher in the age of margarine as well as low-fat foods.

Procter and Gamble's claims about Crisco touching the lives of every American proved eerily prescient. The substance (like many of its imitators) was 50 percent trans fat, and it wasn't until the 1990s that its health risks were understood. It is estimated that for every two percent increase in consumption of trans fat (still found in many processed and fast foods) the risk of heart disease increases by 23 percent. As surprising as it might be to hear, the fact that animal fats like butter pose this same risk is not supported by science.

Around the same time, other innovations were taking place to radically altar our millennia old food habits. Soybeans, an exciting new crop from China arrived in the 1930s. Soy was protein-rich, with a medium viscosity oil. Henry Ford established a soybean research laboratory, developed soybean plastics and a soy-based synthetic wool, and built a car "almost entirely" out of soybeans.

By the 1950s and 1960s, soybean oil had become the most popular vegetable oil in the US.

In the mid-1970s, Canadian researchers developed a low-erucic-acid rapeseed cultivar. Because the word "rape" was not considered optimal for marketing, they coined the name "Canola" (from "Canada Oil low acid"). The U.S. Food and Drug Administration approved use of the canola name in January 1985, and U.S. farmers started planting large areas that spring. Today Canola is the beauty queen of the vegetable oil industry

Unscrupulous, All Powerful Food Lobby

According to the acclaimed author, Sally Fallon, vital researches in the 20th century by nutrition experts like Weston Price, Robert Mccarrison etc. remain largely forgotten because the importance of their findings, if recognized by the general populace, would bring down the world's largest industry--food processing and its three supporting pillars--refined sweeteners, white flour and vegetable oils.

Representatives of this industry have worked behind the scenes to erect the huge edifice of the "lipid hypothesis"--the untenable theory that saturated fats and cholesterol cause heart disease and cancer.

All one has to do is look at the statistics to know that it isn't true. Butter consumption in America at the turn of the century, according to Sally Falon, was eighteen pounds per person per year, and the use of vegetable oils almost nonexistent. Yet cancer and heart disease were rare. Today butter consumption hovers just above four pounds per person per year while vegetable oil consumption has soared--and cancer and heart disease are endemic.

What the research really shows is that both refined carbohydrates and vegetable oils cause imbalances in the blood and at the cellular level that lead to an increased tendency to form blood clots, leading to myocardial infarction. This kind of heart disease was virtually unknown in America in 1900.

Today it has reached epidemic levels. Atherosclerosis, or the buildup of hardened plague in the artery walls, cannot be blamed on saturated fats or cholesterol. Very little of the material in this plaque is cholesterol. A 1994 study appearing in the Lancet showed that almost three quarters of the fat in artery clogs is unsaturated. The "artery clogging" fats are not animal fats but vegetable oils.

Built into the whole cloth of the lipid hypothesis is the postulate that the traditional foods of our ancestors - the butter, cream, cold pressed oils, that were necessary to produce "splendid physical development" in "primatives" - are bad for us.

A number of schemes have served to imbed this notion in the consciousness of the people, not the least of which was the National Cholesterol Education Program (NCEP), during which tax payers paid for a packet of "information" on cholesterol and heart disease to be sent to every physician in America.

In 1990, the National Cholesterol Education Program recommended a lowfat diet for all Americans above the age of two. The advantage of such a diet is supposed to be reduced risk of heart

disease in later life--even though not a single study has shown such an hypothesis to be tenable.

What the scientific literature does tell us is that low fat diets for children, or diets in which vegetable oils have been substituted for healthy fats like natural butter, result in failure to thrive--failure to grow tall and strong--as well as learning disabilities, susceptibility to infection and behavioral problems. Teenage girls who adhere to such a diet risk reproductive problems. If they do manage to conceive, their chances of giving birth to a low birth weight baby, or a baby with birth defects, are high.

Compared to this folly, the wisdom of the so-called primitive in regards to ensuring the health of his children has inspired the awe of many experts. Tribal groups--especially those in Africa and the South Pacific--fed special foods to young men and women before conception, to women during pregnancy and lactation, and to children during their growing years.

For a future of healthy children--for any future at all--we must turn our backs on the dietary advice of sophisticated medical orthodoxy. We must return to the food wisdom of our so-called primitive ancestors, choosing traditional whole foods that are organically grown, minimally processed and above all not shorn of their vital lipid component.

The Process of Extracting Vegetable Oils

Vegetable oils look clean and bright on the grocers shelves, but a description of their processing reveals the true nature of these products. These poor oils go through 'more primping and processing than a dog at a Kennel Club show.'

According to Paul Hawken & Fred Rohe, one very basic difference between our way of looking at vegetable oils and the industrial oil technician's viewpoint should be understood. When he sees dark color, it represents the presence of "impurities" -- material that prevents the oil from being light colored, odorless and bland in taste. From our viewpoint, those "impurities" look desirable -- the things which impart color, odor and flavor are 'nutrients'.

It is both tragic and ironic that the removal of nutrients should be equated with "purity".

Modern method of oil extraction called solvent extraction is described in the book 'The Lowdown on Edible Oils' as "definitely dangerous to health."

This process is not for the squeamish. Take a look at the steps and decide for yourself if this is a "food" you want to consume:

Oil seeds such as soybean, rapeseed, cotton, sunflower are gathered. Most of these seeds are from plants that have been genetically engineered or huge amounts of pesticides have been applied to them.

The seeds are husked and cleaned of dirt and dust, then crushed.

The crushed seeds are then heated to temperatures between 110 degrees and 180 degrees in a steam bath to start the oil extraction process.

The seeds are put through a high volume press which uses high heat and friction to press the oil from the seed pulp.

The seed pulp and oil are then put through a hexane solvent bath and steamed again to squeeze out more oil.

Hexane is produced by the refining of crude petroleum oil. It is a mild anesthetic. Inhalation of high concentrations produces first a state of mild euphoria, followed by sleepiness with headaches and nausea. Chronic intoxication from hexane has been observed in recreational solvent abusers and in workers in the shoe manufacturing, furniture restoration and automobile construction industries where hexane is used as a glue. The initial symptoms are tingling and cramps in the arms and legs, followed by general muscular weakness. In severe cases, atrophy of the skeletal muscles is observed, along with a loss of coordination and problems of vision. In 2001, the U.S. Environmental Protection Agency issued regulations on the control of emissions of hexane gas due to its potential carcinogenic properties and environmental concerns.

The big commercial edible oil processors and distributors tell us that if any of the solvent remains in the oils it is very little. But

you know just how harmful these solvents may be. Pertinent here is an observation coming out of a symposium of cancer specialists organized by the International Union Against Cancer meeting in Rome in August 1956.

Among many things they observed 'Since various petroleum constitutents, including certain mineral oils and paraffin, have produced cancer in man and experimental animals, the presence of such chemicals in food appears to be objectionable, particularly when such materials are heated to high temperatures.'

Enough of hexane story. Now the seed/oil mixture is put through a centrifuge and phosphate is added to begin the separation of the oil and seed residues.

After solvent extraction, the crude oil is separated and the solvent is evaporated and recovered. The seed pulp residues are conditioned and reprocessed to make by-products such as animal feed.

The crude vegetable oil is then put through further refining techniques including degumming, neutralization and bleaching:

Water degumming: In this process, water is added to the oil. After a certain reaction period the hydrated phosphatides can be separated either by decantation (settling) or continuously by means of centrifuges. In this process step a large part of water soluble and even a small proportion of the non-water soluble phosphatides are removed. The extracted gums can be processed into lecithin for food, feed or for technical purposes.

Neutralization: Any free fatty acids, phospholipids, pigments, and waxes in the extracted oil promote fat oxidation and lead to undesirable colors and odors in the final products. These impurities are removed by treating the oil with caustic soda (sodium hydroxide) or soda ash (sodium carbonate). The impurities settle to the bottom and are drawn off. The refined oils are lighter in colour, less viscous, and more susceptible to oxidation.

Bleaching: The major purpose of bleaching is the removal of off colored materials in the oil. The heated oil is treated with various bleaching agents such as fuller's earth, activated carbon, or activated

clays. Many impurities, including chlorophyll and carotenoid pigments, are absorbed by this process and removed by filtration. However, bleaching also promotes fat oxidation since some natural antioxidants and nutrients are removed along with the impurities.

Deodorization is the final step in the refining of vegetable oils. Pressurize steam at extremely high temps (500 degrees or more) is used to remove volatile compounds which would cause off odors and tastes in the final product.

The oil produced is referred to as "refined oil" and is ready to be consumed or for the manufacture of other products. A light solution of citric acid is often added during this step to inactivate any metals such as iron or copper present in the final product.

The process of refining vegetable oil damages the fats and makes the oils very unstable and prone to going rancid quite easily. Rancid oils in any form are particularly bad for your health because they introduce cancer causing free radicals into your body, without the benefit of including an antioxidant like vitamin E.

Author Sally Fallon adds a comment to this grim scenario:

"High-temperature processing causes the weak carbon bonds of unsaturated fatty acids, especially triple unsaturated linolenic acid, to break apart, thereby creating dangerous free radicals. In addition, antioxidants, such as fat-soluble vitamin E, which protect the body from the ravages of free radicals, are neutralized or destroyed by high temperatures and pressures. BHT and BHA, both suspected of causing cancer and brain damage, are often added to these oils to replace vitamin E and other natural preservatives destroyed by heat."

The process of refining oils is exactly analogous to the refining of whole wheat and whole sugar into white ones. In all cases, one takes a product full of natural vitamins, minerals, enzymes and other food factors and reduces the original natural food into a relative "nonfood" - devitalized, stripped.

Hydrogenated and Trans Fats

Even if you don't know much about hydrogenated fats or trans fats, you would probably agree that they sound like some kind of

experiment gone awry in a science fiction movie. These fats seem like some experimental food produced in test tubes by evil scientists that come to life at night and start attacking everything in sight. Well, that's actually not far from the truth.

Hydrogenation is a process using high temperatures to change the structure of fat molecules from a liquid to a solid. The food industry benefits from this unnatural process because it prevents the oils from becoming rancid. People respond positively to the marketing campaigns that tell you the product will last longer.

But what is the human cost of this experimental food substance? Hydrogenation turns healthy fatty acids (cis-fatty acids) into harmful ones (trans fatty acids). Cis-fatty acids, which are sometimes called essential fatty acids, trigger healthy fat metabolism in the human body. They are critical to a healthy brain and nervous system, immune system, organs, tissues, and cells.

After a fat has been chemically altered to become a trans fatty acid, it no longer offers any of these benefits. Instead, the human body does not even recognize it as food. It treats trans fats as toxins and searches for dumping sites in the body fat stores. In some cases, trans fats get dumped into organs, like the liver, which usually cannot filter all of them over long periods of time.

Trans fats can also clog the liver and prevent healthy fatty acids from being absorbed from healthy foods. Trans-fatty acids can be referrred to as '*plastic fats*' since they really do not resemble food any longer.

The melting point of trans-fatty acids found in todays margarines and most prepared and packaged foods is 46 degrees C. These fats do not melt or break down at body temperature (37 degrees C).

Stick margarine is up to 30 percent trans-fatty acids while shortening is up to 50 percent of these harmful fats. Most oils found on grocery store shelves contain trans fats as well. This is because of the high heat used to extract the oils from nuts and seeds during the manufacturing process.

Cooking oils to high temperatures, as in home cooking or industrial cooking, can cause the healthy fats to turn into trans fats. That includes most fried foods, potato chips, commercial salad dressings, baked goods, candy bars, breads, cookies, and chocolates, all of which can contain between 30 and 50 percent trans fats. If you check the ingredient list, you will typically find items such as partially hydrogenated oil or hydrogenated vegetable oil or shortening or vegetable oil shortening. These all indicate the presence of trans fats.

Cold-pressed oils or extra-virgin olive oil are better choices than commercial cooking oils, margarine, and shortening. Why bother with something so processed and unhealthy when there are umpteen other, better options out there?

Traditional Method

Traditional method of extracting vegetable oils from nuts, grains, beans, seeds or olives is by use of a hydraulic press. This is an ancient method and yields the best quality oil. The only two materials that will yield enough oil without heating them first are sesame seeds and olives. Therefore, sesame oil and olive oil from a hydraulic press are the only oils which could truly be called "cold pressed".

The term "virgin" for olive oil refers only to the first pressing by a hydraulic press without heat. The term "cold pressed" refers only to hydraulic pressing without heat. These oils are the closest possible to the natural state, therefore have the most color, odor and flavor - in a word, the most nutrition - but they will often be unavailable because these days, so little is produced this way.

If an oil which has been extracted by hydraulic press but has been heated prior to pressing, this will be referred to as 'pressed', not 'cold pressed'.

Expeller Method

This is the second method of oil extraction and it is much less violent than industrial refining. This process yields more oil compared to 'pressed' or 'cold pressed' methods.

This method by expeller is described in 'The Lowdown on Edible Oils' as follows: "This uses a screw or continuous press with a constantly rotating worm shaft. Cooked material goes into one end and is put under continuous pressure until discharged at the other end with oil squeezed out." Temperatures between 200 and 250 degrees are normal. Obviously, this type of extraction does not qualify as 'cold pressed'. Oil produced this way is referred to as 'expeller pressed.'

Unlike 'pressed' or 'cold pressed' method, 'expeller pressed' oil needs some refining after extraction, though not as massive as industrial refining.

Clogging The Arteries

Like all natural foods, natural fats are blessed with a natural 'life cycle', a period of optimum nutritional density during which they must be eaten, and after which they become toxic and degrade.

Hydrogenation forces natural fats into becoming molecularly "shelf" stable by accelerating the oxidation process with high temperatures and addition of heavy metal nickel catalyst to force the insertion of additional hydrogen atoms into the molecule, and the subsequent "refining" process removes the bad oxidation tastes and smells by further high heat steam sparging and deodorization.

In other words, all liquid vegetable oils that are packaged in clear glass or plastic bottles and displayed at room temperature on open shelves are stable because they are already oxidized and biologically dead and toxic.

There are too many individual parts to the story to post here, so for the rest of the story can be read in the Wikipedia articles about Hydrogenation, Trans vs. Cis molecules, and also the one about Essential Fatty Acids. It is very simple and easily understandable and there are even pictures of the molecules that will help you understand why industrially processed pre-oxidized and adulterated vegetable oils are a direct cause of arterial plaque formation (progressive atherosclerosis) and cancer.

In a nutshell it is because when vegetable oils are heated the molecules straighten out (trans vs. cis) and glue themselves together like straws, they polymerize and become a type of natural plastic which is not dissolvable by blood plasma and body fluids.

That is also why boiled linseed oil is used to make paints and varnishes.

Mental Development And Brain Fats

Human beings are capable of much more than most people believe. Under the right circumstances, and by eating correctly, the brain actually grows larger and one can develop unusual abilities.

Fats and oils play a critical role in this type of development. They coat the nerves with myelin, an important fatty substance that is needed to conduct nerve impulses properly. Without enough quality fats and oils, human beings will simply not develop their minds as well as they could. One of the serious problems in the nations of Africa and some Asian nations is that the food supply is low in these "brain fats". People are forced to live on mainly starches such as grains, beans, fruits and some nuts. They do not have enough dairy products to nourish their brains properly, so they suffer mentally, as well as physically.

This is a critical benefit of eating high quality fats and oils every day.

Health authorities such as William Campbell Douglass, MD suggest that fats are one of the most important food groups. This is no doubt the case with growing children, whose brains and nervous systems absolutely require sufficient amounts of high-quality saturated fats for optimum brain development. It is also true of most adults, especially those who wish to have truly good health.

Dairy As A Source Of Healthy Fats

These include whole milk fat, fat in yogurt, cheeses, butter, and cream. Dairy fats are excellent if they are natural or raw, and not pasteurized or homogenized. This is important because

pasteurization and homogenization damage the fat and other components of dairy products so they become much less healthful.

Most cows today are hybrids and their products are not as healthful as in the past. Many people these days are insisting on dairy products from traditional breeds of the cows.

In many parts of the world, goat, sheep, yak, camel and reindeer have been used as a source of milk and butter.

If one cannot find raw milk products, the next best appears to be organic dairy products. Regular pasteurized commercial dairy products are not nearly as good.

Children And Fats

Babies and children have a critical need for high quality fats for the development of their brain and nervous systems. It is most unfortunate when parents do not feed their children fat, for fear the children will become overweight. It is also unfortunate when children are fed poor quality, pasteurized dairy products and overcooked fried oils, and other inferior fats and oils.

Even worse, instead of giving their children quality milk, yogurt and other fat-containing foods, some parents substitute soymilk, artificial fruit juice and sugar-laden soda pop. These contain much more sugars, which tend to make children overweight and ill.

Another horror is most commercial baby formula that contains cheap soymilk or soy oil, when babies desperately need all the essential fatty acids for their brain development. Babies who cannot drink mother's milk, which is over 50% fat, often do well on unprocessed cow or goat milk.

Fats to avoid for everyone, particularly children, are French fries fried in vegetable oil, fast-food milk shakes, which are mostly chemicals, and other fried foods. Avoid grilled cheese sandwiches, cheese dips, and processed cheeses used in pizza and other dishes. These fats and oils are usually old, overheated and quite unhealthful.

One cannot emphasize enough that babies and children must have high-quality fats and oils every day to nourish their brains and avoid many kinds of developmental and behavioral problems.

Make Your Own Healthy, Delicious Oils At Home

There are many companies selling manual oil presses these days. With one such press, you can extract your own healthy oils, right in your own kitchen. These presses can extract oil from almost all kinds of seeds and nuts. These home made, cold pressed oils are superior to industrial oils in every conceivable way. Freshly pressed oils have unique, complex flavors that bottled oils can't match. And then there are added health benefits. These oils carry all the natural goodness of their respective seeds or nuts. Though most of these are hand operated, it doesn't take much time or effort to extract a bottleful of oil. For a small family, this arrangement is quite sufficient. Some of the brands can be ordered online.

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17.

Margarine

Trust A Cow More Than A Chemist

Margarine was originally manufactured to fatten turkeys. When it killed the turkeys, the people who had put their money into the research wanted a payback so they put their heads together to figure out what to do with this product.

It was a white substance with no food appeal, so they added the yellow colouring and sold it to people to use in place of butter. How do you like it? Then they came out with some clever new flavourings.

During World War II, a shortage of butter and other fats gave a boost to popularity of margarine. Today it has become a major part of the Western diet and overtook butter in popularity in the mid-20th century. In the United States, for example, in 1930 the average person ate over 18 pounds (8.2 kg) of butter a year and just over 2 pounds (0.91 kg) of margarine. By the end of the 20th century, an average American ate around 5 lb (2.3 kg) of butter and nearly 8 lb (3.6 kg) of margarine.

Although a staple of the American diet, butter came under a great deal of scrutiny when its high levels of saturated fat were associated with increased heart disease risk. Many people accepted the demise of butter in stride, ruing the loss of its savory flavor but agreeing that

its effect on the heart might be too high a price to pay. They dutifully switched to margarine, as researchers and nutritionists suggested.

Then the hazards of margarine came to light. Its high levels of trans fats packed a double whammy for heart disease by raising levels of LDL (bad cholesterol) and lowering levels of HDL (good cholesterol). Many people felt betrayed or duped.

The truth is, there never was any good evidence that using margarine instead of butter cut the chances of having a heart attack or developing heart disease.

Margarine intake has been linked to a host of illnesses such as colitis and arthritis. The hardening agents used in the production of margarine include nickel and cadmium. Nickel is a toxic metal that causes lung and kidney problems. Cadmium is among the most toxic of the heavy metals. It may contribute to serious diseases such as arteriosclerosis, high blood pressure and malignancy.

Process of Manufacture

Manufacturers cannot use liquid oils in baked goods or frying, and they are not spreadable. So to harden the liquid vegetable oils to make margarine and shortening, they put the oils through a process called partial hydrogenation. To make margarine or shortening, first the oil is extracted under high temperature and pressure, and with hexane solvents as we have already seen in detail.

These oils are then mixed with a nickel catalyst and put into a huge high-pressure, high-temperature reactor. What goes into the reactor is a liquid, but what comes out of that reactor is a semi-solid that looks like grey cottage cheese and smells terrible. Emulsifiers are mixed in to smooth out the lumps. The product is then steam cleaned a second time to get rid of the horrible smell. Then it is bleached to get rid of the grey color. At this point, the product can be used as vegetable shortening.

To make margarine, they add artificial flavors and synthetic vitamins. Then they add annatto or some other natural coloring. It is then packaged in blocks and tubs. Advertising promotes this garbage as a health food.

Margarine is but one molecule away from being plastic and shares 27 ingredients with paint.

You can try this yourself: Purchase a tub of margarine and leave it open in your garage or shaded area. Within a couple of days you will notice a couple of things:

No flies, not even those pesky fruit flies will go near it. That should tell you something.

It does not rot or smell differently because it has no nutritional value; nothing will grow on it. Even those teeny weeny microorganisms will not a find a home to grow. Why? Because it is nearly plastic. Would you melt your Tupperware and spread that on your toast?

All of the margarines, shortenings, spreads, even low-trans spreads contain trans fats plus many other artificial ingredients. In the groceries stores there is just a little bit of space for the butter because all the high-profit margarine foods have totally invaded the food supply. Virtually all packaged or processed foods contain trans fatty acids. They're in all the chips and crackers, and they now use them for French fries.

It used to be that when you made desserts for your kids, at least these contained butter, cream and nuts and other healthy ingredients—all good wholesome foods. Now the industry can imitate the butter, cream and so many other things, so most desserts end up being mostly sugar, partially hydrogenated oils and a long list of artificial ingredients.

Problems with Hydrogenated Oils

Many, many diseases have been associated with the consumption of trans fatty acids, such as heart disease, cancer, digestive disorders and degeneration of joints and tendons (which is why we have so many hip replacements today). Trans fats are associated with auto-immune disease, skin problems, growth problems in children and learning disabilities. The only reason that we are eating this stuff is because we have been told that the competing fats and oils—butter, cream, coconut oil etc.—are bad for us and cause heart disease.

This message is nothing but industry propaganda to get us to buy substitutes.

The Low-Fat Craze

"Low-fat" everything has produced an epidemic of obesity, diabetes, hypoglycemia, and even some of the ADHD and perhaps cancers that are so common today. These diseases were not as prevalent before people began believing the lie that quality fats are bad for you.

What few people realize is that if you do not eat fats and oils, you must consume many more sugars or starches to obtain the calories you need. This easily exceeds most people's carbohydrate tolerance level and leads to many diseases.

Also, prepared foods that are low in fat usually contain many more chemicals in order to give the food the flavor that fats normally provide. Many of these chemical additives are of questionable safety.

Low-Fat Diet Does Not cut Cancer, Heart And Other Health Risks

By Gina Kolata, The New York Times, February 8, 2006

Following is a press report busting the myth of low fat diet. This myth has demonized traditional fats like butter and cream for almost a century.

> The largest study ever to ask whether a low-fat diet reduces the risk of getting cancer or heart disease has found that the diet has no effect.
>
> The $415 million federal study involved nearly 49,000 women ages 50 to 79 who were followed for eight years. In the end, those assigned to a low-fat diet had the same rates of breast cancer, colon cancer, heart attacks and strokes as those who ate whatever they pleased, researchers are reporting today.
>
> "These studies are revolutionary," said Dr. Jules Hirsch, physician in chief emeritus at Rockefeller University in New York City, who has spent a lifetime studying the effects of diets on weight and health. "They should put a stop to this era of thinking that we have all the information we need to change the whole national diet and make everybody healthy."

"The study, published in today's issue of The Journal of the American Medical Association, was not just an ordinary study", said Dr. Michael Thun, who directs epidemiological research for the American Cancer Society. It was so large and so expensive, Dr. Thun said, that it was "the Rolls-Royce of studies." As such, he added, it is likely to be the final word.

"We usually have only one shot at a very large-scale trial on a particular issue," he said.

The results, the study investigators agreed, do not justify recommending low-fat diets to the public to reduce their heart disease and cancer risk. Given the lack of benefit found in the study, many medical researchers said that the best dietary advice, for now, was to follow federal guidelines for healthy eating, with less saturated and trans fats, more grains, and more fruits and vegetables.

The study found that women who were randomly assigned to follow a low-fat diet ate significantly less fat over the next eight years. But they had just as much breast and colon cancer and just as much heart disease. The women were not trying to lose weight, and their weights remained fairly steady. But their experiences with the diets allowed researchers to question some popular notions about diet and obesity.

Although all the study participants were women, the colon cancer and heart disease results should also apply to men, said Dr. Jacques Rossouw, the project officer for the Women's Health Initiative.

While cancer researchers said they were disappointed by the results, heart disease researchers said they were not surprised that simply reducing total fat had no effect, because they had moved on from that hypothesis.

Junk Cheese

Most cheese today is mass-produced in huge batches and many shortcuts are taken to make it ferment faster. For instance, many chemicals may be added to it, it is not aged naturally and preservatives and other chemicals are added or sprayed on later to make it keep longer.

As a result, most cheese is close to junk food status, unfortunately. This is what your child is eating when he or she eats most pizza, for example, or most Mexican dishes. It is especially the case in

restaurants, where cutting costs is the primary consideration, and not your health.

The worst cheese is called "cheese food" or "processed cheese". Velveeta and Kraft make this fake food. Its ingredients don't let you know that it may be made from rejected milk and other dairy products that cannot be sold fresh. Then many chemicals, colors, flavors and more, are added and even glue is added to give it "consistency". This is not really a food, but it is what is served in some schools, many restaurants and even in fancy establishments as well.

Cholesterol Myths

Dr. Lawrence Wilson, MD

Cholesterol is an essential fat compound manufactured in our livers that is needed to make all of the sex hormones and steroid hormones. It is mainly made in our bodies. However, a little, relatively speaking, is found in animal fats.

Odd as it sounds, I have seen a number of vegetarian patients with high serum cholesterol, although they ate no cholesterol at all. The reasons are explained below.

Saturated fat is not the same as cholesterol. Coconut and palm oil, for example, are quite saturated fats (solid at room temperature) but contain no cholesterol. This is because they are vegetable products and only animal fats contain any cholesterol at all.

Eating cholesterol does not necessarily raise blood cholesterol and does not automatically clog your arteries. In fact, the connection between elevated cholesterol and heart disease is much more tenuous and tentative than we are led to believe. Some studies show no correlation at all between high levels of cholesterol in the blood and coronary heart disease.

It now appears that much better methods of monitoring the condition of your arteries are by testing for elevated homocysteine, C-reactive protein (which measures inflammation), and non-

invasive tests such as an ultrasound or Doppler test for arterial blockage can also be done.

Minerals such as calcium, copper, iron, cadmium and others may also build up in the arteries and contribute to heart disease.

These can, at times, be revealed on a hair mineral analysis or perhaps with a 'urine metals challenge test' using EDTA. I believe these methods are much better than checking cholesterol if one suspects or wishes to prevent heart disease.

An elevated cholesterol level in the blood is not good, but of itself is not a serious problem. It is mainly a liver stress indicator. It will come down on its own, in my experience, as one's general health improves on a nutritional balancing healing program based on hair mineral testing.

Cholesterol-Lowering Drugs

Dr. Lawrence Wilson, MD

A recent medical nightmare is the widespread use of cholesterol-lowering drugs, often called "statin drugs". Their names include Crestor, Zocor, Lovastatin, Mevacor, Crestor and a dozen others from different companies. They are all basically similar to each other. The word "statin" is a misnomer as the drugs have nothing to do with stasis. It is just another lie of the pharmaceutical industry to increase sales of these quite awful drugs that kill people regularly.

These are now prescribed to millions of Americans and others worldwide. They have few benefits in most studies and are quite costly.

The adverse effects of the statin drugs are often much worse than the elevated cholesterol. In fact, one of the "adverse effects" of these drugs includes heart attacks, the very condition these drugs are supposed to prevent. So I advise everyone to avoid these drugs completely if you value your health at all.

If a doctor suggests that you take a drug to lower your cholesterol, here are my suggestions:

1. A mildly elevated cholesterol level is not a cause for concern in my opinion. It is usually a stress indicator and that is all.

2. Before considering dangerous drug therapy, which is the truth about the statin drugs, first try natural methods for lowering cholesterol. The most complete and reliable method is a nutritional balancing program.

However, simple, symptomatic remedies such as red rice yeast, chromium, or more fiber may help. I do not recommend any niacin, however, in any form. In doses above about 100 mg daily, it may build up in the liver, even if it controls cholesterol.

However, I don't recommend these remedies very much, as none of them correct the cause of the elevated cholesterol. Overall, the cholesterol debate has ruined the reputation of many wonderful fats like grassfed butter. This has been most unfortunate for the health of millions of people.

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18.

Saturated Fats

Indispensable For Bodily Functions

In the not-so-distant past, the medical establishment considered all fats equally loathsome: all fats were created equal and they're all bad for you. Things have changed in that quarter, if only slightly. You have no doubt heard the drumbeat of current medical thinking on fats: some fats are now good for you but others like all saturated fats are bad for you. That's an improvement from the old cry, but far from the truth.

These important fats need to be a regular part of our healthy diet. Why? Because humans need them and here are just a few reasons why.

1) Improved Cardiovascular Risk Factors

Though you may not have heard of it on the front pages of your local newspaper, online news source, or local television or radio news program, saturated fat plays a couple of key roles in cardiovascular health. The addition of saturated fat to the diet reduces the levels of a substance called lipoprotein (a)—pronounced "lipoprotein little a" and abbreviated Lp(a)—that correlates strongly with risk for heart disease. Currently there are no medications to lower this substance and the only dietary means of lowering Lp(a) is eating saturated fat. Bet you didn't hear that on the nightly news. Moreover, eating saturated (and other) fats also raises the level of HDL, the so-called good cholesterol. Lastly, research has shown that when women diet,

those eating the greatest percentage of the total fat in their diets as saturated fat lose the most weight.

2) Stronger Bones

In middle age, as bone mass begins to decline, an important goal (particularly for women) is to build strong bones. You can't turn on the television without being told you need calcium for your bones, but do you recall ever hearing that saturated fat is required for calcium to be effectively incorporated into bone? According to one of the foremost research experts in dietary fats and human health, Mary Enig, Ph.D., there's a case to be made for having as much as 50 percent of the fats in your diet as saturated fats for this reason. That's a far cry from the 7 to 10 percent suggested by mainstream institutions. If her reasoning is sound—and we believe it is— is it any wonder that the vast majority of women told to avoid saturated fat and to selectively use vegetable oils instead would begin to lose bone mass, develop osteoporosis, and get put on expensive prescription medications plus calcium to try to recover the loss in middle age?

3) Improved Liver Health

Adding saturated fat to the diet has been shown in medical research to encourage the liver cells to dump their fat content. Clearing fat from the liver is the critical first step to calling a halt to middle-body fat storage. Additionally, saturated fat has been shown to protect the liver from the toxic effects of alcohol and medications, including acetaminophen and other drugs commonly used for pain and arthritis, such as nonsteroidal anti-inflammatory drugs or NSAIDs, and even to reverse the damage once it has occurred. Since the liver is the lynchpin of a healthy metabolism, anything that is good for the liver is good for getting rid of fat in the middle. Polyunsaturated vegetable fats do not offer this protection.

4) Healthy Lungs

For proper function, the airspaces of the lungs have to be coated with a thin layer of what's called lung surfactant. The fat content of

lung surfactant is 100 percent saturated fatty acids. Replacement of these critical fats by other types of fat makes faulty surfactant and potentially causes breathing difficulties. Absence of the correct amount and composition of this material leads to collapse of the airspaces and respiratory distress. It's what's missing in the lungs of premature infants who develop the breathing disorder called infant respiratory distress syndrome. Some researchers feel that the wholesale substitution of partially hydrogenated (trans) fats for naturally saturated fats in commercially prepared foods may be playing a role in the rise of asthma among children. Fortunately, the heyday of trans fats is ending and their use is on the decline. Unfortunately, however, the unreasoning fear of saturated fat leads many people to replace trans fats with an overabundance of polyunsaturated vegetable oils, which may prove just as unhealthful.

5) Healthy Brain

You will likely be astounded to learn that your brain is mainly made of fat and cholesterol. Though many people are now familiar with the importance of the highly unsaturated essential fatty acids for normal brain and nerve function, the lion's share of the fatty acids in the brain are actually saturated. A diet that skimps on healthy saturated fats robs your brain of the raw materials it needs to function optimally.

6) Proper Nerve Signaling

Certain saturated fats, particularly those found in butter, coconut oil, and palm oil, function directly as signaling messengers that influence the metabolism, including such critical jobs as the appropriate release of insulin. And just any old fat won't do. Without the correct signals to tell the organs and glands what to do, the job doesn't get done or gets done improperly.

7) Strong Immune System

Saturated fats found in butter and coconut oil (myristic acid and lauric acid) play key roles in immune health. Loss of sufficient

saturated fatty acids in the white blood cells hampers their ability to recognize and destroy foreign invaders, such as viruses, bacteria, and fungi. Human breast milk is quite rich in myristic and lauric acid, which have potent germ-killing ability. But the importance of the fats lives on beyond infancy; we need dietary replenishment of them throughout adulthood, middle age, and into seniority to keep the immune system vigilant against the development of cancerous cells as well as infectious invaders.

Source

Dr. Michael R. Eades, MD and Dr. Mary Dan Eades, MD

Excerpts from The 6-Week Cure for the Middle-Aged Middle: The Simple Plan to Flatten Your Belly Fast! September 8, 2009

19.

Getting Some Culture

Does It Get Any Better Than Butter?

By Melissa Kronenthal

Yes butter, but not just any butter. Of course I'm not talking about the butter I grew up eating — or I should say, the butter I ate before the anti-butter scaremongering hit the media and my parents switched to some vile, purportedly heart-healthier substance. I honestly have no idea when I first tasted that butter, but it was probably long before I started making taste memories. I'm talking about the butter I discovered on my very first trip to France, at the home of the family friend who hosted me for a week and took it upon herself to introduce me to as many of France's gastronomic delights as humanly possible. Among the cheeses and patés and potages and pastries she stuffed me with, I had a taste of a butter so remarkable I couldn't stop thinking about it for years.

In my defence, it was amazing stuff. That butter possessed a creaminess beyond description, and a sweetly subtle, almost cheesy flavor. I had never had anything like it, and I slathered it on every surface I could find (including my naked fingers), probably consuming more in that week than in the totality of my life up to that point. What must they be feeding those French cows to get butter like this? I wondered. I imagined them lolling about in

green fields, being hand-fed choice bits of tender spring stalks by doting farmers. Maybe they had regular massages à la Kobe cows, and perhaps soothing classical music was piped into their climate-controlled barns at night to help them sleep. I mean really, how else could you explain why this French butter was so good?

While I can't say for sure that none of that actually happens in France, I do know something now that I didn't know then. French butter is actually so delicious because the French routinely do something to their butter that Americans (and British, and most of the rest of the world) don't: they give it some culture.

Simply put, culturing butter consists of fermenting the cream before the butter is churned. Have you ever had crème fraîche? Then you've tasted cultured butter's parent. By introducing some dairy-friendly bacteria to the fresh cream, the sugars in the cream are converted to lactic acid; this, along with souring the cream, produces additional aroma compounds including diacetyl which make for a more complex and "buttery" taste. You wouldn't think that souring cream would necessarily have a positive impact on the butter made from it (I mean, the thought of sour butter doesn't exactly get your mouth watering, does it?), but surprisingly, it does: the butter absorbs just enough of the flavor compounds to acquire a subtle, mysterious and completely addictive tang.

When I was in the U.S. last summer, I noticed that Americans' fascination with all things European has expanded to the dairy case, and cultured butter is now widely available. It was indeed delicious, but it was also obscenely expensive; I was almost glad that I don't live there and have to face decisions such as either indulging in cultured butter or paying my rent on a regular basis. At home I still scanned the butter aisle religiously, however, hoping against hope that the cultured variety was about to catch on here in the UK, when lo and behold, I stumbled upon a completely unexpected piece of information. Did you know that cultured butter is actually a cinch to make at home? I certainly didn't, but I have since confirmed it myself: it is not only a cinch, it is spectacular. All it takes is a quart

of the richest, freshest organic cream you can lay your hands on, a few spoonfuls of a fermented dairy product like yogurt or buttermilk, and a little bit of patience. In 24 hours, you can have as much fresh, cultured butter as your long-suffering tastebuds desire - at a cost so low you will be able to slather it on not only your toast every morning, but each and every one of your fingers too, and you'll still be able to pay your rent in the process.

Cultured Butter

I actually have reader and fellow blogger Dominic to thank for clueing me in to the fact that cultured butter can be made at home. I had no idea, but after reading his description, I got to work and have now made my own not once, not twice, but three times in the last week. Uh yeah, I know that's a lot of butter. But it's amazing stuff, and worth every luscious, calorie-laden bite. There's not much to tell you here that the recipe doesn't; the only thing I'll stress is the importance of getting yourself really good (preferably organic) cream, since tasty cream=tasty butter. But you could have probably figured that one out for yourself.

Yield: 12-14 ounces (340-400g) of butter, depending on the fat content of your cream (note that the recipe can easily be halved)

4 cups (1ltr) heavy or double cream (the best quality, and highest butterfat you can find)

1/3 cup (80ml) plain whole-milk yogurt, crème fraîche or buttermilk (check the ingredients to make sure these do not contain any gums or stabilizers)

Ice

Salt, to taste

Begin by culturing your cream (this is an overnight process, so plan accordingly). In a clean glass or ceramic container (bowl, jar, etc) combine the cream and yogurt, crème fraîche or buttermilk. Cover loosely and place it in a warmish part of the house - the ideal temperature is around 75F (23C), but anywhere in the range from 70-80F (20-26C) is okay.

After 12-18 hours, the cream should be noticeably thicker and should taste slightly tangy, i.e. like crème fraîche. If it's bubbling and gassy, some unwanted bacteria have gotten in there so discard your cream and start again (note that this has never happened to me). If it hasn't thickened yet, leave it alone for another few hours and eventually it will. When your cream has thickened, if you are not ready to make your butter right away, transfer the container to the fridge where you can leave it for up to another 24 hours.

In order to churn properly, the cream needs to be at about 60F (15C). If you're taking it out of the fridge just let it warm up until it reaches this temperature; if you're making it from room temperature you'll need to place the bowl in a bath of ice water for a few minutes to cool it down. Also, fill a large bowl with water and ice cubes and keep it handy.

You can use any method you want to beat the cream; handheld electric beater, stand mixer, etc - even whisking by hand if you're trying to pre-emptively burn off a few calories. Basically, just put the thickened cream in a clean, deep bowl and start beating as if you're making whipped cream. When the cream starts to form stiff peaks, reduce the speed to low. At this point watch carefully; first the peaks will start to look grainy, and a few seconds later the cream will break. When it does you'll know it - globules of yellow butterfat will be swimming in a sea of buttermilk, and if you're beating too fast you'll have buttermilk everywhere. Stop beating and carefully tilt the bowl over a cup, holding back the butter clumps as best you can, and drain away as much buttermilk as possible. You can use this just like commercial buttermilk, by the way, and it's delicious.

Now you have to wash the butter to get rid of all the residual buttermilk, which would cause it to spoil prematurely. Using a fork (my preferred implement) or a stiff rubber spatula, pour some of your reserved icewater over the butter, kneading and stirring it around vigorously. The water will turn whitish and the butter will firm up, making it cohere and knead more easily. Pour out the liquid and repeat as many times as needed until the water sloshing around in

your bowl is completely clear. After you've poured off the last of the liquid, continue kneading for a few more minutes to get as much water as possible out of the butter. If you want salted butter, add your favorite salt now, to taste.

You've now got a generous supply of your very own cultured butter. Pack it into ramekins, roll it in waxed paper, or fill cute little molds with it before refrigerating; I recommend freezing some if you won't be able to finish what you've made within a week or so. Whether storing it in the fridge or freezer, though, keep it tightly covered, as butter is a sponge for other aromas.

20.

Why Butter Is Better

By Sally Fallon and Mary G. Enig, PhD

When the fabricated food folks and apologists for the corporate farm realized that they couldn't block America's growing interest in diet and nutrition, a movement that would ultimately put an end to America's biggest and most monopolistic industries, they infiltrated the movement and put a few sinister twists on information going out to the public. Item number one in the disinformation campaign was the assertion that naturally saturated fats from animal sources are the root cause of the current heart disease and cancer plague. Butter bore the brunt of the attack, and was accused of terrible crimes. The Diet Dictocrats told us that it was better to switch to polyunsaturated margarine and most Americans did. Butter all but disappeared from our tables, shunned as a miscreant.

This would come as a surprise to many people around the globe who have valued butter for its life-sustaining properties for millennia. When Dr. Weston Price studied native diets in the 1930's he found that butter was a staple in the diets of many supremely healthy peoples.[1] Isolated Swiss villagers placed a bowl of butter on their church altars, set a wick in it, and let it burn throughout the year as a sign of divinity in the butter. Arab groups also put a high

value on butter, especially deep yellow-orange butter from livestock feeding on green grass in the spring and fall. American folk wisdom recognized that children raised on butter were robust and sturdy; but that children given skim milk during their growing years were pale and thin, with "pinched" faces.[2]

Does butter cause disease? On the contrary, butter protects us against many diseases.

Butter & Heart Disease

Heart disease was rare in America at the turn of the century. Between 1920 and 1960, the incidence of heart disease rose precipitously to become America's number one killer. During the same period butter consumption plummeted from eighteen pounds per person per year to four. It doesn't take a Ph.D. in statistics to conclude that butter is not a cause. Actually butter contains many nutrients that protect us from heart disease. First among these is vitamin A which is needed for the health of the thyroid and adrenal glands, both of which play a role in maintaining the proper functioning of the heart and cardiovascular system. Abnormalities of the heart and larger blood vessels occur in babies born to vitamin A deficient mothers. Butter is America's best and most easily absorbed source of vitamin A.

Butter contains lecithin, a substance that assists in the proper assimilation and metabolism of cholesterol and other fat constituents.

Butter also contains a number of anti-oxidants that protect against the kind of free radical damage that weakens the arteries. Vitamin A and vitamin E found in butter both play a strong anti-oxidant role. Butter is a very rich source of selenium, a vital anti-oxidant--containing more per gram than herring or wheat germ.

Butter is also a good dietary source cholesterol. What?? Cholesterol an anti-oxidant?? Yes indeed, cholesterol is a potent anti-oxidant that is flooded into the blood when we take in too many harmful free-radicals--usually from damaged and rancid fats in margarine and highly processed vegetable oils.[3] A Medical

Research Council survey showed that men eating butter ran half the risk of developing heart disease as those using margarine.[4]

Butter & Cancer

In the 1940's research indicated that increased fat intake caused cancer.[5] The abandonment of butter accelerated; margarine--formerly a poor man's food-- was accepted by the well-to-do. But there was a small problem with the way this research was presented to the public. The popular press neglected to stress that fact that the "saturated" fats used in these experiments were not naturally saturated fats but partially hydrogenated or hardened fats--the kind found mostly in margarine but not in butter. Researchers stated--they may have even believed it--that there was no difference between naturally saturated fats in butter and artificially hardened fats in margarine and shortening. So butter was tarred with the black brush of the fabricated fats, and in such a way that the villains got passed off as heroes.

Actually many of the saturated fats in butter have strong anti-cancer properties. Butter is rich in short and medium chain fatty acid chains that have strong anti-tumor effects.[6] Butter also contains conjugated linoleic acid which gives excellent protection against cancer.[7]

Vitamin A and the anti-oxidants in butter--vitamin E, selenium and cholesterol--protect against cancer as well as heart disease.

Butter & the Immune System

Vitamin A found in butter is essential to a healthy immune system; short and medium chain fatty acids also have immune system strengthening properties. But hydrogenated fats and an excess of long chain fatty acids found in polyunsaturated oils and many butter substitutes both have a deleterious effect on the immune system.[8]

Butter & Arthritis

The Wulzen or "anti-stiffness" factor is a nutrient unique to butter. Dutch researcher Wulzen found that it protects against calcification of the joints--degenerative arthritis--as well as

hardening of the arteries, cataracts and calcification of the pineal gland.[9] Unfortunately this vital substance is destroyed during pasteurization. Calves fed pasteurized milk or skim milk develop joint stiffness and do not thrive. Their symptoms are reversed when raw butterfat is added to the diet.

Butter & Osteoporosis

Vitamins A and D in butter are essential to the proper absorption of calcium and hence necessary for strong bones and teeth. The plague of osteoporosis in milk-drinking western nations may be due to the fact that most people choose skim milk over whole, thinking it is good for them. Butter also has anti-cariogenic effects, that is, it protects against tooth decay.[10]

Butter & the Thyroid Gland

Butter is a good source of iodine, in highly absorbable form. Butter consumption prevents goiter in mountainous areas where seafood is not available. In addition, vitamin A in butter is essential for proper functioning of the thyroid gland.[11]

Butter & Gastrointestinal Health

Butterfat contains glycospingolipids, a special category of fatty acids that protect against gastro-intestinal infection, especially in the very young and the elderly. For this reason, children who drink skim milk have diarrhea at rates three to five times greater than children who drink whole milk.[12] Cholesterol in butterfat promotes health of the intestinal wall and protects against cancer of the colon.[13] Short and medium chain fatty acids protect against pathogens and have strong anti-fungal effects.[14] Butter thus has an important role to play in the treatment of candida overgrowth.

Butter & Weight Gain

The notion that butter causes weight gain is a sad misconception. The short and medium chain fatty acids in butter are not stored in the adipose tissue, but are used for quick energy. Fat tissue in humans is composed mainly of longer chain fatty acids.[15] These

come from olive oil and polyunsaturated oils as well as from refined carbohydrates. Because butter is rich in nutrients, it confers a feeling of satisfaction when consumed. Can it be that consumption of margarine and other butter substitutes results in cravings and bingeing because these highly fabricated products don't give the body what it needs?.

Butter for Growth & Development

Many factors in butter ensure optimal growth of children. Chief among them is vitamin A. Individuals who have been deprived of sufficient vitamin A during gestation tend to have narrow faces and skeletal structure, small palates and crowded teeth.[16] Extreme vitamin A deprivation results in blindness, skeletal problems and other birth defects.[17] Individuals receiving optimal vitamin A from the time of conception have broad handsome faces, strong straight teeth, and excellent bone structure. Vitamin A also plays an important role in the development of the sex characteristics. Calves fed butter substitutes sicken and die before reaching maturity.[18]

The X factor, discovered by Dr. Weston Price (and now believed to be vitamin K2), is also essential for optimum growth. It is only present in butterfat from cows on green pasture.[19] Cholesterol found in butterfat plays an important role in the development of the brain and nervous system.[20] Mother's milk is high in cholesterol and contains over 50 percent of its calories as butterfat. Low fat diets have been linked to failure to thrive in children[21] -- yet low-fat diets are often recommended for youngsters! Children need the many factors in butter for optimal development.

Beyond Margarine

It's no longer a secret that the margarine Americans have been spreading on their toast, and the hydrogenated fats they eat in commercial baked goods like cookies and crackers, is the chief culprit in our current plague of cancer and heart disease.[22] But mainline nutrition writers continue to denigrate butter--recommending new fangled tub spreads instead.[23] These may not contain hydrogenated

fats but they are composed of highly processed rancid vegetable oils, soy protein isolate and a host of additives. A glitzy cookbook called Butter Busters promotes butter buds, made from maltodextrin, a carbohydrate derived from corn, along with dozens of other highly processed so-called low-fat commercial products.

Who benefits from the propaganda blitz against butter? The list is a long one and includes orthodox medicine, hospitals, the drug companies and food processors. But the chief beneficiary is the large corporate farm and the cartels that buy their products--chiefly cotton, corn and soy--America's three main crops, which are usually grown as monocultures on large farms, requiring extensive use of artificial fertilizers and pesticides. All three--soy, cotton and corn--can be used to make both margarine and the new designer spreads. In order to make these products acceptable to the up-scale consumer, food processors and agribusiness see to it that they are promoted as health foods. We are fools to believe them.

Butter & the Family Farm

A nation that consumes butterfat, on the other hand, is a nation that sustains the family farm. If Americans were willing to pay a good price for high quality butter and cream, from cows raised on natural pasturage--every owner of a small- or medium-sized farm could derive financial benefits from owning a few cows. In order to give them green pasture, he would naturally need to rotate crops, leaving different sections of his farm for his cows to graze and at the same time giving the earth the benefit of a period of fallow--not to mention the benefit of high quality manure. Fields tended in this way produce very high quality vegetables and grains in subsequent seasons, without the addition of nitrogen fertilizers and with minimal use of pesticides.

If you wish to reestablish America as a nation of prosperous farmers in the best Jeffersonian tradition, buy organic butter, cream, whole milk, whole yoghurt. These bring good and fair profits to the yeoman producer without concentrating power in the hands of conglomerates.

Ethnic groups that do not use butter obtain the same nutrients from things like insects, organ meats, fish eggs and the fat of marine animals, food items most of us find repulsive. For Americans--who do not eat bugs or blubber--butter is not just better, it is essential.

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According to a study published in The Lancet, we are living in a sick world. Over 95% of the world population has health problems, with over a third having more than five ailments. Just one in 20 people worldwide (4·3%) had no health problems in 2013.

The findings come from the largest and most detailed analysis to quantify levels, patterns, and trends in ill health and disability around the world between 1990 and 2013.

Happiness lies first of all in health. Failing on health front means we fail on every other front.

Here is the cause of our downfall. We think we are too smart and so we have thrown the traditional knowledge out the window. But if we are so smart, why do we find ourselves in such a terrible predicament today? Our species is facing a barrage of extraordinary and complex problems for which we have no feasible solutions.

The irony is that these problems exist because our cleverness, our being so smart, created them. Our activities, clever as we have thought them to be, are the causes of the problems, which, collectively, threaten the very existence of humanity! Irony is, we are only smart enough to create the problems, but we're not smart enough to fix them.

Some one has rightly said, "In the end, cockroaches would prove to be more intelligent than humans if humans destroy themselves. Intelligence is really a survival skill for the entire species and that which survives proves intelligent on a species level."

Our greatest failings have been in the areas of food and health. This is because, out of arrogance, we have chosen to ignore the collective wisdom of countless generations. Instead, we have chosen to follow the fallible wisdom of modern doctors and unscrupulous food companies. We have reposed our trust in nutritionists, supplement makers and celebrities, rather than our moms and grandmoms.

This book discusses the vital role of ghee or clarified butter in maintaining the health and vitality of the human race. Only recently we have 'discovered' that dairy fats are bad for us. But for thousands of years, countless civilizations have survived on them. Civilizations tends to get rid of foods that are harmful, and that the dairy fats made it through these civilizations, conveys some truth in the matter.

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