

CHAPTER 1

Fat Is Your Friend

Some of the information I share with my patients surprises them. After listening to their concerns for a while, I may, for instance, ask, “Did you know that *fat* is one of the key ingredients in the fountain of youth you’re seeking?”

At this point, they typically look back at me incredulously. Their eyes open wide, and then there is a chuckle. Finally they come to the realization that I am being serious.

When my patients ask me my age, I reply that I am in my forties. Because I look about half that age, knowing my age helps them start to believe that maybe I do have some answers on how to slow down or reverse aging. Some people get confused when they see my super-thin frame, which has hardly an ounce of fat on it. “But you are very thin,” they point out. “How can fat possibly be the fountain of youth?”

I reply, “The fountain of youth is not the fat on your body. It’s the fat in your face!”

The Fat Story

The world has become downright fat phobic. This is due, in part, to scientific evidence that obesity (excessive stored body fat, especially in the area of the belly) may be responsible for diseases ranging from heart disease to diabetes and some forms of cancer. In response, some people have declared a fight against fat and refuse to consume it. Many people believe that the fats in our food turn into fat on our bodies. With so many people in this country struggling with being overweight and the corresponding health issues, it is no surprise that many feel an animosity toward dietary fats, which they were taught in the past were their enemy. But this is a misconception. Obesity doesn’t result exclusively from overconsumption of a single nutrient.

Fortunately, in recent years we have learned that not all fats are unhealthy to eat. In fact, there are even “good fats,” such as those found in salmon and other oily fish, walnuts, flaxseeds, avocados, and olive oil. Good fats aid in metabolic processes, help fight off diseases, and are essential for the health of the human body. Fats help improve the functions of different organs and systems of the body, including:

- **The brain:** Fats make up 60 percent of the brain and are essential to several brain functions, including learning, memory, and mood. Fats are especially important for women to eat during pregnancy, as they are essential for the development of the fetal brain.
- **The cells:** Fatty acids on the cells' surfaces help them to stay flexible and are responsible for building cellular membranes.
- **The nerves:** The material that insulates and protects the nerves is composed of fat. Fat aids in isolating their electrical impulses and speeding up the transmission of signals from parts of the body to the brain.
- **The eyes:** Fat cushions and protects the eyes, and it is essential for their optimal functioning.
- **The heart:** Specific fats are essential to help the heart beat in a regular rhythm. Sixty percent of the heart's energy comes directly from burning fat.
- **The lungs:** Saturated fats are essential for the production of the lung surfactants that keep the lungs from collapsing. These fats come from sources such as chicken, red meat, dairy, coconut oil, and palm oil.
- **The digestive system:** Fat slows the digestive process so that the body has more time to absorb required nutrients. Also, vitamins A, D, E, and K actually require fat for absorption.
- **The immune system:** Inflammation, which plays a huge role in aging, is attenuated by fat, which helps the immune system and the metabolism to function properly.
- **All internal organs:** Omental fat (the kind that is stored within the tissue that supplies your intestines with blood) protects and cushions all internal organs.

As you can see, fats play an integral role in the well-being of the human body. They protect internal organs by providing energy, fueling building blocks for hormones, and by absorbing fat-soluble vitamins. That being said, an accumulation of fat in the body generally reflects an unhealthy lifestyle (inactivity and/or overeating) or a genetic predisposition to put on padding. Unhealthy weight, especially fat stored in the belly, is considered a harbinger of potential medical problems and is not aesthetically pleasing.

Interestingly, however, facial fat is one of most important tissues that affect the aging face. In recent studies, the medical community has found that deep subcutaneous facial fat gives the face its youthful position, contour, and dimensions. Facial fat is critical in slowing down the morphological changes that occur to our faces over time. When we lose too much facial fat, we begin to look gaunt and aged.

You can appreciate the value of fat in a person's face when you see people who have lost a lot of weight. Their bodies may look amazing, but their faces look as if they have aged significantly. For all these years, most of us have been trying to keep our body fat percentage at a minimum without knowing that our faces were being negatively affected. Indeed, it is ironic that much-hated fat is actually what maintains our youthful features and keeps us from running to a plastic surgeon.

Unfortunately, each of us has an internal clock on our facial fat cells that determines how soon

they will start disappearing and thereby cause the volume depletion of our faces. Some of us, due to genetic factors, will lose our facial fat cells slower than others. This is why some people, even those with sun-damaged skin, can appear younger than their peers of the same age; and why those who “do everything right” age drastically fast.

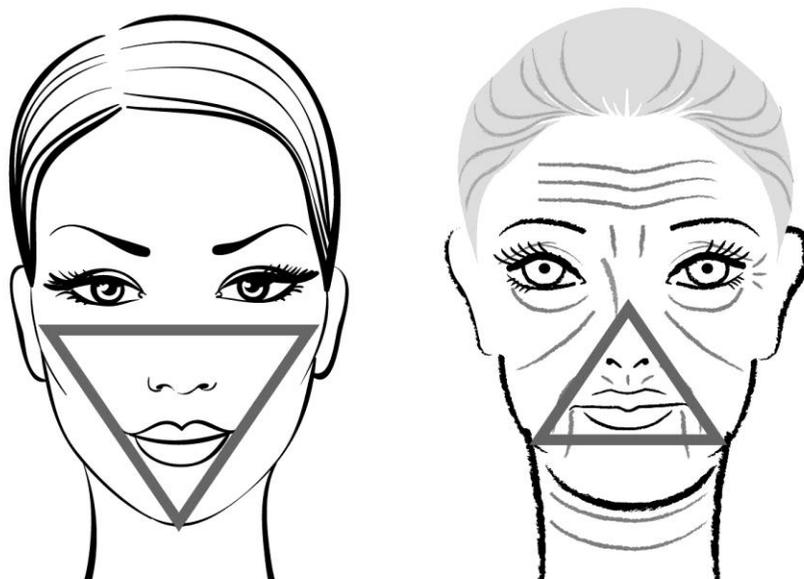
Another factor that affects facial fat cells is the pressure we put on our faces when we are sleeping. If we favor one side of the face while sleeping, that side of the face will always appear older than the other. This is because the side of the face that is pressed down on the pillow or arm is not getting the same amount of oxygen and nutrients as the other side. The fat cells of the affected area become starved, then begin to deflate and eventually vanish. This is how I can tell which side of the bed a patient sleeps on. The affected side appears pushed back and droops while the unaffected side tends to look plump and younger.

During consultations, I usually lift up a mirror to demonstrate how one side of the face looks younger, while the other side has deeper nasolabial folds (lines from the corner of the nose to the corner of the mouth) and fleshier jowls. Patients tend to be unaware of the different rates of aging because they are usually only focusing on the secondary effects of losing fat volume on their faces. Since symmetry equates to beauty, if you have an asymmetrical face it is robbing you of your natural beauty and attractiveness.

The Triangle of Youth vs. the Pyramid of Old Age

The face can be divided into thirds: an upper third, a middle third, and a lower third. During our youth, there is a smooth transition of the tissues from one area to the next. As we age, we begin to lose the strategically placed facial fat that serves as a scaffold for the structures above it. The skin also begins to show a loss of elasticity and a decrease in thickness, rendering it unable to accommodate the volume loss in the underlying tissues. The smooth transitions we once enjoyed become bumpier. This is the beginning of the aging process. We look aged when we no longer have the same facial contour that we had in our twenties and thirties. Of course, this is just the softer appearance of being middle aged. An elderly face comes later with bone loss.

In our youth, the widest part of the face is the area beneath the cheekbones that narrows down to the chin like an inverted triangle. This area is known as the *triangle of youth* (see figure 1a below). With age, the forehead narrows due to temporal atrophy; it also elongates, causing the brow line to drop. The lower face widens due to volume loss in the flesh over the cheekbones, leading to sagging and jowling. The jawbone also gets remodeled and parts of its mass are reabsorbed. All of these changes causes the triangle of youth to become the *pyramid of old age* (see figure 1b below).



Figures 1a and 1b. The triangle of youth (**figure 1a**) is delineated by the cheekbones and chin. The pyramid of old age (**figure 1b**) is delineated by the two sides of the jawbone below our ears and the center of the forehead.

Every structure in the human body is interconnected. Changes in individual tissues are interrelated; alterations in one type of tissue (for example, fat, bone, skin, or muscle) lead to modifications in the other types of tissue. The whole collection of changes is what causes a change in an individual's overall facial appearance as he or she ages. For example, volume loss of the deep midfacial fat results in decreased support of the medial cheek compartment. This results in a diminished midface projection (in other words, a flattening of the face) and the unmasking of nasolabial folds. This occurs because the malar fat, or mid-cheek fat, seems to slide forward and down with age. These phenomena, combined with gravity, create a negative vector—a downward force—in which excessive traction is placed on the skin of the lower eyelid, causing it to lengthen and lose elasticity.

Because of the way fat is originally located in our faces, in youth we are given the well-rounded, three-dimensional topography that we desperately seek to maintain as we get older. This subcutaneous facial fat is partitioned into discrete compartments that age independently from one another. For this reason, it is possible to see a decrease in the volume of facial fat in some areas and an accumulation of fat volume in others. As time goes by, transitions from one part of the face to the others get disrupted, creating shadows and malpositioning of the defining arcs of a youthful face. The fullness and roundness of the face gets broken up into uneven planes, creating a more drawn and aged appearance.

Ultimately, bone loss due to reabsorption leads to the pyramid of old age, in which there is a sagging downward descent of facial soft tissues that drape around the mouth.

The Old “Old Face” Method

It was long theorized that facial aging was due to the relaxation of facial muscles. Therefore many surgical techniques and devices were created to tighten or shorten the facial muscles in order to rejuvenate the face. Different books and videos were sold that suggested electrical currents could be used to tone facial muscles. However, this theory had a critical flaw evidenced by observing patients with facial paralysis. The folds around the mouths, eyes, and between the eyebrows of those with facial nerve paralysis tend to soften and appear younger on the affected side. In addition, Botox® improves the appearance of wrinkles and creases by relaxing—not tightening—muscles around the eyes, between the forehead, and on the neck.

As a child, I remember my mother and grandmother doing all kinds of facial exercises—none of which seemed to help stop the aging of their faces. The Internet is full of sites claiming that isometric facial exercises that stimulate muscle tone prevent facial wrinkles. However, a study published in the *Journal of Aesthetic Plastic Surgery* by Le Louarn and colleagues (2007) suggests that repeated muscle contraction of the facial muscles actually can expel fats from deep compartments below the muscles into other compartments overlaying the muscles, causing malposition of facial fat, straightening and shortening of facial muscles, and overall decreased muscle tone. They also conducted MRI studies that examined the association of facial fat and muscles in people of various ages. This showed that the position of the fat determines the shape and subsequent action of the muscle. In addition, the MRI data also revealed that facial muscles have a curvilinear convex contour because of the underlying facial fat.

The authors of this study theorize that the acquired shape of the facial muscles, due to the underlying fat, dictates both the direction and amplitude of muscle contractions that are characteristic of a youthful facial expression. As we age, these muscles gradually straighten, shorten, and become more flaccid due to the volume depletion of the underlying fat. This is consistent with the earlier statement that changes in an individual tissue will lead to changes in other types of tissues, affecting an individual’s overall appearance as he or she ages.

Other studies using MRI scans have found no difference in overall facial muscle thickness, length, or volume in patients over fifty-nine years in age and those between sixteen and thirty. Additionally, we know that using Botox to prevent the movement of facial muscles proves to be far more effective in preventing aging than the daily routine of exercising these muscles. It is the movement of these muscles during everyday living that contributes to the formation of the lines in the first place. The constant rubbing, pulling, and dragging of the skin in daily life causes mild inflammation. This, in turn, affects the integrity of the existing collagen and elastic fibers in the dermis, resulting in a less elastic, thinner, and dryer skin as time passes.

The use of muscle-toning systems tends to come in and out of style every so often. I can remember purchasing a device endorsed by actress Linda Evans that looked like a scary mask. It had a few metal contact plates that caused an electrical current to stimulate the facial muscles in a rhythmic pattern. I was able to control the intensity of the current and the pain threshold levels. Although I used it religiously for a few weeks, I never saw the improvements that were promised. The erroneous premise was that the aging process causes muscles to sag and lose their tone, leading to a dull, aged, and inelastic skin, so toning the muscles underneath the skin would reverse the process and lead to smoother, younger-looking skin. But there is little evidence that this approach to antiaging is effective.

Continuing my research, I also came across facial weights for muscle toning and development. The premise for the invention I tried was that by using steel-bead weights on the face and following up with a resistance exercise routine, the facial muscles could be toned and developed. Although there have been reports of facial weights helping people recover from facial paralysis and facial trauma, infection, and surgery, there is no data to support the notion that facial weight-resistance exercises improve the appearance or prevent the look of aging.

From the bizarre to the ridiculous, I have found devices that promise a non-surgical “facelift” via electric current stimulation. Their manufacturers all swear that the loss of muscle tonicity and mass are one of the major causes, if not the major cause, of aging and the sagging of facial skin. Old “Old Face” methods of treatment were all about muscle tone and mass, but New “Old Face” methods are about preventing volume loss of bones and facial fat compartments.

The New “Old Face” Method

For years it was believed that the human face could be restored to a more youthful state by subtractive methods, such as the removal of fat and skin. The surgery consisted of removing excess sagging skin and fat pads, and then pulling the tissues tightly. The aim was facial tightening. Unfortunately, this approach made older people look like they’d been through a wind tunnel, and announced to the world, “I have had a facelift.” They did not look any younger after their facelifts; they just looked like old people who’d had work done on them. Pulling the skin and underlying tissues tightly over a volume-less face only leads to a cadaveric appearance.

Today’s school of thought about facial rejuvenation is a paradigm shift. The emphasis has departed from the older, subtractive techniques to focus more on restorative methods. The latest techniques are designed to restore facial fat volume and contour the tissues in an attempt to emulate a younger and more natural looking face. The New “Old Face” method is all about fat and volume!

A young face has an ample amount of volume. This can easily be seen in the plump faces of babies. As we get older, however, fat is redistributed in strategic compartments to hold the face up. These fat compartments are independent from one another, meaning that not all will age at the same rate. However, they are also interdependent. Changes in one compartment will lead to changes in other fat compartments, as well as changes in other types of tissues.

Facial fat loss is highly individualized. Several factors determine how soon the fat on our faces vanishes. I have noticed that patients who have better volume in their faces always appear younger looking, even without having had any procedures.

But lifestyle can damage fat stores. Marathon runners and triathletes, who are constantly exerting themselves physically, have very little body fat. People who favor one side or lying face down on the mattress while sleeping can deplete the fat cells in one area. People who are wheelchair-bound or bedridden, for example, often have problems with bedsores. When very little oxygen or nutrients is flowing to a tissue, it causes that tissue to starve and begin to disappear. Although most of us do not spend enough hours lying on our faces at night to get bedsores, it still makes a difference. I call the appearance of having slept on one’s face the “thumb-print sign” because the nice apples of the face in time become so flat and gaunt that it almost looks like someone has used his or her thumbs to push them in—like you would with clay.

For years, I have been educating my patients about the theory that fat keeps our appearance youthful. It is not hard to get them to agree with me because it's pure physics and biology 101. While there are other factors that affect the aging of our faces, none has the power to slow down the clock like facial fat and bone. Look at a picture of your grandparents when they were younger and to compare it to how they look now or right before they passed away. Obviously, there were pronounced changes in the morphology of their faces between the first and the second photos.

We can look at people and categorize them at a glance as either "young" or "old." When my grandmother was young, she was one of the most beautiful women you would ever see. Before she died, however, she began to look a little "witchy." If it were not for her beautiful hazel green eyes you could hardly have told that it was the same person. How did she change so drastically? The answer is that as her facial fat began to disappear and was redistributed according to the law of gravity. Bone resorption also took place. Volume loss and redistribution of fat are signs that other changes in the face, such as bone resorption, muscle lengthening, and skin flaccidity, are soon to follow.

Women need to be more vigilant than men about such changes due to the effects of menopause on the bones, collagen fibers, and elastic fibers of the skin. Fat loss starts taking place in women around the thirties, which is why I make a point to educate women of this age that come to see me for treatment about preparing ahead of time for the impact of menopause. No matter their age, but especially when they have the advantage of their youth, women need to do weight-bearing exercises and eat a balanced diet that will help them to increase their bone density and maintain an ideal body weight. They also need to avoid smoking, excessive sun exposure, and if possible, sleeping on their faces. In other words, they need to be vigilant in avoiding a deficit of any body tissues before they get to menopause.

Men also go through morphological facial changes as they age due to not having enough facial fat, though not at the same rate as women. It cannot hurt us to be diligent in our self-care either.

The deep fat compartments under the midfacial muscles are what give them their curvilinear round contours. At the widest part, they form what we call the apples of our faces. Over time, these fat stores start to taper off. With the help of gravity, the muscles start to lose their shape, and the face elongates and deflates like a balloon. The nice apples of the cheek then look more like saggy pancakes. Fat loss leaves the face looking flat or hollow and accentuates the lines known as nasolabial folds, which run from the sides of the nose to the corners of the mouth.

When I see patients who are mainly bothered by their deep nasolabial folds, I always take a close look at their cheeks. If I see that their folds are due to having faces that are deflating and dropping, I will not try to correct folds using fillers. Instead, I educate them using a little bit of physics. Imagine that your face is coming down and I add more weight to it. I would be helping gravity to create a downward vector that would accelerate the aging process. I see many patients that had done just that. After my explanations, they understand why they still do not look rested or younger after filling their lines. I will only fill these lines if they have a good midfacial volume. Otherwise, I correct the volume loss, and the nasolabial folds disappear right before their eyes without using any filler.

When we start to lose our mid-facial fat, we create a vertical downward negative vector that leads to excessive traction on the lower eyelid. This eventually leads to sclera show, a condition in which your lower lid drops and reveals more of the white part of the eye. This phenomenon is known as V-shaped deformity of the lower eyelid. Studies show that as we age there is a loss of elasticity of the fragile skin around our eyes. It's like having an old sock that has lost its elasticity from constant pulling and keeps

slipping down around one's ankles. In order to prove this theory, scientists conducted a study that concluded that when medial cheek elevation was restored with fillers there was an improvement in the rapid return of the lower eyelid skin after being pinched. Pinching flesh in this manner is called a snap test.

I observe this phenomenon every day in my practice. When you improve the volume of a sunken cheek with filler you also improve the skin elasticity in the eye area and the skin around the mouth, jawline, and upper neck. This again evidences that our facial tissues are interdependent; changes in one affect the others.

Other strategic areas of importance for fat and tissue loss, especially for women, are the temples. These are often neglected or ignored, but they play an important role in preventing facial aging. As we age, the temples become increasingly hollow, making the forehead appear narrower—one of the signs of the pyramid of old age. This creates a negative vector that causes the upper eyelid to drop. This is also the reason why our eyes seem to get smaller and smaller as we age. When this ignored area of the face is finally addressed, it has a big impact in the rejuvenation of the face.

Several processes contribute to jowl formation. Ironically, it has to do with not enough *and* with too much facial fat all simultaneously. Have you ever heard the term *skinny-fat*? I have always felt that way. I am extremely thin, yet I can accumulate excess fat around my waist if I don't watch it. The same notion applies to the face. The face loses fat in certain areas, but it can accumulate some in others.

A similar process occurs with jowl formation. When the buccal fat around our mouth dimples starts to diminish in conjunction with the preauricular fat (the fat on the edges of the face right in front of the ears), it creates a forward movement of the face. Adding the downward and forward vectors of temporal wasting, the superficial fat accumulation along the jawline causes the chin to become the widest part of the face. In addition to all of these soft tissue changes, we also see bone loss and a repositioning of the chin and the jawline. A deficit in skeletal thickness and bone density further distorts the ratio of a youthful face.

The malar fat pad (the small area of fat that sits right above the cheekbone and under the lower eyelid like a small pillow), slides forward and downward and bulges against the nasolabial crease as we age. This, in turn, causes the under eye area to protrude due to fat pouch accumulation in this region.

It is not a secret that our eyes are floating around in fat. The eyes sit inside a bony socket that encloses a space known as the orbit. The border of this bony socket is called the orbital rim. In addition to the eyeball, the orbit contains an array of tiny muscles, blood vessels, and nerves that allow for the proper functioning of the eyes. Surrounding these structures sits the orbital fat, which is a sort of padding that protects and cushions all these delicate structures. Any process that depletes or disturbs the orbital fat is bound to have negative consequences in the appearance of the eye area. You can see, for example, that extremely malnourished people with little fat mass in their bodies tend to have a sunken and gaunt appearance around their eyes.

The ocular fat compartment is not immune to the loss of soft tissue fullness that comes with aging. As the orbital fat compartments begin to vanish, a person starts to appear tired and older. Later, the eyes become hollow and cast shadows, making the skin appear darker and indented. Finally, the atrophy of this fat compartment is so severe that sometimes you can actually see the orbital rim itself, giving a skeletal appearance to the face.

In the past, plastic surgeons often removed orbital fat during surgery (also known as blepharoplasty). This left their patients worse off than before. Unfortunately, this subtractive technique left many patients with very hollow looking eyes. At present, most plastic surgeons practice tissue-sparing techniques. Bulging fat is usually carefully returned to its normal anatomic compartment, making fat removal unnecessary. Excess fat removal and repositioning is now left for those patients who tend to suffer from extreme fat herniation under their eyes.

Facial fat is the master tissue that holds the secrets of a youthful face. Each one of us will lose facial fat according to our genetics, gender, and lifestyle. In addition, fat loss is highly individualized among compartments in the face. Each compartment will lose volume independently of the others, potentially leading to asymmetry of the face. This also causes the outer envelope of the face to fold or sag, regardless of how well someone might have taken care of his or her skin. This illustrates how changes in facial fat may influence changes in other tissues such as skin and muscle, and possibly bone. The New “Old Face” method is all about the appreciation of the importance of facial fat.

Although our culture has become increasingly fat phobic, we are now preaching the importance of fat as the most powerful weapon to slow down the clock. The awareness of the importance of facial fat may aid young women and men who suffer from eating disorders, including teenagers, to understand that a certain amount of fat in the body is healthy and necessary to maintain youth and vitality. As a former male model who earned a living doing underwear catalogs, I became obsessed with my weight. I tried to keep my body fat extremely low even though I was already thirty pounds underweight.

At six feet tall and weighing 135 pounds, I was unhealthfully thin. My abs, however, photographed great! Losing my abs represented losing my income. I was surrounded by young men and women who would do anything to be skinny for the same reasons as me. When you are young and obsessed with fat, it can easily lead to an unhealthy way of living that creates a recipe for disaster. Once you enter into this world, however, it can be difficult to get out. The more emotions that you attach to it, the lower you slide down the emotional grading scale. For those who hit rock bottom, it can sometimes even lead to fatal results. I hope that by creating a healthy awareness of the importance of fat in the aging process, I may help in my own small way to eliminate eating disorders. After all, most people would rather be a little overweight than look old.