

Bovine Colostrum and Anti-Aging Skin Care *From the Inside Out*

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Society reinforces the idea that looking young is desirable and signals health, and wrinkles are undesirable and signal getting old. Cosmetic manufacturers capitalize on our collective vanity, as evidenced by the endless products to choose from with new ones coming out as often as the seasons change. Current cosmetic procedures and topical treatments approach anti-aging from the perspective of *outside in*. There's no doubt that this approach does have some success; Botox and surgery do smooth out the skin; make-up does cover the blemishes. Yet, an approach of *inside out* may actually be more effective for natural anti-aging of the skin. Healing what ails you on the inside may have the beneficial side effect of healing you on the outside. Some people just seem to look ageless, even without cosmetic surgery. They never get pimples or wrinkles or age spots, and they look young naturally. Whether it's genetic or something else, we envy them.

What most people don't realize is that skin aging is more complex than just "skin deep". In fact, it goes much deeper -- all the way to the gastrointestinal tract. Many skin conditions, such as eczema, psoriasis, rosacea, and acne are representative of internal health issues. Research with bovine colostrum has led to this significant discovery which is sure to turn the nutraceutical and cosmeceutical industries upside down.

The Outward Signs of Skin Aging

Decreased skin elasticity (sagging skin and wrinkles) is the hallmark sign of skin aging. Skin primarily consists of two proteins, collagen and elastin. Collagen's three-stranded helical shape is what accounts for the skin's strength, firmness, and elastic properties. Elastin, by virtue of its name, contributes the most to the skin's elasticity; it allows skin to quickly return to its normal position after it has been depressed or pulled out of place. As skin ages, it takes longer to return to its normal position.

The ability of collagen and elastin to function properly declines with age, due in large part to one's genetic make-up. However, there are some behaviors that accelerate loss of elasticity, skin sagging, and eventually create wrinkles. These include smoking, exposure to U.V. radiation, stress, insufficient good quality sleep, and a high sugar diet. Even if one leads a healthy lifestyle by staying out of the sun, not smoking, avoiding stress, getting eight hours of sleep every night, and never eating refined sugars, one still has to contend with his/her genetic make-up.

Aging skin also reveals shrunken capillaries which result from arteries clogged with cholesterol and calcium deposits. Arterial flexibility throughout the body decreases with age, and there is compromised blood flow to the periphery, particularly the skin. Reduced blood flow means less

oxygen and nutrient delivery to the skin. A healthy diet packed with antioxidant-rich fruits and vegetables won't be as beneficial if the vitamins and minerals can't reach the skin cells.

Wrinkle Creams CAN'T Work

Cosmetic surgery is highly effective in smoothing out facial wrinkles, but what about the person who wants a natural look without the risks of surgery and prefers to age gracefully? Many women look to anti-wrinkle creams for help. Skin creams promise to minimize the look of fine lines and wrinkles, and they do to some extent, but they do not treat the underlying cause – loss of elasticity. Moisturizers hydrate the outer layer of skin (epidermis) which plumps up the skin, making fine lines less visible to the naked eye. Hydrating a wrinkle is not the same as healing a wrinkle. Any nutrients in the creams which might otherwise stimulate skin cell repair and growth cannot reach the inner layer of the skin (dermis). In order for any substance to effectively heal a wrinkle, it must contain phospholipids as a nutrient delivery mechanism. Liposomal Delivery is highly effective in migrating healing components from the epidermis to the dermis, yet very few products utilize this technology.

Skin Aging Caused by Failed Detoxification

Living a healthy lifestyle can't always combat external environmental factors either, and so the liver and skin have a role in the aging process. As the largest detox organ in the human body, the liver filters out all the bad stuff that gets absorbed by the body, from alcohol, to chemicals in processed foods, to second hand smoke, to pollutants in the air we breathe. When the liver is unable to keep up with all these insults, the second largest detox organ in the body, the skin signals that something is amiss. Skin eruptions, blemishes, acne, eczema, psoriasis, and jaundice are signs of failed detoxification in the liver and an overall indicator of one's internal health. Chronic constipation is also a sign of internal toxicity which reveals itself on the skin.

Skin Aging Caused by Telomere Death

It's been hypothesized that telomeres are the key to aging by the role they play in maintaining the structural integrity of chromosomes (DNA). In the case of skin, telomere length determines the number of times that a skin cell can divide. As DNA strands become shorter with aging, they eventually become too badly damaged to replicate new skin cells, and youthful looking skin is replaced with fine lines and wrinkles.

Leaky Gut Syndrome Mechanism of Skin Aging

Failed detoxification by the liver is the result of Leaky Gut Syndrome. The abnormally large spaces between cells that create the lining of the gastrointestinal tract allow toxic material to escape the confines of the GI tract. In other words, the "brown river" (the GI tract) leaks into the "red river" (the bloodstream), and the results of this spill are toxic (cause disease). Skin problems are an outward sign that an individual has Leaky Gut Syndrome.

Leaky Gut Syndrome is characterized by inflammation of the lining of the gastrointestinal tract which is essentially made up of skin cells. The inflammation has numerous causes, including the biggest offenders which are self-inflicted gut irritants -- antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs), and prescription pain medications. Coincidentally, repeated

antibiotic use during puberty to get rid of acne causes or exacerbates a leaky gut and perpetuates the problem later in life.

Healing a leaky gut follows the *inside out* approach to skin care. The inflammation of the intestinal skin cells must be attenuated in order for healing to occur. A healthy, non-leaky gut is important because it is efficient at absorbing antioxidants, particularly minerals that are essential to healthy skin cells. The essential mineral silicon improves skin texture and thickness and plays an important role in stimulating collagen formation, which is important for strength, firmness, and elasticity of the skin. Research shows that supplemented silicon can significantly improve photodamaged (sun-damaged) skin.¹ The key point to remember, however, is that supplementation with anti-oxidants or even a high anti-oxidant diet to feed the skin is nearly worthless if the gut remains leaky. Bovine colostrum, to be discussed in greater detail, heals Leaky Gut Syndrome.

The Hormonal Mechanism of Aging

After maturity and around age twenty, the body's production of growth hormone steadily declines. Growth hormone is essential for reproduction and maintenance of nearly all structural cells in the entire body. This includes muscle, bone, as well as skin. This steady decline in growth hormone is normal, about 12% per decade after middle age and by age sixty, the body secretes very little growth hormone. By the time women reach middle age, their growth hormone levels are up to 70% less than adolescent females. A significant reduction in growth hormone production accelerates the aging process, and mortality ensues. Perhaps the most effective anti-aging process would be simply the replacement of growth hormones at proper levels to slow, possibly stop and even reverse aging. Researchers will continue to debate growth hormone as the Fountain of Youth.^{2,3}

Additionally, aging brings functional changes to the immune and endocrine systems. Immune system function declines with age, and by age sixty-five, the thymus gland and T-cells' ability to respond aggressively and effectively to harmful pathogens is reduced by half of its optimal level. Unhealthy behaviors, such as smoking, poor nutrition, and U.V. light exposure, only compound the problem. The endocrine glands, specifically the pancreas and adrenal glands, alter the otherwise optimal levels of circulating hormones. Decreased insulin production affects blood glucose homeostasis; the corresponding rise in glucose levels increases the risk of type 2 diabetes. Increased cortisol production as a result of the body's response to stress causes inflammation, thereby weakening the immune system, increasing wound healing time,⁴ and decreasing bone formation.⁵ Over time, high levels of cortisol can directly destroy collagen; in laboratory rats, cortisol-induced collagen loss in the skin is ten times greater than in any other tissue.⁶

Colostrum as Mother Nature's Gift

Colostrum is the first food for all mammals, including humans. It provides passive protection to a newborn against enteric pathogens, primarily via the transfer of antibodies (against bacteria and viruses) and growth factors for optimal growth and development. The beneficial components in bovine colostrum are nearly bio-identical to that found in human colostrum, such that it is a

natural way to replace the declining levels as one ages. Although consumption of human colostrum has been practiced in some cultures throughout the centuries, bovine colostrum is more in line with social norms and is widely available in powdered form. “*Taken as an adult, it will turn back the clock on the entire body*”.⁷ The telomerase in colostrum literally makes our DNA younger. This enzyme prevents DNA strands from shortening, thereby allowing identical, undamaged skin cells to replicate over and over. Even more significant is the fact that colostrum is the only known natural source of telomerase. Components in colostrum also improve artery health for improved blood flow. Epithelial/Epidermal growth factor (EGF) and Insulin-like growth factor (IGF-1) repair and regenerate cells which comprise the arterial walls and the ACE inhibitory peptides (casokinins and lactokinins) exert an anti-hypertensive effect.⁸

Colostrum’s Leaky Gut Anti-Aging Benefits – Healing from the Inside Out

Colostrum contains growth factors which help heal a leaky gut. Epithelial/Epidermal growth factor (EGF) is particularly important in closing the holes in the gastrointestinal lining. All mammals receive EGF from their mother’s colostrum and breast milk which closes up the holes as offspring grow and develop. When bovine colostrum is taken as a nutraceutical, EGF acts to close the holes that developed as a result of repeated gut irritation.

Another major benefit of colostrum, specifically the lactoferrin it contains, is that it possesses anti-inflammatory action. Current theory holds that inflammation, caused by an overactive immune system, is the underlying influence on skin aging, as well as many other chronic and auto-immune diseases. So, in order to have healthy looking skin, inflammation must be quelled. Lactoferrin tones down the immune response (inflammation) in the skin cells, and although skin cells normally produce their own lactoferrin, supplementing with exogenous lactoferrin will further increase the anti-inflammatory response.⁹

Colostrum’s Hormonal Anti-Aging Benefits – Healing from the Inside Out

Bovine colostrum is the all-natural solution that returns elasticity to the skin, thereby reducing the appearance of fine lines and wrinkles. Colostrum’s growth factors and anti-aging growth hormone (HGH, or human growth hormone) aid in cellular regeneration when used on a daily basis. These chemical messengers stimulate cell growth in the dermal layer of the skin which in turn, improves skin thickness and elasticity. Such newly regained resilience provides the “new skin” look of one’s youth.

Supplementing with colostrum supplies the body with hormonal growth factors and stimulates the endocrine system to continue producing hormones at a more “youthful” quantity. Although human growth hormone has garnered the headlines for being the “ultimate anti-aging hormone”, it is really a growth factor -- Insulin-like growth factor (IGF-1) -- that is the real superstar. Growth hormone does not possess anti-aging properties in and of itself. Instead, growth hormone stimulates IGF-1 production in the liver which is responsible for cellular repair and reproduction in all the body’s tissues. IGF-1 also stimulates the growth and repair of DNA and RNA. Colostrum does not contain high levels of growth hormone, but is an abundant source of IGF-1. Regular bovine colostrum supplementation returns IGF-1 to pre-puberty levels.

Epidermal/Epithelial growth factor (EGF) is also a critical component in colostrum which reverses the signs of skin aging. Also very abundant in colostrum, EFG repairs skin damage resulting from normal aging to damage caused by the sun, chemical burns, lacerations, or puncture wounds. Growth factors, as the name implies, encourage cells to accelerate their capacity for repair and replication, thereby more quickly replacing old layers of skin with new ones. This is the same mechanism by which Retin-A and other retinol-type skin products work.

To a lesser extent, but also very important, Transforming growth factors (TGF- α and TGF- β) promotes cell proliferation, tissue repair and maintenance, especially in wound healing. Fibroblast growth factor (FGF) stimulates new blood vessel growth which contributes to tissue development and wound healing. Platelet-derived growth factor (PDGF) is involved in blood clotting during the healing of vascular wounds.

Daily Nutrition for Feeding the Skin

- 1 tablespoon Colostrum-LD[®] mixed with water on an empty stomach twice daily (first thing in the morning and before bedtime)
- Hyaluronic Acid – 100mg
- Vitamin K2 (in MK-7 form) -- 90-100mcg
- Vitamin D – 2000mg
- Vitamin C – 3,000-5,000mg
- Silica -- 500mg
- Probiotics (10-12 billion of a multi-strain blend) taken every day for the first week and once a week thereafter

Colostrum's Topical Healing – *Healing from the Outside In*

Bovine colostrum is unique in the fact that it is both a neutraceutical (taken orally) and a cosmeceutical (applied topically). Its growth factors are natural, not synthesized, and it heals skin by stimulating cell repair and re-growth. Once again, the lactoferrin in colostrum is able to exert anti-inflammatory activity when applied to the skin surface. Research has shown that topically applied lactoferrin reduces skin inflammation in a dose-dependent manner.^{10, 11} The phospholipids in colostrum and those applied during colostrum processing (i.e. Liposomal Delivery) effectively heal a wrinkle by migrating the growth factors, lactoferrin, and other beneficial substances through the epidermis to the dermis.

As an anti-microbial, lactoferrin destroys the bacteria that cause acne. It does this on contact, and so this treatment is preferable for the occasional adult blemish. It's definitely safer than taking oral antibiotics which upsets the delicate bacteria balance in the gut. Broad spectrum antibiotics kill both the beneficial and harmful bacteria, yet some harmful bacteria survive and develop antibiotic resistance. These can then colonize, eat their way through the intestinal lining, cause or worsen Leaky Gut Syndrome, and get into the bloodstream. Antibiotics should only be used as a last line of defence against bacteria that will otherwise kill you.

Mixing powdered colostrum with water into a paste can be applied topically to help heal minor burns, cuts, abrasions, skin ulcers, acne, surgical wounds,^{12, 13, 14} as well as wrinkles. Applying colostrum after a chemical facial peel will greatly enhance healing and regeneration of new skin cells. We can also look to midwifery which promotes applying a woman's own colostrum to heal chaffed or cracked nipples prior to childbirth.¹⁵

Your Own Colostrum Cosmeceutical

You can turn the neutraceutical colostrum into a cosmeceutical in either of two very simple ways.

Edible Anti-Wrinkle Cream/Mask: Mix 1-2 tablespoons Colostrum-LD[®] with enough water to make a thick paste. Apply to face and/or décolleté and allow paste to dry. Rise with cool water.

An alternative version is to mix 1 teaspoon Colostrum-LD[®] with enough water, olive oil, or coconut oil to easily apply around the eyes at bedtime. Wash face in the morning.

Non-Edible Anti-Wrinkle Cream: Place a normal amount of your favorite overnight moisturizer in the palm of your hand and add 1 teaspoon Colostrum-LD[®] to it. Mix thoroughly to combine and apply to face and/or décolleté as you normally would.

“The future of skin care is going to involve a strategic combination of cosmeceuticals and neutraceuticals to reverse the biological aging process and degenerative skin changes. Bovine colostrum liberates the body from the visual, inflammatory, and hormonal markers of aging.”⁷

The Importance of Quality Colostrum

Bovine colostrum for the express purpose of rejuvenating the skin must (1) contain all the major components in colostrum, especially the growth factors to repair and regenerate skin cells; (2) retain bioactivity even after digestion; and (3) heal Leaky Gut Syndrome. The quality and effectiveness of a colostrum supplement depends on four factors – the colostrum source, processing methods, testing and verification of active components, and Liposomal Enhanced Delivery (LD)¹⁶. Colostrum-LD[®] meets the following standards:

- Colostrum is obtained from pasture-fed dairy cows that are certified to be healthy, BST, BSE, and antibiotic-free.
- Colostrum is flash pasteurized and dried with low heat, as opposed to the high heat of milk pasteurization, which preserves rather than destroys any of the bioactivity.
- Every batch is tested for quality, efficacy and safety in an FDA licensed facility.
- Liposomal Enhanced Delivery (microcoating of every colostrum particle) is applied to ensure the colostrum will bypass digestion and remain bioavailable at the cellular level.

Summary

Anti-aging skin creams have been around for centuries, and the human desire to appear youthful ensures that they will be around for many more. As we understand the connection

between leaky gut and inflammation and undesirable skin conditions, we look to nutraceuticals that will provide *inside out* healing benefits which are safe and all-natural. It's critical that the nutritious, antioxidant-rich foods and supplements we consume have the opportunity to do their job. Healthy eating doesn't do much good if you have Leaky Gut Syndrome. We also want *outside in* healing benefits, so we utilize the cosmeceutical benefits of colostrum. This two-pronged approach will establish bovine colostrum as the true Fountain of Youth.

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