

## The Role of pH

An important balance for health and effective skin care

Lawrence Samuels

Within our body and skin lives a delicate balance between acid and alkali, otherwise known as our pH. A pH number indicates the acidity or alkalinity of a specific solution. The body and skin are very sensitive to their pH levels and have complex systems that work to maintain an acidic pH for the skin and an alkaline pH for the body.

Because the metabolic function of every cell in the body is affected by pH, our survival depends on the body's ability to maintain the correct pH balance (homeostasis). Outside a healthy pH range, the skin loses its ability to protect the body from environmental damage. Enzymes, and even organ systems, lose their ability to function. The pH factor

### Balance

Normal skin pH is somewhat acidic, in the range of 4.5, plus or minus 1.0. It can be different from one part of the body to another, and can also vary due to age, health, and gender, and a person suffering from a skin disease can have a pH above 6. In contrast, the body's internal pH needs to stay in the range of 7.35 to 7.45 for cells to function properly. The proteins in the skin and body are affected by the tiniest changes in pH.

On a daily basis, there are three main forces at work that can influence the pH of the skin and body: Environmental injuries to the skin; the effects of

*"Feeling gratitude and not expressing it is like wrapping a present and not giving it."*

- W. A. Ward

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Skin pH can vary due to age, health, and gender.

affects circulation, breathing, kidney function, liver function, digestion, hormone function, immune system function, and the skin's hydration control and barrier function. The pH equation for health, therefore, is the perfect balance between the body's internal pH and the skin's external pH.

ingested food and liquids; and the waste products produced by the metabolic activity of the cells.

Fortunately, the skin and body have mechanisms to prevent these forces from shifting pH outside of normal ranges. These include chemical

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buffering systems, the elimination of carbon dioxide, and urinary excretion.

## Chemical Buffering

To guard against sudden shifts in pH, the body uses its naturally occurring antioxidants, enzymes, weak acids, and weak bases to minimize changes.

## Carbon Dioxide Elimination

Carbon dioxide is mildly acidic. As it accumulates in the blood, the pH of the blood decreases (acidosis). Elimination of carbon dioxide occurs in the lungs through normal exhaling; the brain regulates the amount of carbon dioxide that is exhaled by controlling the speed and depth of breathing. Thus, an accumulation of carbon dioxide in the blood makes us feel the need to breathe faster and deeper, eliminating the carbon dioxide faster and returning the pH of the blood to a normal range.

## Urinary Excretion

The body's pH is further controlled by the urinary excretion of acids and bases. The kidneys make these adjustments much slower than the lungs, and generally take several days.

## The Acid Mantle Layer

There also are specific mechanisms within the skin to keep its pH at the optimum level. The skin's pH is regulated by its secretions. The pores of the skin are made up of a combination of oil and sweat glands (sebaceous and sudoriferous glands) that help to keep the skin healthy and elastic. Their constant secretions form what is called the acid mantle layer, a combination of sebum (oily fats), proteins, and perspiration that covers the skin's surface.

Besides its role as barrier and filter, the skin is involved in the immune system, temperature regulation, sensation, storage of chemical compounds, elimination of toxins created by cell metabolism, synthesis of molecules, and determination of physical characteristics. Having the correct pH in the skin is critical for these functions to continue unhindered.

## Age-Related Changes

In addition to the many environmental influences that can change the skin, age is one pH-changing factor we'll all

experience. At puberty, when the body starts to produce more hair, the sebaceous glands associated with hair follicles become more active, as do the hormones that control sweating. Both lead to changes in the skin's pH.

In our late teens to early 20s, the acid mantle is well developed and provides good protection against potentially harmful environmental factors.

With increasing age, the skin's pH becomes more neutral. This reduced acidity leaves the skin more susceptible to bacterial growth and infections. The skin weakens as a result and begins developing problems as the efficiency of the pH-regulating system decreases.

The aging process of the skin causes biochemical changes in collagen and elastin. (Collagen gives the skin its firmness, and elastin gives it elasticity.) The rate of loss of skin firmness and elasticity depends on genetics, health, sun exposure, skin care regimen, and other factors.

As the skin becomes less elastic, it also becomes drier. The underlying fatty

tissue begins to disappear, resulting in the skin beginning to sag and wrinkle. At this stage, the skin is more easily injured, heals more slowly, and tends to dry out more quickly.

Ask your skin care therapist about what you can do to maintain your pH and stave off the effects of environment and age.

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Ask your skin care professional how to help balance your pH.

# Sleep and Your Skin

Shelley Burns

We have all encountered a sleepless night or two. Upon waking, we look in the mirror and are traumatized by what we see: puffy eyes, dark circles, droopy eyelids, and sallow skin. To add insult to injury, more wrinkles may be visible due to tossing and turning. Poor sleep can wreak havoc on your skin.

There are three hormones affected when we don't get adequate amounts of sleep. They each have a direct effect on how our skin ages.

- Cortisol is our stress response hormone. When we are not sleeping well, we're like a battery that does not have the chance to recharge. Our body identifies this as a stressful situation and starts producing cortisol. Like a jolt of caffeine, this spike in cortisol keeps us moving, but at a cost. Elevated cortisol levels break down collagen, resulting in less skin elasticity.

- Growth hormone is responsible for building muscle, bone, and tissue--including skin. It is one of our

antiaging hormones that replenishes as we sleep, rehydrating the skin and allowing for cellular repair.

- Melatonin is our sleep hormone, and it also plays a role in the immune system. It is a significant contributor to the functional and physical integrity of our skin.

Without quality sleep, growth hormone and melatonin are not produced in sufficient quantities, while cortisol is overproduced. The result is overall poor skin condition, including dryness, dullness, fine lines, and wrinkles.

Even how you position your face on your pillow affects your skin. Some dermatologists say women who sleep on their side tend to develop wrinkles in their cheeks, while men will tend to develop wrinkles on their forehead. Sleeping on your back will avoid the risk of "sleep lines."

So, get your beauty sleep--at least seven or eight uninterrupted hours every

night--to achieve radiant and healthier-looking skin.



Sleep is important for healthy skin

# Skin Care Fresh From the Farm

Noreen Young

People are seeking beauty with a health twist, not just a product in a pretty jar. They want to see and feel the beautiful benefits when they use a product and know that they're putting the freshest of the fresh on their delicate skin.

A fresh approach to skin care is "in," and my mantra is not all beauty needs to come from a jar. Farmers' markets, organic farms, and health food stores are burgeoning in every city, and the freshest local fruit, vegetables, and herbs are waiting for you.

Here are some simple ways to help your skin benefit from the bounty of the summer harvest.

## SWEET-AS-HONEY FACE MASK

Honey, a humectant and natural antiseptic, softens skin in its own sweet way.

1 soup spoon of honey

Cleanse your face and then wrap it with a warm, damp towel or facecloth (leave room to breathe!). Lie down and relax

for at least 3 minutes. Apply the honey with a spatula on your clean face and leave on at least 10 minutes. Remove the honey mask with a facecloth and warm water. Apply a light moisturizer to your face and neck. Add eye gel or an eye cream.

## SWEET SUGAR SCRUB

1/4 cup sunflower oil

4 tablespoons organic brown sugar

Mix the sugar and oil for a skin-softening exfoliating scrub. Massage this mixture on your skin and leave on at least 5 minutes. This treatment scrub can be used on the face, chest, hands, or feet. Remove with a warm facecloth.

## CUCUMBER EYE PAD WITH A LAVENDER SUMMER SURPRISE

1/4 fresh cucumber

1 drop of lavender essential oil

Slice the cucumber thinly, place in a

small bowl of fresh spring water, and refrigerate for 10 minutes. Add a drop of lavender essential oil and let the bowl rest on the counter a few minutes while the essential oil infuses into the cucumber. Place slices on your eyes to reduce puffiness or to relieve itchy, allergy eyes.

*"Acknowledging  
the good that  
you already have  
in your life is the  
foundation for  
all abundance."*

-Eckhart Tolle

A Note from Lilly: Wow, the kiddos will be headed back to school soon and summer will be gone before we know it. Time certainly fly's when you are having fun! Thank you so much for hanging out with me this summer, I really appreciate all of the wonderful reviews, both online and through word of mouth. There is NO WAY I can continue to do what I love without all of your support. You lift me up and for that I am humbled and grateful. I am so proud of all you for investing in your skin! We only get one face and GOD says we have to age so....You might as well do it as Gracefully and Naturally as possible.

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