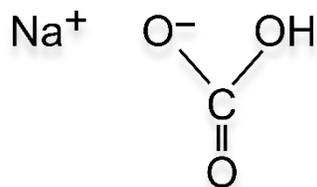


THE MANY UTILITIES OF BAKING SODA

by

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Sodium bicarbonate (NaHCO_3) also known as sodium hydrogen carbonate, has been called “**one of the most useful and versatile substances in the world,**” and that “no wonder the pharmaceutical companies don’t want anyone else to know much about it.” That doesn’t mean you should not learn all you can about baking soda and its many utilities and health benefits. First, you should know that baking soda actually comes from a mineral called natron.



Sodium bicarbonate

Natron is rich in sodium bicarbonate, a term commonly used for baking soda and not to be confused with baking powder. In ancient Egypt, people used natron as a soap, and in later centuries individuals discovered more and more uses for this natural wonder. Many of those uses included taking advantage of its healing properties.

Natron is a naturally occurring mixture of sodium carbonate decahydrate ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$, a kind of soda ash) and around 17% sodium bicarbonate (also called baking soda, NaHCO_3) along with small quantities of sodium chloride and sodium sulfate.



Baking soda is one of the most versatile products in our kitchen, **yet we often neglect to take advantage of its many benefits.** If absorbing odors in your refrigerator and whitening your teeth and for baking, of course are just about the only uses you can think

of for baking soda, read below for all other reasons would should use this pantry staple and what it can do for your home and health.

Baking Soda Properties: When combined with water, an endothermic reaction turns baking soda into a mild antiseptic, according to the textbook "Biology: Life on Earth with Physiology." It is non-toxic in small doses and unlikely to cause any allergic reactions because its only ingredients are sodium, hydrogen carbon and oxygen. It is highly effective at treating a variety of conditions.

BENEFITS OF BAKING SODA

Bee Sting or Spider Bites or any other types of bites: Most amazing if done quickly. Make a medium paste of baking soda with any vinegar best of course is organic apple cider vinegar. However white distilled vinegar will do the trick. Apply this paste to affected area and leave on for 20 minutes wrap with a gauze not too tight. Do this 3-4 times per day until all redness and wound is gone. This will draw into the poultice the venom and prevent any secondary complication, but time is of most critical importance if you wait more than 5 minutes it will still be of value but wont work as well as if it is done promptly.

Scabs and Wounds: Sodium bicarbonate, should be used to treat wounds at all stages of healing because of its disinfectant properties. Baking soda can help remove hardened scabs, prevent scars from forming and lower the risk of developing an infection such as a cellulitis at the site of a wound. Before treating any serious wound with baking soda, consult a physician first. The use of topical antibiotic is in fact problematic because they are always found put into an excipient such as an ointment or cream base, which prevent the wound from drying up and therefore often ends results with a more serious infection. The utmost importance is to keep a wound dry and you must cover the wound with a plastic bag prior to taking a shower. You do not want to keep a wound wet for nothing.

Moist wounds and dead tissue create a breeding ground for bacteria to grow. Infection poses one of the greatest delays in bedsore healing and is one of the worst complications. Preventing infection is a key step to heal wounds, sores and ulcers. When bacteria spread under the skin and into the soft tissues, the body reacts by creating inflammation.

Insect Bites: Apply a paste made of baking soda and water to insect bites to help relieve itching. You can also try rubbing the dry powder onto your skin. This is also effective for itchy rashes and poison ivy. Baking soda helps to relieve minor skin irritation and itching by neutralizing toxins and irritants on the skin's surface

Splinter removal: Add a tablespoon of baking soda to a small glass of water, then soak the affected area twice a day. Many splinters will come out on their own after a couple of days using this treatment. The reason being is that **baking soda is a drawing agent.**

Removing a Scab: When a wound is healing, repeated cleaning of the area can result in dry skin and a hard, itchy scab. Baking soda can help soften and remove the scab but should only be used when the wound is no longer painful or seeping. It is recommended to mix 2 to 3 tablespoons of baking soda with a half cup of water, then applying to the scab. Leave the paste on the wound for 15 minutes and then rinse thoroughly.

Cleaning a Scab: Baking soda has mild antiseptic and drying properties and is effective at keeping a wound clean and preventing excessive oozing. It works best on scabs that are still soft and wounds that are still painful or itchy. Simply apply a paste of two to three

tablespoons baking soda mixed with a half cup of water. The baking soda might fizz and bubble, and you might feel very mild burning. When the bubbling stops, rinse the baking soda from the wound.

Preventing Scars: After a scab has fallen off, keeping the wound clean and dry can enable further healing and reduce your chances of developing a scar, according to the "Mayo Clinic Book of Home Remedies." Soak a bandage in a solution containing 1 teaspoon of baking soda to one half cup of water and apply the bandage to the wound, removing the bandage daily and allowing the wound at least 12 hours of exposure to air without the bandage every day.

Allergy and chemical sensitivity relief: According to Dr. Eric Chan (in Sircus' book), use of a sodium bicarbonate IV can stop allergic reactions and consuming a drink that contains baking soda can reduce symptoms of chemical sensitivity. In a recent study published in *Pediatric Respiratory Reviews*, sodium bicarbonate is listed as one of the treatment options for this ***acute asthmatic condition in children***.

Body odor: You can avoid body odor and the toxic chemicals in commercial antiperspirants and deodorants by combining baking soda and water to make a paste. Apply a thin layer however, it is not invisible the only drawback but very effective without any toxicity.

Chickenpox: The constant itching and irritation caused by chickenpox can feel like torture for many people, especially children. A baking soda bath may provide the relief they need. Adding 1 to 2 cups of baking soda to a lukewarm bath and soaking for up to 20 minutes, three times a day can help provide relief. Adding ingredients such as oatmeal or chamomile tea may also reduce symptoms.

Common cold and flu. The jury is still out on this use for baking soda, although there is scientific evidence for its use dating back to 1925. That's when the Arm & Hammer Company suggested the following to help prevent or relieve symptoms. The formula: On day 1, take 6 doses of ½ teaspoon of baking soda in a glass of cool filtered water about every 2 hours; day 2, take 4 doses; and day 3, take 2 doses. Repeat the day 3 dosing until your cold symptoms disappear.

Constipation and hemorrhoids: A baking soda bath may help relieve the itching and pain caused by constipation or hemorrhoids. A ½ cup of baking soda added to a warm bath may be enough to relieve symptoms.

Decreases the incidence of Kidney Stones: Health benefits of baking soda include providing relief from kidney stones. Kidney stones are common amongst people and may run in families. There are different types of stones such as calcium stones, cystine stones, uric acid stones etc. usually smaller stones pass but sometimes if the stones are big, they may cause severe pain. Sodium bicarbonate helps in decreasing stone formation and removing of material that causes the kidney stones.

Diaper rash: The damp, warm conditions in a diaper make it the perfect place for germs to multiply. This can cause a red rash on the skin called a diaper rash. The infant's skin may also become irritated due to constant friction from the diaper. A baking soda bath can help to gently remove the irritating germs and soothe sensitive skin. For babies and small children, it is essential only to use a minimal amount of baking soda, as the

dissolved baking soda may be absorbed through the skin. Using 1 to 2 tablespoons of baking soda in a small, lukewarm bath and soaking the affected area for 10 minutes is enough for relief in most cases.

Eczema: causes dry, itchy, and inflamed patches of skin to develop on the body during flare-ups. These areas may be so itchy that a person scratches and breaks the skin, leaving it prone to skin infection and making symptoms worse. Baking soda may help prevent eczema flare-ups or reduce symptoms in some people. Adding $\frac{1}{4}$ to $\frac{1}{2}$ cup of baking soda to a warm bath may help soothe itchy skin. It is important to pat the skin dry and moisturize immediately after the bath.

Fungal skin and nail infections: Research suggests that baking soda is a useful compound as an antifungal agent against many of the fungal strains that commonly infect human skin and nails. People with the nail fungus onychomycosis, which causes thick, discolored, or crumbly nails, may find relief from regularly soaking their hands or feet in a baking soda bath.

Itchiness (pruritis): You can rub either dry baking soda or a paste made with water on insect bites, poison ivy, or itchy rashes to reduce the itching.

Kidney disease: Sodium bicarbonate can mediate the toxicity of chemotherapy as well as help preserve kidney function in people who are living with kidney disease. A new study published in *Kidney International* noted that use of bicarbonate in patients with chronic kidney disease reduced levels of excreted angiotensinogen, an indicator of kidney disease severity.

Maintains Fresh Breath: There are several reasons why a person may have halitosis (bad breath). Among all the reasons the presence of bacteria in the mouth is the main reason for having bad breath. Baking soda provides an instant solution to this kind of problem. Mixing one teaspoon of Celtic sea salt with sodium bicarbonate in a Waterpick is a home remedy that has been proved to work effectively in the restoration and maintenance of fresh breath. No longer is it recommended to floss. Waterpick is proven to be superior.

Minimizes Metabolic Acidosis (blood acid pH): Sodium bicarbonate is beneficial in minimizing the risk of metabolic acidosis in various health disorders such as diabetes, cardiovascular disorders etc. It also provides relief in case of renal tubular acidosis.

Plaque buster: To help eliminate tooth plaque and fight oral bacteria, combine six parts baking soda with one part of Celtic sea salt and pulse in a blender for 30 seconds. Wet your finger and gently rub the mixture on your gums, both inside and outside, and your teeth. Spit out any excess and let the mixture stay in your mouth for 10 to 15 minutes. Then rinse your mouth thoroughly with water. Baking soda has antibacterial activity against *Streptococcus mutans* associated with tooth decay and poor teeth health. Use of sodium bicarbonate based oral products may help in decreasing the levels of this bacterium and protect the teeth from decay and teeth whitener.

Poison ivy, poison oak, or sumac: A poison ivy rash on a person's arm. A baking soda topical poultice can be beneficial. Baking soda may also promote the healing of rashes caused by touching poisonous plants. Taking a bath is usually a good idea after touching toxic plants, as bathing may help prevent the skin from absorbing the oils that cause a rash. A bath may also help prevent these oils from spreading to other areas of the body.

or another person. Baking soda can soothe the inflamed skin and reduce irritation and itching. Soaking in a lukewarm tub with ½ to 1 cup of baking soda may help reduce symptoms. Adding oatmeal to the bath can also ease itching. If already having blisters avoid bathing to prevent spread and proceed with making a medium paste and put on affected area for 20 minutes or leave on longer and repeat 3-4 times per day with a new poultice.

Psoriasis: just like eczema, medicated baths may be helpful for people with psoriasis. People managing psoriasis symptoms often use oatmeal baths to reduce inflammation. Adding ½ cup of baking soda to an oatmeal bath may further reduce irritation and itchiness. It is essential for someone with psoriasis to moisturize their skin immediately after drying off with a towel, as hot water can dry out the skin further.

Stomach Ulcers and gastrointestinal problems: 1 to 2 teaspoons of baking soda stirred into 8 ounces of high-quality filtered water is an effective way to deal with ulcer pain. Reduces Acidity: Baking soda has antacid properties and is beneficial to relieve indigestion, severe acidity, and heartburn. It helps in relieving symptoms of peptic ulcer disease. Due to its alkaline properties, it is also recommended for reducing acidity in urine and blood.

Stuffy nose: If you experience a stuffy nose from the common cold or flu, mix ¼ teaspoon each of salt and baking soda in 8 ounces of warm water. Use a nasal irrigation kit or a bulb syringe to gently inject water into your nostrils. Hold one nostril shut while you squirt the mixture into the other nostril. Let the treated nostril drain and repeat application another 2 to 3 times. Then do the other nostril.

Sunburn relief: If you stay in the sun too long, add ½ cup of baking soda to lukewarm water in a bathtub and soak. Do not towel dry after getting out of the bathtub; allow your body to air dry.

Vulva irritation: Some women commonly experience irritation and itching around the vulva. Adding ¼ cup of baking soda to a bath and soaking for 15 to 20 minutes, three times daily may help reduce symptoms in some women.

Yeast infections: Many people experience yeast infections, but some symptoms, such as itching and swelling, can often make it difficult for a person to go about their daily activities. A baking soda bath may relieve symptoms and help a person recover faster. One study found that baking soda helped kill Candida cells, which are the fungal cells responsible for yeast infections.

Detox Baths: Even without an underlying condition to treat, a baking soda bath may be a helpful way to promote detoxification. According to a 2017 research published in International Journal of Nephrology, administration of sodium bicarbonate may be beneficial in providing relief against toxicities such as salicylate intoxication, ingestion of methanol and ethylene glycol and sodium channel blockers poisonings. To do this, mix ½ cup of baking soda with ½ cup of Epsom salts by SaltWorks (the ultra-fine) and add the mixture to a warm bath. People may also wish to add medicinal herbs or essential oils, such as eucalyptus, to help the body sweat and detox.

How to use a baking soda bath

- Bath supplies in bowl on top of towels, including loofah, scrub, skin brush.
- Using a loofah or body brush to gently exfoliate the skin beforehand may make a baking soda bath more effective.
- To make a baking soda bath, add between ¼ to 2 cups of baking soda to warm bath water and stir it around to let it dissolve.
- Once the baking soda has completely dissolved, soak in the tub for at least 20 to 30 minutes. After the bath, pat the skin dry with a towel and use a natural oil or lotion to moisturize the skin.

HOUSEHOLD USES:

Baking soda is an alternative to AJAX and a great scrub for your bath and kitchen. Put it in a glass grated cheese container with a stainless-steel top that has holes in it, and just sprinkle the baking soda on the surfaces and scrub. Make a paste of baking soda and water and use it to scrub away grime from your shower and bath.

Baking soda can also be used as a fabric softener in your laundry, or to get your clothes whither and brighter (add one cup to your laundry load).

Baking soda is a natural carpet cleaner. Sprinkle it onto carpets, let it sit for 15 minutes, then vacuum it up.

Baking soda mixed with apple cider vinegar is a bubbly combination that has many uses. As a drain cleaner, sprinkle baking soda down the drain, then add apple cider vinegar and let it bubble for 15 minutes, then rinse with hot water. This is a safer alternative to dangerous drain cleaners.

Clean kids' toys in a mixture of 4 tablespoons of baking soda and 1 quart of water.

In the event of a minor grease fire in your kitchen, use baking soda to help reduce the flames.

Soak pots and pans in hot water and baking soda for 15 minutes to easily wipe away baked-on food. Use baking soda to scrub your barbecue grill.

Sprinkle baking soda in your shoes for a natural deodorizer.

To polish silver without using toxic silver polish, fill your kitchen sink with hot water, add a sheet of aluminum foil and baking soda, and let the silver pieces soak until clean. It is an easy and fun way to clean silver.

Scientific Studies on the Benefits of Baking Soda

Bicarbonate supplementation preserves renal function in experimental chronic kidney disease (CKD), but whether the same benefit occurs in humans is unknown. Here, we randomly assigned 134 adult patients with CKD (creatinine clearance [CrCl] 15 to 30 ml/min per 1.73 m²) and serum bicarbonate 16 to 20 mmol/L to either supplementation with oral sodium bicarbonate or standard care for 2 yr. The primary end points were rate of CrCl decline, the proportion of patients with rapid decline of CrCl (>3 ml/min per 1.73 m²/yr.), and ESRD (CrCl <10 ml/min). Secondary end points were dietary protein intake, normalized protein nitrogen appearance, serum albumin, and mid-arm muscle circumference. Compared with the control group, decline in CrCl was slower with

bicarbonate supplementation (5.93 versus 1.88 ml/min 1.73 m²; P < 0.0001). Patients supplemented with bicarbonate were significantly less likely to experience rapid progression (9 versus 45%; relative risk 0.15; 95% confidence interval 0.06 to 0.40; P < 0.0001). Similarly, fewer patients supplemented with bicarbonate developed ESRD (6.5 versus 33%; relative risk 0.13; 95% confidence interval 0.04 to 0.40; P < 0.001). Nutritional parameters improved significantly with bicarbonate supplementation, which was well tolerated. This study demonstrates that ***bicarbonate supplementation slows the rate of progression of renal failure to ESRD and improves nutritional status among patients with CKD*** (de Brito-Ashurst et al., 2009).

A study tested the hypothesis that oral NaHCO₃ intake stimulates splenic antiinflammatory pathways. Following oral NaHCO₃ loading, macrophage polarization was shifted from predominantly M1 (inflammatory) to M2 (regulatory) phenotypes, and FOXP3+CD4+ T-lymphocytes increased in the spleen, blood, and kidneys of rats. Similar anti-inflammatory changes in macrophage polarization were observed in the blood of human subjects following NaHCO₃ ingestion. Surprisingly, they found that gentle manipulation to visualize the spleen at midline during surgical laparotomy (sham splenectomy) was enough to abolish the response in rats and resulted in hypertrophy/hyperplasia of the capsular mesothelial cells. Thin collagenous connections lined by mesothelial cells were found to connect to the capsular mesothelium. Mesothelial cells in these connections stained positive for the pan-neuronal marker PGP9.5 and acetylcholine esterase and contained many ultrastructural elements, which visually resembled neuronal structures. Both disruption of the fragile mesothelial connections or transection of the vagal nerves resulted in the loss of capsular mesothelial acetylcholine esterase staining and reduced splenic mass. This study data indicate that oral NaHCO₃ activates a splenic antiinflammatory pathway and provides evidence that the signals that mediate this response are transmitted to the spleen *via* a novel neuronal-like function of mesothelial cells (Ray et al., 2018).

Cancer: No peer-reviewed articles in medical journals were found supporting the theory that cancer is caused by a fungus infection or a yeast infection. Available peer-reviewed medical journals do not support claims that sodium bicarbonate works as a cancer treatment.

CONTRAINDICATIONS

A daily dose of sodium bicarbonate—baking soda, already used for baking, cleaning, acid indigestion, sunburn, and more—slows the decline of kidney function in some patients with advanced chronic kidney disease (CKD), reports an upcoming study in the Journal of the American Society of Nephrology (JASN). "This cheap and simple strategy also improves patients' nutritional status, and has the potential of translating into significant economic, quality of life, and clinical outcome benefits," comments Magdi Yaqoob, MD (Royal London Hospital).

As with all medications in cardiac arrest (i.e. epinephrine, amiodarone) the benefits of sodium bicarbonate administration have been discussed and debated for decades. While it is clear that sodium bicarbonate can play a role in resuscitation of arrest due to hyperkalemia, it's role in patients with acidemia resulting from or causing arrest is unclear. In theory, raising the pH may be beneficial but the use of bicarbonate increases serum

CO₂ which may be deleterious as it creates a respiratory acidosis. Despite the absence of good evidence, sodium bicarbonate continues to be used in non-hyperkalemic cardiac arrest management.

Prolonged oral therapy with sodium bicarbonate; patients losing chloride (as from vomiting, GI suction, diuresis); heart disease, hypertension; renal insufficiency; peptic ulcer; pregnancy (category C).

Cautious use: edema, sodium-retaining disorders; lactation; older adult patients.

Do not use sodium bicarbonate as antacid. A nonabsorbable OTC alternative for repeated use is safer.

Do not take antacids longer than 2 weeks except under advice and supervision of a physician. Self-medication with routine doses of sodium bicarbonate or soda mints may cause sodium retention and alkalosis, especially when kidney function is impaired.

Be aware that commonly used OTC antacid products contain sodium bicarbonate: Alka-Seltzer, Bromo-Seltzer, Gaviscon.

Do not breast feed while taking this drug without consulting physician.

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