

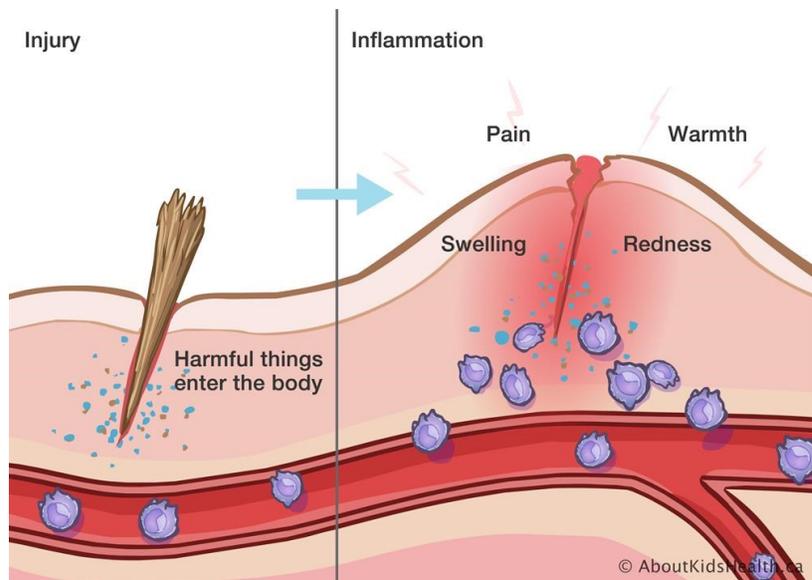
## What is Inflammation?

Inflammation is a defense mechanism in the body. When something harmful or irritating affects a part of our body, there is a biological response to try to remove it. Inflammation does not mean that there is an infection, but an infection can cause inflammation. The inflammation response is beneficial when, for example, your knee is bruised and tissues need care and protection. However, sometimes inflammation can persist longer than necessary, causing more harm than benefit.

### Acute and Chronic Inflammation

**Acute Inflammation** is one that starts quickly and becomes severe in a short time. Signs and symptoms normally last for a few days but may last a few weeks. Examples of diseases, conditions, and situations that can cause acute inflammation include:

- acute bronchitis
- infected ingrown toenail
- a sore throat from a cold or flu
- a physical trauma, bruise or cut
- high-intensity exercise
- appendicitis
- dermatitis
- tonsillitis
- infective meningitis
- acute sinusitis

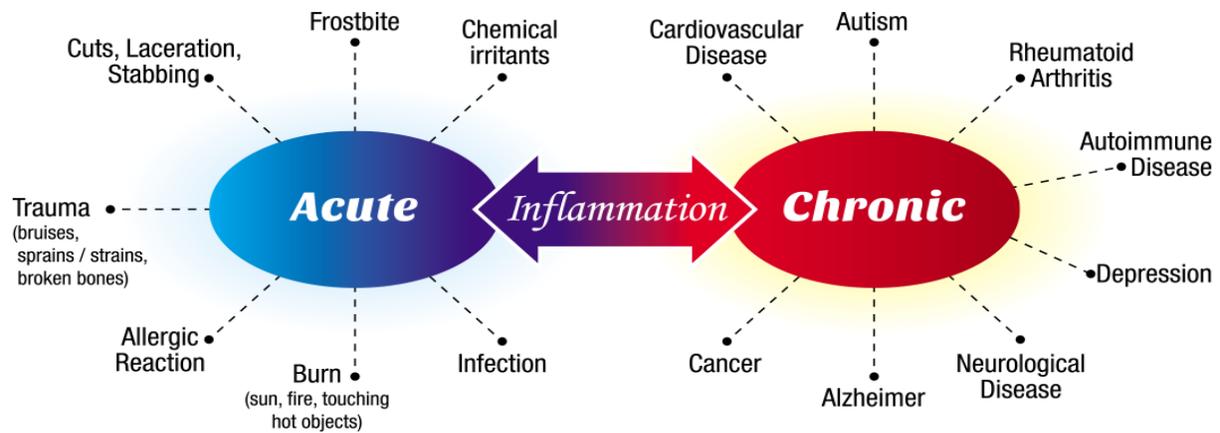


A blow to the knee causing acute inflammation of the skin will result in:

- **Pain:** because chemicals that stimulate nerve endings are released.
- **Redness:** because capillaries in the area are filled with more blood than usual.
- **Immobility:** because there may be some loss of function in the area of the inflammation.
- **Swelling:** because of fluid build-up.
- **Heat:** because more blood flows to the affected area, making it feel warm to the touch.

If inflammation occurs deep inside the body, only some of the signs may be noticeable. For example, some internal organs may not have sensory nerve endings nearby, so there will be no pain, such as in certain types of lung inflammation.

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**Chronic inflammation** can last for several months and even years. It can result from:

- Failure to remove or repair whatever was causing an acute inflammation.
- Your immune system attacking healthy cells in your body by mistake.
- Having excess weight, a poor diet, a lack of exercise, stress, smoking, pollution, poor oral health and/or excessive alcohol consumption.

Although damaged tissue cannot heal without inflammation, chronic inflammation can eventually cause diseases and conditions which we are becoming more aware of with new research. These include asthma, chronic peptic ulcer, tuberculosis, rheumatoid arthritis, periodontitis, ulcerative colitis and Crohn's disease, sinusitis, and active hepatitis. In addition, research is linking chronic inflammation with some types of cancers, atherosclerosis and heart disease, diabetes, depression, Alzheimer's Disease, and hay fever.

Symptoms of chronic inflammation may include tiredness, mouth sores, chest pain, abdominal pain, fever, rash, and/or joint pain. When there is inflammation in the body, C-reactive protein (CRP) levels in the blood are higher. Doctors will test for CRP when they are trying to figure out if a patient has diseases like lupus, arthritis or heart disease, where a high CRP level is a risk factor.

### **Anti-inflammatory medications**

Non-steroidal anti-inflammatory drugs (NSAIDs) can help relieve the pain caused by inflammation. They counteract an enzyme that contributes to inflammation. Examples include naproxen, ibuprofen, and aspirin.

**Avoid the long-term use of NSAIDs unless advised by your doctor.**



Acetaminophen, such as Tylenol, can reduce pain without affecting the inflammation. They may be ideal for those wishing to treat just the pain while allowing the healing factor of the inflammation to run its course. Corticosteroids, like cortisol or prednisone, are a group of steroid hormones that prevent a number of functions involved in inflammation. Glucocorticoids are prescribed for arthritis, dermatitis, inflammatory bowel disease (IBS), systemic lupus, hepatitis, asthma, and allergic reactions. Check with your physician or pharmacist about taking any medications concerning risk and side-effects.

## Anti-inflammatory Diets and Foods

Diets to help with inflammation have become popular. Hard evidence is lacking regarding the effectiveness of these diets in reducing inflammation, according to the Mayo Clinic, but the principles of an anti-inflammatory diet are healthy ones. Many of the foods listed below provide omega-3 fatty acids, which protect the body against the possible damage caused by inflammation. They inhibit an enzyme that produces prostaglandins, which trigger inflammation, similar to how aspirin works. The recommended foods are typical of a Mediterranean eating pattern and include:

- olive and canola oil
- tomatoes and avocados
- nuts, such as walnuts and almonds
- leafy greens, including spinach and kale, as well as broccoli, Brussell Sprouts, and cauliflower
- fatty fish, such as salmon, herring, tuna and mackerel, two or three servings (about 12 ounces) per week.
- a variety of fruits
- whole grain cereals and breads, brown rice



The diet limits foods that may aggravate inflammation, including:

- fried foods
- white bread, pastry, and other foods that contain refined carbohydrates
- soda and sugary drinks, red meat, margarine and lard

While these dietary recommendations may not cure the inflammation, they can help prime the immune system to work more effectively.



Certain spices have compounds that inhibit inflammation. Discuss any possible use of herbal supplements with your doctor.

- Harpagophytum procumbens: Also known as devil's claw, wood spider, or grapple plant, this herb may have anti-inflammatory properties.
- Hyssop: Mixed with other herbs, such as licorice, for treating some lung conditions, including inflammation. The essential oils of hyssop can lead to life-threatening

convulsions in laboratory animals. Caution is advised.

- Ginger: Used for hundreds of years to treat indigestion, constipation, colic, and other gastrointestinal problems, as well as rheumatoid arthritis pain. Try some ginger ale.
- Cannabis: Has anti-inflammatory properties. However, cannabis is not legal in many places.
- Turmeric: Possible benefits in treating arthritis, Alzheimer's disease, and some other inflammatory conditions. Curcumin, a substance found in turmeric, may reduce inflammation.
- Frankincense: Used for centuries, it helps prevent chemical reactions involved in inflammation.
- Willow bark: This supplement can ease pain and inflammation, as it contains salicin, a chemical similar to that in aspirin. Aspirin contains a man-made version of willow bark's salicin.

## Simple and nutritious “anti-inflammatory” beverages and snacks to try



### Spinach-Avocado Smoothie 1 serving

Ingredients: 1 cup nonfat plain yogurt and 1 cup fresh spinach

- 1 frozen banana and ¼ avocado
- 2 Tbsp. water and 1 tsp. honey

Directions: Combine all in a blender. Puree until smooth.



### Herbal Chamomile Health Tonic 4 servings

Ingredients: 4 cups boiling water and 6 bags chamomile tea

- 2 tsp. grated fresh ginger and 4 slices lemon
- 2-4 tsp. honey and 2 sprigs rosemary, lightly bruised

Directions: Stir boiling water and all ingredients in large heatproof bowl. Steep, stirring occasionally, for 20 minutes. Strain the liquid through a fine-mesh sieve, pressing on the tea bags to get as much liquid out as possible.



### Purple Fruit Salad 4 servings

Ingredients: 2 cups halved seedless black grapes

- 2 cups blueberries or halved blackberries
- 2 cups diced plums (about 2)
- 2 Tbsp. chopped purple basil (optional)
- 1 cup flavored low fat yogurt (optional)

Directions: Combine all in a large bowl. Serve with yogurt and basil, if desired.



### Dark Chocolate Trail Mix 1 serving

Ingredients: 2 tablespoons whole almonds

- 4 dried apricots and 2 tsp. dark chocolate chips

Directions: Combine almonds, apricots and chocolate chips.

(Recipes from EatingWell Magazine, accessed July 2018)

**Resources:** Medical News. November 2017 <https://www.medicalnewstoday.com/articles/248423.php>

WebMD. September 2016 <https://www.webmd.com/arthritis/about-inflammation#1>

Live Science. September 2015 <https://www.livescience.com/52344-inflammation.html>

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**For information,  
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**NY Connects**  
Your Link to Long Term  
Services and Supports

### **Do you have a questions or concerns about what to eat?**

If you are participating in services offered by Schenectady County’s Senior and Long Term Care services, you are eligible to have a free consultation with a Registered Dietitian. Call Cornell Cooperative Extension, Schenectady County at 518-372-1622, ext. 269. Leave a message, if necessary, for dietitian to call you back.

### **Check out our website for nutrition resources:**

**<http://ccschenectady.org/nutrition-for-seniors>**

Schenectady County Department of Senior and Long Term Care Services denies no person services or access to service based upon race, color, sex, religion, national origin, marital status and/or handicapping conditions. Schenectady County Department of Senior and Long Term Care Services is primarily funded with County tax dollars. Supplemental funding is through the New York State Office for the Aging under Title III-B/D, III-C-1, III-C-2, III-F of the Federal Older Americans Act, and New York State Expanded In-Home Services for the Elderly (EISEP), Community Services for the Elderly Act (CSE), Congregate Services Initiative (CSI), and the Wellness In Nutrition (WIN).