



## Tretinoin (Vesanoid®, All-Trans-Retinoic Acid, ATRA)

**Pronounce:** TREH-tih-NO-in

**Classification:** Retinoid

### About Tretinoin (Vesanoid®, All-Trans-Retinoic Acid, ATRA)

Tretinoin belongs to a class of drugs known as retinoids. Retinoids are drugs that are relatives of vitamin A. Retinoids control normal cell growth, cell differentiation (the normal process of making cells different from each other), and cell death. This occurs during embryonic development and, in certain tissues, later in life. In APL, the cells are "stuck" in an immature form, making thousands of copies of this immature cell that cannot function. Tretinoin causes the cells to get "unstuck" and mature. This can slow or stop the growth of cancer cells.

### How to Take Tretinoin

Tretinoin comes as a capsule to take orally (by mouth). The capsules should be taken whole with a glass of water, and should not be opened, crushed, or chewed. You may take with or without food; although taking with food may help increase the absorption of tretinoin. It is typically taken twice a day for up to 90 days. The dose is based on your body size. If you miss a dose or vomit after taking a dose, contact your care team for instructions.

This medication also comes in a topical form used in the treatment of acne. The information in this article relates to the oral form only.

It is important to make sure you are taking the correct amount of medication every time. Before every dose, check that what you are taking matches what you have been prescribed.

You should not take vitamin A supplements while taking this medication. This medication can interact with other medications including oral contraceptives, multivitamins, gemfibrozil, sulfamethoxazole/trimethoprim, monteleukast, pioglitazone, rosiglitazone, phenobarbital, aminocaproic acid, and rifampin. Be sure to tell your care team about all medications, vitamins, and supplements you are taking. This medication can also make certain forms of birth control pills less effective. Talk with your care team about effective birth control options.

### Storage and Handling

Store your medication in the original, labeled container at room temperature and in a dry location (unless otherwise directed by your healthcare provider or pharmacist). Keep this medication out of the sun and excessive heat. This medication should not be stored in a pillbox. Keep containers out of reach of children and pets.

If a caregiver prepares your dose for you, they should consider wearing gloves or pour the pills directly from their container into the cap, a small cup, or directly into your hand. They should avoid touching the pills. They should always wash their hands before and after giving you the medication. Pregnant or nursing women should not prepare the dose for you. Ask your oncology team where to return any unused medication for disposal. Do not flush down the toilet or throw it in the trash.

## Where do I get this medication?

Tretinoin is available through select specialty pharmacies. Your oncology team will work with your prescription drug plan to identify an in-network specialty pharmacy for the distribution of this medication and shipment directly to your home.

## Insurance Information

This medication may be covered under your prescription drug plan. Patient assistance may be available to qualifying individuals depending upon prescription drug coverage. Co-pay cards, which reduce the patient co-pay responsibility for eligible commercially (non-government sponsored) insured patients, may also be available. Your care team can help you find these resources if they are available.

## Possible Side Effects of Tretinoin

There are a number of things you can do to manage the side effects of tretinoin. Talk to your care team about these recommendations. They can help you decide what will work best for you. These are some of the most common or important side effects:

### Differentiation Syndrome

This is a syndrome resulting from the changes tretinoin causes to blood cell production in patients with leukemia. Symptoms of the syndrome include fever (temperature >100.4F), sudden weight gain and/or swelling, low blood pressure, bone pain, and fluid build-up around the heart, lungs, and chest, causing shortness of breath or difficulty breathing. The symptoms typically occur after 7-12 days on the medication. This syndrome is treated with high doses of IV steroids (like dexamethasone). Your healthcare providers will monitor for these signs or symptoms, but it is also important for you to tell your doctor or nurse promptly if you experience any of these symptoms.

### Headache and Muscle or Joint Pain/Ache

Headache is a common side effect associated with tretinoin. It most commonly occurs several hours after the dose. Your care team can recommend over-the-counter medications to treat the headache. These headaches tend to occur around the time of the medication and resolve before the next dose. If your headache is persistent or severe, notify your healthcare provider right away. There is a very rare side effect of tretinoin that is associated with severe, persistent headaches.

### Fatigue

**Fatigue** is very common during cancer treatment and is an overwhelming feeling of exhaustion that is not usually relieved by rest. While on cancer treatment, and for a period after, you may need to adjust your schedule to manage fatigue. Plan times to rest during the day and conserve energy for more important activities. Exercise can help combat fatigue; a simple daily walk with a friend can help. Talk to your care team for helpful tips on dealing with this side effect.

### Flu-Like Symptoms

These include muscle aches, fever, chills, and feeling tired. Notify your provider if you are experiencing any of these side effects.

### Increased Cholesterol and Triglycerides

This medication can cause a temporary increase in your cholesterol and triglyceride levels, which typically come back down after you stop taking the medication. Your healthcare team may monitor these levels while you are taking tretinoin.

### Liver Toxicity

This medication can cause liver toxicity, which your oncology care team may monitor for using blood tests called liver function tests. Notify your healthcare provider if you notice yellowing of the skin or eyes, your urine appears dark or brown, or you have pain in your abdomen, as these can be signs of liver toxicity.

## Bleeding/Hemorrhage

Tretinoin can cause serious bleeding in some cases. Let your oncology care team know immediately if you have any excess bruising or bleeding, including nose bleeds, bleeding gums, or blood in your urine or stool.

## Nausea and/or Vomiting

Talk to your care team so they can prescribe medications to help you manage [nausea and vomiting](#). In addition, dietary changes may help. Avoid things that may worsen the symptoms, such as heavy or greasy/fatty, spicy or acidic foods (lemons, tomatoes, oranges). Try antacids, (e.g. milk of magnesia, calcium tablets such as Tums), saltines, or ginger ale to lessen symptoms.

Call your care team if you are unable to keep fluids down for more than 12 hours or if you feel lightheaded or dizzy at any time.

## Infection

You should let your doctor or nurse know right away if you have a fever (temperature greater than 100.4°F or 38°C), sore throat or cold, shortness of breath, cough, burning with urination, or a sore that doesn't heal. The most common infection related to this medication is a urinary tract infection. Symptoms of urinary tract infection include frequency, urgency, and burning with urination.

## Peripheral Edema

Peripheral edema is swelling of the extremities caused by the retention of fluid. It can cause swelling of the hands, arms, legs, ankles, and feet. The swelling can become uncomfortable. Notify your oncology care team if you are experiencing any new or worsening swelling.

## Rash

Some patients may develop a rash, scaly skin, or red itchy bumps. Use an alcohol-free moisturizer on your skin and lips; avoid moisturizers with perfumes or scents. Your oncology care team can recommend a topical medication if itching is bothersome. If your skin does crack or bleed, be sure to keep the area clean to avoid infection. Be sure to notify your oncology care team of any rash that develops, as this can be a reaction. They can give you more tips on [caring for your skin](#).

## Increased White Blood Cell Count

This is also called hyperleukocytosis. Generally, it does not cause any problems, nor does it require stopping the treatment. Your healthcare provider will monitor your white blood count during treatment.

## Mouth Ulcers (Mucositis)

Certain cancer treatments can cause [sores or soreness in your mouth](#) and/or throat. Notify your oncology care team if your mouth, tongue, inside of your cheek or throat becomes white, ulcerated, or painful. Performing [regular mouth care](#) can help prevent or manage mouth sores. If mouth sores become painful, your doctor or nurse can recommend a pain reliever.

- Brush with a soft-bristle toothbrush or cotton swab twice a day.
- Avoid mouthwashes that contain alcohol. A baking soda and/or salt with warm water mouth rinse (2 level teaspoons of baking soda or 1 level teaspoon of salt in an eight-ounce glass of warm water) is recommended 4 times daily.
- If your mouth becomes dry, eat moist foods, drink plenty of fluids (6-8 glasses), and suck on sugarless hard candy.

- Avoid smoking and chewing tobacco, drinking alcoholic beverages, and citrus juices.

## Ear Concerns

These include earache, the feeling of fullness, and, less commonly, hearing loss. Notify your provider of any changes to your ears or of any hearing loss.

## Heart Problems

This medication can cause slow or abnormal heartbeats or an abnormal heart rhythm. Notify your healthcare provider right away if you feel abnormal heartbeats or if you feel dizzy or faint. Tretinoin can also cause high or low blood pressure. Your provider will monitor your blood pressure throughout treatment.

## Less common but important side effects can include:

- **Dizziness:** Some patients will experience dizziness. You should not drive or operate machinery until you know how this medication affects you.
- **Vision changes:** This medication can affect your vision and may make your eyes more sensitive to light. If you develop any vision changes, notify your provider.

## Reproductive Concerns

Exposure of an unborn child to this medication could cause birth defects, so you should not become pregnant or father a child while on this medication. Women should use 2 forms of birth control while taking this medication and for 1 month after the last dose. Men should use effective birth control while taking this medication and for 1 week after their last dose. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. You should not breastfeed while receiving this medication.

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