



SKIN CARE WEST

MEDICAL + SURGICAL DERMATOLOGY

UNDERSTANDING 5FUC

5FUC IS A 50:50 MIXTURE OF TWO INEXPENSIVE TOPICAL MEDICATIONS

- The first component (5FU) is **EFUDEX**, a cream-based chemotherapy. It has been used since the 1960's to treat precancerous sun damage (actinic keratosis) and certain types of thin low risk skin cancer.
- The second component (C) is **DOVONEX**, also known as calcipotriol or calcipotriene. It is an ointment based synthetic vitamin D derivative developed in the 1980's to treat psoriasis.

EFUDEX (5FU) IS A VERY EFFECTIVE, BUT IT TAKES A LONG TIME TO WORK (TYPICALLY 2-4 WEEKS)

- In 2017 scientists at Harvard's 'Dana-Farber Cancer Institute' showed that combining it with calcipotriol (C) could achieve in 4 days what would take 2 weeks with 5FU on its own.
- Adding calcipotriol doesn't simply 'speed up' the chemotherapeutic effect of 5FU, it changes the mechanism of action. When combined, the two medications function as an 'immunotherapy'. They stimulate the immune system to attack and clear abnormal skin cells.
- The studies at Harvard were done with public funding. They can be accessed online at: <https://www.jci.org/articles/view/89820> and <https://insight.jci.org/articles/view/125476>.

5FUC IS NOW COMMONLY USED FOR CONDITIONS THAT WERE PREVIOUSLY TREATED WITH 5FU ALONE

5FUC provides a similar benefit but with greatly increased convenience. Unfortunately, a Health Canada approved 'off the shelf' version is not available. The pharmaceutical industry has thus far taken little interest in developing one, since 5FU and calcipotriol have been around for decades and are off patent. Fortunately, they are inexpensive and readily available as individual components, which can be combined and used off label.

- One option is to obtain a tube of Efudex cream and Dovonex ointment and mix them yourself.
- The other is to go to a **compounding pharmacy**, where the pharmacist will mix them for you at the correct ratio (recommended).

USING 5FUC

1. GO TO A COMPOUNDING PHARMACY TO GET 50:50 EFUDEX AND DOVONEX PREMIXED INTO 5FUC

- A compounding pharmacy is one that is licensed to custom make medication mixtures on site. If you take your prescription to a regular pharmacy, they will send it to another facility to be made. That may add substantial cost.
- We usually prescribe a set quantity of 5FUC, along with several refills. If you need more, but less than the full amount, you can ask for a partial refill.

2. GET THE 5FUC PREPARED JUST BEFORE YOU ARE PLANNING TO USE IT

- Pharmacists often won't guarantee that the ingredients in a compound will be at their full strength for more than a month, but they're usually active much longer.
- 4 months is a reasonable shelf life for 5FUC once it has been prepared. Make sure to store it in a cool dark place. Remove medication from the container with a cotton swab or a clean finger.

3. APPLY 5FUC IN A THIN LAYER TWICE A DAY

- It's safe to use your fingers, just make sure to wash your hands well afterwards. Put on enough so you can easily see the compound at first and then it gradually disappears as you rub it into your skin. Avoid eyelids and lips (unless specifically instructed otherwise).
- Use warm water and a cloth to gently wash treated areas of skin before each reapplication. Do not cover with a dressing.
- If you are treating a broad area of precancerous sun damage, put the compound on all of the affected skin.
- If you are treating a specific lesion, such as a low-grade skin cancer, or a limited number of precancers, apply it to each spot along with a small margin of surrounding normal skin.

4. LENGTH OF TREATMENT WILL DEPEND ON YOUR SKIN'S RESPONSE TO 5FUC, BODY LOCATION, AND WHAT IS BEING TREATED.

- Since it functions as an immunotherapy, the effect of 5FUC can vary between individuals. Everyone's immune system is different.
- Thicker skin takes longer to treat. Facial skin is the thinnest and most responsive. Scalp and neck take a bit longer. Torso and extremities take longer still.
- If you are using 5FUC for precancerous sun damage, always limit your first round of treatment to four days.
- If you are treating a skin cancer, you will be given specific instructions with your prescription about how long to apply the compound.

5. IF YOU DEVELOP VERY INTENSE SKIN INFLAMMATION OR ANY SYSTEMIC SYMPTOMS WITH 5FUC, STOP YOUR TREATMENT AND CONTACT THE CLINIC.

- 5FUC is usually well tolerated, although some skin discomfort is expected. It is most severe towards the end of treatment and in the days immediately after. Applying a thin layer of Vaseline, Aquaphor, or an equivalent wound care ointment can be very helpful.
- Some individuals are missing an enzyme that helps their body break down 5FU. Even the tiny amount that is absorbed through their skin during treatment can make them feel unwell. Symptoms include fever, nausea, diarrhea, headache, and mouth ulcers. Reactions of this kind are extremely rare.

- Skin infections can occasionally occur during treatment. Symptoms include skin redness, swelling, warmth and pain. This is not directly due to the action of 5FUC, but from its effect on your skin. Small sores often form where abnormal skin cells are being destroyed and sloughed off. Avoid getting dirt or other contaminants into these areas.
- Some patients may experience an allergic reaction to an ingredient in the compound. This can look like an infection, but instead of pain, allergic reactions tend to be itchy.

6. IF YOU ARE USING 5FUC TO TREAT PRECANCEROUS SUN DAMAGE, REPEAT AS NEEDED ON THE SAME PATCH OF SKIN, OR ON OTHER AFFECTED AREAS. ADJUST LENGTH OF TREATMENT BASED ON BODY LOCATION AND YOUR SKIN'S PREVIOUS RESPONSE TO THE COMPOUND

- Individuals with an average sensitivity to 5FUC get a good effect from it in 4 days on the face, 6 days on the neck and scalp, and 7-10 days on the torso and extremities.
- 'Good effect' means moderate but tolerable inflammation, which settles over a couple weeks, and leaves treated skin significantly improved.
- If you experience only mild inflammation and don't get much improvement, go 1-2 days longer for your next round of treatment.
- If you get a good effect overall, but a few lesions fail to clear, repeat treatment, and focus on just those spots. Apply the compound 1-2 days longer than you did when you treated the whole area.
- If you develop severe inflammation and the treatment is hard to tolerate, but there is good improvement, go 1-2 days shorter in the future. That will likely provide a similar benefit but with less discomfort.
- Once you establish how long the compound takes to work *for you* in any given body area, treat for the same length of time in the future (if required).
- Allow 4 weeks between treatment cycles when applying 5FUC to the same location. That's about how long it takes your skin to fully recover.

7. ADDITIONAL TIPS

- Peak inflammatory effect of 5FUC is usually a few days after you finish applying it. If you are doing your first 4-day treatment and have only mild inflammation on the last day, don't keep going. Consider it a 'test' treatment and wait to see how things progress. You can always repeat and go a bit longer the next time.
- Immediately after finishing treatment, start applying Vaseline, Aquaphor, or an equivalent wound care ointment. It will speed up healing and improve cosmetic outcome. Twice a day for a week is usually sufficient.
- Limit use of heavy facial makeup until any open areas of skin have healed.
- While you are using it, 5FUC will increase the sun sensitivity of the skin to which it has been applied. Limit use to cooler and cloudier times of the year or combine with intensive sun protection.
- Applying sunscreen is safe during treatment. Physical or mineral based options, often marketed for 'sensitive skin', are best.