

What are actinic keratoses?

Actinic keratoses (AKs) are rough spots that occur in sun-exposed areas, particularly on the face, balding scalp, tops of the ears and the backs of the hands and arms. An AK is a precancerous skin lesion caused by years of sun exposure. Some AKs will later develop into skin cancers, usually squamous cell skin cancer, not melanoma.

How do I get rid of them?

There are several ways of treating AKs:

- 1) Freezing treatment with liquid nitrogen is the most common way
- 2) Topical agents, most commonly 5-fluorouracil (5-FU) cream (Efudex, Carac), can be used, but are expensive. Alternatives: Imiquimod, ingenol mebutate, and diclofenac.
- 3) Topical agents in combination with light exposure (photodynamic therapy), is less commonly used and can cause significant blistering without precautionary measures.

Freezing treatment is most practical if there are only a few AKs, if the AKs are very thick, if they have not cleared with 5-FU, or if the patient can not afford the expense of the topical agents.

These treatments are also sometimes used for **thin basal cell and squamous cell cancers**.

When there are many small AKs, 5-FU cream, or photodynamic therapy is usually more practical. There are different ways we advise our patients to apply 5-fluorouracil, as some patients are very sensitive to the customary 3 to 4 week regimen.

- 1) The 2x2x2 regimen: Apply the cream broadly to affected areas twice daily for two consecutive days (e.g., Saturdays and Sundays only) each week for two months.
- 2) The 3 to 4 week regimen: Apply the cream broadly to affected areas twice daily for approximately 3 to 4 weeks, or until too irritated to continue. With this regimen the treated area is much more likely to become severely irritated compared to the 2x2x2 regimen, particularly when used on the face.
- 3) The modified 4 week regimen: Apply the cream broadly to affected areas twice daily for four consecutive days (e.g., Monday through Thursday only) each week for 4 weeks. No treatment on the other three days/week.
- 4) The spot treatment regimen: The method is the same as the 3 to 4 week regimen except the patient only treats the rough feeling spots, rather than the whole region. This helps minimize the irritation that can develop when large areas are treated.
- 5) The combo regimen: Apply both 5-FU and **calcipotriene** together twice daily for 5, 10 or 14 days, depending on the degree of irritation. Using both creams together usually causes a faster irritation reaction so that the duration of treatment can be shortened.

Remember: If you don't get red and scaly, then the treatment is not working!

Any other things I should know?

If needed, the discomfort from the irritation can be lessened with white petrolatum ointment (**Vaseline**) or **1% hydrocortisone cream** twice daily. Healing starts when the 5-FU is stopped. New AKs and skin cancers often arise at or near the location where old ones have been treated. This is because the skin cells nearby have just as much sun damage as the ones already treated. This is why we often ask patients to treat the areas around the AKs as well as the AKs. 5-FU can make some people a bit more sensitive to the sun, so sun avoidance measures should be followed (avoid prolonged sun exposure and protect your skin from the sun with clothing, hats, and sun screen). **Avoid getting the 5-FU close to the eyes or mouth.** **Wash your hands well after applying the medication.**