PHYSICAL AND CHEMICAL SUNSCREEN FOR ACNE PRONE SKIN

A sunscreen is a substance that helps protect the skin from the sun's harmful rays. Sunscreens reflect, absorb, and scatter both ultraviolet A and B radiation to provide protection against both types of radiation. Using lotions, creams, or gels that contain sunscreens can help protect the skin from premature aging and damage that may lead to skin cancer. (1)

There are two different types of sunscreen:

- chemical and
- physical.

CHEMICAL SUNSCREEN:

Chemical sunscreens use up to a dozen ingredients that, when applied, are absorbed in the top layer of skin. They react with the skin to absorb UV rays and create a chemical reaction in which UV light is converted to heat, and the heat dissipates from the skin

Example: **oxybenzone, avobenzone, octisalate, octocrylene, homosalate, and octinoxate**.

Chemical sunscreens aren't as thick as physical ones, so they are often used in sunscreens specifically made for the face as well as those found in spray bottles. Since chemical sunscreens need to be absorbed into the skin, they must be applied at least 20 to 30 minutes before heading outdoors. (2)

PHYSICAL SUNSCREEN:

Physical sunscreens, sometimes called "natural or mineral" sunscreens, include two ingredients: **zinc oxide and titanium dioxide**. They are small particles that sit on the skin's surface and physically prevent UV rays from penetrating the skin.

Physical sunscreens act like a shield, while chemical sunscreens are absorbed into the skin. Both ingredients work well to protect from UVA and UVB (broad spectrum) rays. Since physical sunscreens are thicker, they can leave a white cast on the skin. [2]

CHEMICAL VS PHYSICAL SUNSCREEN: [3]

PHYSICAL SUNSCREEN	CHEMICAL SUNSCREEN
UV filters: Zinc oxide, Titanium Dioxide.	UV filters: Oxybenzone, avobenzone, Octisalate, Octocrylene, Homosalate, Octinoxate, etc.
More suitable for (safer option) for sensitive skin, children and pregnant women.	Better sensorial experience, feels more comfortable on the skin. Leaves no white cast.
Since Zinc oxide is an astringent, it tends to dry out the skin	Tendency to be more hydrating and blendable
Downside: white cast, not suitable for all skin tone, often times (not all) chalky texture	**Downside:** might not be suitable for sensitive skin, prone to clog the pores, not the safest bet for children and pregnant women.

PHYSICAL SUNBLOCK TENDS TO BE:

- Less irritating and a better fit for sensitive skin.
- More moisturizing, which can feel heavy on the skin.
- Difficult to fully blend into the skin. However, newer brands now offer matte and tinted versions that have less of a white cast and can give the skin a smooth, even appearance.

CHEMICAL SUNSCREEN IS A BETTER OPTION IF YOU:

- Are swimming and need a water-resistant formulation.

- Play sports or sweat a lot during the day.
- Want a sunscreen that absorbs quickly into the skin. [4]

SUNSCREEN FOR ACNE-PRONE SKIN:

In case of acne-prone or sensitive skin, the right sunscreen won't end up with break out — in fact, it can improve the appearance of skin. One should Look for a product labelled for sensitive or blemish-prone skin. [4]

Physical or mineral sunscreen tends to be less irritating to the skin compared to chemical sunscreen, making it ideal for people with sensitive or acne-prone skin. In addition, physical sunscreen is a safer option for the environment. [5]

In case of chemical sunscreen, it is necessary to check for light formulations that does not clog pores in acne prone skin.

WHAT TO LOOK FOR WHEN CHOOSING A SUNSCREEN:

Whether you choose physical or chemical SPF, there are several things to look for on the label

- Broad spectrum (protects from both UVA and UVB rays)
- Fragrance-free
- Noncomedogenic (won't clog pores)
- Oil-free
- Paraben-free
- SPF of at least 30 or higher

REFERENCES:

1. NCI Dictionary of Cancer Terms

2. Health and wellness blog- **How to Choose Your Sunscreen,** June 11, 2019
3. Full Comparison of Mineral SPF vs Chemical SPF, Claudia Christin on Oct 06, 2022
4. Piedmont - he difference between physical and chemical sunscreen.
5. American Academy of Dermatology Association. (2022) Sunscreen FAQS.