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## Holistic Skin Care and Selection of Skin Care Products in Acne

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June is World Acne Awareness Month [1]. Face washes are an integral part of acne treatment, while usage of cosmetics and other skin-care products is also common in the acne age-group of teens and youth. An overview of considerations and relevant parameters for skin-care products for people with acne or acne-prone skin, maybe beneficial as part of a holistic approach to acne management.

As established, the pathophysiology of acne revolves around the blockage of the pores of the pilo-sebaceous units of the skin due to hyper-keratinization and excess sebum production leading to comedo formation [2,3]. Subsequent inflammation and infection cause the characteristic pimples or zits, more commonly seen on the face, thereby causing both cosmetic and psychological concerns especially in the teens and youth. Though medicines, both topical and oral, are often prescribed for acne, it is equally important to evaluate personal skin care. If one has a tendency for acne, some points kept in mind while choosing skin care products like face washes, creams and cosmetics, can be beneficial [4].

**Comedogenicity** indicates the potential to lead to formation of comedones and development of acne. Finished products containing high comedogenicity ingredients should be evaluated for their comedogenic potential. We have come a long way from the introduction of the term '*'Acne Cosmetica'*' by Kligman and Otto, and the use of the conventional ingredient-based rabbit ear comedogenicity testing and grading model. Today non-invasive human follicular biopsy with cyanoacrylate glue and the newer 'in use-real world' human testing of finished products, have increased the practical relevance and interpretation of comedogenic potential of skin-care products [5-8].

Some acids and their salts especially in the Isopropyl form (Myristic, Stearic, Palmitic, Lauric acid), Algae extracts, and foaming agent SLS (Sodium Lauryl Sulphate) have known high comedogenicity. Highly comedogenic oils include coconut, wheat germ, cocoa, palm, and linseed oils, while others like almond, avocado, olive, peanut, jojoba and safflower oils are relatively less comedogenic [9]. Other Low comedogenic ingredients include Cetyl/ Cetearyl Alcohol, Polyethylene Glycol (PEG), Glycerin, Simethicone, Sodium Hyaluronate, Hydroxy Propyl Methyl Cellulose (HPMC), Allantoin, Aloevera and Talc. A combination of ingredients can change the overall comedogenicity of the finished product, hence the emphasis on

human testing of the latter. Though Parabens, added as preservatives are not comedogenic, they have been seen to be associated with long term skin damage in some studies, therefore now there is a shifting preference to '*Paraben free*' skin care products [10].

**pH** of our skin is naturally acidic between 5 to 5.9 that acts as a protective barrier to prevent infections, as well as acne. Most soaps are alkaline as they contain 'hydroxides' with fatty acids. So, people with acne prone skin should avoid using soaps on their faces and instead use liquid face washes or cleansers most of which maintain pH between 4.5 to 6 [11].

**Moisturization and Oil Control** are important attributes for skin care products for acne prone skin to help in maintaining softness of the skin, reducing retinoid-induced dryness-irritation and also controlling oiliness at the same time. Substances like Cetyl alcohol, Glycerin and Dimethicone can moisturize without greasiness while Zinc salts are known to control excess sebum production [12].

**Other Beneficial Substances** are Exfoliative agents like Glycolic acid and Lactic acid (alpha hydroxy acids) that help in removing dead skin cells, un-clogging pores and improving skin health and glow, along with Keratolytic agents like Salicylic acid (beta Hydroxy acids) that help breakdown keratin plugging the skin pores [13]. Astringents like Citrus fruit extracts, Green Tea extracts (*Catechin Tannins*), Witch hazel and Rose water, help to cleanse, unclog and tighten pores, as well as control oiliness [14]. Nourishing and Soothing agents like Allantoin, Aloe Vera, Beta carotenes, Niacinamide (Vitamin B3), Vitamin E and Vitamin C (Ascorbate) are non-comedogenic, non-irritant, and anti-inflammatory, therefore beneficial for acne, and generally for the skin [9,12].

**Holistic Skin Care** in acne also requires a nutritious diet low on refined carbohydrates, sugar products and fat, and increasing intake of whole grains, fruits, vegetables, and yogurt (curd) [15]. Good hydration and increase in water intake, regular fresh air, physical activity and exercise, adequate duration and quality of sleep, and stress management are other aspects requiring emphasis.

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