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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

Acnutrol™ has been formulated to provide comprehensive support for healthy acne control by focusing on the body's natural repair and regeneration processes and overall skin health.* This product features skin-supportive nutrients, vitamins, and minerals that work synergistically to target underlying factors that may worsen the appearance of acne, such as unhealthy inflammatory responses and dysregulated immune balance.* In doing so, Acnutrol™ may help address the root causes of acne, a skin condition that afflicts millions of people.*

Formula Highlights

- Features 2,500 mg of pantothenic acid and 500 mg of L-carnitine per serving to support healthy skin and lipid metabolism*
- Vitamin B6 is provided as pyridoxine HCl and the activated form of pyridoxal-5-phosphate (P5P) for superior bioavailability*
- Includes highly absorbable and bioavailable forms of zinc, selenium, copper, and chromium*
- Features preformed vitamin A (retinyl palmitate) to support optimal skin cell metabolism and immune function*
- Includes vitamin E isomers extracted from the annatto plant (as DeltaGold® gamma- and delta-tocotrienols) to promote antioxidant status and cell membrane integrity*
- Gluten-free, dairy-free, soy-free, non-GMO

Benefits*

- Supports clear and radiant skin
- Supports healthy lipid metabolism
- Promotes antioxidant status and immune balance
- Supports healthy inflammatory responses

The National Institutes of Health reports that nearly 80% of individuals aged 11 to 30 will develop some form of acne outbreak – an inflammatory skin condition that can affect people of all ages.¹ Acne, one of the most common dermatological conditions worldwide, has various contributing factors. Among the main culprits are disturbed sebum production and sebum fatty acid composition, hormone dysregulation, hyperkeratinization of follicles, immune dysfunction, and unhealthy inflammatory responses.² Hand in hand with these are systemic oxidative stress, insulin resistance, hormonal imbalances, and altered skin and intestinal microflora.³

Pantothenic Acid, Carnitine, and Healthy Lipid Metabolism*

Pantothenic acid may help decrease the severity of acne.* A double-blind, randomized controlled trial (n = 48) showed that individuals with acne who received pantothenic acid supplementation (2.2 g/day for 12 weeks) displayed significantly reduced total lesion count versus the placebo group. A secondary analysis revealed the experimental group had significantly reduced area-specific and inflammatory blemishes.⁴

Acnutrol™ contains a generous 2,500 mg of pantothenic acid (vitamin B5) per serving. The development of acne appears to be associated with an insufficiency of this vitamin.⁵ Pantothenic acid plays a significant role in maintaining keratinocytes, the predominant cell type in the skin's outermost layer (the epidermis). Research shows that when this vitamin is depleted, keratinocyte proliferation is suppressed.⁶ Additionally, pantothenic acid insufficiency may lead to a decrease in the synthesis of keratinocyte growth factor and procollagen in fibroblasts, the cells in connective tissue that produce collagen and other extracellular matrix compounds.⁶

Pantothenic acid also works to transport fats across cell membranes, assisting in the regulation and efficiency of lipid metabolism, which gets disrupted during acne breakouts.^{7,8} When acne occurs, bacteria cause inflammation in skin pores blocked with sebum, the fluid secreted from the sebaceous glands. With proper lipid metabolism, there is a decrease in the excretion of sebum; this reduction in sebum production results in the normalization of pore size and the factors contributing to acne.^{9,10}

Including carnitine in Acnutrol™ is clinically relevant, as it is a critical nutrient for optimal lipid metabolism.* Carnitine is an indispensable nutrient that supports the transport of fatty acids into the mitochondria, where they are oxidized and produce cellular energy.¹¹ Carnitine also possesses anti-inflammatory properties and may support immune function, which may promote clearer-looking skin.¹² The 500 mg of carnitine in each serving of Acnutrol™ may synergize with pantothenic acid in promoting healthy lipid metabolism.*

Supplement Facts

Serving Size 6 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin A (as Retinyl Palmitate)	15,000 mcg RAE 1667%	Selenium (as Selenium Glycinate Complex)	100 mcg 182%
Vitamin D (as Cholecalciferol)	50 mcg (2000 IU) 250%	Copper (as TRAACS® Copper Bisglycinate Chelate)	2 mg 222%
Niacin (Vitamin B-3)(as Niacinamide)	500 mg NE 3125%	Chromium (as TRAACS® Chromium Nicotinate Glycinate Chelate)	400 mcg 1143%
Vitamin B-6 (as Pyridoxine HCl and Pyridoxal-5-Phosphate)	50 mg 2941%	L-Carnitine (from L-Carnitine Tartrate)	500 mg *
Biotin	500 mcg 1667%	Vitamin E Isomers (as DeltaGold® delta and gamma tocotrienols)	15 mg *
Pantothenic Acid (as d-Calcium Pantothenate)	2500 mg 500,000%		
Zinc (as Zinc Bisglycinate Chelate)	50 mg 455%		

*Daily Value not established.

Other Ingredients: Cellulose (capsule), stearates (vegetable source), silicon dioxide.

Zinc, Copper, Selenium, and Chromium

Zinc is an essential mineral required for numerous cellular processes, including wound healing, protecting against free radicals, and the proper functioning of the immune system. A deficiency in this mineral may impair the immune response and promote unhealthy inflammatory responses.¹³ Substantially high zinc levels are found in the skin, especially in the epidermis.¹⁴ Zinc plays a crucial role in maintaining skin integrity, and many dermatologic conditions (including acne) are associated with zinc insufficiency.^{14,15} Combining this mineral with other skin-supportive nutrients may be clinically beneficial for individuals with certain skin conditions.*

The role of zinc in promoting clear skin owes to its ability to promote healthy inflammatory responses.¹³ Zinc has been shown to decrease the number of inflammatory lesions associated with acne, such as inflammatory papules, by enhancing the production of antioxidant proteins and enzymes like superoxide dismutase and glutathione peroxidase.^{16,17} Moreover, zinc has also been shown to inhibit chemotaxis and lessen the production of the proinflammatory cytokine tumor necrosis factor-alpha.¹⁸

Copper is included in Acnutrol™ to help maintain a healthy copper-to-zinc ratio.* Copper is also involved in collagen maturation, acting as a cofactor in forming cross-links, increasing collagen's stability and tissue strength.¹⁹ The presence of selenium in Acnutrol™ is due to its role as a cofactor for glutathione peroxidase, a potent antioxidant and detoxifying enzyme significantly decreased in patients with severe acne.¹⁸ Chromium is involved in glucose metabolism, as it helps balance blood sugar by enhancing the effects of insulin.²⁰ Studies have shown an association between acne and dysregulated insulin responses.^{20,21} Thus, chromium may be beneficial to those with acne.*

The Fat-Soluble Vitamins: A, D, and E

Vitamin A may help promote clear and healthy skin.* Vitamin A supports immune health and is essential for maintaining and repairing tissues like skin and mucous membranes.^{22,23} One clinical study with 200 patients (100 with acne, 100 without acne) concluded that blood levels of vitamins E and A were significantly lower in those with acne.²⁴

Vitamin E is a lipophilic antioxidant that displays anti-inflammatory properties, which may promote overall skin health during the aging process.²⁵ Vitamin E tocotrienol isomers have been shown to promote skin integrity and may mitigate the effects of photosensitivity.²⁵ A systematic review of 18 articles, encompassing cell culture, animal, or human subjects, concluded that tocotrienols, whether administered orally or topically, could potentially delay skin aging by decreasing inflammatory factors, melanin accumulation, and filtering ultraviolet (UV) radiation.²⁶ Under normal circumstances, UV irradiation tends to deplete antioxidants in the skin. However, in a study involving mouse skin, the pre-application of tocotrienols preserved the skin's vitamin E content.²⁷ Notably, the majority of vitamin E was detected in the subcutaneous layer of the skin, suggesting a rapid penetration of applied vitamin E through the skin.²⁸ This penetration may play a crucial role in mitigating the effects of oxidative stress induced by exposure to UV or ozone.^{28,29}

Vitamin D is included to support the immune system and to promote skin health.* The skin is an important target tissue for vitamin D, where it regulates growth and differentiation in keratinocytes.³⁰ In one study with 80 patients with acne and 80 healthy controls, a vitamin D deficiency was detected in 48.8% of patients with acne, while only 22.5% were in the healthy controls.³¹ After eight weeks of vitamin D supplementation (1,000 IU/day), the patients with acne displayed a statistically significant decrease in inflammatory acne lesions compared to those with acne receiving the placebo.³¹

Additional B Vitamins

In addition to pantothenic acid, Acnutrol™ contains niacin (vitamin B3, non-flushing niacinamide), vitamin B6, and biotin. Research suggests that specific combinations of B vitamins promote fibroblast and keratinocyte proliferation, which may be clinically relevant to individuals with inflammatory skin conditions, such as acne.³² Vitamin B6 plays a role in glucose metabolism and hormonal balance, and its inclusion in Acnutrol™ may be clinically relevant to women with premenstrual acne.³³ While the main functions of biotin lie in its participation in glucose and lipid metabolism, this B vitamin is best known for its role in skin (along with hair and nail) health, where it provides metabolic and skin cell regeneration support.³⁴

Recommended Use: Take 6 capsules per day or as directed by your health-care practitioner.

Warning: Not for use by children. Do not exceed the recommended dose or use long-term without medical supervision. Excess vitamin A may cause reproductive harm or organ damage.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---acnutrol-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

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***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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