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“Dermatologic Effects of Testosterone Therapy: A Clinical Review”

Abstract

The use of testosterone therapy (TTh) is drastically increasing, yet cutaneous manifestations are incompletely characterized in dermatology literature. We conducted a literature search in PubMed, Embase, and Cochrane for articles reporting dermatology-related outcomes in TTh-treated individuals to synthesize current evidence on the cutaneous physiology, therapeutic potential, and adverse effects of TTh, with emphasis on formulation-specific considerations relevant to dermatologic practice. No date or language restrictions were applied, and articles published prior to the search date of 18 June 2025 were reviewed for relevance by the authors. Systematic reviews, meta-analyses, randomized controlled trials, cohort studies, and informative cases reporting on dermatological outcomes of TTh and key mechanistic investigations were included. Androgen signaling modulates sebaceous activity, follicular cycling, dermal collagen, and wound repair. Limited clinical data suggest TTh may reduce Psoriasis Area and Severity Index scores and accelerate healing in catabolic states, although randomized trials are lacking. Conversely, acne, seborrhea, androgenetic alopecia, hirsutism, and contact dermatitis are common dose- and formulation-dependent adverse events. Transdermal systems elevate dihydrotestosterone significantly more than intramuscular injections, potentially correlating with higher cutaneous side-effect rates. For clinicians, knowledge of the incidence, nature, and factors contributing to these cutaneous manifestations is essential for effective patient counseling, managing expectations, and devising targeted management or preventive strategies. Further research is needed, particularly long-term prospective studies and direct comparative trials of different formulations.