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### Burden of atopic dermatitis: Real-world data from a large nationwide health care provider



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**Objective:** Atopic dermatitis (AD) is a common chronic relapsing inflammatory skin disease. This study aims to describe the real-world burden of AD in a large, unselected population.

**Methods:** A retrospective-database study was conducted in Maccabi Healthcare Services (2.3-million-member health care provider, Israel). Point-prevalence (31/Dec/2017) was described for AD patients diagnosed during the study (2013-2017). 'Moderate' AD was defined as  $\geq 2$  dispensed topical-calcineurin inhibitors,  $\geq 2$  topical corticosteroids with mid-to-high potency, or  $\geq 1$  phototherapy. 'Severe' AD was defined as  $\geq 2$  systemic corticosteroids combined with 'moderate' AD criteria, or  $\geq 1$  dispensed systemic therapy (methotrexate/azathioprine/cyclosporine/mycophenolate mofetil). The remainder were 'mild' AD. Outpatient visits, hospitalizations and treatments in 2017 were described. Direct annual costs (Israel Ministry of Health prices) for AD vs non-AD controls (matched 1:1 on age, sex, residence) were compared using generalized-linear modeling with logarithmic link (trimming highest 1%).

**Results:** The study included 94,483 AD patients with median age 11.2 (IQR: 5.7-28.4) years (52.3% female). AD prevalence was 4.4% (age 0 to <6 mo = 0.9%, 6 mo to <12 y = 11.0%, 12 to <18 y = 5.8%,  $\geq 18$  y = 2.2%). AD was 57.7%, 36.2% and 6.1% (adults: 43.8%, 46.3% and 9.9%) mild, moderate and severe, respectively. Dermatologist and allergist visits and hospitalization rates ( $\geq 1$ /year) were 40.9%, 6.7%, and 4.9% (adults: 51.6%, 6.3%, and 7.9%), respectively, for overall AD. Compared with controls, overall and moderate to severe AD were associated with 36% and 52% increases in per-person costs (incremental costs of USD126 and USD190), respectively.

**Conclusions:** AD prevalence in Israel is consistent with published database studies. This study provides real-world evidence of the clinical and economic burden of AD, especially for moderate to severe disease.

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### Nail degradation and decomposition secondary to extended use of cuticle remover cosmetic solutions



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**Background:** Nail dystrophy commonly presents in dermatology, often secondary to cosmetic use for nail decoration, care, and maintenance. Reported side effects include contact dermatitis, leukonychia, onycholysis, brittle nails, and secondary infections. Chemical products used to soften or remove cuticles frequently cause local irritant reactions due to keratolytic effects of their active ingredients, sodium hydroxide (NaOH) or potassium hydroxide (KOH), often in 2%-5% concentrations. Recommended application times typically range from 1 to 10 minutes, but a unique crateriform onychodystrophy has been observed in a patient who kept a cuticle product on overnight to allow prolonged contact. This study further investigates this finding and the effects of improper use of keratolytic products.

**Methods:** Nail specimens from 10 individuals with treatment-naïve nails were exposed to cuticle remover solutions, A, B, and C (pH 9.0-10.5), for eighteen hours, and the keratolytic effects were quantified, as measured by the percent decrease in total nail mass and by protein concentration (using NanoDrop A280) in the post-treatment supernatant.

**Results:** Treatment of nail specimens with each cuticle remover, A, B, and C, demonstrated significant decreases in nail mass:  $23.0 \pm 4.2\%$ ,  $25.0 \pm 4.6\%$ , and  $26.0 \pm 3.8\%$ , respectively, vs control,  $3.5 \pm 0.9\%$ ,  $P < .01$ ; and significant protein extraction [protein concentration (mg/mL)]:  $10.0 \pm 1.3$ ,  $8.6 \pm 1.4$ , and  $9.9 \pm 1.8$ , respectively, vs control,  $1.8 \pm 0.3$ ,  $P < .01$ .

**Conclusions:** Dermatologists should be aware of potentially-destructive effects of commercially-available cuticle softeners and removers and specifically ask patients with unexplained nail dystrophy if and how they use these products.

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### Application of physical therapy principles for the prevention of musculoskeletal injuries in dermatologic surgery



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During dermatologic surgery, we tend to focus on optimizing the surgical experience for our patients but not necessarily for ourselves. Nearly ninety percent of Mohs surgeons surveyed in a recent study reported musculoskeletal symptoms or injuries, most commonly of the neck, shoulders, and back, related to their daily work. Substantial stress can be placed on the musculoskeletal system during surgery via repeated and protracted head- and back-bent postures. This inefficient and prolonged positioning can predispose to the development of both upper and lower crossed syndromes, which are well recognized musculoskeletal dysfunction syndromes that combine shortening and tightening of certain muscles with weakening and inhibition of the opposing muscles. Over time, these syndromes can negatively impact both static and dynamic function, perpetuating a cycle of chronic musculoskeletal pain. Physical therapy principles can be implemented to mitigate the risk of musculoskeletal injury in dermatologic surgery. We will present several key exercises that address the classic dysfunction seen in the upper and lower crossed syndromes including strengthening of the weak musculature and stretching of the hypertonic musculature in hopes of optimizing the dermatologic surgeon's physical performance and function for the duration of their career.

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### Thyroid dysfunction in psoriasis: Higher prevalence of thyroid dysfunction in patients with generalized pustular psoriasis



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The previous literature indicates that further investigation is needed to clarify association of psoriasis with thyroid dysfunction. To date, relationship of the severity of psoriasis and thyroid dysfunction has not been investigated. Furthermore, no data regarding generalized pustular psoriasis (GPP) have been available, probably because GPP is a rare disease. In our study, we investigated the prevalence of thyroid dysfunction in patients with psoriasis vulgaris (PsV), psoriatic arthritis (PsA), and GPP, and relationship of severity of psoriasis with serum free T<sub>3</sub> (fT<sub>3</sub>), free T<sub>4</sub> (fT<sub>4</sub>), and TSH levels. Patients diagnosed with PsV, PsA, or GPP visiting our hospital from January 2015 to November 2017 in whom serum fT<sub>3</sub>, fT<sub>4</sub>, and TSH levels were measured in the central laboratory of the hospital were included in this study. Data on 85 psoriasis patients visiting our hospital from January 2015 to November 2017 (54 men and 31 women; PsV 51 patients, PsA 23, GPP 11) were retrospectively analyzed. Fourteen percentage of psoriasis patients had thyroid dysfunction. The percentage of patients with thyroid dysfunction was the highest in GPP (GPP; 45%, PsA 13%, PsV 8%). Psoriasis patients with thyroid dysfunction demonstrated significantly higher PASI scores and elevated serum CRP levels than those without it. Significantly negative correlation was observed between serum levels of CRP and fT<sub>3</sub> ( $P = .0032$ ,  $r = -0.4635$ ). In GPP, severity scores were significantly higher in patients with thyroid dysfunction than in those without it. Our data indicate that thyroid dysfunction in psoriasis is associated with inflammation caused by psoriasis.

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