

# Sleep Deficiency and Psoriasis: Implications for Clinical Practice

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# ABSTRACT

Adults with psoriasis experience sleep deficiency due to poor sleep habits, underlying sleep disorders (obstructive sleep apnea, insomnia), and symptoms of pruritus and pain. This article aims to provide an overview of (1) psoriasis, (2) sleep deficiency in psoriasis, (3) sleep assessment, and (4) the clinical implications of sleep deficiency in psoriasis. Routine assessment and treatment of sleep deficiency in clinical practice may improve quality of life, facilitate disease management, and decrease health care utilization.

**Keywords:** insomnia, obstructive sleep apnea, pain, pruritus, psoriasis, sleep deficiency, sleep habits

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# BACKGROUND

n estimated 50 to 70 million adults in the United States have sleep deficiency,<sup>1</sup> which is a deficit in the quantity or quality of sleep obtained and a major public health concern.<sup>2</sup> Left untreated, it can lead to cardiovascular morbidity, metabolic dysfunction, work-related injuries, and daytime deficits (eg, daytime sleepiness, fatigue, mood), all of which place patients at risk for adverse health outcomes and increased healthcare utilization.<sup>2,3</sup> Psoriasis occurs in 7.5 million adults in the United States and has been identified as a potential risk factor for sleep deficiency.<sup>4-7</sup> In 2013, psoriasis treatment was estimated at \$51-\$63 billion in the United States,<sup>8</sup> and sleep deficiency may contribute to these costs. Sleep deficiency in psoriasis may be an additional comorbidity that contributes to lower quality of life, poor disease management, and increased health care utilization. This article aims to provide an overview of (1) psoriasis, (2) sleep deficiency in psoriasis, (3) sleep assessment, and (4) the clinical implications of sleep deficiency in psoriasis.

#### **OVERVIEW OF PSORIASIS**

Psoriasis is a chronic, inflammatory, immunemediated disease that affects the skin and joints. It is

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more prevalent in Caucasians aged 20-35 years and 50-60 years of age.<sup>5,6</sup> Disease severity ranges from mild with a few small localized skin lesions to severe involving widespread lesions that result in scaling, erythematous plaques, pain, and pruritus. An estimated 30% of individuals with psoriasis will develop psoriatic arthritis. Psoriatic arthritis causes pain, swelling, decreased mobility, and destruction of the joints if left untreated. The pathogenesis is multifactorial and involves the immune system, psoriasis-associated chromosomal loci, autoantigens, and environmental factors.<sup>9</sup> Prior studies have shown that psoriasis is a T-cell-mediated disease that results in high levels of interleukin (IL)-17 in response to IL-23, which has led to the development of new, more effective treatments.<sup>9</sup> Treatments are classified as topical, systemic, and phototherapeutic, and the treatment modalities are based on disease severity, comorbidities, patient preference (quality of life, cost, insurance, adherence), and patient response.<sup>10</sup> The presence of active psoriatic arthritis could require systemic therapy even if psoriasis is mild. The first line of treatment for localized psoriasis includes topical agents such as emollients, corticosteroids (eg, triamcinolone, clobetasol), and vitamin D analogs (eg, calcipotriene).<sup>10</sup> Treatment of moderate to severe psoriasis and psoriatic arthritis, as well as

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localized disease that does not respond to topical modalities, are continuously changing and include a range of systemic treatments including older therapies (eg, phototherapy, acitretin, methotrexate) and newer therapies including biologics (eg, apremilast, adalimumab, secukinumab).<sup>10</sup> Therapeutic paradigms for the treatment of psoriasis continue to evolve. For that reason, patients with moderate to severe, recalcitrant localized psoriasis and psoriatic arthritis should be referred to dermatology for an evaluation and treatment recommendations.

Pruritus and pain are common symptoms and contribute to sleep deficiency.<sup>11–14</sup> Nighttime itching and pain interfere with sleep duration and quality (eg, difficulty falling asleep, increased awakenings).<sup>11–14</sup> Furthermore, comorbidities such as hypertension, diabetes, obesity, myocardial infarction, depression, and anxiety are common in psoriasis and can negatively affect sleep.<sup>15,16</sup> For example, an estimated 30% of patients with psoriasis are diagnosed with depression and/or anxiety, which is often attributed to disease stigma, severity, and missed work due to

painful skin lesions.<sup>17</sup> Thus, in caring for these patients, comorbid conditions need to be considered.

# **Sleep Deficiency in Psoriasis**

The National Sleep Foundation recommendations at least 7 hours of sleep each night for adults aged 18 to 60 years.<sup>18</sup> Yet 1 in 3 adults report sleeping < 7 hours nightly, and 10% report not getting enough sleep every day in the past month.<sup>19</sup> The growing epidemic of sleep deficiency coincides with the rising rates of obesity, diabetes, and chronic conditions.<sup>20</sup>

Table 1 shows the risk factors and symptoms associated with specific sleep disorders in psoriasis. Sleep deficiency may result from a sleep disorder (eg, obstructive sleep apnea, insomnia) and is often comorbid with chronic conditions and poor sleep habits (eg, media use, irregular bedtimes, caffeine consumption). Inadequate amounts of sleep and/or poor quality sleep have been shown to predict nextday symptoms of pain and depressed mood in individuals with rheumatoid arthritis.<sup>21</sup> Given prior

	Risk Factors	Symptoms
Obstructive sleep apnea	Age > 65 years Male gender Obesity: body mass index > 30 Neck circumference: > 17 inches in men > 16 inches in women Family history Craniofacial structures: high arched palate, micrognathia, retrognathia	Snoring Witnessed apnea Wake with breath hold, gasping, or choking from sleep Morning headache Restlessness during sleep (kicking, tossing, and turning) Daytime sleepiness (napping at work or drowsy driving) Cognitive impairment (eg, difficulty concentrating, inattention)
Restless leg syndrome	Iron insufficiency Family history Disease-related symptoms: pruritus and pain Pregnancy	Urge to move the legs Uncomfortable and unpleasant sensations in the legs (eg, pins and needles, pulling, or tugging) Involuntary leg movements when awake Worsens during immobility (at bedtime) or sitting Worse in the evening or at bedtime Relieved by movement, walking, stretching, or rubbing the legs
Insomnia	Poor sleep practices (media use at bedtime or in the bedroom; bedroom temperature; exercise 2–3 hours before bed; caffeine consumption) Comorbidities: depression and anxiety, psoriasis (pruritus, pain)	Difficulty falling asleep (> 30 minutes) Difficulty staying asleep (middle of the night insomnia) Unrefreshing sleep Daytime sleepiness (napping at work or drowsy driving) Cognitive impairment (eg, difficulty concentrating, inattention) Emotional distress

# **Table 1. Risk Factors for Sleep Deficiency**

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