

Sleep Disorders in Pregnancy



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KEYWORDS

- Pregnancy • Restless legs syndrome • Narcolepsy • Insomnia • Circadian rhythm
- Sleep-disordered breathing

KEY POINTS

- Pregnancy is associated with physiologic changes that may disrupt sleep, cause sleep disorders, or worsen underlying sleep conditions.
- Restless legs syndrome may occur de novo in pregnancy or could potentially be exacerbated by increased iron or folate requirements.
- Sleep-disordered breathing may be exacerbated or caused by pregnancy; the disorder is associated with adverse pregnancy outcomes.

Sleep disturbances in pregnancy have been well recognized since Hippocrates. In 2000, the American Academy of Sleep Medicine officially recognized sleep disorders associated with pregnancy as a separate entity defined as the occurrence of insomnia or excessive daytime sleepiness in the course of pregnancy.¹ The past decade has witnessed the emergence of numerous publications on various sleep disorders associated with pregnancy.

Pregnancy is a unique, short-lived state that is associated with profound physiologic changes that may predispose individuals to the development of sleep disturbances; these changes also may exacerbate preexisting conditions. Many pregnancy-related factors may result in sleep disruption.² Heartburn is significantly more common in pregnancy and has been reported in up to 75% of pregnancies in one study.³ Oxytocin, the hormone that is responsible for uterine contractions, is known to peak at night, possibly

causing sleep fragmentation in late pregnancy. Nocturia is a common occurrence in the first and third trimesters. Nocturia is related to an increase in the overnight sodium secretion, leading to a higher overnight urine flow. In late pregnancy, nocturia is worsened by the effect of the growing uterus on bladder capacity.⁴ Fetal movements can disrupt sleep, and musculoskeletal discomfort related to musculoskeletal changes of pregnancy also can result in sleep fragmentation. In the postpartum period, sleep is naturally disrupted and restricted by the needs of the newborn. Some pathologic respiratory conditions, such as asthma, may be exacerbated by physiologic changes of pregnancy, such as nasal congestion, heartburn, and immune changes, resulting in disrupted sleep.

Management of the various conditions in the pregnant population is complicated by concern for fetal well-being and the impact of treatment on the safety of the unborn child. Nonetheless, management decisions should also take into

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consideration the effect of the untreated conditions on the health of the pregnancy and the fetus. This review focuses on nonbreathing-related sleep disorders, with a brief mention of sleep-disordered breathing. A detailed discussion of physiologic changes of pregnancy resulting in sleep disruption is outside the scope of this article.

SLEEP-DISORDERED BREATHING

Many of the physiologic changes of pregnancy predispose to sleep-disordered breathing. Upper airway edema,⁵ increased Mallampati score,⁶ nasal congestion,⁷ and reduction in functional residual capacity⁸ are all predisposing factors, as they contribute to decreased airway patency and increased collapsibility. Despite protective factors, the balance tips toward a higher incidence of sleep-disordered breathing in this population compared with the nonpregnant population. Sleep-disordered breathing has been repeatedly associated with negative pregnancy outcomes, such as gestational hypertensive disorders,^{9,10} gestational diabetes,^{9,11–14} and cesarean deliveries.^{9,10} Adverse fetal outcomes also have been described, but are less consistent. Growth restriction has been described in some studies,^{15,16} but not others.^{9,17–20} Preterm birth has been described in women who snore or have obstructive sleep apnea,^{9,10} but this complication is likely mediated by preeclampsia. Fetal heart rate decelerations were described in clinical studies^{21,22}; however, recent polysomnographic data do not show decelerations following apneic episodes.²³

One recent retrospective study has shown that the risk of a composite set of adverse outcomes increases with the severity of sleep-disordered breathing.²⁴ These data suggest that, like the nonpregnant population, pregnant women with more severe disease need to be offered treatment. It remains unclear, however, whether continuous positive airway pressure (CPAP) alters pregnancy outcomes. Small studies and case series of women with obstructive sleep apnea^{25,26} show an improvement in daytime somnolence, quality of life, and other symptoms, such as morning headaches. However, the impact of CPAP on the prevention of gestational hypertension, gestational diabetes, or fetal outcomes in the setting of obstructive sleep apnea remains unclear. Minimal data have assessed sleep-disordered breathing outside the setting of obstructive sleep apnea and snoring. Central sleep apnea appears to be quite uncommon in pregnant women with sleep-disordered breathing.²⁷ Treatment of these conditions is usually extrapolated from the nonpregnant population.

In summary, sleep-disordered breathing is prevalent in pregnancy and is associated with adverse outcomes. Optimal management of pregnant women with obstructive sleep apnea is unclear and should follow nonpregnant guidelines until evidence suggesting that CPAP modifies pregnancy-specific outcomes exists.

RESTLESS LEGS SYNDROME

Restless legs syndrome (RLS), now known as Willis Ekbom disease (WED), is a sensorimotor phenomenon characterized by an urge to move the legs because of an unpleasant sensation; the urge is worse during periods of rest or inactivity and is partially or totally relieved by movement, and the sensation is worse during the evening or at night. Although a sleep study is not required to make the diagnosis of RLS/WED, the vast majority of patients with RLS/WED have evidence of periodic limb movements and arousals on polysomnography.²⁸

Depending on methodology in community-based surveys in the nonpregnant population, RLS/WED estimates fall between 1.9% and 15.0%²⁹ and appear to have a female predominance.³⁰ RLS/WED has a higher prevalence in pregnancy, with more than a quarter of pregnant women reported to have the syndrome in some studies.^{31,32} However, the methodology and the gestational age at the time of administration of questionnaires in these epidemiologic studies varied significantly. Although some used self-administered questionnaires,^{33,34} others used interview-based information.^{35–37} Timing of data collection also varied significantly, with some studies performing the assessment longitudinally throughout pregnancy,^{38,39} while others performed a cross-sectional analysis at various points during pregnancy.^{31,40} Importantly, the number of criteria met for the diagnosis of RLS also differed between studies.

In a study that performed face-to-face interviews with pregnant women conducted at delivery, nearly a quarter of pregnant women met criteria for RLS according to the International Restless Legs Syndrome Study Group criteria.³⁵ Almost two-thirds of these women had new-onset symptoms, whereas about one-third had symptoms predating pregnancy. The prevalence of RLS appears to increase with gestational age,^{33,38,39} suggesting *de novo* symptoms. For most women, symptoms resolve shortly after delivery.^{36,40} Lower prevalence was reported in other studies³³ and the discrepancy may be related to methodology and the diagnostic criteria used.

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