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## Comparison between REM-related and positional obstructive sleep apnea

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**Purpose:** To document the clinical characteristics of rapid eye movement (REM)- related obstructive sleep apnea (OSA) and supine-only OSA and identify the effects of sleep state and posture in each subtype.

**Method:** In this cross-sectional study, we evaluated 967 OSA adults. REM-related only OSA was defined as 1) an overall apnea-hypopnea index (AHI)  $\geq 5/h$ ; 2) a AHI REM to AHI NREM ratio  $>2$ ; 3) a AHI NREM  $<15/h$  regardless of positional tendency and 4) not fulfill the criteria of positional OSA. Positional-only OSA was defined as: 1) overall AHI  $\geq 5/h$ ; 2) supine AHI to non-supine AHI ratio  $>2$ ; 3) non-supine AHI  $<15/h$  and 4) not fulfill the criteria of REM-related OSA. And, fitting to both the criteria of REM-related and positional OSA was REM-related with positional OSA subtype. To compare demographic, clinical, and polysomnographic features among the three subtypes of OSA.

**Result:** Of the 967 patients, 36 (5.7%) and 460 (73.2%) fulfilled the criteria for REM-related only and positional only OSA. REM-related only OSA had higher proportions of women (38.9%) and BDI scores  $\geq 10$  (63.9%). Patients with positional-only subtype had the most severe sleep apnea and the worst sleep architecture. In patients with REM-related only OSA, the effects of sleep posture were larger during REM sleep, and the effects of sleep state were also larger during supine sleep. However, in positional-only OSA, the postural effects regardless of sleep state were larger than the sleep state effects.

**Conclusion:** REM-related only OSA, positional-only OSA and REM-related with positional OSA subtype have different clinical characteristics. The effects of sleep state and posture were similar in REM-related OSA. However, the effects of sleep posture were significantly larger than the sleep state effects in positional OSA.

### Recent Publications

1. Arie Oksenberg, Elena Arons, Khitam Nasser, Tatiana Vander and Henryk Radwan (2010) REM - related obstructive sleep apnea: The effect of body position. *Journal of Clinical Sleep Medicine* 6(4):343-348.
2. Lee S A, Paek J H, Chung Y S and Kim W S (2017) Clinical features in patients with positional obstructive sleep apnea according to its subtypes. *Sleep & Breathing* 21(1):109-117.
3. Lee S A, Paek J H and Han S H (2016) REM-related sleep-disordered breathing is associated with depressive symptoms in men but not in women. *Sleep Breath* 20(3):995-1002.
4. Nisbet L C, Phillips N N, Hoban T F and O'Brien L M (2014) Effect of body position and sleep state on obstructive sleep apnea severity in children with Down syndrome. *Journal of Clinical Sleep Medicine* 10(1):81-88.
5. Oksenberg A, Silverberg D S, Arons E et al. (1997) Positional vs. non-positional obstructive sleep apnea patients: Anthropomorphic, nocturnal polysomnographic, and multiple sleep latency test data. *Chest* 112(3):629-39.

### Biography

Hyun Woo Kim is majoring in sleep and epilepsy in Seoul Asan Medical Center for fellowship. This is 2nd year for fellowship, and he has involved in many studies about sleep disorder and epilepsy with his colleague.

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