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Obstructive sleep apnea: an update on mechanisms and cardiovascular consequences.

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BACKGROUND AND AIM: There is growing recognition of the widespread incidence and health consequences of obstructive sleep apnea (OSA). This review examines the evidence linking sleep apnea with cardiovascular disease and discusses potential mechanisms underlying this link. **DATA SYNTHESIS:** The weight of evidence provides increasing support for a causal relationship between OSA and hypertension. Furthermore, OSA may contribute to the initiation and progression of cardiac ischemia, heart failure and stroke. Chronic sympathetic activation appears to be a key mechanism linking OSA to cardiovascular disease. Other potential mechanisms include inflammation, endothelial dysfunction, increased levels of endothelin, hypercoagulability and stimulation of the renin angiotensin system. OSA, hypertension and obesity often coexist and interact, sharing multiple pathophysiological mechanisms and cardiovascular consequences. Effective treatment of OSA may attenuate neural and humoral abnormalities in circulatory control, improve blood pressure control and conceivably reduce the risk of future cardiovascular events. **CONCLUSION:** Patients with OSA are at increased risk for cardiovascular disease. OSA should be considered in the differential diagnosis of hypertensive patients who are obese. In particular, OSA should be excluded in patients with hypertension resistant to conventional drug therapy.

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