

diagnosed and treated before chronic hyperventilation can be considered. A high index of suspicion is required as increased minute ventilation can be difficult to detect on physical examination. Once chronic hyperventilation is established, a sustained 10% increase in alveolar ventilation is enough to perpetuate hypocapnia. This increase can be accomplished with subtle changes in the respiratory pattern, such as occasional sigh breaths or yawning 2–3 times per min.

TREATMENT

Hyperventilation

There are few well-controlled treatment studies of chronic hyperventilation owing to its diverse features and the lack of a universally accepted diagnostic process. Clinicians often spend considerable time identifying initiating factors, excluding alternative diagnoses, and discussing the patient's concerns and fears. In some patients, reassurance and frank discussion about hyperventilation can be liberating. Identifying and eliminating habits that perpetuate hypocapnia, such as frequent yawning or sigh breathing, can be helpful. Some evidence suggests that breathing exercises and diaphragmatic retraining may be beneficial for some patients. The evidence for using medications to treat hyperventilation is scant. Beta blockers may be helpful in patients with sympathetically mediated symptoms such as palpitations and tremors.

■ FURTHER READING

ANDERSON PM et al: EFNS guidelines on the clinical management of amyotrophic lateral sclerosis (MALS)—revised report of the EFNS task force. *Eur J Neurol* 19:360, 2012.

BENDITT JO: Pathophysiology of neuromuscular respiratory diseases. *Clin Chest Med* 39:297, 2018.

CHUNG F et al: STOP-Bang questionnaire: A practical approach to screen for obstructive sleep apnea. *Chest* 149:631, 2016.