A Continuum of Normal Breathing to Snoring to Sleep Apnea

Sleep related breathing disorders form a continuum ranging from benign snoring and upper airway resistance syndrome to severe obstructive sleep apnea.

Apnea is defined as cessation of breathing for ten or more seconds. There are three patterns of apnea.

- Obstructive apnea is the absence of airflow despite persistent breathing efforts.
- Central apnea is the absence of airflow due to lack of breathing effort.
- Mixed apnea is a combination of central and obstructive apnea with a central pattern evolving into an obstructive one.

The vibration of the pharyngeal soft tissues creates snoring as air passes through an airway that is too small to allow for smooth, unimpeded flow. Some instances of loud, regular snoring, due to the exaggerated breathing effort and high resistance to airflow, result in repetitive sleep arousal. This condition, referred to as upper airway resistance syndrome, gives rise to the symptoms described above that are most often attributed to obstructive sleep apnea.

Management of sleep disordered breathing (SDB) can be either general or site specific. General approaches require avoidance of risk factors, which include obesity, sleeping supine, eating excessively or drinking alcoholic beverages late at night, taking sedative-hypnotic medications and hypothyroidism.

The gold standard of the general treatments is positive airway pressure, a method of respiratory ventilation that is most often delivered nasally.

More advanced versions of this deliver the air during inhalation and exhalation and are automated to adjust to changes in the patient's unstable airway.

Site specific approaches refer surgically altering the disproportionate anatomy through the removal of, first, excessive soft tissue of the nasal and oral pharynx and second, modify tongue position by altering the position of muscle attachments.

Surgery can correct hard tissue obstruction such as that of a deviated nasal septum, it can bypass soft tissue obstruction through tracheostomy procedures and it can change tongue and palate position through jaw advancement surgery.

Oral appliance therapy is a non-surgical approach to management of tongue position. It prevents the base of the tongue from collapsing and obstructing the upper airway.

The dentist who is involved in the treatment of obstructive sleep disordered breathing must have a working knowledge of

- various sleep related breathing disorders,
- other related sleep disorders, their diagnosis, management and treatment,
- and the over 100 oral appliances now available for use in oral appliance therapy