

# CONGESTIVE HEART FAILURE AND SLEEP APNEA

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## BACKGROUND (ref 1, 2 & 3)

Congestive heart failure is commonly associated with Sleep Apnea  
Asymptomatic CHF up to 30% incidence of Sleep Apnea  
Symptomatic CHF up to 50% incidence of Sleep Apnea  
Patients with CHF often do not have classical symptoms of snoring, excessive weight or daytime sleepiness. They often have orthopnea, paroxysmal nocturnal dyspnea and witnessed apnea.  
The mortality for CHF is significantly greater when Sleep Apnea is present.

## CARDIAC EFFECTS OF SLEEP APNEA (ref 1, 2 & 4)

With upper airway obstruction - increased negative intra thoracic pressures causes:  
increased LV after-load and decreased LV pre-load which combine to decrease stroke volume  
Intermittent hypoxia will increase pulmonary artery pressure and decrease cardiac contractility  
Sympathetic vasoconstrictors increase with apnea and they increase BP and increase after-load

## TYPES OF SLEEP APNEA SEEN IN CONGESTIVE HEART FAILURE (ref 1, 2 & 4)

Obstructive sleep apnea -  
Central sleep apnea - Cheyne-Stokes  
Results from instability of respiratory control  
Components include: Hyperventilation, Prolonged circulation time and Reduced blood buffering capacity

## EFFECTS OF TREATMENT (ref 5 & 6)

Obstructive sleep apnea - Significant improvement in cardiac function with nasal CPAP  
Central Apnea - Cheyne-Stokes -  
Oxygen therapy  
Short term oxygen attenuates frequency and duration of Cheyne-Stokes respirations  
Cardiac function does not improve with six months of oxygen therapy  
Continuous positive airway pressure (CPAP)  
Short term improvement in ventilation and oxygenation  
Cardiac function does improve with long term treatment

## CONCLUSIONS

**SLEEP APNEA IS A COMMON PROBLEM IN CONGESTIVE HEART FAILURE**

**TREATMENT OF OBSTRUCTIVE AND CENTRAL APNEA IMPROVES  
CARDIAC FUNCTION (Sept 2003)**

## REFERENCES

### BACKGROUND, EFFECTS OF TREATMENT and TYPES OF SLEEP APNEA SEEN IN CONGESTIVE HEART FAILURE

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### EFFECTS OF TREATMENT

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