Introduction

- Sleep Apnea is a form of sleep-disordered breathing
- Airway becomes blocked by walls of soft tissue, tongue or tonsil
- Leads to pauses of breathing while sleeping
- Severe sleep apnea requires treatment to prevent hypoxemia (low blood oxygen)
- Symptoms include daytime sleepiness and cognitive effects

Experimental Task

- Subjects consisted of:
  - 7 right handed male patients who were recently diagnosed with OSA
  - 7 healthy non-apneic males matched for handedness and age
- Voxel-Based morphometry (VBM) was used to see changes of cortical gray matter
- Breathing, O2 saturation, heart rate and body position were monitored

The Results
**Results Summary**

- Significantly lower concentration of focal gray matter on the left hippocampus in OSA group
- Non-significant difference but still lower concentration of focal gray matter on the right hippocampus in OSA group
- No difference in total gray matter volume between the two groups (mean±SEM; 0.914±0.012 vs. 0.913±0.013 l).

**Discussion**

- Gray matter loss in patients is due to hypoxic action
- Non significant results on the right hippocampus isn’t known for sure
  - could be due to lack of subjects
  - severity of hypoxaemia
- Other studies show loss of gray matter in other brain areas as well

**My Opinion**

- Needed more subjects to enhance validity
- Perhaps use fMRI
- Test severe OSA subjects to see if results remain the same

**Questions**

- The Results