Manuscript #574S

1. Full Title: Left Heart Morphology and Systolic Function in Sleep-Disordered Breathing
   Abbreviated Title (Length 26): LHM and LV in SDB

2. Writing Group (list individual with lead responsibility first):
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4. Rationale:
   Planning re: echocardiography variables; data transfer: 2/98-9/98
   Data Analysis: 9/98-1/99
   a) Primary: To determine if there are correlations between left heart morphology and systolic function defined by echocardiography and the severity of sleep-disordered breathing.
   b) Secondary: To determine the potential confounders/modifiers of any observed association between SDB and left ventricular hypertrophy (LVH) and left ventricular (LV) systolic function.

5. Main Hypothesis:
   a) The prevalence of LVH and LV systolic dysfunction are increased in subjects with sleep apnea.
   b) There will be a positive correlation between LV systolic dysfunction and LVH and the severity of sleep apnea (normal, snorers, mild, moderate, severe).
   c) The association between sleep apnea and LVH and LV systolic dysfunction are confounded and modified by clinical factors associated with sleep apnea including hypertension and obesity in subjects with sleep apnea.
6. Data (variables, time window, source, inclusions/exclusions):
   a) Study design: cross-sectional analysis to examine the relation between SDB and left
      heart morphology and LV systolic function.
   b) Population: eligible subjects will be SHHS participants who had an echocardiogram.
      Cohort of 2928 subjects will be classified into categories by snoring and RDI status
      (analyzed as a continuous variable).
      Exclusions include technically inadequate studies which preclude measurement and
      interpretation, and subjects with significant aortic stenosis.
   c) Echocardiography: A critical issue to be addressed by the writing group will be the
      across site comparability of LV and LA measurements. Issues concerning
      variability include technical and biological differences across sites. Possible
      approaches include:
      - Random rereading of 20 echoes from each site by the investigators at all 3 sites to
        determine inter-site reproducibility.
      - Stratify or adjust results by sites.
      - Studies will be analyzed by investigators blinded to the subject’s RDI status.