OBJECTIVES/SPECIFIC AIMS: We investigated the association between relationship power imbalance (which can have a negative impact on HIV prevention) and male partner HIV testing, using baseline data from a HIV self-testing trial in 3 antenatal clinics in central Uganda. METHODS/STUDY POPULATION: Pregnant women with HIV-male partners were recruited and randomized by day into standard of care or intervention (HIV self-testing kits). Analyses were performed in SAS 9.4, with χ² tests and p < 0.05 for significance. RESULTS/ANTICIPATED RESULTS: In total, 1514 women were recruited (737 standard of care, 777 intervention). Overall, 39.6% of male partners had previously tested for HIV. Among women <26, contributions to expenses differed by partner testing (overall p < 0.001, 47.6% of women whose partners tested made no contribution vs. 63.2% of women whose partners did not test). Relationship status differed by partner testing (overall p = 0.02, 12.4% of women whose partners tested showed a sometimes difficult relationship vs. 5.7% of women whose partners did not test). Among women ≥26, decision making for family visits differed by partner testing (overall p = 0.005, 52.9% of women made joint decisions with partners who tested vs. 36.5% whose partners did not test). DISCUSSION/SIGNIFICANCE OF IMPACT: Higher relationship power was associated with higher HIV testing among male partners when measured by contribution to expenses and decision making for family visits, but not relationship status. Relationship power balance should be considered when counseling women and men to increase HIV testing.

Role of the antioxidant enzyme catalase in respiratory syncytial virus infection
Maria Ansar1, Jeffrey M. Chamblis2, Naryana Komaravelli3, Teodora Ivanucci2, Antonella Casola2 and Roberto P. Garofalo1
1 University of Texas Medical Branch, Galveston, TX, USA;
2 Department of Pediatrics, University of Texas Medical Branch, Galveston, TX, USA

OBJECTIVES/SPECIFIC AIMS: The goal of this study is to further evaluate underlying disease parameters in respiratory syncytial virus (RSV) infection, that is reduction in antioxidant potential, and determining if supplementation of the antioxidant enzyme catalase could be employed as a potential therapeutic. METHODS/STUDY POPULATION: Nasopharyngeal secretions were obtained from patients (<2 years old) verified for RSV infection, and assessed for catalase activity and correlated with disease parameters. In addition, the BALB/c animal model of RSV infection was utilized to directly study the effect of supplemental catalase on RSV-related disease parameters in vivo. The catalase formulation used in these studies is pegylated, and has been tested to provide long-term increased catalase activity in vivo. We are also currently working on designing an in vitro model of catalase supplementation in AS49 bronchial epithelial cells. RESULTS/ANTICIPATED RESULTS: Our preliminary data shows that patients with more severe disease (based on hospitalization, oxygen supplementation) have significantly lower levels of catalase activity (p < 0.02). Additionally, when pegylated-Catalase (PG-CAT) treatment is utilized in RSV infection of mice, there is significant improvement in several disease parameters. PG-CAT-treated mice show an attenuated body weight loss (p < 0.001) and clinical disease (p < 0.02), and also have lower levels of key pro-inflammatory cytokines including CXCL1 and TNF-α. PG-CAT treatment also resulted in a minor decrease in viral titer, which is being further evaluated. In addition, PG-CAT treatment resulted in an improvement in airway hyperresponsiveness observed at baseline, we are further characterizing this improvement and also conducting methacholine challenges. Currently, we are working to determine the underlying mechanism through which PG-CAT results in these improvements, and whether it is through changes in immune cell populations, cellular signaling or apoptosis signaling pathways (i.e., caspases). DISCUSSION/SIGNIFICANCE OF IMPACT: RSV is the leading cause of viral pneumonia and bronchiolitis in infants, with no vaccines or effective therapeutics available on the market. A medicinal product containing catalase could be used as a potential treatment for RSV.