

Statistical Analysis Plan

Project Title: *Ultrasound Characterization of Ovarian Follicle Dynamics during Weight Loss*

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Statistical Analyses. Mixed models will be used to assess changes in follicle number, follicle diameter, endocrine status and body weight during baseline and the intervention. Time will be designated as the within-subject factor and group (i.e., Irregular Menstrual Cycles / PCOS or Regular Menstrual Cycles) as the between-subject factor. Differences in the incidence and characteristics of key events in folliculogenesis (i.e. including recruitment, selection, dominance, and ovulation), anthropometry, and endocrine and metabolic parameters will be evaluated at designated time points by paired t-test or Wilcoxon Signed Rank Test (within groups), two-sample t-test or Mann-Whitney U test (between groups) and Pearson's chi-square test. Logistic regression will be performed to evaluate the associations between baseline clinical, biochemical, and sonographic endpoints and the ovulatory response to weight loss. Models will be adjusted for confounding variables, including age and baseline weight.