**Influence of community-based group exercise on fall risk on Parkinson's disease**

NCT05940077

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## 10.3 Approach

### 10.3.6 Sample size and Statistical analysis

Aim# 1 is the primary aim and based on our preliminary data with alpha=.05, a sample size of 20 will give 84% power to detect a relationship with an effect size of r=.60. The prevalence of PD in industrialized countries is estimated to be about 0.3%.[1] Using this estimation, we anticipate there to be approximately 2,129 persons in the Boise area with PD. Based on these factors we anticipate fully meeting our recruitment needs.

For Aim #1, the goal is to explore the relationship between modifiable factors and outcomes. Initially because of the exploratory nature of these explorations, change scores for the outcome measures will be constructed. Bi-variate correlations, parametric and non-parametric as appropriate, will be used to access the strength of the relationship between individual outcome change scores and the modifiable factors. These results may be confounded by the progression of the disease, especially at the later measurement. Change in disease state will be introduced as a possible influence in partial correlations between modifiable factors and outcomes. Effect sizes will be calculate using Cohen's *d*.

For Aim #2 the interest is in the reduction of falls among this patient population. Initially to examine the changes in the number of falls a non-parametric McNemar test of change will be used. To examine other factors outside of the intervention that could influence the outcome will follow-up the analyses with McNemar test stratified by possible confounders (i.e. progression of the disease, continuation of the exercise regimen).

## Reference

1. de Lau LM, Breteler MM. Epidemiology of Parkinson's disease. *The Lancet Neurology*. Jun 2006;5(6):525-35. doi:10.1016/s1474-4422(06)70471-9