

Statistical Analysis Plan (SAP)

The primary endpoint in this study is the mycological presence or absence of fungal hyphae in fragments of the index toenail as viewed on the microscopic PAS stain, following the application of active topical nail solution, or placebo nail solution, to participant's mycotic toenails.

Secondary endpoints are changes in the participants' toenail-related quality of life, as measured using the OnyCOE-t™ quality of life questionnaire (56,57), and changes in the appearance of the index toenail as measured using the visible nail plate involvement score. Additional demographic exposure variables will also be collected and analyzed in order to describe the participants in the study. Specifically, the participant's age, sex, body mass index (BMI), comorbidities and medications, as well as the number of mycotic toe nails, the duration of onychomycosis based on the participant's history, the presence of pedal digital deformity (hammer toe, claw toe, if present), and any local or systemic complication/s that may arise during the course of the investigation.

All participants will be followed to the endpoint of the study, in accordance with the proposed timeline. The data will be considered based on type and distribution. An intention-to-treat analysis will be used, and it will entail descriptive statistical methods, including mean and standard deviation, or median and quartile, to describe demographic variables; as well as tests of the null hypothesis that will include 2-sample Student's *t*-tests, or Wilcoxon rank sum tests, for differences between the two study groups both before and after intervention, and paired *t*-tests, or Wilcoxon signed ranks tests, for comparison of pre- and post-treatment results in single participants, for continuous data, depending on the distribution of the data. The statistician will be blind to treatment allocation, which will be denoted as "A" or "B" until the results are computed, after which time the precise nature of the allocation will be revealed.