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## **STATISTIC ANALYSIS**

### **Title**

**Correlation of pupillary diameter change  
with age and anterior chamber depth after  
cataract surgery**

Approved by the CEIm Grupo Hospitalario Quirónsalud-Catalunya on June 21, 2018  
(ID: 47/2018)

## **Analysis of results**

The data will be exported to a database expressly built for this project with security guarantees that guarantee compliance with the current data protection laws. Information on at least 110 eyes of 55 patients will be obtained. The statistical program IBM® SPSS® Statistics v21 will be used to randomly select one eye per patient, to perform descriptive analysis and inferential analysis. The multiple linear regression model will be used to study the correlation between the variables. As a dependent variable, we will have the differences in pupil diameters and as independent variables the age of the patient and the depth of the anterior chamber. The Durbin-Watson test will be used to evaluate the independence of the errors. Through the observation of the point diagram, we will evaluate the relationship between both variables and residuals to assess their homoscedasticity. We will analyze the tolerance to study the collinearity of the variables. We will evaluate Cook's distance for the detection of observations with excessive influence on the fit and we will use P-P graphs or histograms to observe the normal distribution of the residuals.

To study the secondary objectives, normality tests will be used: the Kolmogorov-Smirnov test, graphic tests based on the Q-Q Plot and Normal-Plot normality graphs. Quantitative variables will be expressed as mean and standard deviation. For the comparison of parameters, the hypothesis contrast tests and appropriate confidence intervals will be used in each case: t-Student, ANOVA and their non-parametric equivalents when necessary (Wilcoxon signed ranges test, Kruskal-Wallis test ). The level of significance in all analyzes will be  $p < 0.05$ .