

# Thermographic analysis of phacoemulsification based cataract surgery procedures

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## Abstract

In this study a thermographic system has been used to analyze and compare three phacoemulsification based cataract surgery procedures performed in vivo. During all the surgical procedures the temperature of the ocular surface was acquired, the temperature values in the area where the phaco tip was inserted in the eye were measured, and the quantities of heat transmitted to the eye were assessed through suitable indices. The surgical procedure which have the lowest thermal impact on the eye has been detected. Thermography, used in this study as a temperature monitoring instrument, has allowed analysis to be effected through a useful and advantageous methodology, totally non-invasive as regards both surgeon and patient, and has been applied in vivo without requiring any change in the surgical procedure.

*Keywords:* thermography, in vivo measurement, temperature analysis, cataract surgery.

*This article will appear in the QIRT Journal 4.2.*