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(54) Title: A TONOMETER SYSTEM FOR MEASURING INTRAOCULAR PRESSURE BY APPLANATION AND/OR INDENTATION

(57) Abstract

A tonometer system for measuring intraocular pressure by accurately providing a predetermined amount of applanation of the cornea, and detecting the amount of force required to achieve the predetermined amount of applanation. The system is also capable of measuring intraocular pressure by indenting the cornea using a predetermined force applied using an indenting element, and detecting the distance the indenting element (16) moves into the cornea when the predetermined force is applied, the distance being inversely proportional to intraocular pressure. Also provided is a method of using a tonometer system to measure hydrodynamic characteristics of the eye, especially outflow facility. The tonometer system includes a contact device for placement in contact with the cornea and an actuation apparatus (6) for actuating the contact device so that a portion thereof projects inwardly against the cornea to provide a predetermined amount of applanation. The system further includes a detecting arrangement (8) for detecting when the predetermined amount of applanation has been achieved, and a calculation unit responsive to the detecting arrangement (8) for determining intraocular pressure based on the amount of force the contact device must apply against the cornea in order to achieve the predetermined amount of applanation. An indentation distance detection arrangement is also provided for use when intraocular pressure is to be detected by indentation. In carrying out the method, the system is used to detect intraocular pressure between successive steps of forcing intraocular fluid out from the eye.

