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## Advantages of the extra corneal diaton tonometry in patients before and after photo refractive intervention

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Great success of the modern keratorefractive surgery and its wide spread require high attention to the biometric parameters of the eye in pre- and post-operation period. The most important parameters are those characterizing the cornea, such as central corneal thickness and its changes, regenerative response of corneal tissue and its regulation, as well as the intraocular pressure (IOP) and its correlation with corneal parameters. Morphological structure of the cornea is altered, during various, and first of all laser surgeries with refractive, reconstructive, optical and other purposes. For the patients after corneal surgery an accurate IOP measurement without corneal contact would be desirable. The transpalpebral transscleral tonometer Diaton is small and mobile. It is a non-corneal device, which allows for IOP-measurement in sitting and supine position. recording of stationary and expansive equipment like slit lamp and air puff machines, in seated or in lying position of the patient, and it is independent from mains supply. A recent clinical study revealed that the results of IOP measurement using transpalpebral transscleral tonometry in patients with refraction anomaly before and after keratophotorefractive surgery do not depend on central corneal thickness and are similar to CCT-corrected IOP-values measured by Goldmann Applanation Tonometry. A reproducibility study with Diaton showed recently that when performed by experienced or well-trained individuals, IOP-measurements with Diaton possess high reproducibility and low inter-grader variability. Moreover the measuring method has been shown to be easy to learn over a short time. Clinical application of transpalpebral transscleral tonometry with Diaton makes IOP-measurement efficient and economical. No additional instrumental examination, like measurement of CCT is required. This allows for the application of Diaton as a screening tonometry device both in clinical and non-clinical environment, as well as in rural areas. A particular advantage of Diaton is its ability to measure IOP in situations of contraindication to the corneal tonometry, e.g., ulcer or IOP-monitoring after keratorefractive surgery.

### Recent Publications:

1. A.P. Nesterov, A.R. Illarionova, B. V. Obruch (New tonometer through the eyelid TGDc-01 diaton). Vestn Oftalmol-2007, January-February; 123 (1): 42-4
2. D. Sander, A.Bohm, S. Kostov, L.Pillunat Measurement of intraocular pressure "using a tonometer through the eyelid" TGDc-01 in comparison with flatten tonometry. Graefes Arch Clin Exp Pphtalmol. 2005 June; 243 (6): 563-9
3. M.D. Dogerti, Z.I.Carr, D.P. O'Neill Diaton tonometry: estimation of the suitability and advantages in comparison with Goldmann tonometry. Clin Experiment Ophthalmol. 2012 May-June; 40 (4): e171-5
4. J.A.Cook, A.P. Botello, A. Elders, A. Fathi Ali, A. Azuara-Blanco, K. Fraser and others Systematic review of compliance of the Goldmann tonometer to the flatten tonometry. Ophthalmology, 2012 Aug.; 119 (8): 1552-7
5. SaF04-06: Repeatability and inter observer variability of IOP data using diaton. Dashevsky A.1, Krastel H.\*2, Kotliar K.3, 1Augenarztpraxis Dr. Alexej Dashevsky, München, Deutschland, 2Neckargemünd, Deutschland, 3Fachhochschule Aachen, Campus Jülich, Fachbereich Biomedizintechnik und Technomathematik, Jülich, Deutschland. Ophthalmologie 2017 ÄE 114 (Suppl2):S7-S201, DOI 10.1007/s00347-017-0551-6.

### Biography

Margarita Rozhdestvenskaya has her expertise in regulatory strategies, medical device registration standards, quality management system compliance and in-country regulatory representation. From 2013 she is a director of the Tonom GmbH that is the European Authorized Representative for transpalpebral transscleral tonometer diaton. Tonon GmbH fulfills the obligations of the Medical Device Directive MDD 93/42/EEC and acts as legal entity towards the European authorities as well as providing additional services regarding the technical information of the medical devices within the European Community. Her expertise and proficiency as well as interest to science, innovation and a culture of operational excellence contribute to offer technology, services and support that improve the quality of people's lives.

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