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Changes on the ocular surface affect blink dynamics

Yakup ACET

Mardin Artuklu University Faculty of Medicine, Turkey

Introduction: A blink refers to the opening and closing of the eyelids over the palpebral fissure. The upper eyelid's movement primarily drives the blink function, which can occur spontaneously, voluntarily, or reflexively. Despite its crucial role in maintaining ocular surface wetness, health, and tear film stability, blink activity has been largely overlooked in the context of ocular surface diseases. This is likely due to the challenges associated with detecting blink dynamics and incorporating them into routine clinical assessments for these conditions. Recently, Acet et al. conducted a study that detailed a method for examining blink dynamics without touching the participant's eyes, without shining light into their eyes, and most importantly, without the participant being aware of the process. In summary, images captured by the camera in the meibography module of the corneal topography device were recorded on a mobile phone, allowing access to various parameters related to blink dynamics. This approach was termed 'Non-Noticeable Blink Dynamics'. Using this method, extensive information about blink dynamics can be acquired, making the examination of blink dynamics more practical and enabling the quantitative evaluation of numerous related parameters.

The non-invasive tear break-up time test is one of the gold standard methods in diagnosing dry eye disease, as it provides both quantitative and qualitative information about the stability of the tear film.

The non-noticeable blink dynamics data of 32 participants with dry eye disease were compared with those of 18 participants without the disease. We found that the blink rate per minute was statistically significantly higher in participants with dry eye disease compared to those without (p < 0.05). In contrast, the interblink interval was statistically significantly longer in participants without dry eye disease compared to those with the disease (p < 0.05). In conclusion, changes on the ocular surface affect blink dynamics. We recommend considering blink dynamics in ocular surface tests

Biography

Yakup ACET works at Department of Ophthalmology, Mardin Artuklu University Faculty of Medicine. Nur mahallesi diyarbakır yolu yenişehir yerleşkesi, 47200. Artuklu/ Mardin, TURKEY.