

Publication

Zeitliche Schwingungen retinaler Gefäß durchmesser bei Gesunden unterschiedlichen Alters

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 1192816**Author(s)** Kotliar, K E; Vilser, W; Schmidt-Trucksäss, A; Halle, M; Lanzl, I M**Author(s) at UniBasel** [Schmidt-Trucksäss, Arno](#) ;**Year** 2009**Title** Zeitliche Schwingungen retinaler Gefäß durchmesser bei Gesunden unterschiedlichen Alters**Journal** Der Ophthalmologe : Zeitschrift der Deutschen Ophthalmologischen Gesellschaft**Volume** 106**Number** 7**Pages / Article-Number** 609-18**Keywords** Vessel diameter, Spontaneous venous pulsation, Vasomotion, Signal analysis, Periodicity

PURPOSE: We investigated whether temporal oscillations of the retinal vessel diameter, as measured with the dynamic vessel analyzer (DVA), undergo age-related changes. **METHODS:** Vessel diameters of retinal arterial and venous segments were examined with the DVA in 28 medically healthy volunteers divided into two age groups of 14 persons each: young subjects (21-32 years) and seniors (52-70 years). Continuous temporal records of vessel diameter were mathematically evaluated and divided into high-frequency (period <1.5 s) and low-frequency (period ≥1.5 s) oscillations. **RESULTS:** The phase difference between temporal arterial and venous vessel diameter records was higher in the young group [0.6 (0.1, 3.3)] s [median (1st quartile, 3rd quartile)] compared with the seniors [0.1 (-0.4, 0.3) s]. There was a difference in the periodicity in veins between the groups and, in seniors, between the arteries and the veins. **CONCLUSIONS:** High-frequency oscillations of vessel diameter correspond to the heartbeat. These were expressed more in seniors. Low-frequency oscillations were well expressed in young subjects. Our results show significant age-related alterations in retinal vessel regulation.

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