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## The Effect of Using Smartphone on Convergence and Accommodation

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We look at the extent to which the power of congestion and the ability to control after eye exercises are changed using smartphone applications. We studied 19 to 25 years old college students who had no ocular disease and visual surgery experience and had no problems with convergence and accommodation, and who had more than 1.0 for distance vision. An ARK (Auto-Refracto Keratometer) and phoropter were used to measure the refraction of the students. After that students wear a glasses for some time and checked Near Point of Convergence (NPC test) and Near Point of Accommodation (push-up test). Students doing smartphone game for 30 minutes on full correction and measuring repeatedly. The study result show that the mean variation before and after the experiment were increased 2.3 cm for the near point of convergence, and the mean variation were approximately 1.00 D for the Near Point of Accommodation. The higher the age and the higher the refractive error of the students were more affected by the convergence and accommodation of control after using the smartphone. There were statistically significant differences between the control group, the congestion and concomitant deterioration in continuous smartphone work. However, after a sufficient rest, it has recovered again. As a result, consecutive short-distance work induces congestion and loss of control, so proper rest and control of work time are necessary.

## **Biography**

Ji-eun Kim from 2012 to 2016 graduated from Department of Optometry, Eulji University in Korea. In 2016 she obtained Korea optician license and currently working for the optician in optical store. Main department is contact lenses, refraction and preparation. In 2017, she entered the Graduate School of Public Health Eulji University(KOREA) and Master Science in Clinical Optometry, Marshall B. Ketchum University(U.S.A.) is currently enrolled and in 2017 and 2018, she received an award from The Korean Society of Vision Science and The Korean Ophthalmic Optics Society joint conferences.

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