

1 **Supplemental Material**

2           The Root Mean Square of individual Ocular and Corneal Higher-order  
3 Aberrations of Pooled Population and Difference Among Different Age Groups at  
4 baseline was listed in Supplementary Table 1. When comparing the individual Zernike  
5 coefficients, RMS of Ocular and corneal spherical HOA increased in the older group.  
6 RMS of ocular primary vertical comatic aberrations ( $Z_3^{-1}$ ) were found to have  
7 increased from 0.09 $\mu\text{m}$  to 0.21 $\mu\text{m}$ , while corneal primary vertical comatic aberrations  
8 ( $Z_3^{-1}$ ) increased from 0.14 $\mu\text{m}$  to 0.17 $\mu\text{m}$  with age. RMS of ocular primary vertical  
9 trefoil aberrations ( $Z_3^{-3}$ ) were found to have increased from 0.10 $\mu\text{m}$  to 0.12 $\mu\text{m}$ , while  
10 corneal primary vertical trefoil aberrations ( $Z_3^{-3}$ ) increased from 0.12 $\mu\text{m}$  to 0.13 $\mu\text{m}$   
11 with age. These findings were in line with the trends in individual Zernike terms  
12 evaluated in the forms of mean values.

13           **SUPPLEMENTARY TABLE 1 RMS of individual Ocular and Corneal Higher-order**  
14 **Aberrations of Pooled Population and Difference Among Different Age Groups at baseline**

Parameters	Total (n=458)	Age, years		
		$\leq 12$ (n=146)	13-15 (n=209)	16-18 (n=103)
Ocular, $\mu\text{m}$				
$Z_4^0$	0.08	0.08	0.08	0.08
$Z_6^0$	0.01	0.01	0.01	0.01
$Z_3^{-1}$	0.19	0.18	0.18	0.21
$Z_3^1$	0.09	0.09	0.09	0.09
$Z_5^{-1}$	0.03	0.02	0.03	0.03
$Z_5^1$	0.01	0.01	0.01	0.01

$Z_3^{-3}$	0.10	0.10	0.09	0.12
$Z_3^3$	0.08	0.09	0.08	0.08
$Z_5^{-3}$	0.02	0.02	0.02	0.02
$Z_5^3$	0.01	0.01	0.01	0.01
Corneal, $\mu\text{m}$				
$Z_4^0$	0.11	0.09	0.11	0.11
$Z_6^0$	0.02	0.02	0.02	0.02
$Z_3^{-1}$	0.15	0.14	0.14	0.17
$Z_3^1$	0.08	0.08	0.08	0.09
$Z_5^{-1}$	0.03	0.03	0.03	0.03
$Z_5^1$	0.02	0.02	0.02	0.01
$Z_3^{-3}$	0.12	0.12	0.12	0.13
$Z_3^3$	0.09	0.10	0.09	0.09
$Z_5^{-3}$	0.04	0.04	0.03	0.03
$Z_5^3$	0.03	0.02	0.02	0.03

15 Abbreviations: RMS: Root Mean Square;

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17 Marked changes in ocular primary horizontal comatic aberrations ( $Z_3^1$ ) (from 0.11  $\mu\text{m}$   
 18 to 0.08  $\mu\text{m}$ ) and corneal primary horizontal comatic aberrations ( $Z_3^1$ ) (from 0.11  $\mu\text{m}$  to  
 19 0.06  $\mu\text{m}$ ) were observed in our high-myopia cohort, which was also in line with the  
 20 mean value changes of individual Zernike terms (Supplementary Table 2) .

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22 **SUPPLEMENTARY TABLE 2 RMS of Higher-order Aberrations of the Pooled**  
 23 **Population at Different Visits**

Parameters	Baseline (n=99)	First year (n=99)	Baseline (n=99)	First year (n=99)
	Ocular, $\mu\text{m}$	Ocular, $\mu\text{m}$	Corneal, $\mu\text{m}$	Corneal, $\mu\text{m}$
$Z_4^0$	0.08	0.07	0.10	0.11
$Z_6^0$	0.01	0.01	0.02	0.02
$Z_3^{-1}$	0.17	0.18	0.13	0.14
$Z_3^1$	0.11	0.08	0.11	0.06
$Z_5^{-1}$	0.03	0.03	0.03	0.02
$Z_5^1$	0.01	0.01	0.01	0.02
$Z_3^{-3}$	0.11	0.10	0.15	0.12
$Z_3^3$	0.09	0.10	0.10	0.10
$Z_5^{-3}$	0.02	0.01	0.04	0.03
$Z_5^3$	0.01	0.01	0.03	0.03

24 Abbreviations: RMS: Root Mean Square

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