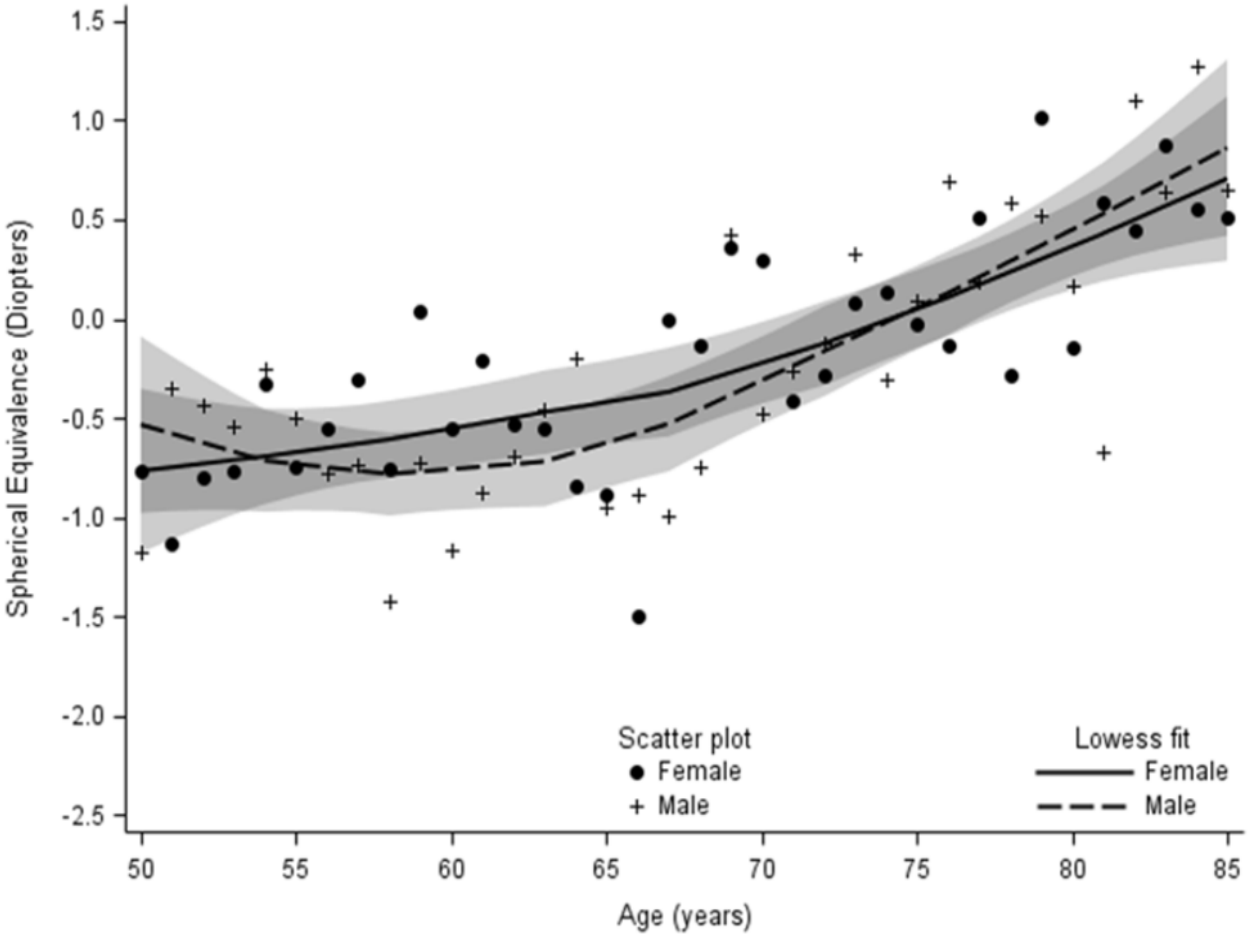
Supplementary Online Content

Richter GM, Wang M, Jiang X, et al; Chinese American Eye Study Group. Ocular determinants of refractive error and its age- and sex-related variations in the Chinese American Eye Study. *JAMA Ophthalmol*. Published online May 18, 2017. doi:10.1001/jamaophthalmol.2017.1176

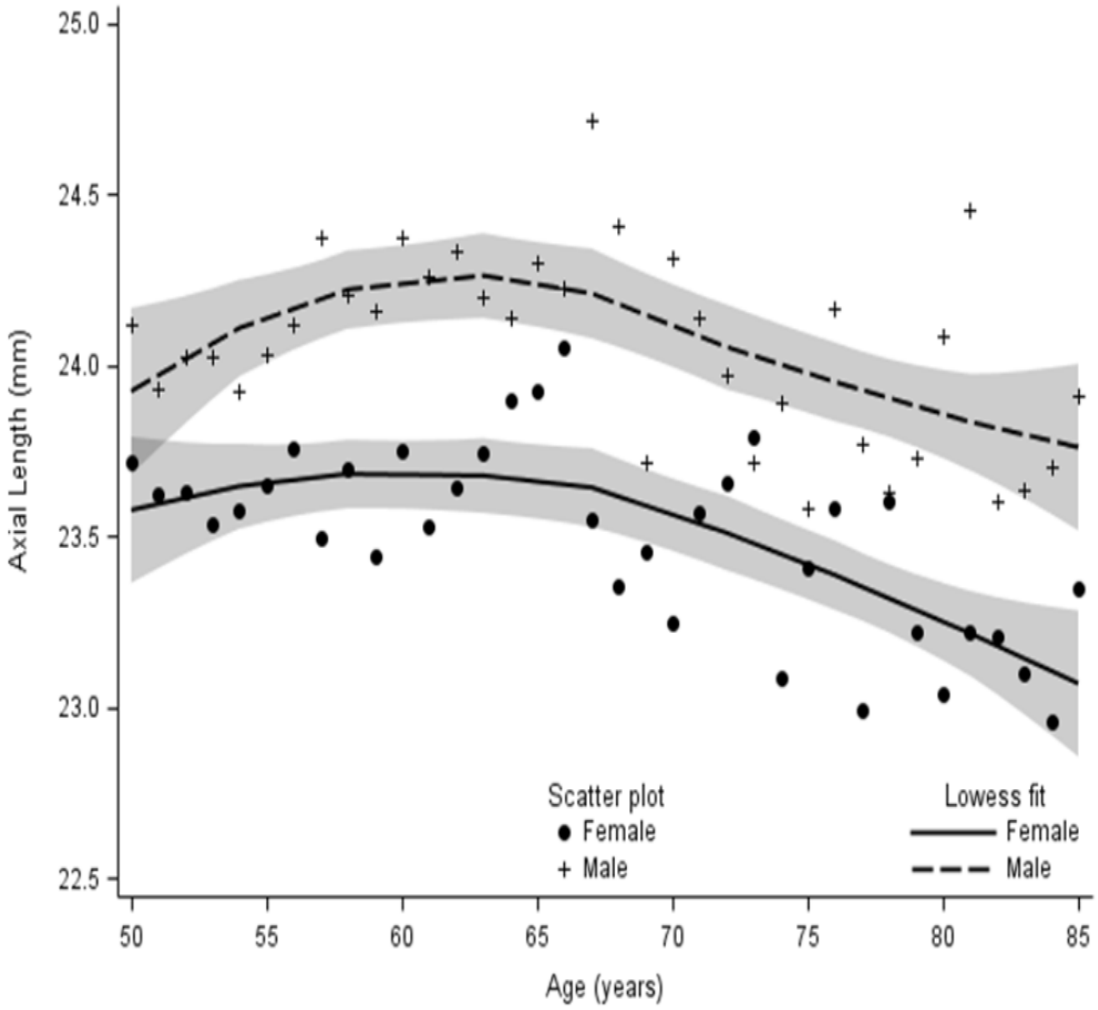
This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure 1. Association Among Age, Sex, and Spherical Equivalent (SE) Plotted Using LOWESS



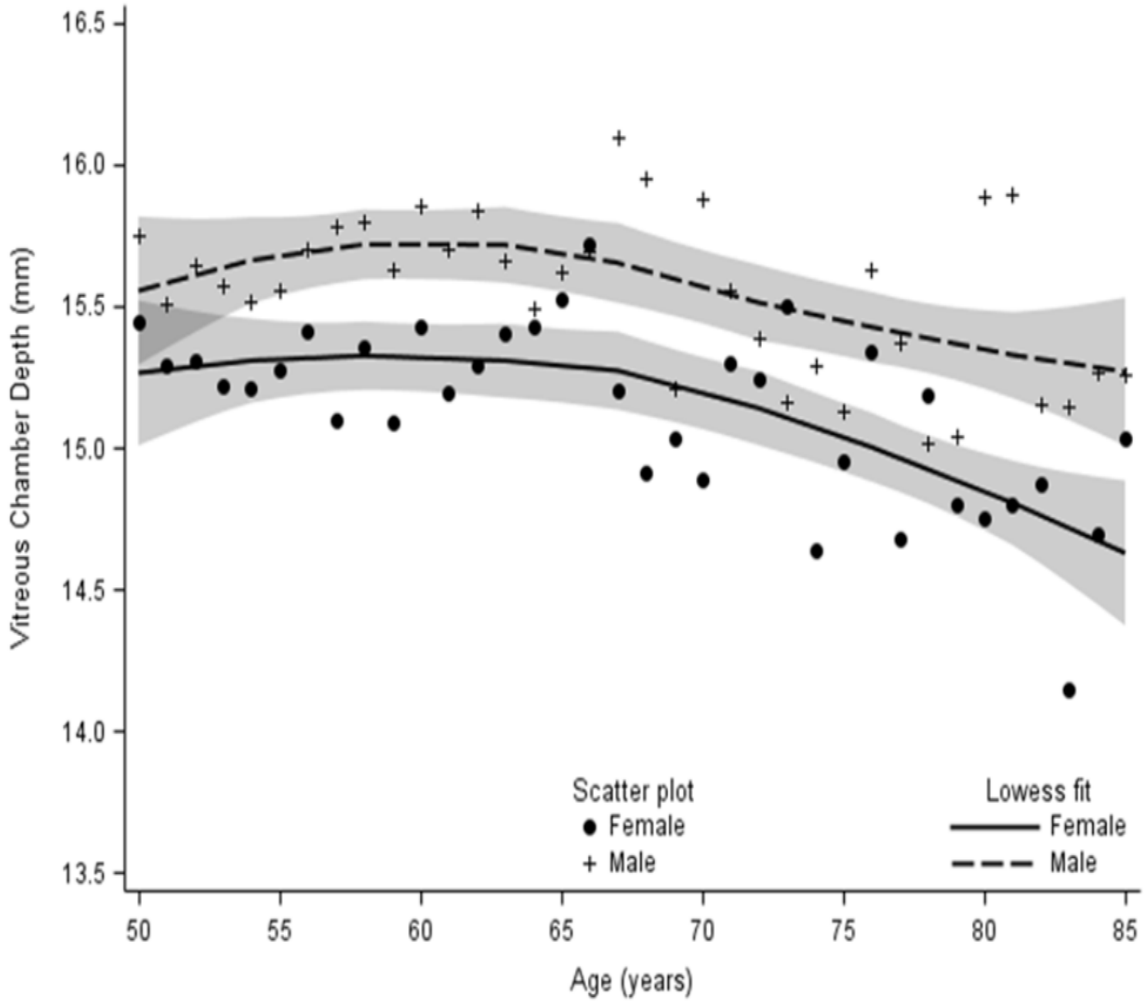
The mean data are plotted for each year from ages 50 to 85+, with a 95% confidence interval. The locally weighted regression lines that best fit the data are also shown. Beyond 60 to 65 years, there is a greater SE refractive error each year.

eFigure 2. Association Among Age, Sex, and Mean Axial Length (AL) Plotted Using LOWESS



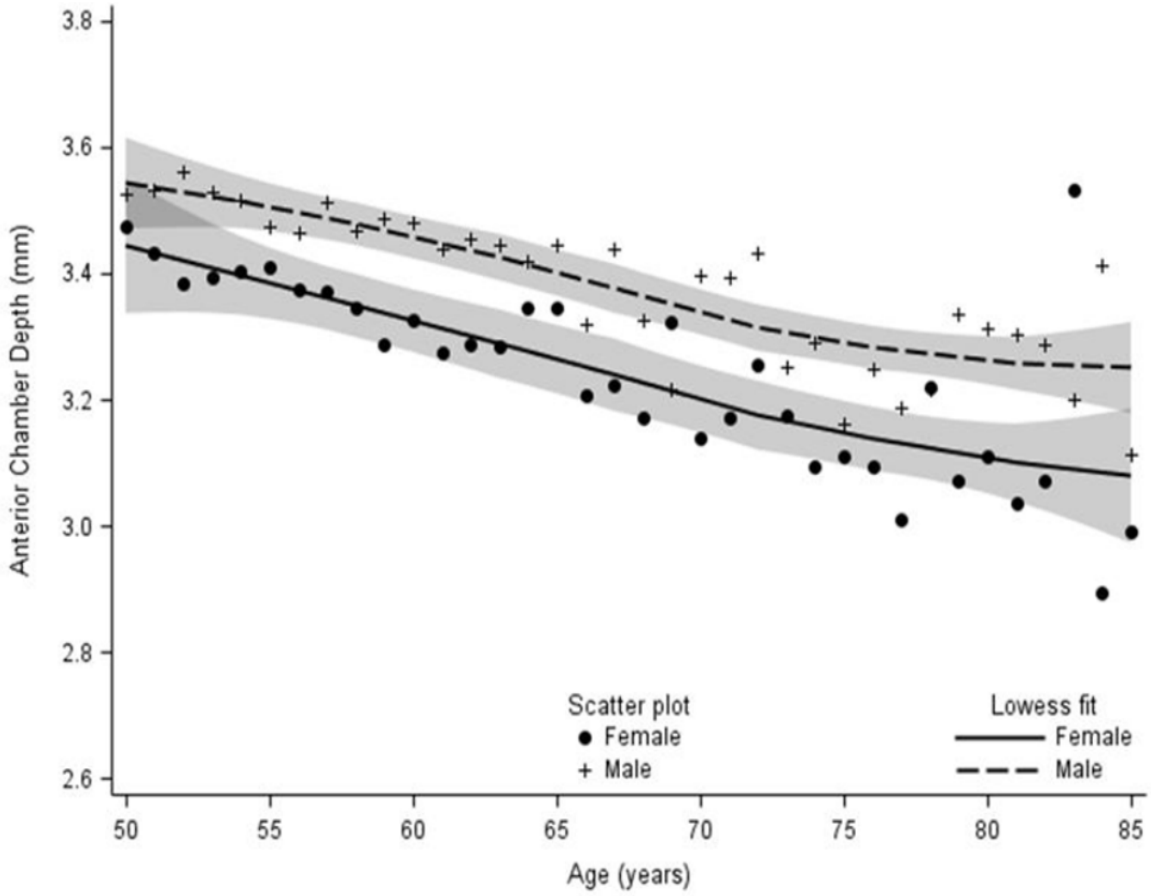
The mean data are plotted for each year from ages 50 to 85+, with a 95% confidence interval. The locally weighted regression lines that best fit the data are also shown. The overall difference between axial length in men and women is demonstrated in the relatively parallel and separate regression lines across the age distribution.

eFigure 3. Association Among Age, Sex, and Mean Vitreous Chamber Depth Plotted Using LOWESS



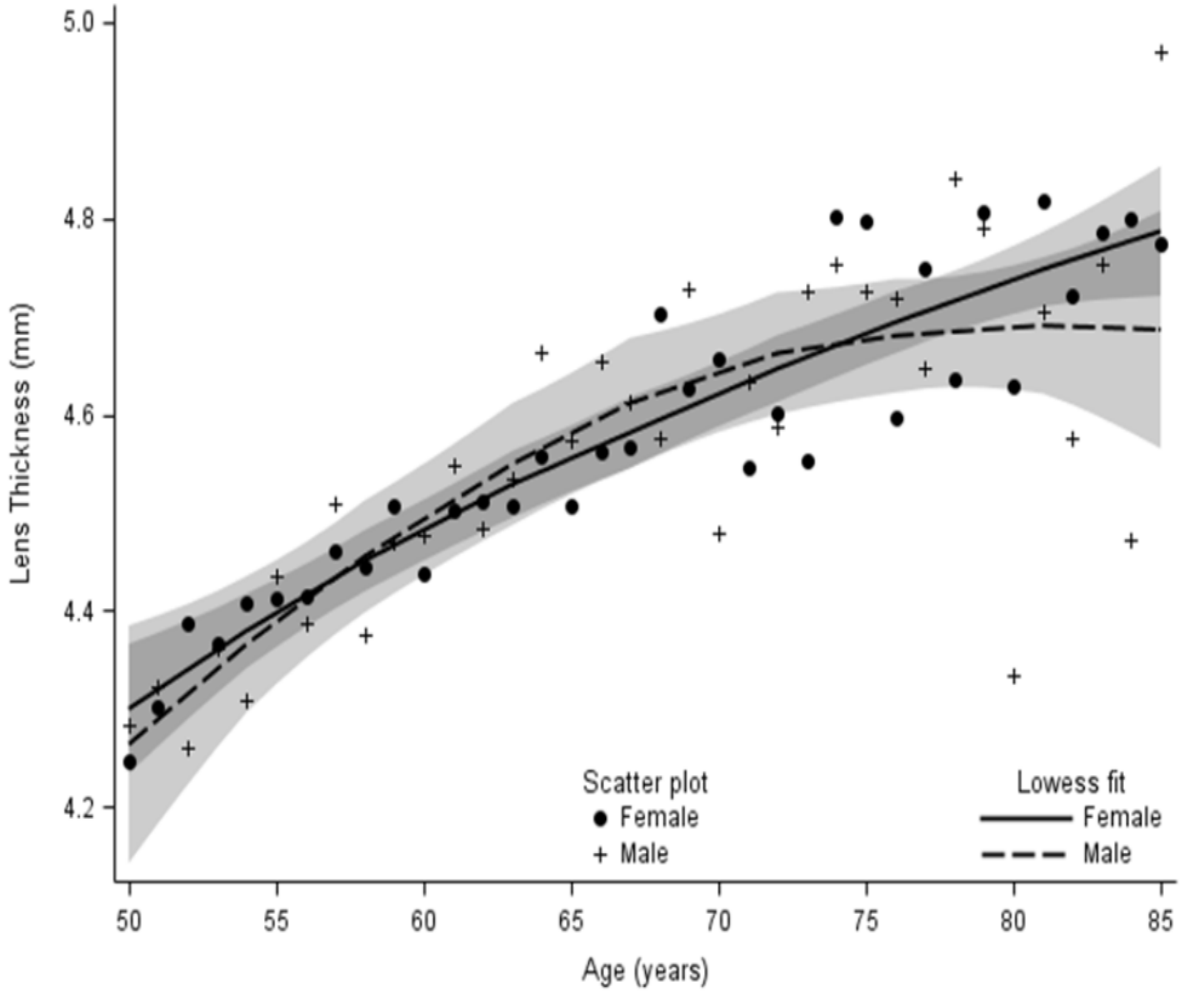
The mean data are plotted for each year from ages 50 to 85+, with a 95% confidence interval. The locally weighted regression lines that best fit the data are also shown. There appears to be a significant difference in vitreous chamber depth in men versus women.

eFigure 4. Association Among Age, Sex, and Mean Anterior Chamber Depth (ACD) Plotted Using LOWESS



The data are plotted by means for each year from ages 50 to 85+, with a 95% confidence interval. The locally weighted regression lines that best fit the data are also shown. Mean ACD across age for women and men have relatively parallel and separated regression lines across the age distribution.

eFigure 5. Association Among Age, Sex, and Mean Lens Thickness Plotted Using LOWESS



The data are plotted by means for each year from ages 50 to 85+, with a 95% confidence interval. The locally weighted regression lines that best fit the data are also shown. Lens thickness increases with age for both women and men, but there is virtually no sex difference.

eTable 1. Age-Stratified Multivariate Linear Regression Models Demonstrating Association of Ocular Variables with Age

Biometric and Clinical Variables	Regression Coefficient	*P* Value
50-59 Age Group		
Spherical Equivalent (D)	0.038	.063
Axial Length (mm)	0.004	.64
Vitreous Chamber Depth (mm)	-0.003	.77
Anterior Chamber Depth (mm)	-0.01	<.001
Central Corneal Thickness (µm)	-0.1	.695
Lens Thickness (mm)	0.017	<.001
Corneal Power (D)	0.01	.33
Lens Nuclear Opalescence (LOCS II grade)	1.14*	<.001[a]
60-69 Age Group		
Spherical Equivalent (D)	0.005	.88
Axial Length (mm)	0.007	.6
Vitreous Chamber Depth (mm)	0.004	.77
Anterior Chamber Depth (mm)	-0.01	.004
Central Corneal Thickness (µm)	-0.08	.81
Lens Thickness (mm)	0.014	<.001
Corneal Power (D)	0.019	.2
Lens Nuclear Opalescence (LOCS II grade)	1.11*	<.001[a]
70-79 Age Group		
Spherical Equivalent (D)	0.037	.35
Axial Length (mm)	-0.032	.09
Vitreous Chamber Depth (mm)	-0.034	.066
Anterior Chamber Depth (mm)	-0.016	.006
Central Corneal Thickness (µm)	-0.29	.62
Lens Thickness (mm)	0.018	.009
Corneal Power (D)	0.008	.73
Lens Nuclear Opalescence (LOCS II grade)	1.10*	.011[a]
80+ Age Group		
Spherical equivalent (D)	-0.01	.83
Axial Length (mm)	0.009	.74
Vitreous Chamber Depth (mm)	0.001	.97
Anterior Chamber Depth (mm)	-0.024	.015
Central Corneal Thickness (µm)	0.36	.67
Lens Thickness (mm)	0.032	.021

Corneal Power (D)	0.009	.83
Lens Nuclear Opalescence (LOCS II grade)	1.12*	.093[a]

All data were sex-adjusted
CHES = Chinese American Eye Study; LOCS II = Lens Opacification Classification System II
*Odds ratio for LOCII grade ≥2 and [a] P value associated with each year of older age

eTable 2. Age-Stratified Multiple Linear Regression Models Demonstrating Ocular Determinants of Refractive Error in CHES

Model 1[a]						Model 2[a]				
Variable	**Regression (95% CI)**	**SRC**	**SPCC[2]**	***P* Value**		**Variable**	**Regression**	**SRC**	**SPCC[2]**	***P* Value**
50-59 Age Group										
						Vitreous Chamber Depth	-2.32 (-2.39, -2.26)	-1.02	0.53	<.001
Axial Length	-2.02 (-2.08, -1.96)	-0.93	0.54	<.001		Corneal Power	-0.94 (-0.99, -0.9)	-0.5	0.17	<.001
Corneal Power	-0.86 (-0.91, -0.81)	-0.46	0.17	<.001		Lens Thickness	-2.34 (-2.55, -2.13)	-0.27	0.06	<.001
Nuclear Opalescence	0.06 (-0.10, 0.21)	0.009	0.0001	0.48		Anterior Chamber Depth	-0.40 (-0.62, -0.18)	-0.046	0.002	<.001
						Central Corneal Thickness	-0.003 (-0.005, -0.002)	-0.041	0.002	<.001
						Nuclear Opalescence	0.14 (-0.01, 0.28)	0.021	0.0004	.06
Model R^2	0.71					Model R^2	0.75			
60-69 Age Group										
						Vitreous Chamber Depth	-2.31 (-2.38, -2.23)	-0.98	0.57	<.001
Axial Length	-2.06 (-2.13, -1.99)	-0.93	0.6	<.001		Corneal Power	-0.88 (-0.94, -0.82)	-0.43	0.14	<.001
Corneal Power	-0.81 (-0.87, -0.75)	-0.39	0.13	<.001		Lens Thickness	-2.14 (-2.39, -1.90)	-0.25	0.049	<.001
Nuclear Opalescence	-0.24 (-0.39, -0.10)	-0.046	0.002	0.001		Anterior Chamber Depth	-0.49 (-0.76, -0.22)	-0.05	0.002	<.001
						Central Corneal Thickness	-0.003 (-0.005, -0.0004)	-0.03	0.001	.025
						Nuclear	-0.14 (-	-	0.0	.05

						Opalescence	0.28, 0.00)	0.026	007	2
Model R^2	0.73					Model R^2	0.76			