Supplement Table 1. Mean annual change in lens thickness, lens power and axial length during follow-up among students at G7

	1st quartile (SE change<-0.563D)		2nd quartile (SE change≥-0.500D to SE change<-0.325D)		3rd quartile (SE change≥-0.313D to SE change<-0.188D)		4th quartile (SE change≥-0.125D)		P for trend*
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
G7	208		184		204		240		
SE (D)	208	-0.762 (0.214)	184	-0.433 (0.052)	204	-0.247 (0.047)	240	0.004 (0.146)	<0.001
LT (mm)	207	0.007 (0.018)	183	0.012 (0.019)	203	0.016 (0.016)	236	0.014 (0.016)	<0.001
LP (D)	207	-0.228 (0.254)	181	-0.198 (0.248)	204	-0.200 (0.212)	235	-0.299 (0.369)	0.009
AL (mm)	208	0.338 (0.101)	184	0.209 (0.066)	204	0.142 (0.058)	240	0.079 (0.067)	<0.001

G7: first year of junior high school; SE: spherical equivalence; AL: axial length; LT: lens thickness; LP: lens power; SD: standard deviation.

*P for trend was calculated by linear regression model.

Supplement Table 2. Annual change (2018-2019) in lens thickness, lens power and axial length during follow-up

	Persistent non-myopia		Persistent Myopia		Newly developed myopia		*P* for trend*
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
G0	1126		1		2		
LT (mm)	227	-0.049 (0.038)	1	-0.071 (/)	1	-0.065 (/)	/
LP (D)	221	-0.947 (0.602)	1	-2.097 (/)	1	-0.755 (/)	/
AL (mm)	231	0.198 (0.084)	1	0.470 (/)	1	0.199 (/)	/
G1	1239		10		75		
LT (mm)	983	-0.033 (0.035)	7	-0.036 (0.036)	65	-0.045 (0.028)	0.025
LP (D)	920	-0.433 (0.470)	7	-0.681 (0.354)	64	-0.636 (0.488)	<0.001
AL (mm)	990	0.152 (0.069)	7	0.408 (0.298)	64	0.323 (0.177)	<0.001
G4	1107		248		499		
LT (mm)	822	-0.028 (0.037)	225	-0.026 (0.028)	404	-0.040 (0.038)	<0.001
LP (D)	795	-0.423 (0.437)	219	-0.515 (0.401)	470	-0.674 (0.412)	<0.001
AL (mm)	818	0.194 (0.090)	221	0.470 (0.172)	472	0.434 (0.171)	<0.001
G7	325		421		121		
LT (mm)	229	0.012 (0.022)	399	0.013 (0.022)	105	-0.002 (0.027)	<0.001
LP (D)	228	-0.146 (0.355)	394	-0.171 (0.365)	103	-0.355 (0.364)	<0.001
AL (mm)	303	0.117 (0.085)	405	0.263 (0.138)	106	0.337 (0.161)	<0.001

G0: kindergarten; G1: first year of primary school; G4: fourth year of primary school; G7: first year of junior high school; AL: axial length; LT: lens thickness; LP: lens power; D: diopters; SD: standard deviation.

* *P* for trend was calculated by linear regression model.

Supplement Table 3. Annual change (2019-2020) in lens thickness, lens power and axial length during follow-up

	Persistent non-myopia		Persistent Myopia		Newly developed myopia		P for trend*
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
G0	1126		1		2		
LT (mm)	877	-0.045 (0.044)	1	-0.049 (/)	2	-0.076 (0.027)	/
LP (D)	843	-0.844 (0.590)	1	-0.366 (/)	2	-1.036 (0.565)	/
AL (mm)	913	0.175 (0.103)	1	0.560 (/)	2	0.752 (0.014)	/
G1	1239		10		75		
LT (mm)	1053	-0.022 (0.034)	9	-0.017 (0.028)	61	-0.029 (0.044)	<0.001
LP (D)	970	-0.566 (0.479)	8	-0.437 (0.359)	58	-0.566 (1.062)	<0.001
AL (mm)	1057	0.174 (0.114)	9	0.330 (0.177)	59	0.497 (0.218)	<0.001
G4	1107		248		499		
LT (mm)	873	0.013 (0.040)	218	-0.008 (0.030)	357	0.003 (0.028)	<0.001
LP (D)	853	-0.296 (0.542)	215	-0.286 (0.437)	470	-0.384 (0.542)	0.015
AL (mm)	883	0.153 (0.152)	219	0.327 (0.208)	472	0.401 (0.170)	<0.001
G7	325		421		121		
LT (mm)	243	0.013 (0.024)	383	0.017 (0.020)	92	0.006 (0.022)	0.282
LP (D)	240	-0.365 (0.497)	374	-0.286 (0.437)	88	-0.252 (0.374)	<0.001
AL (mm)	257	0.097 (0.093)	387	0.165 (0.108)	93	0.237 (0.121)	<0.001

G0: kindergarten; G1: first year of primary school; G4: fourth year of primary school; G7: first year of junior high school; AL: axial length; LT: lens thickness; LP: lens power; D: diopters; SD: standard deviation.

* *P* for trend was calculated by linear regression model.

Supplement Table 4. Annual changes in lens thickness for different age groups.

|	3-year-old	4-year-old	6-year-old	7-year-old	9-year-old	10-year-old	12-year-old	13-year-old	P value*
Baseline									
LT, mm	3.61 (0.13)	3.59 (0.13)	3.47 (0.14)	3.44 (0.14)	3.39 (0.15)	3.38 (0.15)	3.34 (0.15)	3.35 (0.17)	<0.001
First-year follow-up									
LT, mm	3.56 (0.13)	3.54 (0.13)	3.43 (0.14)	3.40 (0.15)	3.35 (0.15)	3.36 (0.15)	3.36 (0.16)	3.36 (0.17)	<0.001
ΔLT, mm	-0.04 (0.04)	-0.05 (0.04)	-0.04 (0.04)	-0.03 (0.03)	-0.04 (0.04)	-0.03 (0.04)	0.01 (0.02)	0.01 (0.02)	<0.001
Second-year follow-up									
LT, mm	3.51 (0.14)	3.50 (0.13)	3.40 (0.14)	3.38 (0.15)	3.36 (0.15)	3.37 (0.16)	3.37 (0.16)	3.37 (0.18)	<0.001
ΔLT, mm	-0.05 (0.04)	-0.05 (0.04)	-0.03 (0.04)	-0.02 (0.03)	0.01 (0.04)	0.01 (0.03)	0.01 (0.02)	0.01 (0.02)	<0.001

LT: lens thickness. Data was presented as mean (standard deviation). Δ was calculated as current observations minus previous year's observations.

* The trend across age groups was testing by linear regression for LT and Δ.

† Annual changes (Δs) by age groups were tested using paired t-test, and all P-values were<0.001.
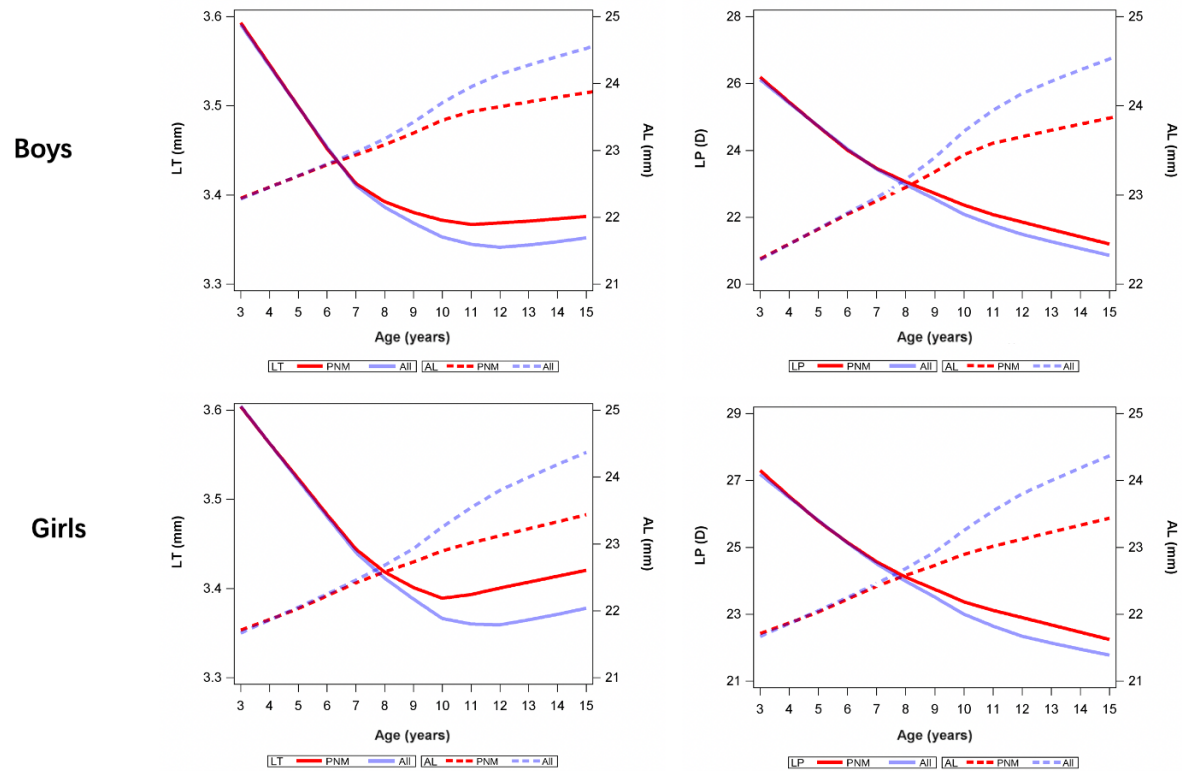
Supplement Figure 1. Gender-specific change in lens thickness and axial length with increasing age among persistent myopia and non-myopia children during the follow-up. The curves were estimated using lowess plots with a smoothing value of 0.50. AL: axial length; LT: lens thickness; LP: lens power; PM: persistent myopia; PNM: persistent non-myopia; D: diopters.
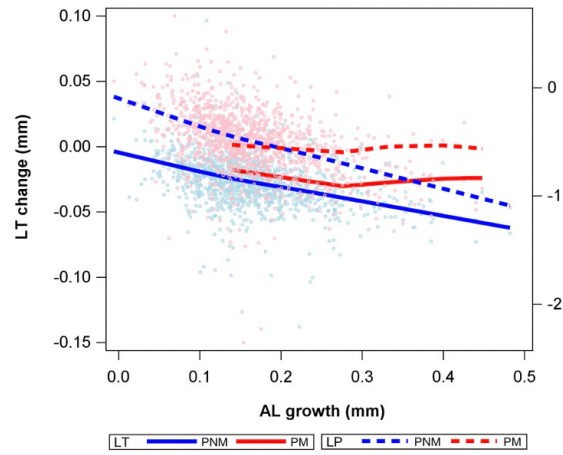
G1
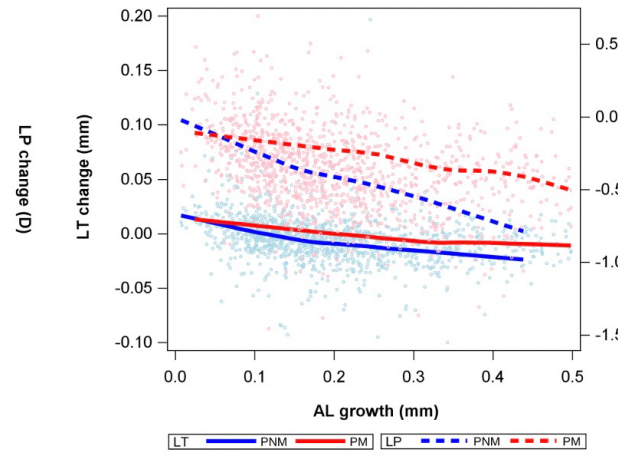
G4
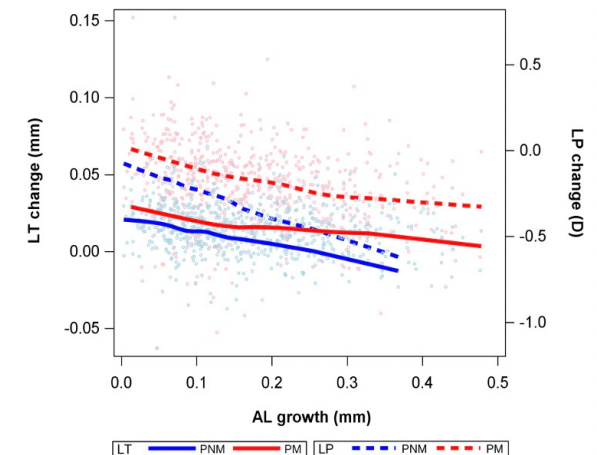
G7

Supplement Figure 2. Change in lens thickness, lens power with axial length growth among persistent myopia and non-myopia children during the follow-up. The curves were estimated using lowess plots with a smoothing value of 0.50. AL: axial length; LT: lens thickness; LP: lens power; PM: persistent myopia; PNM: persistent non-myopia; D: diopters; G1: first year of primary school; G4: fourth year of primary school; G7: first year of junior high school. Detailed regression coefficient and p value could be found in Table 3. Specifically for each of sub-samples, the regression co-efficient (β) was estimated by a separate model with LT growth and LP change as the dependent variable, and AL growth, refractive status (PM vs. PNM) as the independent variables and an interaction term included, adjusting for sex and height as covariates.
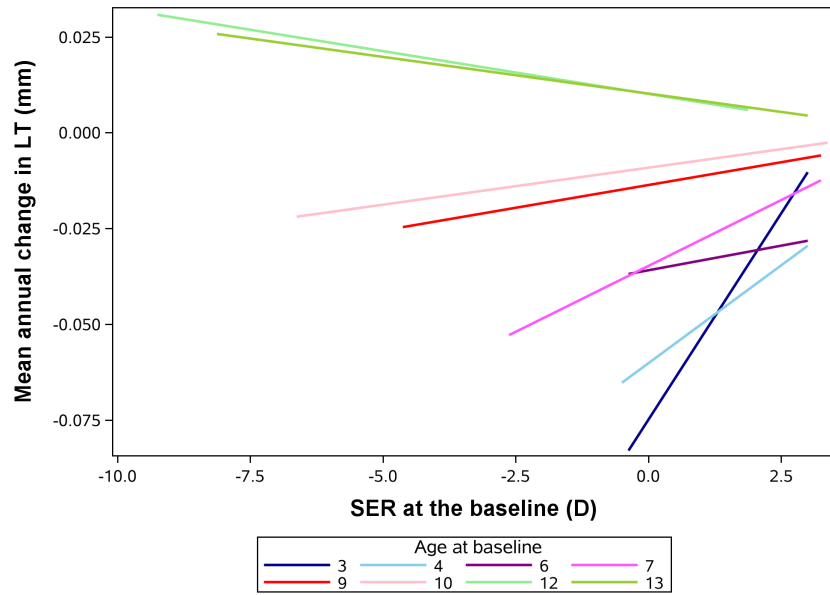
Supplement Figure 3. Change in lens thickness for children with different age and spherical equivalence at baseline. LT: lens thickness; SER: spherical equivalence. Regression with LT change as the dependent variable and baseline SER as the independent variable showed an overall P value of less than 0.001.

Supplement File. The Bennett formula

The lens power (P_L) was calculated using Bennett method:

$$P_{L,\ Bennett} = \frac{-1000n\ (S_{cv}+K)}{1000n-(ACD+c_1 LT)(S_{cv}+K)} + \frac{1000n}{c_2 LT+V}$$

$S_{cv} = \frac{SE}{(1-0.014SE)}$, spherical refraction at the corneal vertex;

SE = spherical power $+0.5*$ cylindrical power

$n = 4/3$, Refractive index of aqueous and vitreous humors;

$c_1 LT$: the distance between the anterior lens surface and first lenticular principal plane

$c_2 LT$: the distance between the posterior lens surface and second lenticular principal plane

c_1 and c_2 constants using the Gullstrand-Emsley eye model: $c_1 = 0.596$, $c_2 = -0.358$;

$V = AL - ACD - LT$, Vitreous depth

SE: Spherical equivalent, AL: Axial length, ACD: Anterior chamber depth (corneal epithelium to anterior lens), LT: Lens thickness, K: Corneal power