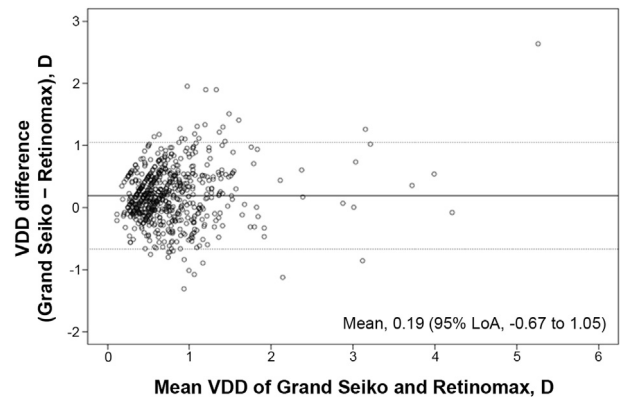
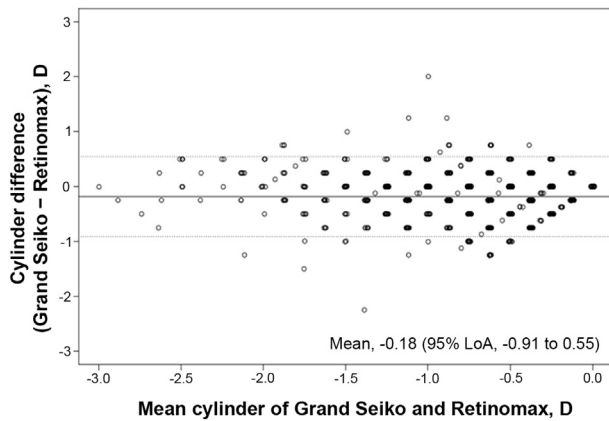


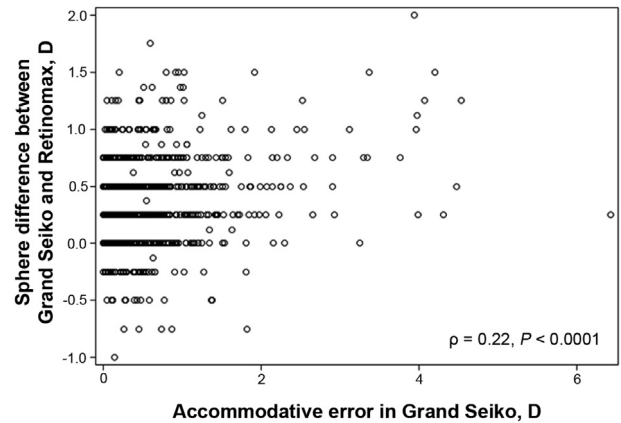
eFIG 1. Bland-Altman plot for sphere measurement from the Grand Seiko and Retinomax autorefractors.



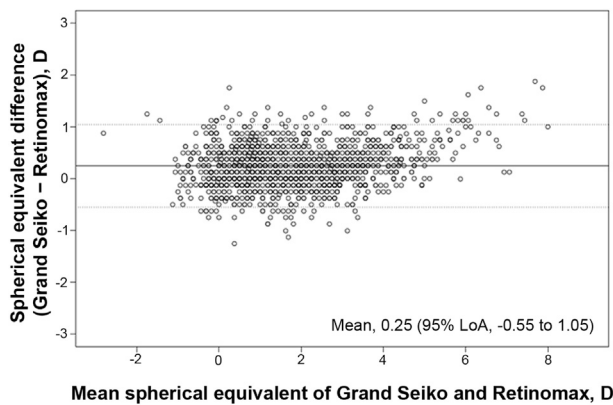
eFIG 4. Bland-Altman plot for vector dioptric difference from the Grand Seiko and Retinomax autorefractors.



eFIG 2. Bland-Altman plot for cylinder measurement from the Grand Seiko and Retinomax autorefractors.



eFIG 5. Scatterplot of accommodative error versus sphere difference between cycloplegic Grand Seiko and Retinomax autorefractors.



eFIG 3. Bland-Altman plot for spherical equivalent from the Grand Seiko and Retinomax autorefractors.

eTable 1. Characteristics of study participants eligible for analysis (N = 702)

Characteristic	Eligible, no. (%)
Age, months	
≤53	173 (24.6)
54-59	241 (34.3)
60-65	218 (31.1)
66 to <72	70 (9.8)
Sex	
Female	375 (53.4)
Male	327 (46.6)
Ethnicity	
Hispanic or Latino	190 (27.1)
Not Hispanic or Latino	495 (70.5)
Unable to answer	17 (2.4)
Race	
African American	487 (69.4)
White	72 (10.3)
Multiple/other	10 (1.4)
Unable to answer	133 (19.0)
Head Start	
No	32 (4.6)
Yes	670 (95.4)
Eligibility for VIP-HIP	
Not eligible	268 (38.2)
Eligible: emmetropia	221 (31.5)
Eligible: hyperopia	213 (30.3)
Suspected amblyopia	
No	671 (95.6)
Yes	31 (4.4)
Strabismus at distance or near	
No	694 (98.9)
Yes	8 (1.1)

D, diopter; SD, standard deviation.

eTable 2. Agreement of refractive error measurements between cycloplegic Grand Seiko and cycloplegic Retinomax (N = 702 children; 1404 eyes)

	Grand Seiko Mean ± SD	Retinomax Mean ± SD	Mean difference ± SD	P value	95% LoA
Sphere, D	2.33 ± 1.66	1.99 ± 1.59	0.34 ± 0.41	<0.0001	-0.46 to 1.14
Cylinder, D	-0.75 ± 0.48	-0.57 ± 0.53	-0.18 ± 0.37	<0.0001	-0.91 to 0.55
Spherical equivalent, D	1.96 ± 1.64	1.71 ± 1.54	0.25 ± 0.41	<0.0001	-0.55 to 1.05
Inter-eye VDD, D ^a	0.85 ± 0.58	0.65 ± 0.51	0.19 ± 0.44	<0.0001	-0.67 to 1.05

D, diopter; LoA, limits of agreement; SD, standard deviation; VDD, vector dioptic distance.

^aThree subjects with missing data in axis from the Retinomax were excluded.

eTable 3. Frequency distribution of refractive error measurements differences between autorefractors by categories

Refractive error difference: Grand Seiko – Retinomax, D	Sphere, no. eyes (%)	Spherical equivalent, no. eyes (%)	Cylinder, no. eyes (%)
≤ -1	2 (0.1)	4 (0.3)	35 (2.5)
> -1, ≤ -0.75	8 (0.6)	12 (0.9)	108 (7.7)
> -0.75, ≤ -0.5	35 (2.5)	40 (2.9)	245 (17.5)
> -0.5, ≤ -0.25	108 (7.7)	123 (8.8)	394 (28.1)
> -0.25, <0.25	268 (19.1)	456 (32.5)	368 (26.2)
≥0.25, <0.5	379 (27.0)	351 (25.0)	179 (12.8)
≥0.50, <0.75	297 (21.2)	233 (16.6)	60 (4.3)
≥0.75, <1.00	184 (13.1)	113 (8.1)	11 (0.8)
≥1.00	123 (8.8)	72 (5.1)	4 (0.3)

eTable 4. Univariate analysis for factors associated with difference in refractive error measurements between the Grand Seiko and the Retinomax autorefractors

Factor	No. eyes	Mean difference \pm SD			
		Sphere, D	Cylinder, D	Spherical equivalent, D	VDD, D
Age, months, at eye exam					
≤ 53	346	0.39 (0.45)	-0.19 (0.37)	0.29 (0.45)	0.20 (0.48)
54-59	482	0.31 (0.39)	-0.17 (0.36)	0.22 (0.40)	0.17 (0.40)
60-65	436	0.34 (0.41)	-0.18 (0.39)	0.26 (0.42)	0.21 (0.46)
66 to <72	140	0.31 (0.40)	-0.22 (0.32)	0.20 (0.37)	0.23 (0.41)
P value ^a		0.12	0.53	0.15	0.63
Sex					
Female	750	0.35 (0.43)	-0.17 (0.38)	0.26 (0.42)	0.19 (0.46)
Male	654	0.33 (0.40)	-0.19 (0.35)	0.23 (0.41)	0.20 (0.41)
P value		0.46	0.33	0.26	0.74
Race					
African American	974	0.32 (0.42)	-0.18 (0.37)	0.23 (0.41)	0.19 (0.44)
Non-African American	430	0.39 (0.41)	-0.18 (0.35)	0.30 (0.42)	0.20 (0.44)
P value		0.02	0.71	0.01	0.80
Spherical equivalent ^b					
≤ 4.0 D	1274	0.31 (0.39)	-0.18 (0.37)	0.21 (0.40)	0.19 (0.43)
> 4.0 D	130	0.67 (0.45)	-0.15 (0.32)	0.60 (0.44)	0.28 (0.47)
P value		<0.0001	0.009	<0.0001	0.07
Accommodative error in Grand Seiko ^c					
≤ 1.35 D	615	0.36 (0.40)	-0.18 (0.37)	0.27 (0.39)	0.18 (0.42)
> 1.35 D	78	0.54 (0.47)	-0.21 (0.33)	0.44 (0.51)	0.29 (0.56)
P value		0.0003	0.47	0.0008	0.046
Any strabismus or suspected amblyopia					
No	1338	0.33 (0.41)	-0.18 (0.37)	0.24 (0.41)	0.19 (0.43)
Yes	66	0.48 (0.48)	-0.12 (0.38)	0.42 (0.46)	0.24 (0.49)
P value		0.06	0.18	0.01	0.53

SD, standard deviation; D, diopter; VDD, vector dioptic distance.

^aTest for any difference among age groups.

^bBased on the mean value from cycloplegic Grand Seiko and Retinomax autorefraction.

^cOnly the right eye was measured for accommodation using the Grand Seiko.

eTable 5. Multivariate analysis for the factors associated with differences in refractive error measurements between the Grand Seiko and Retinomax autorefractors^a

Factors	No. eyes	Mean difference \pm SD	
		Sphere, D	Spherical equivalent, D
Spherical equivalent ^b			
≤ 4.0 D	627	0.35 \pm 0.40	0.26 \pm 0.39
> 4.0 D	66	0.66 \pm 0.42	0.57 \pm 0.42
P value		<0.0001	<0.0001
Accommodative error by Grand Seiko ^a			
≤ 1.35 D	615	0.38 \pm 0.40	0.29 \pm 0.39
> 1.35 D	78	0.44 \pm 0.47	0.33 \pm 0.51
P value		0.24	0.40
Any strabismus or suspected amblyopia			
No	660	0.38 \pm 0.41	0.29 \pm 0.40
Yes	33	0.43 \pm 0.47	0.37 \pm 0.44
P value		0.50	0.28
Race			
African American	479	0.38 \pm 0.42	0.29 \pm 0.40
Non-African American	214	0.39 \pm 0.41	0.30 \pm 0.42
P value		0.85	0.77

D, diopter; SD, standard deviation.

^aBecause only the right eye was measured for accommodation using Grand Seiko, this multivariate analysis included only data from the right eye.

^bBased on the mean value from cycloplegic Grand Seiko and Retinomax autorefraction.