

# A Study of the Present Prevalence of Myopia in Children of School Age in Two Regions of Eastern Inner Mongolia

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## Supplementary Description

**Table S1:** A single-factor analysis of myopia among students in two regions in 2021.

Variables	Number of people surveyed	Number of myopias (%)	$\chi^2$	P
<b>On-campus eye use Does the height of the desk and chair adjust to your height?</b>			116.73	< 0.001
Never	12695	8682 (68.4)		
Once in an academic year	2796	1767 (63.2)		
Once a semester	5485	3356 (61.2)		
Once every two to three months	4819	3010 (62.5)		
<b>How many times a day do eye exercises in school</b>			91.64	< 0.001
1 time	6151	4185 (68.0)		
2 times	15698	10083 (64.2)		
3 times and above	2772	1681 (60.6)		
Do not do it in school	1174	866 (73.8)		
<b>Where are the general activities at recess</b>			230.08	< 0.001
Inside the teaching building	10899	7678 (70.4)		
Outdoor (e.g. playgrounds, etc.)	14896	9137 (61.3)		
<b>Off-campus eye use Time spent doing homework/reading and writing after school every day in the past week</b>			345.24	< 0.001
Less than 1 hour	7291	4255 (58.4)		
1-2 hours (not including 2)	9728	6369 (65.5)		
2-3 hours (not including 3)	624	335 (53.7)		
3 hours and above	8152	5856 (71.8)		
<b>In the past week, time spent attending cultural tutorials in English, math, writing, etc.</b>			33.62	< 0.001
Less than 1 hour	19919	12879 (64.7)		
1-2 hours (not including 2)	3337	2155 (64.6)		
2-3 hours (not including 3)	1390	954 (68.6)		
3 hours and above	1149	827 (72.0)		
<b>Reading and writing positions Read and write with your chest more than a fist from the edge of the table</b>			101.08	< 0.001
Never	3703	2257 (61.0)		
Occasionally	7928	5464 (68.9)		
Frequently	5411	3588 (66.3)		
Always	8753	5506 (62.9)		
<b>Read and write with eyes more than one foot (33 cm) from the book</b>			118.86	< 0.001
Never	3532	2197 (62.2)		
Occasionally	7678	5356 (69.8)		

Frequently	5900	3860 (65.4)		
Always	8685	5402 (62.2)		
<b>Read and write with fingers about one inch (3.3 cm) from the pen tip</b>			39.31	< 0.001
Never	3643	2284 (62.7)		
Occasionally	6339	4304 (67.9)		
Frequently	5867	3871 (66.0)		
Always	9946	6356 (63.9)		
<b>Did the teacher remind you to pay attention to reading and writing posture</b>			75.19	< 0.001
Never	3716	2272 (61.1)		
Occasionally	5538	3841 (69.4)		
Frequently	5699	3747 (65.7)		
Always	10842	6955 (64.1)		
<b>Do parents remind you to pay attention to reading and writing posture</b>			63.64	< 0.001
Never	3312	1968 (59.4)		
Occasionally	4491	3044 (67.8)		
Frequently	5956	3933 (65.9)		
Always	12027	7870 (65.4)		
<b>Electronic screen usage time Time spent on the computer per day in the past week</b>			8.03	0.045
Less than 1 hour or not seen	22806	14845 (65.1)		
1-2 hours (not including 2)	1934	1289 (66.6)		
2-3 hours (not including 3)	572	388 (67.8)		
3 hours and above	483	293 (60.7)		
<b>Time spent using mobile electronic devices (including cell phones, tablets, etc.) per day in the past week</b>			77.6	< 0.001
Less than half an hour	12234	7652 (62.5)		
0.5-1 hour (not including 1)	3324	2270 (68.3)		
1-2 hours (not including 2)	6331	4210 (66.5)		
2 hours and above	3906	2683(68.7)		
Close eye use				
<b>Read a book or electronic screen in direct sunlight?</b>			114.85	< 0.001
Never	18037	11425 (63.3)		
Occasionally	6714	4736 (70.5)		
Frequently	565	356 (63.0)		
Always	479	298 (62.2)		
<b>Turn off the lights when watching the electronic screen after dark?</b>			71.68	< 0.001
Never	16787	10647 (63.4)		
Occasionally	6442	4381 (68.0)		
Frequently	1521	1082 (71.1)		
Always	1045	705 (67.5)		
<b>Lying down or lying on your back to read a book or electronic screen?</b>			185.38	< 0.001

Never	13611	8365 (61.5)		
Occasionally	8357	5724 (68.5)		
Frequently	2700	1919 (71.1)		
Always	1127	807 (71.6)		
<b>Do you read books or electronic screens while walking or riding in a car?</b>			118.98	< 0.001
Never	18861	11926 (63.2)		
Occasionally	5487	3868 (70.5)		
Frequently	874	624 (71.4)		
Always	573	397 (69.3)		
<b>What light is used to read and write at home after dark</b>			121.92	< 0.001
Simultaneous use of table lamps and roof lights	12214	8373 (68.6)		
Use only table lamps	2935	1881 (64.1)		
Use only roof lights	10646	6561 (61.6)		
<b>When using the eyes at close range, how often to rest the eyes (distant view, closed eyes or outdoor activities, etc.)</b>			125.23	< 0.001
15 minutes or less	6283	3794 (60.4)		
More than 15 minutes, but less than 0.5 hours	6497	4143 (63.8)		
0.5-1 hour (not including 1)	6461	4366 (67.6)		
1-2 hours (not including 2)	3866	2647 (68.5)		
2-3 hours (not including 3)	1005	692 (68.9)		
3 hours and above	1683	1173 (69.7)		
<b>Outdoor activity and sleep</b>				
<b>How much time was spent outdoors during the day in the past week</b>			30.35	< 0.001
Less than 1 hour or not seen	6504	4332 (66.6)		
1-2 hours (not including 2)	9565	6265 (65.5)		
2-3 hours (not including 3)	3688	2448 (66.4)		
3 hours and above	4280	2650 (61.9)		
I don't know	1758	1120 (63.7)		
<b>Sleeping time</b>			627.41	< 0.001
<8 hours	8899	6712 (75.4)		
≥8 hours	16896	10103 (59.8)		
<b>Whether the parents are nearsighted</b>			782.7	< 0.001
Only the father is myopic	2318	1756 (75.8)		
Only mother is myopic	3712	2885 (77.7)		
Both parents are myopic	1454	1198 (82.4)		
Neither parent is nearsighted	18311	10976 (59.9)		

**Table S2:** Variable assignment table

Variables	Assignment
Myopia or not	0= non-myopia ; 1= myopia
Gender	0= Male ; 1= Female
Ethnicity	0= Han Chinese ; 1= Mongolian ; 2= Manchu ; 3= other ethnic groups
Residence	0=urban ; 1= Suburban counties
Learning stage	0= Elementary school ; 1= Middle School ; 2= High school ; 3= Vocational high school
Does the height of desks and chairs adjust according to height?	0= never ; 1= once a school year ; 2= once a semester ; 3= once every two to three months
How many times a day do you do eye exercises at school	0=1 time ; 1=2 times ; 2=3 times and more ; 3= not at school ;
Where do you usually go during recess	0=in the school building ; 1= outside
In the past week, on average, how much time you spent doing homework and reading and writing after school each day	0= less than 1 hour or no homework ; 1=1-2 hours (not including 2); 2=2-3 hours (not including 3); 3=3 hours or more ; 5= don't know
In the past week, how long did you attend cultural tutorials in total	0= less than 1 hour or no tutorials ; 1=1-2 hours (not including 2); 2=2-3 hours (not including 3); 3=3 hours and more ; 4= don't know
When reading and writing, chest is more than one fist from the edge of the table	0= Always ; 1= Never ; 2= Sometimes ; 3= Frequently
When reading and writing, eyes are more than one foot (33cm) from the book	0= Always ; 1= Never ; 2= Sometimes ; 3= Frequently
Reads and writes with fingers about one inch (3.3cm) from the tip of the pen	0= Always ; 1= Never ; 2= Sometimes ; 3= Frequently
Does your teacher remind you of your reading and writing posture	0= Always ; 1= Never ; 2= Sometimes ; 3= Frequently
Do your parents remind you to pay attention to your reading and writing posture	0= Always ; 1= Never ; 2= Sometimes ; 3= Frequently
In the past week, usually used computer time per day	0= less than 1 hour or did not look at it ; 1=1-2 hours (not including 2); 2=2-3 hours (not including 3); 3=3 hours and more
Average time spent using mobile electronic devices per day	0=0-29 minutes ; 1=30-59 minutes ; 2=60-119 minutes ; 3=120 minutes and more
Read or look at electronic displays in daylight?	0= Never ; 1= Sometimes ; 2= Frequently ; 3= Always
Do you turn off the lights when looking at electronic displays after dark?	0= Never ; 1= Sometimes ; 2= Frequently ; 3= Always
Read or look at electronic displays while lying on your back or stomach	0= Never ; 1= Sometimes ; 2= Frequently ; 3= Always
Do you read or look at an electronic display while walking or riding in a car?	0= Never ; 1= Sometimes ; 2= Frequently ; 3= Always
What kind of lighting do you use to read and write at home after dark	0= both desk lamp and roof lamp ; 1= desk lamp only ; 2= roof lamp only ; 3= other
Average time spent outdoors during the day in the past week	0= less than 1 hour ; 1=1-2 hours (not including 2); 2=2-3 hours (not including 3); 3=3 hours and more ; 4= don't know
Sleep time	0=< 8 hours ; 1=≥8 hours
Whether parents are nearsighted	0= neither parent is nearsighted ; 1= only father is myopic ; 2= only mother is myopic ; 3= both parents are myopic

**Table S3:** Binary Logistic Regression of Factors Affecting Myopia.

Variable	$\beta$	SE	Wald $\chi^2$	OR	OR95%CI	P
<b>Gender</b>						
Male				1		
Female	0.434	0.028	234.462	1.543	1.460-1.631	< 0.001
<b>Ethnicity</b>						
Han Chinese				1		
Mongolian	-0.249	0.031	66.165	0.779	0.734-0.828	< 0.001
Other ethnic groups	-0.19	0.06	10.77	0.82	0.730-0.930	0.016*
<b>Place of residence</b>						
Urban				1		
Suburban County	-0.212	0.046	21.197	0.809	0.739-0.885	< 0.001
<b>Stage of study</b>						
Elementary School				1		
Middle School	0.891	0.33	719.55	2.439	2.285-2.603	< 0.001
High School	1.428	0.053	725.403	4.168	3.757-4.625	< 0.001
Vocational High School	0.476	0.111	18.337	1.61	1.294-2.001	< 0.001
<b>Where is recess usually held</b>						
Inside the school building				1		
Outside	-0.106	0.03	12.173	0.9	0.848-0.955	< 0.001
<b>Read and write with eyes more than one foot (33cm) from the book</b>						
Always				1		
Never	0.309	0.088	12.272	1.363	1.146-1.620	< 0.001
Occasionally	0.342	0.068	25.627	1.408	1.233-1.608	< 0.001
Often	0.184	0.063	8.499	1.202	1.062-1.359	0.004*
<b>Average daily time spent using mobile electronic devices in the past week</b>						
Less than half an hour				1		
0.5-1 hour (excluding 1)	0.138	0.045	9.341	1.148	1.051-1.254	0.020*
1-2 hours (not including 2)	0.105	0.036	8.755	1.111	1.036-1.192	0.030*
2 hours and more	0.054	0.046	1.384	1.055	0.965-1.154	0.239
<b>Read a book or electronic screen in direct sunlight?</b>						
Never				1		
Occasionally	0.127	0.04	10.36	1.136	1.051-1.227	0.001*
Often	-0.078	0.1	0.606	0.925	0.761-1.125	0.436
Always	-0.091	0.118	0.594	0.913	0.724-1.151	0.441
<b>Do you read books or electronic screens lying down or on your stomach?</b>						
Never				1		
Occasionally	0.137	0.04	11.838	1.146	1.061-1.239	0.001*
Often	0.168	0.06	7.995	1.183	1.053-1.330	0.005*
Always	0.374	0.093	16.165	1.454	1.212-1.745	< 0.001

Are parents nearsighted						
Neither parent is nearsighted				1		
Only the father is myopic	0.764	0.053	204.632	2.148	1.934-2.385	< 0.001
Only mother is myopic	0.848	0.044	363.805	2.334	2.139-2.546	< 0.001
Both parents are myopic	1.168	0.074	252.307	3.217	2.785-3.716	< 0.001

Note: "\*" is  $P < 0.05$