

Project 1 - Myopia Studies

Statistics for BA II

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The aim of this project is to examine which variables contribute to the development of "Myopia within the first five years of follow up", measure by variable MYOPIC. The rest variables are potential candidates for examining the variable under study. The data are a subset of data from the Orinda Longitudinal Study of Myopia (OLSM), a cohort study of ocular component development and risk factors for the onset of myopia in children.

Column	Description	Value/Unit	Name
1	Year subject entered the study	year	STUDYYEAR
2	Myopia within the first five years of follow up	0 = No; 1 = Yes	MYOPIC
3	Age at first visit	years	AGE
4	Gender	0 = Male; 1 = Female	GENDER
5	Spherical Equivalent Refraction	diopter	SPHEQ
6	Axial Length	mm	AL
7	Anterior Chamber Depth	mm	ACD
8	Lens Thickness	mm	LT
9	Vitreous Chamber Depth	mm	VCD
10	Time spent engaging in sports/outdoor activities	hours per week	SPORTHR
11	Time spent reading for pleasure	hours per week	READHR
12	Time spent playing video/computer games or working on the computer	hours per week	COMPHR
13	Time spent reading or studying for school assignments	hours per week	STUDYHR
14	Time spent watching television	hours per week	TVHR

Column	Description	Value/Unit	Name
15	Composite of near-work activities	hours per week	DIOPTERR
16	Was the subject's mother myopic?	0 = No; 1 = Yes	MOMMY
17	Was the subject's father myopic?	0 = No; 1 = Yes	DADMY



Using important methods of Statistics, we found an accurate model that choose the characteristics that contribute to the development of "Myopia within the first five years of follow up" .

- spherical equivalent refraction
- time spending doing sports
- heredity

Conclusion

According to our model , the existence of myopia depends on the D value of spherical equivalent refraction, the time spending in sports and the heredity. Specifically, low prices in spherical equivalent refraction during childhood can be an evidence of suffering from myopia in the long run. Time spending doing sports is a good way of reducing the probability of developing myopia. Last but not least, if one or both parents have myopia it is very possible that the child will have myopia as well.