



# Does Computer Work Cause Myopia?

📅 2015-02-22 | ≡ By: [Jake Steiner](#)

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Maybe. Sort of.

All myopia starts as “pseudo myopia”, also referred to as ciliary spasm myopia or NITM (near-induced transient myopia).

This isn't real myopia, in that it would just go away if you stopped the excessive close-up focus. A whole lot of computer work, every day, never stopping that strain, does cause pseudo myopia. This can show up to be anywhere from 1 to 1.5 diopters at an optometrist exam.

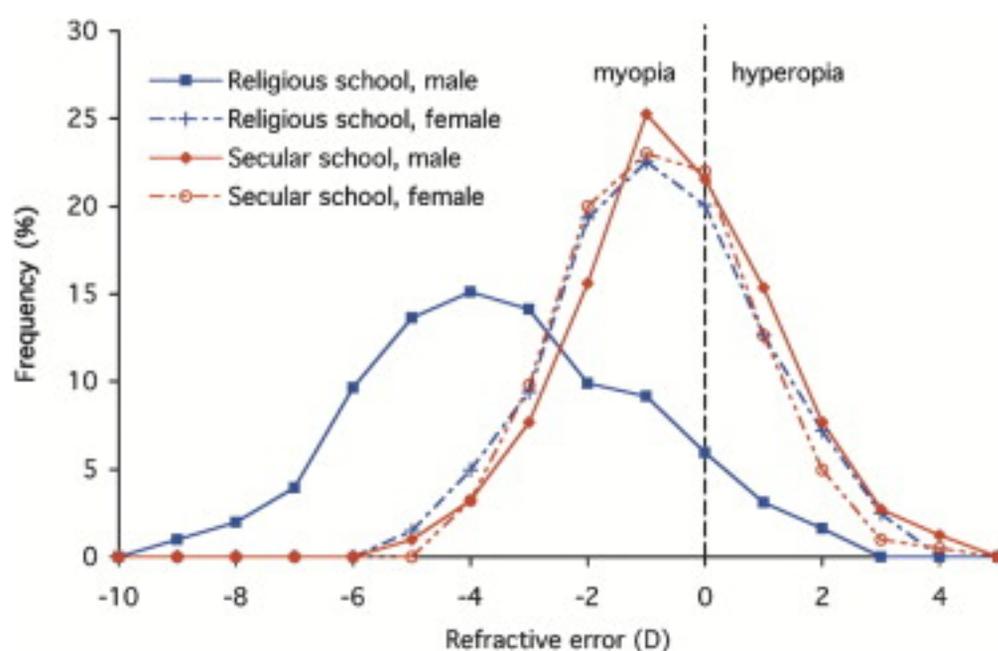
Computer work alone (or reading books, or any other consistent close-up focus) doesn't cause myopia higher than 1.5 diopters of optometrist diagnosed correction. It's not until

you begin to wear glasses, that real myopia happens (lens-induced, axial elongation myopia).

From ScienceDirect:

*“Until the past decade or two, the conventional wisdom had been that myopia was principally genetic in origin both because of the higher incidence of myopia among the children of myopic parents and the large differences in myopia prevalence among ethnic groups (Mutti et al., 2002). This view was weakened by the discovery of homeostatic control of refractive error in animals, including primates. This gave credibility to the epidemiological evidence accumulating over decades that visual factors might contribute to myopia in humans. The evidence is of three types. First, there are epidemiological studies in many countries showing an association between the educational level attained and the prevalence of myopia (e.g., Goldschmidt 1968 and Sperduto et al. 1983), ranging from 3% for unskilled laborers to 30% for those with university educations. Second, a high proportion of young adults who do intensive professional studies (medical, law, engineering, or pilot school) become myopic over the few years of study (e.g., Kinge et al. 2000 and Zadnik and Mutti 1987). Third, cultures in which people lead outdoor lives have little myopia (Morgan and Rose, 2004), but when compulsory*

education and the other attributes of modern Western culture were introduced to Inuit or American Indian villages, there was a 4-fold increase in the incidence of myopia within one generation (Bear, 1991), although it is difficult to dissociate the visual changes from dietary and other changes (Cordain et al., 2002). The thrust of these findings is that education is associated with an increased prevalence of myopia. The risk factor most discussed as the intervening variable is reading, because the nearness of the page presents the eye with hyperopic defocus. Although the accommodation system reduces this hyperopic defocus, it cannot eliminate it, because accommodation is under negative feedback control, with defocus being the error signal that drives the accommodation output. Therefore, it is plausible that continuous hyperopic defocus during reading drives the emmetropization mechanism to correct this apparent refractive error by making the eye myopic.”



# Near-Work and Myopia

*Frequency distribution of refractive errors in four populations of Israeli students. Boys in religious schools, who do much sustained near-work, have a much higher prevalence of myopia than do girls in religious schools or than either girls or boys in secular schools (replotted from [Zylbermann et al., 1993.](#))*

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