

Researchers discover correlation between birth month and short-sightedness

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Planning for a summer delivery for your child? You might want to choose an ophthalmologist along with an obstetrician.

If your child is born in the winter or fall, it will have better long-range eyesight throughout its lifetime and less chance of requiring thick corrective glasses, predicts a Tel Aviv University investigation led by Dr. Yossi Mandel, a senior ophthalmologist in the Israel Defense Forces Medical Corps.

Forming a large multi-center Israeli team, the scientists took data on Israeli youth aged 16-23 and retroactively correlated the incidence of myopia (short-sightedness) with their month of birth. The results were astonishing. Babies born in June and July had a 24% greater chance of becoming severely myopic than those born in December and January – the group with the least number of severely myopic individuals. The investigators say that this evidence is likely applicable to babies born anywhere in the world.

The results of the study were published this month in the clinical eye journal *Ophthalmology*. The team interpolated data from a sample size of almost 300,000 young adults, making it one of the largest epidemiological surveys carried out in the world on any subject.

Is this great disparity in eyesight related to one's luck or astrological sign? "Nonsense," balks study co-author Prof. Michael Belkin of Tel Aviv University's Goldschleger Eye Research Institute, the most

prominent eye research organization in Israel and the region. Belkin is also Incumbent to the Fox Chair of Ophthalmology and one of the founders and first director of the Goldschleger Institute, established more than 25 years ago at the Sheba Medical Center. In November Prof. Belkin will attend the annual American Academy of Ophthalmology conference in New Orleans, La.

“It is probably a long-term effect of early-life exposure to natural light that increases the chances of a child becoming short-sighted,” he says. “I am speaking about those people who would have to wear very thick glasses, if they did not use contact lenses or laser surgery for the removal of spectacles.”

A more thorough laboratory analysis of myopia in young chickens suggested that the body has a mechanism that causes the eyeball to lengthen (short-sighted eyes are longer than normal) when it is exposed to prolonged illumination. This mechanism is associated with melatonin, a pigment secreted by the pineal gland, though scientists are not sure exactly how it operates. This is the same gland that sets our body’s internal clock or permits it to participate in “Circadian rhythms.”

“We know that sunlight affects the pineal gland and we have indications that melatonin, through other compounds, is involved in regulating eye length,” says Belkin. “More sun equals less melatonin, equals a longer eye which is short sighted.”

Belkin doesn’t identify any evolutionary benefit for extreme myopia in summer babies. “People with longer eyes who lived in the period prior to the invention of eyeglasses were severely disadvantaged and restricted to a few professions or doomed to death.” Nowadays, however, shortsightedness has its advantages, Belkin says, pointing out a strong correlation between myopia and intelligence.

Belkin scientifically demonstrated this correlation 20 years ago. “It is not a myth at all that people who wear pop-bottle glasses are smarter. They tend to be,” he argues.

Though involved in this recent research regarding myopia, Belkin’s main research subject is lasers and their application for curing eye disease. “I am studying the effects of lasers on eyes: How to prevent accidental injuries and how to develop lasers for treatment of eye diseases such as glaucoma and age-related macular degeneration - the leading causes of blindness.”

Source: American Friends of Tel Aviv University

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