

Can Sleep Position Affect your KC?

Multiple studies establish the relationship between eye rubbing and keratoconus. A group of cornea experts in Paris hoped to identify other risk factors that may lead to progression. They turned to a small subgroup of patients – those with severe KC in one eye and no evidence of disease in the other to learn more.

Thirty-three keratoconus and 64 control patients were given a comprehensive eye exam and survey with questions about their general health, allergies, dominant hand, eye rubbing, computer use, stress, and sleep habits.

They found most patients with KC admitted to vigorous eye rubbing: 81% reported eye rubbing in the morning, and 97% rubbed their eyes during the day, compared to 15% of the control patients.

In a significant finding not previously reported, 94% slept on the side of their 'worse' eye. The authors theorized that pressure from a hand or pillow may provide relief, just like eye rubbing, and could be causing trauma to genetically fragile corneas. Several hours each night of low-level biomechanical stress from 'pillow hugging' may have a cumulative effect and may be an overlooked risk factor.

Dr. Neda Nikpoor, MD, a cornea specialist in Honolulu found the study results compelling, "it stands to reason that sleep position could exacerbate keratoconus." She added that she asks her dry eye patients about sleep position since those patients can show more irritation on their preferred sleeping side. "I would be very interested in a larger study to see if these results can be replicated. Until then, I plan to start asking my KC patients about their sleeping position to see if I notice a similar trend."

The authors further theorized that sleeping on the side or stomach may increase heat to the eye. A small change in temperature can cause biochemical changes resulting in corneal

weakening. They also reasoned that direct and prolonged contact of eyelids against bed linen could increase allergens, triggering morning eye rubbing.

The good news about these findings is that sleep position is an adaptable behavior. Dr. Nikpoor concluded, “We are fortunate to live in a time in which we can offer CXL to our patients, yet there is still so much we do not know about KC. I look forward to more information like this on modifiable risk factors so we can better counsel our patients.”

Reference: Incorrect sleeping position and eye rubbing in patients with unilateral or highly asymmetric keratoconus: a case-control study, Mazharian A et al, Graefes Arch Clin Exp Ophthalmol 2020, [258:2431-2439](#).



Dr. Neda Nikpoor, MD, is a graduate of the University of Oklahoma Medical School. She completed her ophthalmology residency and cornea fellowship at the University of Miami's Bascom Palmer Eye Institute, followed by a global ophthalmology fellowship at Stanford University where she worked with the Himalayan Cataract Project. Dr. Nikpoor is in private practice at Aloha Laser Vision in Honolulu, HI.