

Self-moisturizing contact lenses, naturally

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Even contact lenses are joining the trend to go green. Chemical engineering researchers at McMaster University have shown that a common fluid found in our bodies can be used as a natural moisturizing agent in contact lenses.

This is a step up from the current wave of self-moisturizing contact lenses that use synthetic materials as a wetting agent to prevent eye dryness and increase wearer comfort.

It is estimated that more than 50 per cent of people who stop wearing contact lenses do so because of discomfort caused by dryness, which is particularly high at the end of the day.

The research from McMaster, recently published in the journal *Biomaterials*, showed that hyaluronic acid can be entrapped in existing contact lens material without affecting optical properties.

It was also found that using hyaluronic acid considerably reduces the build up of proteins which can cloudy contact lens material, the cause of up to 30 per cent of all after-care visits by contact lens wearers to optometrists. [That's one less appointment and one more step towards reducing your carbon footprint.]

Hyaluronic acid is a natural polymer that acts to reduce friction. An average person weighing 70-kg has about 15 grams of hyaluronic acid in their body, one third of which is turned over daily. The body uses hyaluronic acid to repair skin, provide resiliency in cartilage, and

contribute to the growth and movement of cells, among other things. It is also used by the medical profession to treat patients with dry eyes, in cataract surgery, and for other eye-related procedures.

While manufacturers have not yet produced contact lenses with hyaluronic acid, the researchers remain hopeful.

"We've shown that the process works," said Heather Sheardown, professor of chemical engineering at McMaster and a member of the McMaster School of Biomedical Engineering, who was involved in the research. "We're optimistic that a manufacturer will see the benefits of using this naturally based technology to provide contact lens wearers with greater comfort and convenience."

Source: McMaster University

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