Singapore scientists invent drug-dispensing contact lens  
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SINGAPORE, Oct 28 (AFP) - Scientists in Singapore have invented a contact lens capable of releasing precise amounts of medication to treat glaucoma and other eye diseases, doing away with eye drops, the developers said Thursday.

The government-backed Institute of Bioengineering and Nanotechnology (IBN) is now looking for partners to commercialize the product, which also minimizes the harmful seepage of drugs to other body organs.

"Glaucoma accounts for 20 percent of blindness in Singapore and is rapidly becoming the second major cause of blindness in Asia after cataracts," the IBN said in a statement.

"Contact lens wearers with dry eyes may also benefit from this invention as the material can be modified to produce self-lubricating contact lenses," it added.

According to industry studies, the eye care market is undergoing exponential expansion due to population growth, ageing, widening of licensing for prescription of ophthalmic drugs and novel technologies.

The market for ophthalmic drugs worldwide is estimated at about 4.0 billion US dollars per year, growing at 10-15 percent annually.

Most opthalmic medications are now delivered through eye drops but the drugs usually mix with tears and reach other organs through the bloodstream, potentially causing serious side effects.

IBN developed a simple method of making entirely new polymeric lens materials whereby drugs are added directly into the solution that eventually becomes the lens, a spokesman said.

The drugs sit in the structure of the lens material and are released into tiny channels from which they slowly leak onto the surface of the eye.

IBN scientist Edwin Chow, a co-inventor of the new contact lens, said the delivery system can be tailored to different drugs and remain effective for extended periods.

"Drugs may also be encapsulated in polymeric nanoparticles which are then dispersed through the lens material," he said.

"By altering the size, concentration and structure of these polymeric nanoparticles, we can further control the drug delivery rates, while retaining the appropriate lens clarity," he added.