

Childhood vaccination may protect adult eyes

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Childhood vaccination for the rubella virus may have also almost entirely eliminated an inflammatory eye disease from the U.S.-born population, according to a study by researchers at the University of Illinois at Chicago.

The study is published in the September issue of the *American Journal of Ophthalmology*.

Fuchs heterochromic iridocyclitis, or FHI, is a chronic inflammatory disease of the eye that causes cataract and glaucoma and can lead to blindness. There is no effective treatment.

"We don't know what causes FHI," says Dr. Debra Goldstein, associate professor of ophthalmology and visual sciences at UIC. "But we were seeing changes in the incidence of the disease and in the makeup of the patient population with the disease -- fewer American-born FHI patients, and those we did see were older."

Although not able to establish the cause of FHI, earlier studies had found antibodies for rubella in the eyes of patients with FHI, suggesting that the rubella virus might be involved. The UIC researchers looked for epidemiological evidence that might link childhood vaccination for rubella, commonly known as German measles, with the decrease in the incidence of FHI they had observed.

"We hypothesized that if there was a relationship between rubella and FHI, then the proportion of FHI cases we were seeing at UIC would

decrease after the institution of the national rubella vaccination program and that an increasing percentage of the FHI cases would be in patients coming from countries without a vaccination program," Goldstein said.

Patients with FHI and two other types of inflammatory eye disease who were seen at UIC between 1985 and 2005 were grouped by the decade of their birth to determine whether the percentage with FHI decreased relative to the two other inflammatory eye diseases. The percentage of foreign-born versus U.S.-born patients with FHI and the two control groups was also compared.

For U.S.-born patients born before rubella vaccinations (1919-1958) the percentages of FHI and two other eye inflammatory diseases were about equal. But there was a 69 percent drop in FHI in patients born the following decade (1959-1968) and a further 40 percent drop in patients born from 1969 to 1978. Only one FHI patient born during the decade 1979-1988 was seen.

Over the same periods, the percentage of foreign-born patients with FHI increased compared with the controls.

Rubella vaccination was implemented in the United States in 1969. By 1977, an estimated 60 percent of children had been vaccinated, with an 80 percent decline in cases.

Currently, children commonly receive two doses of the vaccine by the time they are six years old. As a result of the vaccination program, the majority of U.S. rubella cases now occur in foreign-born individuals.

The vast majority of eye inflammatory diseases have no known cause, according to Goldstein. "Although this kind of study has its limitations, it's exciting to find convincing epidemiological support for earlier research implicating the rubella virus as a cause of FHI," she said.

Source: University of Illinois at Chicago

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