



## The Role of Doctors of Optometry in the Identification, Treatment and Prevention of Sexually Transmitted Diseases

As chlamydia, gonorrhea and syphilis cases continue to rise in U.S. for the fourth year in a row, there is an urgent public health need to recognize that doctors of optometry detect signs of sexually transmitted diseases (STDs) in the eye.<sup>1</sup> Transmitted during sexual contact between partners or during childbirth between mother and child, STDs can be detected during routine comprehensive eye examination.

The importance of this comprehensive eye examination, especially for populations most affected, is underscored by the Centers for Disease Control and Prevention (CDC) annual Sexually Transmitted Disease Surveillance Report (2017), released August 2018. The CDC report highlights that three fourths of all new STD diagnoses were comprised of 1.7 million new cases of chlamydia, with 45 percent among 15- to 24-year-old females. The report additionally specifies that new cases of gonorrhea diagnoses increased 67 percent overall from 2016 and new cases of syphilis diagnoses increased 76 percent from 2016.<sup>2</sup> To combat this trend the CDC is now calling for “a renewed commitment from health care providers—who are encouraged to make STD screening and timely treatment a standard part of medical care, especially for the populations most affected—is an important component to reverse current trends.”<sup>3</sup>

The doctor of optometry can detect signs of chlamydia, gonorrhea and syphilis using a special ocular instrument know as a “slit lamp” to examine various tissues of the eye under high stereoscopic magnification. This clinical procedure provides a unique opportunity for earlier diagnosis of these common STDs, and improved access to necessary treatments. Importantly, the eye provides the same environment that cause STD bacteria to infect the genital regions: moisture and warmth. Chlamydia is more easily transmitted, through unprotected sex, from one person to another because it is rare for patients to show symptoms their sexual partner(s) would detect. Chlamydia symptoms can often be very non-specific, in terms of urethritis/chlamydia/nongonococcal urethritis (*NGU*); however, the eye lesions that present about one week after exposure are more specific. Clinical eye exam findings under slit lamp include: varying degrees of conjunctivitis; corneal keratitis (*i.e. fluorescein staining*) in the upper cornea; and opalescent follicles in the membranes of the inner part of the eye lids.<sup>4</sup> These

<sup>1</sup> <https://www.cdc.gov/nchstp/newsroom/2018/press-release-2018-std-prevention-conference.html>

<sup>2</sup> <https://www.cdc.gov/nchstp/newsroom/2018/press-release-2018-std-prevention-conference.html>

<sup>3</sup> <https://www.cdc.gov/nchstp/newsroom/2018/press-release-2018-std-prevention-conference.html>

<sup>4</sup> J. Kanski, *The Eye in Systemic Disease*. Butterworth & Co. Publishers Ltd.

findings lead the eye doctor to order confirmatory lab tests and initiate necessary treatments, if laboratory testing results are positive.

Chlamydial conjunctivitis is treated with both prescribed antibiotic in pills, eye drops and/or ointment form to kill the chlamydia in the eye tissues and throughout the body. All sexual partners should be informed, tested and treated. Treated individuals will usually get better after taking the antibiotics for three to four weeks. It is important that patients always finish the total antibiotic treatment as prescribed, even if signs of chlamydia go away sooner.

Gonococcal conjunctivitis is another type of conjunctivitis and is caused by *Neisseria gonorrhoeae* (*gonorrhea*), a sexually transmitted disease that also spreads to the eye by contact with genital secretions from a person who has a gonorrheal infection. Prompt eye treatment of gonococcal conjunctivitis is important, since this organism can penetrate an intact corneal epithelium and rapidly cause corneal ulceration and permanent vision loss. Gonococcal conjunctivitis is treated with both antibiotic pills and eyedrops or eye ointment to kill the organism in the eye tissues and throughout the body. All sexual partners should be informed, tested and treated even if they have no symptoms. If left untreated gonorrhea can affect a woman's fertility and ability to conceive. Pregnant women can pass gonorrhea on to their fetus during child birth; it can cause arthritis, blindness, heart disease and skin disease. For this reason, the U.S. Preventive Services Task Force released January 29, 2019, a final recommendation statement on ocular prophylaxis for gonococcal ophthalmia neonatorum. The Task Force found that all newborns should receive antibiotic ointment to prevent a serious eye infection.<sup>5</sup>

Syphilis can also be transmitted into the eye, causing redness and visual problems such as light sensitivity and pain due to eye inflammation and swelling (i.e. anterior or posterior uveitis), that can destroy eye tissues. A recent plethora of cases of ocular syphilis has suggested a re-emergence of ocular syphilis.<sup>6</sup> An ocular infection with syphilis can occur six weeks to six months after primary inoculation and lead to scarring and, ultimately, blindness, so prompt treatment is important.<sup>7</sup> Additionally, contact with secretions that are infected with the bacteria that cause syphilis can sometimes lead to a chancre (sore) on or around the eyelid. All sexual partners should be tested and treated, even if there are no symptoms.

According to Jonathan Mermin, M.D., M.P.H, director of CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, "It is evident the systems that identify, treat, and ultimately prevent STDs are strained to near-breaking point."<sup>8</sup>

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<sup>5</sup> <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/ocular-prophylaxis-for-gonococcal-ophthalmia-neonatorum-preventive-medication1>

<sup>6</sup> Furtado, et. al., Clinical Manifestations and Ophthalmic Outcomes of Ocular Syphilis at a Time of Re-Emergence of the Systemic Infection, Scientific Report, August 2018 <https://www.nature.com/articles/s41598-018-30559-7>

<sup>7</sup> J. Kanski, The Eye in Systemic Disease. Butterworth & Co. Publishers Ltd.

<sup>8</sup> <https://www.cdc.gov/nchstp/newsroom/2018/press-release-2018-std-prevention-conference.html>

With eye findings being relatively common among individuals with STDs, doctors of optometry represent a unique stakeholder group and should be included in the national prevention efforts aimed at combating a growing trend of STDs.<sup>9 10 11</sup>

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<sup>9</sup> <https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea.htm>

<sup>10</sup> <https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm>

<sup>11</sup> <https://npin.cdc.gov/featured-partner/national-coalition-std-directors-ncsd>