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Week of May 19, 2014 – Syphilis –It's Back!

By the year 2000, syphilis was considered all but eradicated in the U.S. But with new data collected from 2005-2013, the CDC has just come out with a shocking announcement: Syphilis is back, with the rate of new cases more than doubling since 2005.

The overall per population rate more than doubled to 5.3 cases per 100,000 people in 2013 from 2.1 cases of syphilis per 100,000 in 2000, when syphilis was at its lowest rate. And the numbers are pretty clear about gender; it's almost exclusively men getting syphilis. The proportion of new syphilis cases that were in men grew with each year studied, and in 2013, a whopping 91 percent of all new syphilis cases were men; and almost all of those were among men who identified themselves as gay or bisexual.

There are also huge racial and ethnic differences among those getting syphilis. The CDC has reported that black men are five times as likely to contract the disease as white men, and black women are 13 times more at risk than white women. In addition, secrecy around gay and bisexual sex is a major contributing factor to the spread of the disease.

The history of syphilis has been well studied, but the exact origin of syphilis is unknown. There are two primary hypotheses: one proposes that syphilis was carried from the Americas to Europe by the crew of Christopher Columbus, while the other proposes that syphilis previously existed in Europe but went unrecognized. These are referred to as the "Columbian" and "pre-Columbian" hypotheses, respectively.

The first written records of an outbreak of syphilis in Europe occurred in 1494/1495 in Naples, Italy, during a French invasion. Because it was spread by French troops, the disease was known as "French disease", and it was not until 1530 that the term "syphilis" was first applied by the Italian physician and poet Girolamo Fracastoro who immortalized the disease in his epic poem, *Syphilis sive morbus gallicus* (Latin for "Syphilis or The French Disease"). The protagonist of the poem is a shepherd named Syphilus who is presented as the first man to contract the disease, sent by the god Apollo as punishment for the defiance that Syphilus and his followers had shown him. From this character Fracastoro derived a new name for the disease, which he also used in his medical text *De Contagionibus* ("On Contagious Diseases").

The causative organism, *Treponema pallidum*, was first identified by Fritz Schaudinn and Erich Hoffmann in 1905. The first effective treatment (Salvarsan) was developed in 1910 by Paul Ehrlich which was followed by the introduction of penicillin in 1943. Many famous historical figures including Franz Schubert, Arthur Schopenhauer, and Édouard Manet are believed to have had the disease.

Before effective treatments were available, syphilis could sometimes be disfiguring in the long term, leading to defects of the face and nose ("nasal collapse"). Syphilis was a stigmatized disease due to its sexually transmissible nature. Such defects marked the person as a social pariah, and a symbol of sexual deviancy. Artificial noses were sometimes used to improve this appearance. The pioneering work of the facial surgeon Gasparo Tagliacozzi in the 16th century marked one of the earliest attempts to surgically reconstruct nose defects. Tagliacozzi's technique was to harvest tissue



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from the arm without being removed from the arm, and thereby maintaining a blood supply to the nose. This meant that the patient would have to stay with their arm strapped to their face until new blood vessels grew at the recipient site, and the skin flap from the arm could finally be separated during a second procedure.

Another common remedy was mercury: the use of which gave rise to the saying "A night in the arms of Venus leads to a lifetime on Mercury". It was administered in various fashions, including by mouth, by rubbing it on the skin, and by injection (that should make industrial hygienists everywhere cringe!). One of the more curious methods was fumigation, in which patients were placed in closed boxes with their heads sticking outward. Mercury was placed inside the box and a fire started under the box, causing the mercury to vaporize. It was a grueling process for the patient and the least effective for delivering mercury to the body.

Syphilis is not a disease you can take lightly, as some may remember from the 1960s, 70s and 80s when this disease reached epidemic proportions. Syphilis can cause dementia, blindness, and death if undetected and untreated. Women are particularly at risk because syphilis can be mild or even asymptomatic (a disease carrier showing no symptoms). Another problem is that the most common early warning symptoms, such as fever or rash, can be easily confused with other conditions. According to the CDC, the sores most people picture as occurring with syphilis can be painless and mistaken for an ingrown hair. Women who don't know they have syphilis and get pregnant can seriously endanger their babies, resulting in low birth weight, prematurity, and even stillbirth. Due to the recent increase in syphilis cases, the CDC is currently campaigning to start screening for syphilis (just like in the 60's, 70's and 80's) with an emphasis on gay/bisexual men as well as those persons that have multiple partners (who should be screened every three to six months).

The signs and symptoms of syphilis vary depending in which of the four stages it presents (primary, secondary, latent, and tertiary). The primary stage classically presents with a single chancre (a firm, painless, non-itchy skin ulceration), secondary syphilis with a diffuse rash which frequently involves the palms of the hands and soles of the feet, latent syphilis with little to no symptoms, and tertiary syphilis with gummas (soft, non-cancerous tissue growth), neurological, or cardiac symptoms. Diagnosis is usually made through blood tests; however, the syphilis bacteria can also be detected using dark field microscopy. Syphilis can be effectively treated with antibiotics, specifically the preferred intramuscular penicillin G (given intravenously for neurosyphilis), or ceftriaxone, and in those who have a severe penicillin allergy, oral doxycycline or azithromycin.

Currently, there is no vaccine effective for prevention. Abstinence from intimate physical contact with an infected person is effective at reducing the transmission of syphilis, as is the proper use of a latex condom. Condom use, however, does not completely eliminate the risk. Thus, the CDC recommends a long-term, mutually monogamous relationship with an uninfected partner and the avoidance of substances such as alcohol and other drugs that increase risky sexual behavior.

I have noticed even people who claim everything is predestined, and that we can do nothing to change it, look before they cross the road.

Stephen Hawking

