Syphilis is a curable sexually transmitted disease caused by the *Treponema pallidum* spirochete. The route of transmission of syphilis is almost always by sexual contact, although there are examples of congenital syphilis via transmission from mother to child in utero. The signs and symptoms of syphilis are numerous; before the advent of serological testing, precise diagnosis was very difficult. In fact, the disease was dubbed the "Great Imitator" because it was often confused with other diseases, particularly in its tertiary stage. Syphilis (unless antibiotic-resistant) can be easily treated with antibiotics including penicillin. The oldest and still most effective method is an intramuscular injection of benzathine penicillin. If not treated, syphilis can cause serious effects such as damage to the heart, aorta, brain, eyes, and bones. In some cases these effects can be fatal. In 1998, the complete genetic sequence of *T. pallidum* was published which may aid understanding of the pathogenesis of syphilis.

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### Alternative names

The name "syphilis" was coined by the Italian physician and poet Girolamo Fracastoro in his epic noted poem, written in Latin, entitled *Syphilis sive morbus gallicus* (Latin for "Syphilis or The French Disease") in 1530. The protagonist of the poem is a shepherd named Syphilus (perhaps a variant spelling of Sylius, a character in Ovid's *Metamorphoses*). Syphilis is presented as the first man to contract the disease, sent by the god Apollo as punishment for the defiance that Syphilus and his
Until that time, as Fracastoro notes, syphilis had been called the "French disease" in Italy and Germany, and the "Italian disease" in France. In addition, the Dutch called it the "Spanish disease", the Russians called it the "Polish disease", the Turks called it the "Christian disease" or "Frank disease" (tıftığı) and the Tatars called it the "British disease". These "national" names are due to the disease often being present among invading armies or sea crews, due to the high instance of unprotected sexual contact with prostitutes. It was also called "Great pox" in the 16th century to distinguish it from smallpox. In its early stages, the Great pox produced a rash similar to smallpox (also known as variola). However, the name is misleading, as smallpox was a far more deadly disease. The terms "Lues" (or Lues venerea, Latin for "venereal plague") and "Cupid's disease" have also been used to refer to syphilis. In Scotland, Syphilis was referred to as the Grandgore. The ulcers suffered by British soldiers in Portugal was termed "The Black Lion".6

Origins
There have been three theories on the origin of syphilis which formed an ongoing debate in anthropological and historical fields.

The pre-Columbian theory holds that syphilis symptoms are described by Hippocrates in Classical Greece in his venereal tertiary form. There are other suspected syphilis findings for pre-contact European, including at a 13–14th century Augustinian friary in the northeastern English port of Kingston upon Hull. This city's maritime history is thought to have been a key factor in the transmission of syphilis. Carbon dated skeletons of monks who lived in the friary showed bone lesions typical of venereal syphilis. Skeletons in pre-Columbus Pompeii and Metaponto in Italy demonstrating signs of congenital syphilis have also been found, although the interpretation of the evidence has been disputed.

The Columbian Exchange theory holds that syphilis was a New World disease brought back by Columbus and Martin Alonso Pinzon. Supporters of the Columbian theory find syphilis/palilidum on pre-Columbian Native Americans and cite documentary evidence linking crewmen of Columbus's voyages to the Naples outbreak of 1494. A recent study of the genes of venereal syphilis and related bacteria has supported this theory, by locating an intermediate disease between yaws and syphilis in Guyana, South America.

However, Crosby considers it somewhat more likely that a highly contagious ancestral species of bacteria moved with early human ancestors across the land bridge of the Bering Straits, many thousands of years ago without dying out in the original source population. He hypothesizes that "the differing ecological conditions produced different types of treponematosis and, in time, closely related but different diseases."15 Thus, a weak, non-venereal bacteria survived in the Old World to eventually give rise to yaws or bejel, while a New World version evolved into the milder pintas and the more aggressive syphilis.

Going further than Crosby in arguing for worldwide incidence of syphilis prior to Columbus, Douglas Owsley, the famed physical anthropologist at the Smithsonian Institution, has written that many medieval European cases of leprosy, colloquially called "lepra," were actually cases of syphilis. Although folklore claimed that syphilis was unknown in Europe until the return of the diseased sailors of the Columbian voyages, (quote), . . . syphilis probably cannot be "blamed"—as it often is—on any geographical area or specific race. The evidence suggests that the disease existed in both hemispheres from prehistoric times. It is only coincidental with the Columbus expeditions that the syphilis previously thought of as "lepra" flared into virulence at the end of the fifteenth century.11 Owsley noted that a Chinese medical case recorded in 2637 B.C.E. seems to be describing a case of syphilis, and that a European writer who recorded an outbreak of "lepra" in 1303 C.E. is "clearly describing syphilis."11

History
While working at the Rockefeller University, (then called the Rockefeller Institute for Medical Research) in 1913, Hideyo Noguchi, a Japanese scientist, demonstrated the presence of the spirochete Treponema pallidum in the brain of a progressive paralysis patient, proving that Treponema pallidum was the cause of the disease. Prior to Noguchi's discovery, syphilis had been a burden to humanity in many lands, sometimes misdiagnosed and often misattributed to political enemies.

Some famous historical personages, including Franz Schubert, Charles VIII, Hernando Cortez of Spain, Adolf Hitler, Benito Mussolini, and Ivan the Terrible, have been alleged to have had syphilis. Guy de Maupassant and possibly Friedrich Nietzsche are thought to have been driven insane and ultimately killed by the disease. Al
Keys: people in previous centuries

Known and suspected notable syphilis-infected either new or a mutated form of an earlier disease. The evolved into the disease with the symptoms so well known to us today.”

fatal than it is today. Diamond concludes that “by death within a few months.” In addition, the disease was more frequently definitely recorded in Europe in across Europe. As King Charles of France in that siege. Naples occurred in 1494. The French may have caught it via Spanish mercenaries serving King Charles of France in that siege. From this centre, the disease swept across Europe. As Jared Diamond describes it, “when syphilis was first definitely recorded in Europe in 1495, its pustules often covered the body from the head to the knees, caused flesh to fall from people’s faces, and led to death within a few months.” In addition, the disease was more frequently fatal than it is today. Diamond concludes that “by the 1546, the disease had evolved into the disease with the symptoms so well known to us today.” The epidemiology of this first syphilis epidemic shows that the disease was either new or a mutated form of an earlier disease.

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Known and suspected notable syphilis-infected people in previous centuries

Keys: - suspected case; † - died of syphilis

- Idi Amin (1928-2003), Ugandan dictator S
- Maurice Barrymore (1849-1905) actor †
- Charles Baudelaire (1821-1867), poet †
- Isabella Beeton (1836-1865), author of Mrs. Beeton’s Book of Household Management S
- Karen Blixen (1885-1962), writer
- Manuel Maria Barbosa do Bocage (1765-1805), poet †
- António Botto (1897-1959), poet
- Camilo Castelo Branco (1825-1890), writer
- Beau Brummel (1778-1840), fashion arbiter
- Al Capone (1889-1947), gangster †
- Randolph Churchill, Lord (1849-1895), British statesman and father of Winston S. Churchill S
- Henry Stuart, Lord Darnley (1545-1567), second husband of Mary Queen of Scots
- Frederick Delius (1862-1934), composer †
- Gaetano Donizetti (1797-1848), composer
- Edouard Manet (1832-1883), painter †
- Amedeo Modigliani (1884-1920), painter †
- Heinrich Heine (1797-1856), poet †
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- Adolf Hitler (1889-1945), German dictator S
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- Paul Gauguin (1848-1903), painter †
- Friedrich Wilhelm Nietzsche (1844-1900), nineteenth-century German philosopher S
- Jack Pickford (1896-1933), actor †
- Martin Alonso Pinzón (1441-1493) captain of the Pinta †
- Alcatraz, it reached its third stage, neurosyphilis, leaving him confused and disoriented. Syphilis led to the death of artist Edouard Manet and artist Paul Gauguin is also said to have suffered from syphilis. Composers who succumbed to syphilis include Hugo Wolf, Frederick Delius, Scott Joplin and possibly Franz Schubert and Niccolò Paganini.

The insanity caused by late-stage syphilis was once one of the more common forms of dementia; this was known as the general paresis of the insane. One suspected example is the insanity of noted composer Robert Schumann, although the precise cause of his death is still disputed by scholars.

A recent article in the European Journal of Neurology (June 2004) hypothesized that the founder of communism in Russia, Vladimir Ilyich Lenin, died of neurosyphilis.

The rock critic Lester Bangs caught syphilis and was cured of it in his youth.

Karen Blixen, the author of Out of Africa, contracted syphilis from her husband while living in Africa. He had contracted the disease from an African woman with whom he had been unfaithful. After having undergone treatment in Denmark, she returned to Africa. Blixen was unable to have children.

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- Jack Pickford (1896-1933), actor †
- Martin Alonso Pinzón (1441-1493) captain of the Pinta †
- Franz Schubert (1797-1828), composer S
- Robert Schumann (1810-1856), composer S
- Bedřich Smetana (1824-1884), Czech composer S
- Tungri (1856-1875), ninth Manchu emperor in the Qing dynasty S
- Henri de Toulouse-Lautrec (1864-1901), painter †
- John Wilkes (1647-1680), 2nd Earl of Rochester, writer, debaucher S
- Oscar Wilde (1854-1900), writer S
- Hugo Wolf (1860-1903), composer †
Syphilis infection

Different manifestations occur depending on the stage of the disease:

Primary syphilis
Primary syphilis is typically acquired via direct sexual contact with the infectious lesions of a person with syphilis. Approximately 10-90 days after the initial exposure (average 21 days), a skin lesion appears at the point of contact, which is usually the genitalia, but can be anywhere on the body. This lesion, called a chancre, is a firm, painless skin ulceration localized at the point of initial exposure to the spirochete, often on the penis, vagina or rectum. Rarely, there may be multiple lesions present although typically only one lesion is seen. The lesion may persist for 4 to 6 weeks and usually heals spontaneously. Local lymph node swelling can occur. During the initial incubation period, individuals are otherwise asymptomatic. As a result, many patients do not seek medical care immediately.

Syphilis cannot be contracted through toilet seats, daily activities, hot tubs, or sharing eating utensils or clothing.

Secondary syphilis
Secondary syphilis occurs approximately 1-6 months (commonly 6 to 8 weeks) after the primary infection. There are many different manifestations of secondary disease. There may be a symmetrical reddish-pink non-itchy rash on the trunk and extremities. The rash can involve the palms of the hands and the soles of the feet. In moist areas of the body, the rash becomes flat broad whitish lesions known as condylomata lata. Mucous patches may also appear on the genitals or in the mouth. All of these lesions are infectious and harbor active treponeme organisms. A patient with syphilis is most contagious when he or she has secondary syphilis. Other symptoms common at this stage include fever, sore throat, malaise, weight loss, headache, meningismus, and enlarged lymph nodes. Rare manifestations include an acute meningitis that occurs in about 2% of patients, hepatitis, renal disease, hypertrophic gastritis, patchy proctitis, ulcerative colitis, rectosigmoid mass, arthritis, periostitis, optic neuritis, interstitial keratitis, iritis, and uveitis.

Latent syphilis
Latent syphilis is defined as having serologic proof of infection without signs or symptoms of disease. Latent syphilis is further described as either early or late. Early latent syphilis is defined as having syphilis for two years or less from the time of initial infection without signs or symptoms of disease. Late latent syphilis is infection for greater than two years but without clinical evidence of disease. The distinction is important for both therapy and risk for transmission. In the real-world, the timing of infection is often not known and should be presumed to be late for the purpose of therapy. Early latent syphilis may be treated with a single intramuscular injection of a long-acting penicillin. Late latent syphilis, however, requires three weekly injections. For infectiousness, however, late latent syphilis is not considered as contagious as early latent syphilis.

Tertiary syphilis
Tertiary syphilis usually occurs 1-10 years after the initial infection, though in some cases it can take up to 50 years. This stage is characterized by the formation of gummas which are soft, tumor-like balls of inflammation known as granulomas. The granulomas are chronic and represent an inability of the immune system to completely clear the organism. Gummas were once readily seen in the skin and mucous membranes although they tend to occur internally in recent history. They may appear almost anywhere in the body including in the skeleton. The gummas produce a chronic inflammatory state in the body with mass-effects upon the local anatomy. Other characteristics of untreated tertiary syphilis include neurosyphilis and cardiovascular syphilis. In a study of untreated syphilis, 10% of patients developed cardiovascular syphilis, 16% had gumma formation, and 7% had neurosyphilis.

Neurological complications at this stage can be diverse. In some patients, manifestations include generalized paresis of the insane which results in personality changes, changes in emotional affect, hyperactive reflexes, and Argyll-Robertson pupils. This is a diagnostic sign in which the small and irregular pupils constrict in response to focusing the eyes, but not to light. Tabes dorsalis, also known as locomotor ataxia, a disorder of the spinal cord, often results in a characteristic shuffling gait. See below for more information about neurosyphilis.

Cardiovascular complications include syphilitic aortitis, aortic aneurysm, aneurysm of sinus of Valsalva, and aortic regurgitation. Syphilis affects the ascending aorta causing dilation and aortic regurgitation. This can be heard with a stethoscope as a heart murmur. The course can be insidious, and heart failure may be the presenting sign after years of the disease. The infection can also occur in the coronary arteries and cause narrowing of the vessels. Syphilitic aortitis can cause de Musset’s sign, a bobbing of the head that de Musset first noted in Parisian prostitutes.
Neurosyphilis

Neurosyphilis refers to a site of infection involving the central nervous system (CNS). Neurosyphilis may occur at any stage of syphilis. Before the advent of antibiotics, it was typically seen in 25-35% of patients with syphilis. Neurosyphilis is now most common in patients with HIV infection. Reports of neurosyphilis in HIV-infected persons are similar to cases reported before the HIV pandemic. The precise extent and significance of neurologic involvement in HIV-infected patients with syphilis, reflected by either laboratory or clinical criteria, have not been well characterized. Furthermore, the alteration of host immunosuppression by antiretroviral therapy in recent years has further complicated such characterization.

Approximately 35% to 40% of persons with secondary syphilis have asymptomatic central nervous system (CNS) involvement, as demonstrated by any of these cerebrospinal fluid (CSF) examination:
- An abnormal leukocyte cell count, protein level, or glucose level
- Demonstrated reactivity to Venereal Disease Research Laboratory (VDRL) antibody test
- There are four clinical types of neurosyphilis:
  - Asymptomatic neurosyphilis
  - Meningovascular syphilis
  - General paresis
  - Tabes dorsalis

The late forms of neurosyphilis (tabes dorsalis and general paresis) are seen much less frequently since the advent of antibiotics. The most common manifestations today are asymptomatic or symptomatic meningitis. Acute syphilitic meningitis usually occurs within the first year of infection; 10% of cases are diagnosed at the time of the secondary rash. Patients present with headache, meningeal irritation, and cranial nerve abnormalities, especially the optic nerve, facial nerve, and the vestibulocochlear nerve. Rarely, it affects the spine instead of the brain, causing focal muscle weakness or sensory loss.

Meningovascular syphilis occurs a few months to 10 years (average, 7 years) after the primary syphilis infection. Meningovascular syphilis can be associated with prodromal symptoms lasting weeks to months before focal deficits are identifiable. Prodromal symptoms include unilateral numbness, paresthesia, upper or lower extremity weakness, headache, vertigo, insomnia, and psychotic abnormalities such as personality changes. The focal deficits initially are intermittent or progress slowly over a few days. However, it can also present as an infectious arteritis and cause an ischemic stroke, an outcome more commonly seen in younger patients. Angiography may be able to demonstrate areas of narrowing in the blood vessels or total occlusion.

General paresis, otherwise known as general paresis of the insane, is a severe manifestation of neurosyphilis. It is a chronic dementia which ultimately results in death in as little as 2-3 years. Patients generally have progressive personality changes, memory loss, and poor judgment. More rarely, they can have psychosis, depression, or mania. Imaging of the brain usually shows atrophy.

Diagnostic tests

Early 20th century

In 1906, the first effective test for syphilis, the Wassermann test, was developed. Although it had some false positive results, it was a major advance in the prevention of syphilis. By allowing testing before the acute symptoms of the disease had developed, this test allowed the prevention of transmission of syphilis to others, even though it did not provide a cure for those infected. In the 1930s the Hinton test, developed by William Augustus Hinton, and based on flocculation, was shown to have fewer false positive reactions than the Wassermann test. Both of these early tests have been superseded by newer analytical methods.

Modern diagnostic tests

It was only in the 20th century that effective tests and treatments for syphilis were developed. Microscopy of fluid from the primary or secondary lesion using darkfield illumination can diagnose treponemal disease with high accuracy. As there are other treponemes that may be confused with T. pallidum, care must be taken in evaluating with microscopy to correlate symptoms with the correct disease.

Present-day syphilis screening tests, such as the Rapid Plasma Reagin (RPR) and Venereal Disease Research Laboratory (VDRL) tests are cheap and fast but not completely specific, as many other conditions can cause a positive result. These tests are routinely used to screen blood donors. Notably, the spirochete that causes syphilis does not survive the conditions used to store blood and the number of transfusion transmitted cases of syphilis is minuscule, but the test is used to identify donors that might have contracted HIV from high risk sexual activity. The requirement to test for syphilis has been challenged due to the vast improvements in HIV testing. False positives on the rapid tests can be seen in viral infections (Epstein-Barr, hepatitis, varicella, measles), connective tissue disease, pregnancy, intravenous drug abuse, or contamination.[18] As a result, these two screening tests should always be followed up by a more specific treponemal test. Tests based on monoclonal antibodies and immunofluorescence, including Treponema pallidum hemagglutination assay (TPHA) and Fluorescent Treponemal Antibody Absorption (FTA-ABS) are more specific and more expensive. Unfortunately, false positives can still occur in related treponemal infections such as yaws and pinta. Tests based on enzyme-linked immunosassays are also used to confirm the results of simpler screening tests for syphilis.

Neurosyphilis is diagnosed by finding high numbers of leukocytes in the CSF, or abnormally high protein concentration in the setting of syphils infection.[18] In addition, CSF should be tested with the VDRL test although some advocate using the FTA-ABS test to improve sensitivity. There is anecdotal evidence that the incidence of neurosyphilis is higher in HIV patients, and some have recommended that all HIV-positive patients with syphilis should have a lumbar puncture to look for asymptomatic neurosyphilis.[18]
Diseases caused by other species of Treponema

These diseases are caused by other species or subspecies of Treponema:
- Bejel - caused by Treponema pertenue
- Yaws - caused by Treponema pallidum
- Pinta - caused by Treponema carateum
- T. endemicum - caused by Treponema endemicum

Treatment

Prevention

While abstinence from any sexual activity is very effective at helping prevent syphilis, it should be noted that T. pallidum readily crosses intact mucosa and cut skin, including areas not covered by a condom. Proper and consistent use of a latex condom can reduce, but not eliminate, the spread of syphilis.[1]

Individuals sexually exposed to a person with primary, secondary, or early latent syphilis within 90 days preceding the diagnosis should be assumed to be infected and treated for syphilis, even if they are currently seronegative. If the exposure was more than 90 days before the diagnosis, presumptive treatment is recommended if serologic testing is not immediately available or if follow-up is uncertain. Patients with syphilis of unknown duration and nontreponemal serologic titers ≥1:32 may be considered as having early syphilis for purposes of partner notification and presumptive treatment of sex partners. Long-term sex partners of patients with late syphilis should be evaluated clinically and serologically and treated appropriately. All patients with syphilis should be tested for HIV. Patient education is important as well.

History

There were originally no effective treatments for syphilis. The Spanish priest Francisco Delicado wrote El modo de adoperare el legno de India (Rome, 1555) about the use of Guaiacum in the treatment of syphilis. He himself suffered from syphilis. 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 multiple ways including by mouth and by rubbing it on the skin. One of the more curious methods was fumigation, in which the patient was placed in a closed box with his head sticking out. Mercury was placed in the box and a fire was started under the box which caused the mercury to vaporize. It was a grueling process for the patient and the least effective for delivering mercury to the body.

As the disease became better understood, more effective treatments were found. The first antibiotic to be used for treating disease was the arsenic-containing drug Salvarsan, developed in 1908 by Sahachiro Hata while working in the laboratory of Nobel prize winner Paul Ehrlich. This was later modified into Neosalvarsan. Unfortunately, these drugs were not 100% effective, especially in late disease. It had been observed that some who develop high fevers could be cured of syphilis. Thus, for a brief time malaria was used as treatment for tertiary syphilis because it produced prolonged and high fevers. This was considered an acceptable risk because the malaria could be treated with quinine which was available at that time. This discovery was championed by Julius Wagner-Jauregg, who won the 1927 Nobel Prize for Medicine for his work in this area. Malaria as a treatment for syphilis was usually reserved for late disease, especially neurosyphilis, and then followed by either Salvarsan or Neosalvarsan as adjuvant therapy. These treatments were finally rendered obsolete by the discovery of penicillin, and its widespread manufacture after World War II allowed syphilis to be effectively and reliably cured.[2]

Current treatment

The first-choice treatment for all manifestations of syphilis remains penicillin in the form of penicillin G.[24] The effect of penicillin on syphilis was widely known before randomized clinical trials were used; as a result, treatment with penicillin is largely based on case series, expert opinion, and years of clinical experience. Parenteral penicillin G is the only therapy with documented effect during pregnancy. For early syphilis, one dose of penicillin is sufficient.

Non-pregnant individuals who have severe allergic reactions to penicillin (e.g., anaphylaxis) may be effectively treated with oral tetracycline or doxycycline although data to support this is limited. Ceftriaxone may be considered as an alternative therapy, although the optimal dose is not yet defined. However, cross-reactions in penicillin-allergic patients with cephalosporins such as ceftriaxone are possible. Azithromycin was suggested as an alternative. However, there have been reports of treatment failure due to resistance in some areas. If compliance and follow-up cannot be ensured, the CDC recommends desensitization with penicillin followed by penicillin treatment. All pregnant women with syphilis should be desensitized and treated with penicillin. Follow-up includes clinical evaluation at 1 to 2 weeks followed by clinical and serologic evaluation at 3, 6, 9, 12, and 24 months after treatment.

Azithromycin has been used to treat syphilis in the past because of easy once-only dosing. However, in one study in San Francisco, azithromycin-resistance rates in syphilis, which were 0% in 2000, were 56% by 2004.[25]
LATE LATENT AND INFECTIONS OF UNKNOWN DURATION

Late latent syphilis is defined as latency for greater than one year. If CSF examination yields no evidence of neurosyphilis, then penicillin G is recommended as weekly doses for 3 weeks. If allergic, then tetracycline or doxycycline may also be used for this stage, but for 28 days instead of the normal 14. As with before, the data to support use of tetracycline and ceftriaxone are limited.

NEUROSYPHILIS

For patients diagnosed with neurosyphilis including ocular or auditory syphilis with or without positive CSF results, aqueous crystalline penicillin G is the treatment of choice. The recommended regimen is intravenous treatment every 4 hours or continuously for 10-14 days. If intravenous administration is not possible, then procaine penicillin is an alternative (administered daily with probenecid for two weeks). Procaine injections are painful, however, and patient compliance may be difficult to ensure. To approximate the 21-day course of therapy for late latent disease and to address concerns about slowly dividing treponemes, most experts now recommend 3 weekly doses of benzathine penicillin G after the completion of a 14-day course of aqueous crystalline or aqueous procaine penicillin G for neurosyphilis. No oral antibiotic alternatives are recommended for the treatment of neurosyphilis. The only alternative that has been studied and shown to be effective is intramuscular ceftriaxone daily for 14 days. Neurosyphilis dementia is also a psychiatric diagnosis where as a multitude of atypical anti-psychotic medications are used to help control the patient's irrational behaviors with limited success. Also used in traditional classification of Organic Disorders in the brain. Also commonly called Brain Syphilis.

ALTERNATIVE REGIMENS

Alternative regimens such as tetracyclines are not well studied in HIV infection and a careful follow-up is recommended. Tetra-cyclines are contraindicated in pregnancy.

HIV-infected patients with early syphilis may have a higher risk of neurological complications and a higher rate of treatment failure with currently recommended regimens. The magnitude of these risks, however, although not precisely defined, is probably small. Skin testing or desensitization is recommended in latent syphilis and neurosyphilis in other patients with HIV infection.

Jarisch-Herxheimer reaction

Before administering any treatment, clinicians should warn all patients about the possibility of a Jarisch-Herxheimer reaction, which occurs most often in secondary syphilis and with penicillin therapy, and may be more common in HIV-infected patients.[29] This reaction is characterized by fever, fatigue, and transient worsening of any mucocutaneous symptoms, and usually subsides within 24 hours. These symptoms can be alleviated with acetaminophen (paracetamol) and should not be mistaken for drug allergy. In addition, clinicians should inform HIV-infected patients that currently recommended regimens may be less effective for them than for patients without HIV infection and that close serologic follow-up is therefore essential.

Tuskegee syphilis study

Main article: Tuskegee Study of Untreated Syphilis in the Negro Male

One of the best-documented cases of unethical human medical experimentation in the twentieth century was the Tuskegee syphilis study. The study took place in Tuskegee, Alabama and was supported by the Tuskegee Institute and the U.S. Public Health Service (PHS).[31] The study began in 1932 using a group of 600 black sharecroppers. Of these 600, 399 of the men had the disease and 201 were uninfected control patients. The PHS stated at first that treatment was supposed to be a part of the study, but they were unable to produce any useful data. It was then discovered that the PHS had decided to leave the men untreated and follow the course of the disease to these men's eventual deaths. They thought they were receiving experimental treatment for "bad blood" in exchange for free meals and a $50 death benefit. However, the study was designed to measure the progression of untreated syphilis and to determine whether syphilis caused cardiovascular damage more often than neurological damage, and to determine if the natural course of the disease was different in black men versus white men. By 1947 penicillin had become the standard treatment of syphilis. The men were never advised that they had syphilis, nor were they offered a treatment including Salvarsan or the other arsenical drugs that were in use at the beginning of the study.

The original study was meant to last six to nine months, but continued for 40 years, ending in 1972. long after forty wives and nineteen children had been infected, and many of the men had died of syphilis. Twenty-eight men died directly from syphilis, and one hundred from other complications, during the study. The study ended because of a story printed in the Washington Star. A class-action lawsuit was then filed against the federal government for the study. This lawsuit was settled out of court and the living subjects and their descendants were awarded a total of ten million dollars. After the settlement was awarded, the government passed the National Research Act, which required the government to review and approve all medical studies involving human subjects.

Syphilis in art and literature

To comply with Wikipedia's quality standards, this section may need to be rewritten.

Reason: List of trivia rather than an overview

Please help improve this article. The discussion page may contain suggestions.

Art

The artist Kees van Dongen produced a series of illustrations for the anarchist publication L’Assiette au Beurre showing the descent of a young prostitute from poverty to her death from syphilis as a criticism of the social order at the end of the 19th century.
The artist Jan van der Straet, also known as Johannes Stradanus or simply Stradanus, painted a scene of a wealthy man receiving treatment of syphilis with the tropical wood guaiacum sometime around 1580. The title of the work is "Preparation and Use of Guayaco for Treating Syphilis." That the artist chose to include this image in a series of works celebrating the New World indicates how important a "cure" (however ineffective) for syphilis was to the European elite at that time. The richly colored and detailed work depicts four servants preparing the concoction while a physician looks on, hiding something behind his back while the hapless patient drinks.

The Norwegian, Edvard Munch painted "The sins of the father", a portrayal of a horrified woman with her baby, covered in a rash and with a deformed face lying on a cloth across her knees. This was to portray congenital syphilis, presumably common at the time.

**Classic and antique literature**

Delicado also featured the effects of syphilis in his *Portrait of Lozana: The Lusty Andalusian Woman* (1528).

There are references to syphilis in *William Shakespeare's* play *Measure for Measure*, particularly in a number of early passages spoken by the character Lucio. For example, Lucio says "[...] thy bones are hollow"; this is a reference to the brittleness of bones engendered by the use of mercury which was then widely used to treat syphilis.

In Shakespeare's play *Othello*, the clown at the beginning of Act III makes jest of Cassio, who is leading a musician troupe for Othello, by asking him if he had just arrived from Naples and playing with his nose. (Alluding to the reputation of Naples of being a likely place to contract syphilis, which eats away at the bridge of the nose.)

It has been suggested that the main character in Edgar Allan Poe's "The Tell-Tale Heart" may have been infected with neurosyphilis, due to his strange obsessions and apparent insanity. Francisco de Quevedo puns in his *Buscón* about a nose *entre Roma y Francia* meaning both "between Rome and France" and "between dull and eaten by the French illness".

Jonathan Swift's poetry mentions syphilis as a condition of *prostitution* which reaches the highest ranks of society. See, for example, "A Beautiful Young Nymph Going To Bed" and "The Progress of Beauty".

William Hogarth's works frequently show his subject's infection with syphilis. Two examples are *A Harlot's Progress* and *Marriage à-la-mode*. In both instances it is used to indicate the moral profligacy of the infected.

Some critics have argued that the character of Edward Rochester's first wife, Bertha, in *Jane Eyre*, suffers from the advanced stages of syphilitic infection, general paresia of the insane, and point to corroborative evidence within the text to substantiate this view.

The novel *Candide* by Voltaire describes Candide's mentor and teacher, Pangloss, as having contracted syphilis from a maidservant he slept with; the syphilis has ravaged and deformed his body. Pangloss explains to Candide that syphilis is 'necessary in the best of worlds' because the line of infection - which he explains - leads back to Christopher Columbus. If Columbus had not sailed to America and brought back syphilis, Pangloss states, the Europeans would not have been able to enjoy 'New World wonders' such as chocolate. (One of the purposes of the novel was to satirize Leibniz's philosophy as Pangloss's disingenuous rose-tinted viewpoint.) Pangloss eventually loses an eye and an ear to the syphilis before he is cured.

Also, in Charles Dickens' novel *Tale of Two Cities*, references are made that allude to the main character, Sydney Carton, having syphilis.

In Eça de Queiroz's novel written in 1870, "The Mystery of the Sintra Road", some of the characters have syphilis, and it plays an important role in the plot of a recent movie adaptation. Henrik Ibsen's once-controversial play *Ghosts* has a young man who is suffering from a mysterious unnamed disease. Though it is never named, the play makes it plain that this is syphilis, an inheritance from his dissolute father. However, the young man's mother remains unaffected - this is because it is possible for a woman to carry syphillis and transmit it to her child in the womb without exhibiting any noticeable symptoms. Dr. Rank in Ibsen's play *A Doll's House* also has inherited syphilis.

**Modern literature**


Thomas Disch in his novel *Camp Concentration* describes a fictional strain of syphilis that enhances intelligence but is lethal.

In Thomas Mann's novel *Doktor Faustus*, the Faust character, Adrian Leverkühn, acquires his genius for musical composition from the neurological effects of syphilis.

In Dick Francis' novel, *Bonecrack* the character Enso Rivera is suffering from megalomania caused by syphilis.

Neal Stephenson's trilogy *The Baroque Cycle* has multiple characters and historical figures who have
Syphilis, most notably James II of England and Jack Shaftoe; the latter is cured of the disease by running a high fever.

In Leonard Cohen's second novel Beautiful Losers, the character F. is described in detail as having the terminal stages of syphilis.

In Christina Garcia’s novel "Dreaming in Cuban," Felicia contracts syphilis from her unfaithful husband. The syphilis and her family history lead Felicia down a path towards insanity.

In Ken Follett's novel "A Dangerous Fortune," the wealthy Edward Pilaster contracts syphilis from his frequenting of brothels. When Edward's cohort Micky Miranda finds out, it looks as though his diabolical plans may have a snag.

In Joslyn Jackson's novel "Between, Georgia", the protagonist Nonny Frett suffers from syphilis from a cheating husband she can't seem to rid herself of.

Film, Television and Stage

Syphilis is used as a plot device in many dramatic films, television shows, and plays. While some, such as the Warner Brothers film Dr. Ehrlich's Magic Bullet (1940), focus on the history of the disease, most involve late-stage syphilis because the neurological damage common to late-stage syphilis provides an excuse for strange behaviors. In recent years, syphilis has been mentioned on most involve late-stage syphilis because the neurological damage common to late-stage syphilis such as the

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• Other conditions
  • Gonococcal urethritis (NGU) • Cervicitis • Ectopic pregnancy • Infertility • Non-gonococcal urethritis (NGU) • Pelvic inflammatory disease (PID) • Premature birth • Proctitis • Prostatitis • Reactive arthritis • Urethritis

External links

Wikimedia Commons has media related to:

Syphilis
Syphilis fact sheet from the Center for Disease Control
UCSF HIV InSite Knowledge Base Chapter: Syphilis and HIV
• "History of Syphilis" 14th Congress of the European Academy of Dermatology and Venereology (2005 "video" with no text for hearing-impaired people)
• "A New Gold Standard For Syphilis?" Poster Presentation for European Academy of Dermatology and Venereology 2004 Spring Symposium
• Kipkeepers, Pox and Gleet Vendors: A Rapid History of Syphilis
• Secrets of the Pox: The Syphilis Enigma
• Syphilis and AIDS: Lessons from history
• The treatment of dementia paralytica by malaria inoculation (A Nobel Prize lecture, December 13, 1927)
• New study blames Columbus for syphilis spread Reuters January 15, 2008
• Origins of Syphilis NYTimes April 29, 2008

Sexually transmitted diseases and infections (STD/STI) (primarily A50-A64, 090-099)

Bacterial
  • Chanroid • (Haemophilus ducreyi) • Chlamydia (Chlamydia trachomatis) • Donovoniosis (Granuloma inguinale) • Lymphogranuloma venereum (LGV) • Gonorrhea (Neisseria gonorrhoea) • Syphilis (Treponema pallidum) • Ureaplasma urealyticum

Protozoal
  • Trichomoniasis (Trichomonas vaginalis)

Parasitic
  • Crab louse/crabs • Scabies

Viral
  • AIDS (HIV-1/HIV-2) • Cervical cancer & Genital warts (condyloma) • Human papillomavirus (HPV) • Hepatitis B • Herpes simplex virus (HSV-1/HSV-2) • Molluscum contagiosum (MCV)

Other conditions
  • Clostridium (Pseudomembranous colitis, Botulism, Tetanus, Gas gangrene)
  • Streptococcus A and B (Scarlet fever, Erysipelas) • Staphylococcus (Toxic shock syndrome) • Bacilli (Anthrax, Listeriosis)
Syphilis occurs worldwide, most commonly in urban areas. Syphilis: Syphilis, systemic disease that is caused by the spirochete bacterium Treponema pallidum. Syphilis is usually a sexually transmitted disease, but it also can be transmitted in other ways. This bacterium causes infection when it gets into broken skin or mucus membranes, usually of the genitals. Syphilis is most often transmitted through sexual contact, although it can also be transmitted in other ways. Syphilis usually acquired by direct nonsexual contact with an infected person, and it can also be acquired by an unborn fetus through infection in the uterus. The final stage of syphilis is called tertiary syphilis and is characterized by brain or central nervous system involvement (neurosyphilis), cardiovascular involvement with inflammation of the aorta (aortitis or aneurysms), and gummatous syphilis (destructive lesions of the skin and bones).