

Tuberculosis

Information below was provided by Janice Louie, MD, MPH
Medical Director
San Francisco Department of Public Health
Tuberculosis (TB) Clinic

What is TB?

TB is a germ (bacteria) that can spread from person to person.

TB Incidence and Prevalence

While this is an old and frequently forgotten disease, the truth is that TB infects one out of 7 persons in California, and San Francisco has one of the highest rates of TB in the state. In San Francisco, the populations most likely to have it are Asians, particularly those who were born in China, the Philippines and Vietnam.

Types of TB + Risk Factors

There are two types of TB- latent (sleeping) TB and active (awake) TB. Persons most at-risk for having both types of TB include persons who are 1) born outside of the US; 2) are immunosuppressed due to medications or a medical diagnosis, or 3) have had close contact to someone with active TB in their lifetime.

From Latent TB to Active TB

Latent TB can be silent for many years and patients may have no symptoms and never know they have it. However, when the immune system breaks down- whether due to older age or new diagnoses like diabetes or kidney disease or cancer, the latent TB can wake up and become active. The active form of TB can cause severe illness and even death. The TB usually starts in the lungs and can also spread to other parts of the body, including the kidneys, the liver, the bones, the spine and the brain. Active TB is infectious when patients cough, speak, laugh, or sing, and the TB germ is most likely to spread to those with prolonged close contact, including family, friends, and work colleagues.

TB Demographics

Like with latent TB, active TB is most commonly diagnosed in San Francisco in Asians.

結核病

以下資訊由雷寶春醫學博士、公共衛生碩士
舊金山公共衛生部結核病 (TB) 診所醫療主任提供

什麼是結核病？

結核是一種可以在人與人之間傳播的病菌 (細菌)

結核病發生率和盛行率

雖然這是一種古老且常被遺忘的疾病，但事實是，加州有七分之一的人感染結核病，而舊金山是該州結核病發病率最高的地區之一。在舊金山，最有可能患有這種疾病的人群是亞洲人，尤其是那些出生在中國、菲律賓和越南的人。

結核病類型和危險因素

結核病有兩種類型：潛伏性 (睡眠) 結核病和活躍性 (清醒) 結核病。最容易患上這兩種類型結核病的人包括：1) 出生在美國境外；2) 由於藥物或疾病而導致免疫抑制，或 3) 曾與活躍性結核病患者有密切接觸。

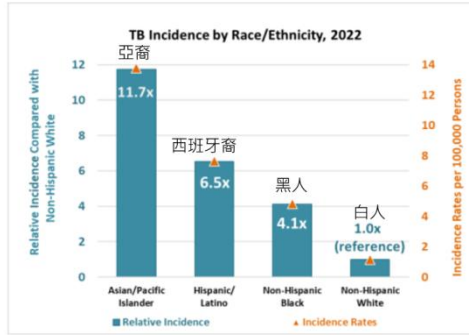
結核病從潛伏性到活躍性

潛伏性結核病可以潛伏於體內多年，患者可能沒有任何症狀，而且永遠不知道自己患有這種疾病。然而，當免疫系統退化時 - 無論是由於年齡大或者是由於有新診斷的糖尿病、腎病或癌症等，潛伏的結核病就會甦醒並變得活躍。活躍性結核病可導致嚴重疾病甚至死亡。結核病通常始於肺部，也可以擴散到身體的其他部位，包括腎臟、肝臟、骨骼、脊椎和腦部。活躍性結核病在患者咳嗽、說話、大笑或唱歌時具有傳染性，結核菌最有可能傳播給長期密切接觸的人，包括家人、朋友和同事。

結核病人口統計

與潛伏性結核病一樣，活動性結核病在舊金山的亞裔中最常見。

TB in San Francisco in 2022 2022 年舊金山結核病



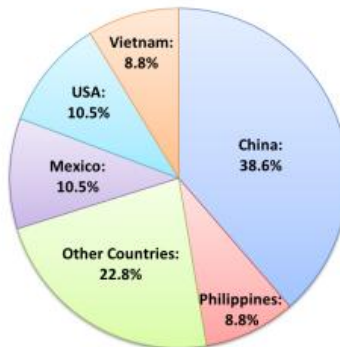
In 2022, Asian Americans had nearly 12X the rate of TB compared to non-Hispanic white persons.

與非西班牙裔的白人相比，2022年美國亞裔的結核病發率幾乎是白人的 12 倍。

Persons born in China accounted for almost 40% of active TB cases in San Francisco in 2022.

2022 年，舊金山活躍結核病病例中，在中國出生者佔近四成。

TB Cases by Country of Birth, 2022



Other country of birth included Brazil, El Salvador, Guatemala, Honduras, India, Malaysia, Mongolia, Republic of Korea, Ukraine, and Uzbekistan.

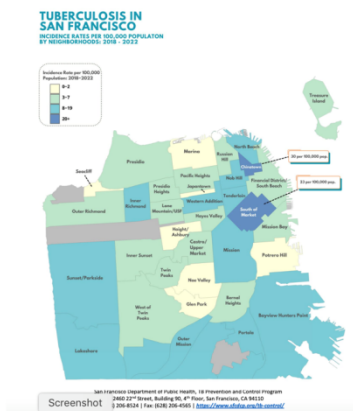
The most common San Francisco neighborhoods where active TB cases are diagnosed are the Tenderloin and the South of Market areas. The neighborhoods are also associated with a high density of persons living in crowded conditions which is also a risk factor for the spread of TB.

舊金山最常診斷出活躍性結核病病例的地區是田德隆區和市場街之南的地區。和這些地區居住的環境擠迫，人口密度高有關，這也是結核病傳播的危險因素。

TB in San Francisco 舊金山的結核病

In San Francisco, the neighborhoods with the most TB are in Chinatown and the South of Market.

在舊金山，結核病最嚴重的社區是唐人街和市場街之南部。



Symptoms

It is important to be aware of symptoms that may be due to active TB. The most common symptoms are cough, fever, weight loss and poor appetite. These symptoms may last for months to years. Approximately twenty percent of patients can have no symptoms in the early stages of TB. TB symptoms can also be confused with cancer.

Treatment for TB, Hospitalization, and Deaths

While cancer is not always curable, TB is 100% curable if a person is can be started on treatment soon enough. Early treatment can also help decrease the chance of passing TB to others. Unfortunately, when TB treatment is not started soon enough, hospitalization and death can occur. And in the past three years in San Francisco, most TB deaths have occurred in persons born in China.

BCG TB Vaccine

An important myth to dispel is that the TB (BCG) vaccine provides lifetime protection to TB. Most persons born outside of the US are BCG-vaccinated at birth. However, the BCG vaccine is most effective in protecting young children under the age of 5 years. In adults and with increasing age, the efficacy of the vaccine wanes and is not protective. All the TB patients who are hospitalized or have died due to TB in San Francisco have been BCG-vaccinated.

TB Testing

How does one prevent getting active TB? Everyone with risk factors, like being born outside of the US, should get tested for latent TB before the germ wakes up.

Testing for latent TB requires a blood test called a quantiferon or IGRA (interferon gamma release assay). While a skin test is available, the result can be falsely positive in persons who have been BCG-vaccinated. Treatment for latent TB is much easier than for active TB. However, once a person has been treated for latent TB, they can still be infected in the future if they spend a lot of time around someone with active TB.

症狀

了解可能由活動性結核病引起的症狀很重要。最常見的症狀是咳嗽、發燒、體重減輕和食慾不振。這些症狀可能持續數月至數年。大約百分之二十的患者在結核病早期階段可能沒有任何症狀。結核病症狀也可能與癌症的症狀混淆。

結核病治療、住院和死亡

雖然癌症並不可以全部治愈，但如果能夠盡快開始了治療結核病，結核病是全部可以治愈的。早期治療也有助於降低將結核病傳染給他人的機會。不幸的是，如果治療結核病遲了開始，可能會導致住院和死亡。在過去的三年裡，舊金山的大多數結核病死亡病例都發生在中國出生的人身上。

卡介苗結核疫苗

需要澄清的一個重要誤解是，結核病 (BCG) 疫苗可為結核病提供終身保護。大多數在美國境外出生的人在出生時都接種了 BCG 疫苗。然而，卡介苗疫苗對於保護 5 歲以下幼兒最為有效。對於成年人和隨著年齡的增長，疫苗的功效逐漸減弱並且沒有保護作用。舊金山所有因結核病住院或死亡的結核病患者均已接種卡介苗。

結核病檢測

如何預防活動性結核病？每個有風險因素的人，例如在美國境外出生的人，都應該在細菌甦醒之前接受潛伏性結核病檢測。

檢測潛伏性結核病需要進行稱為定量素或 IGRA（干擾素伽馬釋放測定）的血液檢測。雖然可以進行皮膚試驗，但對於接種過 BCG 疫苗的人來說，結果可能會呈現假陽性。治療潛伏性結核病比活躍性結核病容易得多。然而，即使一個人已經接受了潛伏性結核病的治療，如果他們長時間與活躍結核病患者在一起，他們仍然可能被感染。

Prevention

Everyone should be aware of symptoms of active TB in themselves, close family and friends. If you have symptoms, it is very important to see a doctor quickly because treatment can be lifesaving, can reduce the likelihood of infecting family and friends, and can save lives. Likewise, if your family or friends are having TB symptoms, encourage them to get tested.

Treatment

TB can be cured 100% if diagnosed early. Active TB disease can be treated with a combination of antibacterial medications for a period of six to 12 months. The most common treatment for active TB is **isoniazid INH** in combination with three other drugs—**rifampin, pyrazinamide and ethambutol**. Latent TB can be successfully treated also for ½ of the time used to treat active TB.

預防

每個人都應該了解自己、親密的家人和朋友的活躍性結核病症狀。如果出現症狀便盡快去看醫生，這是非常重要的，因為治療可以減少感染家人和朋友的可能性，並且可以挽救生命。同樣，如果您的家人或朋友有結核病症狀，便要鼓勵他們接受檢查。

治療

如果及早診斷，結核病可以 100% 治癒。活躍性結核病可以合併使用抗菌藥物治療 6 至 12 個月。活動性結核病最常見的治療方法是異煙肼 INH 與其他三種藥物（利福平、吡嗪酰胺和乙胺丁醇）合併使用。成功治療潛伏性結核病的時間僅為治療活躍性結核病時間的一半。