

[Donate](#)

# Noma

15 December 2023

[العربية](#)[—](#)[Français](#)[Русский](#)[Español](#)

## Key facts

- Noma is a severe gangrenous disease of the mouth and face. Its pathogenesis is linked with non-specific polymicrobial organisms and a range of modifiable risk factors and underlying social determinants shared with other neglected tropical diseases (NTDs).
- Noma mainly affects children aged 2–6 years old and is found most commonly among those living in poor communities. Africa is the most affected continent, although cases have also been reported in Asia, the Americas and other regions.
- The [latest WHO estimates](#) on burden of disease date to 1998, with an estimated 140 000 incident cases per year and a prevalence of 770 000 cases. The case-fatality rate was estimated at 90%, although evidence shows that this can be greatly reduced by early treatment.
- Accurate estimations of noma's burden are challenging, as many cases go undiagnosed, untreated and unreported due to the fast progression of the disease, high case-fatality rate, weak health systems including surveillance, associated stigma and lack of awareness of noma by healthcare workers and caregivers.
- Affected children that survive the diseases are often left with serious aesthetic and functional consequences including disfigurement and impairments in breathing, swallowing, speaking and vision that further contribute to their social isolation, stigmatization, discrimination, and consequently to violations of their human rights.

# Overview

Noma is a rapidly progressing severe gangrenous disease of the mouth and the face. It mostly affects children aged 2–6 years suffering from malnutrition, affected by infectious diseases, living in extreme poverty with poor oral health or with weakened immune systems (1). Noma can also occur among immunocompromised adults due to HIV, leukaemia and other diseases (2).

The disease, also called cancrum oris or gangrenous stomatitis, is mostly found in sub-Saharan Africa, although cases have also been reported in Latin America, Asia and other regions. Noma starts as a soft tissue lesion (a sore) of the gums. It then develops into an acute necrotizing gingivitis that progresses rapidly, destroying the soft tissues and further progressing to involve the hard tissues and skin of the face. Noma is generally considered an opportunistic and non-contagious disease.

Survivors suffer from severe facial disfigurement, have difficulty speaking and eating, endure social stigma, and require complex surgery and rehabilitation. When noma is detected at an early stage, its progression can be rapidly halted through basic hygiene, antibiotics and improved nutrition.

## Scope of the problem

Accurate estimation of the number of noma cases is challenging due to the rapid progression of the disease, high case fatality rate, weak health systems and epidemiological surveillance, changing or varying disease definitions, substantial social stigma, and a lack of awareness of noma by healthcare workers and caregivers. The WHO global incidence, prevalence and case fatality figures from 1998 (global incidence 140 000 cases per year, prevalence 770 000, case fatality 90%) remain the most widely cited, but methodological limitations mean that the true magnitude of noma's burden and the [quantification of noma survivors](#) is largely unknown. Recent evidence suggests that the reported noma case fatality rate could now be less than 90%, and it can be greatly reduced with early treatment (2).

Since the early 2000s over 13 000 cases of noma have been reported in scientific literature. Their distribution indicates that the disease is prevalent beyond the so-called noma belt, an area of the African continent stretching from Mauritania to Ethiopia. Indeed, cases are seen in African countries outside this area as well as in other parts of the world, including Asia and Asia-Pacific, the Americas, the Middle East and Europe (3).

Noma is a marker of absolute poverty. In 2012, the UN Human Rights Council acknowledged that the neglect from which noma is affected may amount to a violation of basic child rights. The Council made a comprehensive set of recommendations in line with the strategies of the WHO Regional Office for Africa Noma Control Programme (4).

## Risk factors and pathogenesis

Limitations exist in our current understanding of the aetiology and pathogenesis of noma. Evidence indicates that the causative agents of noma are non-specific polymicrobial organisms. There is also a wide range of associated risk factors reported: research highlights that the disease is linked with malnutrition, other causes of immunosuppression, underlying infections, poor oral health and extreme poverty. Noma is considered an opportunistic and non-contagious disease: there is no documented evidence to support direct transmission from person to person.

## Diagnosis

Noma is diagnosed using clinical criteria that differ according to the different stages of progress. There is currently no point of care diagnostic test. [WHO classifies noma into 5 clinical stages](#): stage 0 – simple gingivitis (gum inflammation); stage 1 – acute necrotizing gingivitis; stage 2 – oedema; stage 3 – gangrene; stage 4 – scarring; and stage 5 – sequelae.

## Treatment

Early detection is essential, as therapy is most effective at the early stages of disease when it appears as aggressively swollen gums (acute necrotizing gingivitis). Treatment typically includes prescription of widely available antibiotics, advice and support on practices to improve oral hygiene, disinfectant mouthwash (salt water or chlorhexidine could be used), and nutrition supplements. If diagnosed during the early stages of the disease, treatment can lead to proper wound healing and no long-term sequelae. More severe cases may warrant surgical intervention and wound dressing. Once noma reaches the gangrenous stage of the disease with a visible hole in the face, it is likely that children who survive will suffer severe facial disfigurement, have difficulty eating and speaking, face social stigma and isolation, and need reconstructive surgery.

# WHO response

After the inception of WHO's programme to control noma in 1994, the WHO Oral Health Programme has led global and regional noma control efforts including the implementation of the Regional Noma Control Programme in eleven priority countries in the WHO African Region. This programme focuses on strengthening and developing the capacities of health workers, social actors and communities to prevent, promptly detect and manage cases of noma. [Improved awareness of the disease among populations and mental health counselling](#) helps to remove stigma and enhances the reintegration of noma survivors and their families into society. Integration of noma into existing health surveillance systems can improve data availability and accessibility and strengthen the leadership of ministries of health through improved inter- and multisectoral collaboration.

Moreover, [WHO has encouraged Member States](#) to take a more integrated approach to preventing and controlling noma, caused by a range of modifiable risk factors, and their underlying social determinants shared with NTDs.

Following a recommendation of the Strategic and Technical Advisory Group for Neglected Tropical Diseases (STAG-NTD), noma was added to the WHO list of NTDs in December 2023, with a view to integrate noma within the [road map for neglected tropical diseases 2021–2030](#). Through this process WHO is committed to support advocacy efforts, mobilization of resources for research and development and implementation of interventions directed against noma, in coordination with NTD programmes at national level.

Even prior to this decision, noma was linked to fieldwork implemented against the skin NTDs (and other skin diseases), and was included in technical products and resources such as the [OpenWHO course on tropical dermatology](#) and the [SkinNTD mobile application](#). A dedicated online course on noma is currently available in [English](#), [French](#), [Hausa](#), [Hindi](#), and [Portuguese](#).

## References

1. Srour, M. L., Marck, K., & Baratti-Mayer, D. Noma: Overview of a Neglected Disease and Human Rights Violation. The American Journal of Tropical Medicine and Hygiene, 2017, 96(2), 268–274.
2. Maguire B et al. An updated systematic review of the evidence-based knowledge on the distribution, associated risk factors, the prevention and treatment modalities for Noma. Oxford: Infectious Diseases Data Observatory (University of Oxford); 2023.

3. Galli A, Brugger C, Fürst T, Monnier N, Winkler MS, Steinmann P. Prevalence, incidence, and reported global distribution of noma: a systematic literature review. *Lancet Infectious Diseases*, 2022, 15:S1473-3099(21)00698-8.

4. United Nations. Human Rights Council. Advisory Committee. Study of the Human Rights Council Advisory Committee on severe malnutrition and childhood diseases with children affected by noma as an example, A/HRC/19/73, Geneva: UN, 24 February 2012.  
<https://digitallibrary.un.org/record/722000>

Nigeria seeks to eliminate severe and often lethal mouth disease