

Addressing the Growing Threat of Dengue

The Global Public Health team at Johnson & Johnson is advancing breakthrough science against dengue, building on our longstanding commitment to accelerate solutions for neglected tropical diseases through innovation and collaboration.

THE CHALLENGE

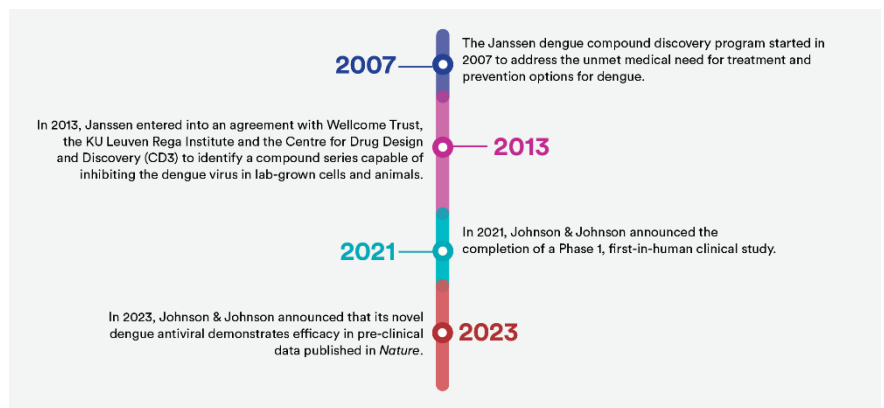
Dengue ranks as the world's most rapidly-spreading mosquito-borne virus, with nearly half the global population at risk for infection and as many as 400 million people infected each year.¹ The incidence of dengue has grown dramatically in recent decades and is expected to impact billions more² as the climate warms and the Aedes species mosquito that carries the dengue virus spreads further from its native regions. An August 2021 report from the Intergovernmental Panel on Climate Change warns that warming temperatures could potentially drive an increase in vector-borne diseases, like dengue, and make it harder to predict outbreaks.³

Research and development (R&D) efforts have proven challenging, in part because of dengue's multiple serotypes, each of which can cause reinfection and co-circulate in the same regions. There are no therapeutics available and only a limited number of prevention options have been approved, making it crucial that the world develop the new treatment and prevention tools needed to combat this disease.

OUR RESPONSE

For over a decade, Johnson & Johnson has been a committed partner in the fight against dengue, accelerating the development of innovative options to prevent and treat dengue, while advancing technologies to improve the forecasting of outbreaks.

Our Dengue R&D Program



Johnson & Johnson's Commitment to NTDs

Our work against dengue is just one part of our larger, decades-long commitment to address the burden of neglected tropical diseases (NTDs), a group of about 20 communicable, often-debilitating conditions that affect more than 1.7 billion people in nearly 150 countries around the world. Beyond our work on dengue, we are also investing in R&D for other NTDs, including leprosy, and are continuing to donate our medicine for intestinal worms around the world.

BY THE NUMBERS

Half

of the world's population is at risk for dengue

Zero

therapeutics currently available for dengue according to the U.S. CDC

8x

more cases of dengue reported to the World Health Organization (WHO) over the past two decades

2B

additional people potentially at risk of dengue by 2080 as the climate warms

Footnotes: 1: Dengue and severe dengue, World Health Organization; 2022. <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue> 2: The current and future global distribution and population at risk of dengue, Nature Microbiology; 2019. <https://www.nature.com/articles/s41564-019-0476-8>; 3: AR6 Climate Change 2021: The Physical Science Basis. The Intergovernmental Panel on Climate Change; 2019. https://www.ipcc.ch/report/ar6/wg1/?mkt_tok=MjExLU5KWS0xNjUAAAF-FU4oTHNx9mbdu0WccFqW6hYl3W-nU1bol2TAAEmEtsthdOFeRjOOFt16XqLW5krKqJpfuCrD-ViiWA_sDrNrD6CHNpc0XRJ7vzcuxO3ln8UD5g

ADDRESSING THE CHALLENGE AT EVERY LEVEL



RESEARCH & DEVELOPMENT

Research published in *Nature* showed that our early-stage clinical candidate provides strong protection against dengue in non-human primates and mice, and is safe and well-tolerated in humans. The antiviral is now being evaluated in Phase 2a clinical studies.



DISCOVERY

Working in collaboration with Duke–NUS in Singapore, Johnson & Johnson launched a new J&J Satellite Center for Global Health Discovery with a focus on flavivirus-related discovery research, including for dengue.



MODELING

Johnson & Johnson is developing an artificial-intelligence-enabled dengue outbreak forecast system as an early response warning tool with university partners to help predict dengue outbreaks ahead of time to support in accelerating trial recruitment and site sourcing.

ADVANCING BREAKTHROUGH SCIENCE AND DISCOVERY

In June 2022, Johnson & Johnson launched the first Satellite Center for Global Health Discovery (Satellite Center) in Asia at Duke–NUS Medical School in Singapore. This unique research collaboration brings together leading scientists in the Asia-Pacific region with Johnson & Johnson to help stimulate the early-stage science, innovation and talent development needed to tackle flaviviruses, including dengue, yellow fever, Zika and other viral threats.

- **How It Works:** The Satellite Centers are powered by an initial five-year commitment in partnership with a local institution to leverage established infrastructure, like lab space, and recruit local scientific and technical staff.
- **Pressing Regional Threat:** Dengue's burden falls largely on lower- and middle-income countries, with Asia experiencing nearly three-quarters of the global burden of the disease.
- **Longstanding Commitment:** Duke–NUS has played a critical role in our dengue research, most recently collaborating to launch Phase 2a clinical trials evaluating Johnson & Johnson's novel dengue-specific antiviral compound for the prevention and treatment of dengue.

J&J Centers for Global Health Discovery

J&J Centers for Global Health Discovery (J&J Centers) are the foundation of a larger, decentralized scientific network that will grow, stimulate local innovation and help drive discovery R&D aimed at addressing critical issues in global health. By partnering with renowned institutions around the world, the J&J Centers unite expertise across the scientific community where the research is most needed, and the challenges are most acute. Johnson & Johnson has also established Satellite Centers at the London School of Hygiene & Tropical Medicine and the Holistic Drug Discovery and Development Centre (H3D), University of Cape Town.

