# MONTHLY SCIENTIFIC REVIEW
# ON CHIKUNGUNYA VIRUS

The content of this document is subject to change as the health situation evolves.
All informations comes from a valid and credible source.

EDITION **Jan. 2026** No. **8**

**Editors**: Yoann Allier, Douae Ammour, Mathilde Certoux, Dahlia Chebbah, Vincent Cicculi, Nathan Claveau, Mario Delgado-Ortega, Sandrine Halfen, Charly Kengne, Rana Lebdy, Diana Molino, Mélanie Nguyen Marzine, Eric Rosenthal, Amandine Verga Gerard, Armelle Pasquet, et Eric D'Ortenzio, avec la participation de Marie Winter (OPEN-ReMIE).

ANRS Emerging Infectious Diseases - Paris, France

## Situation at a glance

- Chikungunya is an infectious disease caused by an arbovirus, the chikungunya virus.
- Between 2010 and 2024, no cases had been detected on Réunion Island. In 2025, Réunion experienced a major outbreak, with nearly 54,550 biologically confirmed autochthonous cases of chikungunya and 43 deaths. The end of the outbreak was officially declared on June 24, 2025, by the health authorities. In parallel, Mayotte also experienced active virus circulation, with more than 1,200 cases.
- Mainland France also experienced active circulation of CHIKV, with a total of 787 autochthonous cases and 1,053 imported cases as of 17 October–November, across 15 departments of metropolitan France.

# Scientific articles

This section presents relevant articles published on peer-reviewed scientific journals or pre-print platforms.

2026-01-28

## Chikungunya in 2025: Comprehensive Insights into Virology, Diagnostics, Vaccines, and Antiviral Therapies.

**Journal**: Viruses

**Authors**: Zeyong Zheng, Hua Ji, Zeping Shan, Jiangcheng Xu, Jiarui Li, Xueting Zhang, Jiajia Zheng, Shibo Jiang, Naru Zhang

This review discusses the global impact of chikungunya virus (CHIKV), its epidemiology, structure, and invasion mechanisms, focusing on the 2024-2025 epidemic hotspots. It summarizes diagnostic techniques, vaccine advancements, and antiviral therapies, proposing evidence-based strategies for CHIKV prevention and control.

**See details**

2026-01-14

## Modulating Chikungunya and Mayaro virus-induced disease severity in mice using low concentrations of anti-IFNAR1 antibodies.

**Journal**: Emerg Microbes Infect

**Authors**: Konrad Wesselmann, Léa Luciani, Gregory Moureau, Jean-Selim Driouich, Ornellie Bernadin, Magali Gilles, Xavier de Lamballerie, Antoine Nougairède

This study demonstrates that modulating disease severity in mice infected with CHIKV or MAYV is achievable using sub-neutralizing doses of anti-IFNAR1 mAb. Varying doses resulted in dose-dependent increases in viral loads, disease severity, and inflammatory markers, enabling the development of a new model for mild systemic disease.

**See details**

2025-12-31

## Minimal Polymerase-Containing Precursor Required for Chikungunya Virus RNA Synthesis.

**Journal**: Viruses

**Authors**: David Aponte-Diaz, Abha Jain, Jayden M Harris, Jamie J Arnold, Craig E Cameron

CHIKV nsP4 precursor (P34) requires nsP2 cleavage for activity; CT50-P34 supports near-wild-type replication. nsP4 interacts with nsP1 dodecamer, where cleavage activates and dissociation inactivates RdRp, providing insights into alphavirus polymerase regulation.

**See details**

2025-12-31

## Chronic Chikungunya Arthritis in Northeastern Brazil: An Association with Very Severe Joint Pain and Lack of Correlation with IL-6 and TNFα Gene Polymorphisms.

**Journal**: Viruses

**Authors**: Mariella Sousa Coêlho Maciel, Catharina Diniz de Brito Martins, Alan Gleison Moreira Dos Santos, Caroline Nobre Oliveira, Hygor Ferreira Fernandes, Raphael de Oliveira Rodrigues, Juliana Navarro Ueda Yaochite

In Northeastern Brazil, 71.6% of Chikungunya fever cases developed chronic arthritis, with females and those experiencing very severe joint pain at higher risk. No significant association was found between IL-6 and TNFα gene polymorphisms and Chikungunya fever development.

**See details**

2026-01-28

## The ability of alphavirus replicases to synthesize non-viral type I interferon-inducing RNAs correlates with viral RNA synthesis and has a diverse impact on virus replication and pathogenicity.

**Journal**: J Virol

**Authors**: Ailar Omler, Anna Rutmane, Suresh Mahalingam, Andres Merits

Alphavirus replicases universally synthesize type I IFN-inducing RNAs (rPAMPs) using non-viral templates, with levels correlating to viral RNA synthesis efficiency. rPAMP synthesis impacts pathogenicity variably: increased rPAMPs correlate with Semliki Forest virus neurov

See details

2025-12-04

## A real-world safety analysis of infection-related adverse events associated with belimumab, rituximab, and TNF inhibitors using the FAERS database.

**Journal**: Sci Rep

**Authors**: Wang Sisi, Deng Sheng, Huang Yuting, Yang Rong, Liu Shao

Belimumab and rituximab linked to higher PML risk; infliximab to TB. Rituximab also associated with hepatitis B reactivation and sepsis. Rare AEs like leishmaniasis and dengue noted. Clinicians should monitor for severe infections.

See details

2025-12-15

## Infection Of Rhesus Macaques With O'nyong-nyong Virus UVIR-O804 Recapitulates Key Aspects of Human Clinical Disease.

**Journal**: bioRxiv

**Authors**: Hannah K Jaeger, Michael Denton, Takeshi F Andoh, Craig N Kreklywich, Lina Gao, Lydia J Pung, Zachary J Streblow, Ann McMonigal, Karina Ray, Brayden Graves, Magdalene M Streblow, Aaron M Barber-Axthelm, Gavin Zilverberg, Margaret Terry, Suzanne S Fei, Glenn Hogan, David C Schultz, Sara Cherry, Michael K Axthelm, Caralyn S Labriola, Mark Heise, Daniel N Streblow

ONNV-UVIR-O804 infection in rhesus macaques induced viremia, immune activation, and clinical symptoms mirroring human disease, including rash, lymphadenopathy, and arthritis. This model shows promise for studying ONNV pathogenesis and evaluating vaccines.

**See details**

2025-12-27

## 2-Deoxy-D-glucose attenuates lipopolysaccharide-induced inflammation and restricts Zika, Chikungunya, and Mayaro virus replication in monocyte-derived macrophages.

**Journal**: Antiviral Res

**Authors**: Y S Tamayo-Molina, Yisel García-Marin, Silvio Urcuqui-Inchima

2-DG modulates LPS-induced inflammation and reduces ZIKV, CHIKV, and MAYV replication in MDMs, highlighting its potential as an antiviral strategy.

**See details**

2025-12-31

## Europe Faces Multiple Arboviral Threats in 2025.

**Journal**: Viruses

**Authors**: Yannick Simonin

Europe is experiencing a shift in arboviral disease dynamics, with chikungunya, dengue, and West Nile viruses becoming more established and endemic. This is marked by expanded geographic range, earlier transmission onset, and increased viral diversity, necessitating enhanced preparedness for longer, more intense seasons of vector-borne diseases.

**See details**

2025-12-31

## Competitive Viral Interference Controls Arbovirus Co-Transmission in Aedes aegypti.

**Journal**: Sci Rep

**Authors**: Brinda Balakrishnan, Siva Santhiya Arul, Aarti Ravindran, Sangita Venkataraman

This study analyzed 237 Aedes aegypti transcriptomic datasets, revealing competitive antagonism between Chikungunya virus and flaviviruses, with key genes in RNAi, ATP-binding, and venom allergen pathways. DDX5 gene modulates viral load responses, potentially determining transmission dominance.

**See details**

2025-12-19

## CRISPR-Cas13a SHERLOCK assay for rapid and sensitive detection of chikungunya virus.

**Journal**: Microbiol Spectr

**Authors**: Niracha Athipanyasilp, Suwanna Saowpak, Chutikarn Chaimayo, Nasikarn Angkasekwinai, Archiraya Pattama, Artittaya Athipanyasilp, Maturada Patchsung, Kanokpol Aphicho, Chayasith Uttamapinant, Navin Horthongkham

The study presents a CRISPR-Cas13a-based SHERLOCK assay for rapid, sensitive CHIKV detection, achieving 215 copies/reaction LOD, 94.52-97.26% sensitivity, and 100% specificity. It shows potential for resource-limited settings, offering a viable alternative to RT-qPCR.

**See details**

2026-01-16

## Unravelling the epidemiological and dispersal dynamics of the 2024-2025 chikungunya virus outbreak on Réunion island.

**Journal**: medRxiv

**Authors**: Etienne Frumence, Raphaëlle Klitting, Kyla Serres, Yucai Shao, Muriel Vincent, Mandev S Gill, Marc A Suchard, Philippe Lemey, Xavier de Lamballerie, Marie-Christine Jaffar-Bandjee, Simon Dellicour

The 2024-2025 Réunion island chikungunya outbreak, originating from a single introduction, was analyzed using >3,000 viral genomes. Phylodynamic and phylogeographic analyses revealed dispersal dynamics aligned with population density, frequent exchanges among distant area

**See details**

2025-12-31

## In Vitro Evaluation of the Antiviral Effect of Spirulina maxima (Arthrospira) Alga Against Chikungunya Virus.

**Journal**: Viruses

**Authors**: José Angel Santiago-Cruz, Araceli Posadas-Mondragón, José Leopoldo Aguilar-Faisal, Cesar Ismael Ortiz-García, Danai Montalvan-Sorrosa, Norma Estela Herrera-González, Angélica Pérez-Juárez

This study evaluated the antiviral potential of Spirulina maxima against Chikungunya virus (CHIKV). Methanol extract showed significant inhibition of viral replication in VERO, HepG2, and BJ cell lines at 15 µg/mL, suggesting its potential as a basis for developing new antiviral therapies. The mechanism may involve inhibition of early infection processes.

**See details**

2025-12-15

## Global Resurgence of Chikungunya Virus: Outbreak Drivers and Emerging Solutions.

**Journal**: Emerg Microbes Infect

**Authors**: Yi Zhang, Jing Wu, Xiaoyang Cheng, Yuxuan Yang, Xinyu Wang, Xiaoyu Zhao, Xiaoyan Wang, Huiling Ouyang, Jingwen Ai, Wenhong Zhang

CHIKV outbreaks driven by vector density, mutations, and delayed intervention. Effective containment requires prompt detection, vector management, genomic tracking, and water surveillance. Available vaccines offer protective opportunities. Timely prevention and control measures are crucial.

**See details**

2025-11-28

## Plaque Characteristics of Circulating Chikungunya Virus Clinical Isolates Correlate With Initial Viral Load, Antibody, and Immune Mediators as Indicators of Disease Outcome.

**Journal**: J Med Virol

**Authors**: Shakuntala Mahilkar, Garvita Mathur, Sylvester Ibemgbo, Naren Babu, Anup Jayaram, Ujwal Shetty, Prasad Varamballi, Anitha Jagadesh, Soma Chattopadhyay, R K Ratho, Baijayantimala Mishra, Sachee Agrawal, Jayanthi S Shastri, Sujatha Sunil

CHIKV plaque size correlates with viral load, immune response, and disease severity; larger plaques linked to severe symptoms and faster recovery, smaller plaques to persistent arthralgia and chronic disease.

**See details**

2025-12-26

## A bibliometric analysis of vaccine research on Chikungunya virus: contributors, trends, and emerging frontiers.

**Journal**: Front Immunol

**Authors**: Da Shao, Zengwei Kou

This bibliometric analysis (up to June 2025) shows rapid growth in CHIKV vaccine research, with U.S. institutions, notably the University of Texas, leading. Live-attenuated and nucleic acid-based vaccines are the primary focus, with the latter gaining increased attention. (299 characters)

**See details**

# Relevant news

This section presents official reports from health agencies, manufacturers and press releases with reliable sources.

2025-12-30

### More than half a million chikungunya cases reported globally in 2025

**Source**: CIDRAP

Chikungunya cases surpassed 500,000 globally in 2025, with 300,000 in the Americas. WHO cites moderate risk due to outbreaks, Aedes mosquitoes, low immunity, and environmental factors. Brazil reported 84% of Americas cases. Chikungunya causes fever, joint pain, and can le

See details

2026-01-05

### Seasonal surveillance for chikungunya virus disease in the EU/EEA for 2025

**Source**: ECDC

Update providing weekly overview of the countries and areas where chikungunya virus disease cases have been reported.

See details

2025-12-03

## Results of the chikungunya seroprevalence survey in Reunion, 2025

**Source**: PRS

Key points Strong overall immunity at the island level (66.0%) and at the district level (from 58.1% to 74.3%). Low risk of a new large-scale epidemic during the 2025-2026 austral summer. Possible limited seasonal resurgence with sporadic cases or localized outbreaks.

**See details**

# Clinical Studies

This section presents relevant clinical trials.

2025-05-27

### A Safety and Immunogenicity Study of CHIKV VLP Vaccine in Children.

**Status**: Recruiting

**Sponsor(s)**: Bavarian Nordic (Group)

The goal of this multi-center, randomized, double-blind, placebo-controlled study is to evaluate the safety and immunogenicity of CHIKV VLP Vaccine in children 2 to \<12 years of age.

**See details**

2026-01-14

### Risk Assessment of Community Spread of Multiple Endemic Infectious Diseases in a One Health Perspective

**Status**: Recruiting

**Sponsor(s)**: Institut Pasteur du Cambodge, Institut Pasteur, CDC - Ministry of Health of Cambodia, UMR ASTRE (CIRAD), Malaria Consortium, Ministry of Agriculture, Forestry and Fisheries Cambodia

RACSMEI uses a One Health approach to study 57 pathogens in Cambodia, combining surveys, diagnostics, and modeling to understand transmission and inform targeted interventions, aiming to generate actionable evidence for public health strategies and ensure transferability to other countries.

**See details**

2025-07-25

## Real-World Study on Chinese Medicine for Treating Chikungunya Fever

**Status**: Recruiting

**Sponsor(s)**: The Third Affiliated Hospital of Guangzhou University of Traditional Chinese Medicine

This study assesses the efficacy and safety of Chinese Medicine, alone or with Western medicine, for chikungunya fever, a viral disease with no specific antiviral treatment.

**See details**

2024-01-26

## Sustainable Reduction of Dengue in Colombia: Vector Breeding Site Intervention With an Insecticidal Coating

**Status**: Completed

**Sponsor(s)**: Rocio Cardenas Sanchez, Göteborg University, Instituto Nacional de Salud, Colombia, Instituto Departamental de Salud de Norte de Santander, Universidad Francisco de Paula de Santander

Cluster randomized trial in Cúcuta, Colombia, evaluated insecticidal coating (IC) with pyriproxyfen and alphacypermerthrin on water containers to reduce dengue transmission and Aedes indices. IC was applied in 10 clusters, with 10 controls. Baseline data collected 2019-20

**See details**

2025-12-04

## Observational Study to Assess the Effectiveness of VLA1553 Vaccine in Preventing Chikungunya During a Pilot Vaccination Strategy in Brazil

**Status**: Enrolling by invitation

**Sponsor(s)**: Valneva Austria GmbH, Fundação Butantan, Coalition for Epidemic Preparedness Innovations

This is an observational, non-interventional, test-negative case-control (TNCC) study to estimate the vaccine effectiveness of VLA1553 against Chikungunya virus in a real-world setting.

**See details**

2025-04-15

## Chikungunya Virus Detection in Semen

**Status**: Not yet recruiting

**Sponsor(s)**: Centre Hospitalier Universitaire de Toulouse, Agence de La Biomédecine

This prospective pilot study investigates Chikungunya virus presence and infectivity in semen, evaluating sperm preparation methods for obtaining virus-free gametes. Fifteen patients with acute infection will provide samples at multiple time points. The study aims to understand viral excretion patterns and enhance the safety of assisted reproduction during epidemics.

**See details**

2025-11-19

## Prospective Safety Cohort Study After VLA1553 Vaccination in Municipalities Selected for Participation in the VLA1553 Pilot Vaccination Strategy in Brazil

**Status**: Enrolling by invitation

**Sponsor(s)**: Valneva Austria GmbH, Fundação Butantan, Coalition for Epidemic Preparedness Innovations

This is an observational study with primary data collection, which will combine a prospective safety cohort study and an SCRI study.

**See details**

2025-09-17

## Against Chikungunya Virus and Neonatal Infection

**Status**: Not yet recruiting

**Sponsor(s)**: Centre Hospitalier Universitaire de La Réunion

This clinical trial investigates the efficacy of convalescent plasma transfusion in newborns of mothers with peripartum Chikungunya infection, aiming to reduce neonatal encephalitis/ encephalopathy and improve survival within the first 5 days. It compares outcomes with an observational cohort of untreated newborns, with follow-up assessments up to 3 months.

**See details**

2025-04-08

## Real-world Effectiveness, Safety and Immunogenicity of Chikungunya Vaccination in Populations at Risk of Severe or Complicated Forms: Prospective Study in La Réunion

**Status**: Recruiting

**Sponsor(s)**: Centre Hospitalier Universitaire de La Réunion, ANRS, Emerging Infectious Diseases, Région La Réunion, ARS La Réunion, Direction Générale de l'offre de Soins (DGOS)

This prospective study evaluates the real-world effectiveness, safety, and immunogenicity of the IXCHIQ® chikungunya vaccine in high-risk populations in La Réunion, including seniors and those with comorbidities, as defined by the French Health Authority. The findings will inform a future cluster randomized trial.

**See details**

2025-04-28

## Trial to Evaluate the Immunogenicity and Safety of the Co-administration of Live Attenuated Dengue and Chikungunya Vaccines Compared to Separate Administration in Adults Aged 18 to 59 Years.

**Status**: Not yet recruiting

**Sponsor(s)**: Instituto Butantan

This randomized, controlled, double blind trial aims at assessing the safety and immunogenicity profiles of the co-administered Live Attenuated Dengue and Chikungunya vaccines comparatively to the isolated administration, in the adult population aged 18 to 59 years without prior exposure to either arbovirus.

**See details**

2024-10-17

## The Interest of Systematic Screening for Dengue, Chikungunya, and Zika, in Malaria-negative Return Travelers

**Status**: Active not recruiting

**Sponsor(s)**: Hôpitaux Universitaires de Strasbourg

This study highlights the underdiagnosis of dengue, chikungunya, and zika in malaria-negative return travelers, with 78% not tested, posing a risk of autochthonous transmission due to Aedes albopictus spread in France. It aims to evaluate infection rates, clinical symptom

**See details**

2024-10-30

## Trial of an Inactivated Chikungunya Virus Vaccine

**Status**: Active not recruiting

**Sponsor(s)**: Najít Technologies (United States), National Institute of Allergy and Infectious Diseases (NIAID)

This Phase 1 trial evaluates the safety and reactogenicity of two dosages (2.5 mcg and 8 mcg) of an inactivated chikungunya virus vaccine (HydroVax-005 CHIKV) administered intramuscularly on Days 1 and 29 in 48 healthy adults aged 18-50.

**See details**

2025-09-01

## Assessment of Chikungunya Virus Seroprevalence Before VLA1553 Vaccination in the Municipalities Selected for Participation in the VLA1553 Pilot Vaccination Strategy in Brazil

**Status**: Active not recruiting

**Sponsor(s)**: Valneva Austria GmbH, Fundação Butantan, Coalition for Epidemic Preparedness Innovations

This is a cross-sectional serosurvey using household cluster sampling conducted before the VLA1553 pilot vaccination strategy will be implemented in about 10 municipalities in Brazil.

**See details**

2025-05-05

## Factors Associated With Hospitalization and Severity of Arbovirosis in the Indian Ocean

**Status**: Recruiting

**Sponsor(s)**: Centre Hospitalier Universitaire de La Réunion

This study aims to identify clinical, demographic, and environmental factors influencing hospitalization and severity of arboviroses (dengue, chikungunya, Zika) in the Indian Ocean, focusing initially on the ongoing chikungunya epidemic in La Réunion.

**See details**

2025-11-13

## Cohort Study of Arbovirus and Other Emerging Virus Infections in Fiji: AEVI-Fiji Cohort.

**Status**: Recruiting

**Sponsor(s)**: Fiji National University, Institut Louis Malardé, Institut Pasteur, Institut Hospitalo-Universitaire Méditerranée Infection, Ministry of Health, Fiji, London School of Hygiene and Tropical Medicine

The AEVI-Fiji cohort study will track arbovirus (DENV, ZIKV, CHIKV) and respiratory virus (SARS-CoV-2, influenza A/B) prevalence, immunity, and transmission in 900 participants over 38 months, informing public health strategies in Fiji and Oceania.

**See details**

# Guidelines and practical information

This section lists official manuals of recommendations for clinical practice or public health policy published by leading health organizations.

| | |
|---|---|
| **HAS** | **Utilisation du vaccin IXCHIQ dans le contexte épidémique de chikungunya dans les territoires de La Réunion et de Mayotte (2025)** |
| **CDC** | **Information for traveller's : Chikungunya (2024)** |
| **WHO** | **Guidelines on Clinical Management of Chikungunya Fever (2019)** |
| **ECDC** | **Guidelines for mosquito surveillance** |
| **Ministère de la Santé et de la Prévention** | **Recommandations nationales sur la prise en charge du chikungunya (Formes aiguës, formes persistantes) (2014)** |
| **PAHO** | **Preparedness and Response for Chikungunya Virus Introduction in the Americas (2011)** |
| **WHO** | **Guidelines for prevention and control of Chikungunya fever (2009)** |

# Fact sheets

### Transmission

CHIKV is an RNA virus from the Alphavirus genus, part of the Togaviridae family, originating in Africa. The disease's name means `the one who walks bent over,` due to joint and muscle pain. There are four known clades: West African, Asian, ECSA (East/Central/South African), and IOL (Indian Ocean Lineage). The virus is mainly transmitted to humans through Aedes mosquitoes (Aedes aegypti and Aedes albopictus). Less common transmission can occur via contact with infected blood, especially in laboratory and healthcare settings (<1%). Vertical transmission from mother to child during the second trimester of pregnancy and intra-partum transmission during viremia at delivery have also been reported.

### Diagnosis

For suspected cases, PCR testing should be done as soon as possible after symptoms appear (viremia lasts about 8 days). Isolated IgM antibodies require a second sample at least 10 days later to confirm seroconversion (IgG appearance). IgG presence alone does not confirm recent infection due to their prolonged persistence.

### Symptoms

CHIKV infection is symptomatic in 80% of cases and typically progresses through three clinical stages: acute (day 1–21), post-acute (day 21–3 months), and chronic (beyond 3 months). Initial symptoms are non-specific (fever, headache, rash, muscle pain, and joint pain). Severe forms are more likely in patients with comorbidities, pregnant women, immunocompromised individuals, and people at extreme ages. Mortality for severe cases ranges from 0.5% to 1.3%. Chronic forms, which significantly affect quality of life, impact 20–60% of patients depending on the viral lineage and care quality.

### Treatment

There is no approved specific treatment for CHIKV. Management focuses on relieving symptoms and treating rheumatologic complications.

### Vaccination

IXCHIQ, developed by Valneva, is the only approved chikungunya vaccine. It is a live-attenuated vaccine given as a single intramuscular dose. It has FDA and EMA approval for individuals aged 18 and older who are not immunocompromised.