MONTHLY SCIENTIFIC REVIEW
ON CHIKUNGUNYA VIRUS

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Situation at a glance

- On 27 January 2026, the first locally acquired case of chikungunya since 2014 was detected in Kourou, French Guiana. Since the identification of this initial confirmed case in late January, 799 biologically confirmed chikungunya cases have been reported in French Guiana according to Santé Publique France. Viral circulation is expanding and intensifying across the territory.
- Between 2010 and 2024, no cases had been detected on Réunion Island. In 2025, Réunion experienced a major outbreak, with nearly 54,550 laboratory-confirmed locally acquired chikungunya cases and 43 deaths. Health authorities declared the end of the outbreak on 24 June 2025. In parallel, Mayotte also experienced active viral circulation with more than 1,200 cases.
- Mainland France also experienced active CHIKV transmission, with a total of 787 locally acquired cases and 1,053 imported cases reported as of 17 October, across 15 departments of metropolitan France.

Scientific articles

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

2026-05-15

Dengue antibody dynamics resolved at epitope level using a dengue 1 human infection model.

Journal: Int J Infect Dis

Authors: Johanna Bouckaert, Adam Tully Waickman, Stephen J Thomas, Kevin K Ariën, Ole Lagatie

This study characterizes longitudinal antibody responses at the epitope level following primary DENV1 infection, identifying antigenic regions for improved dengue serodiagnostics.

See details

2026-05-08

Resurgence of Chikungunya virus: rising global threat and challenges in its mitigation.

Journal: Front Pharmacol

Authors: Priyadarshi Soumyaranjan Sahu, Ritesh Pattnaik, Mohammed Alissa, Ghadah S Abusalim, Alaa S Alhegaili, Ghfren S Aloraini, Abdulkarim S Binshaya, Ghada M Alnafesah, Subrat Kumar

CHIKV, a mosquito-borne virus, causes fever and musculoskeletal pain, with outbreaks expanding globally since 2004. Current control and diagnostic methods are inadequate, leading to underreporting. This review discusses CHIKV pathogenesis, detection, and mitigation challe

See details

2026-04-27

A Mouse-Adapted CHIKV Strain Harboring E2-K200R and Non-Structural Mutations Exhibits Enhanced Pathogenicity in Multiple Rodent Models.

Journal: Viruses

Authors: Cong Tang, Bai Li, Qing Huang, Yun Yang, Wenhai Yu, Yanan Zhou, Daoju Wu, Hao Yang, Haixuan Wang, Junbin Wang, Shuaiyao Lu

A mouse-adapted CHIKV strain with E2-K200R and non-structural mutations shows enhanced pathogenicity in multiple rodent models, inducing higher viremia, broader tissue tropism, and severe internal joint inflammation. The K200R mutation does not affect in vitro replication or receptor binding, offering a new tool for CHIKV research and vaccine evaluation.

See details

2026-04-23

Research advances in chikungunya virus: Epidemiology, pathogenesis, and control.

Journal: One Health

Authors: Shiqin Dai, Hao Li, Shu Li, Xinhua Shao, Xianliang Cheng

Chikungunya virus (CHIKV), transmitted by Aedes mosquitoes, causes debilitating fever and musculoskeletal symptoms, with no specific antiviral treatment. This review covers CHIKV's epidemiology, pathogenesis, clinical manifestations, and control measures, emphasizing the need for cross-disciplinary collaboration and coordinated efforts to combat its global spread.

See details

2026-05-08

Integrated transcriptome-microbiome analysis reveals a host-microbe interplay associated with insecticide resistance in Aedes albopictus.

Journal: Front Microbiol

Authors: Lifang Liu, Guorui Liang, Heting Gao, Siyu Xing, Kai Wang, Xinyu Zhou, Xinan Huang, Chunxiao Li

Ae. albopictus populations in China show varying beta-cypermethrin resistance, with kdr mutations and DEGs identified. Gut microbiome analysis revealed Cedecea neteri's role in resistance, with dietary supplementation increasing survival rates. This study provides insights into resistance mechanisms and potential control strategies.

See details

2026-04-29

The inhibition mechanism of Wolbachia on mosquito-borne RNA virus replication as seen through lipid metabolism regulation.

Journal: Front Microbiol

Authors: Zifu Wang, Xiang Cui, Qingyong Zhang, Lili Zou, Jun Wang

Wolbachia, a mosquito symbiont, inhibits RNA virus replication (e.g., DENV, ZIKV, CHIKV) by regulating host lipid metabolism, disrupting viral invasion and replication.

See details

2026-05-13

Convergent enrichment of Gammaproteobacteria along Aedes aegypti development across different breeding sites.

Journal: Anim Microbiome

Authors: Aboubakar Sanon, Lander De Coninck, Lanjiao Wang, Athanase Badolo, Jelle Matthijnssens, Katrien Trappeniers, Leen Delang

Field-collected Ae. aegypti showed decreased bacterial diversity and increased Proteobacteria, particularly Gammaproteobacteria, from larvae to adults. 40 Gammaproteobacteria ASVs were consistently found in adults, suggesting non-random, diagonal transmission from breeding water.

See details

2026-05-12

Are AI chatbots ready for chikungunya public education? Evidence on validity, reliability, and readability.

Journal: BMC Public Health

Authors: Qi Zhuang, Jiadong Zhao, Yang Liu, Anguo Zhao, Rui Liang, Lei Peng, Rongkang Li

DeepSeek-V3.2 led in accuracy (86.7%) and readability, but all chatbots fell short of recommended readability levels. Reliability varied significantly, with limited transparency. Caution advised against unsupervised use for public health communication.

See details

2026-04-18

Distinct inflammatory biomarkers associated with rheumatological outcomes in chronic chikungunya disease.

Journal: Sci Rep

Authors: Lucas Sousa Magalhães, Juliana Cardoso Alves, Regina Adalva de Lucena Couto Ócea, Alejandra Debbo, Priscila Lima Dos Santos, Suresh Mahalingam, Mauro Martins Teixeira, Amelia Maria Ribeiro de Jesus, Angela Maria da Silva, Roque Pacheco de Almeida, Camilla Natália Oliveira Santos

This study found distinct cytokine profiles in acute vs. chronic chikungunya, with IL-23 linked to persistence and FGF-2/IL-4 to resolution, suggesting biomarkers for risk and therapeutic trials.

See details

2026-04-26

Genomic surveillance reveals multiple origins and local transmission of travel-associated chikungunya virus in Yunnan, China.

Journal: BMC Microbiol

Authors: Mengyuan Zheng, Jie Li, Wei Chang, Hui Xiao, Li Liu, Weihong Qin, Xueshan Xia, Yue Feng

See details

2026-05-13

Strategies to enhance DNA vaccine efficacy against emerging arboviruses: lessons from ZIKA and Chikungunya viruses.

Journal: Vaccine

Authors: Smrithi Sreekanth, Anismrita Lahon

This review explores strategies to enhance DNA vaccine efficacy against Zika (ZIKV) and Chikungunya (CHIKV) viruses, focusing on adjuvants and delivery systems, and proposes a translational roadmap for multivalent vaccines to tackle co-circulating arboviruses.

See details

2026-05-19

Identification and characterization of novel chikungunya virus polymerase inhibitors.

Journal: J Virol

Authors: Peiqi Yin, Ryan Boyce, Sainan Wang, Michael Sirrine, Alexander Leach, Dillon Chu, Dariia Vyshenska, Zafer Sahin, Jenny Wong, Tahirah Moore, Devin Shane M Lewis, Stephen C Pelly, Dennis Liotta, Andres Merits, Alexander L Greninger, Richard K Plemper, Margaret Kielian, Robert M Cox

High-throughput screening identified novel small-molecule inhibitors targeting CHIKV nsP4 RNA polymerase, with resistance profiling and in silico docking suggesting potential binding sites near the active site, highlighting novel targets for antiviral development.

See details

2026-05-27

CHIKV-Infected Human Dermal Fibroblasts Mount an IFNβ Transcriptional Response Independent of TBK1/IKKε Signaling That Fails to Prevent Lethal Infection.

Journal: Viruses

Authors: Meagan M Taylor, Rosemary W Roberts, Jonathan O Rayner

CHIKV-infected human dermal fibroblasts exhibit robust IFNβ transcription but insufficient translation, failing to prevent lethal infection. This response is independent of TBK1/IKKε signaling. Exogenous IFNβ rescues cells, suggesting paracrine signaling may be crucial for fibroblast survival during natural infection.

See details

2026-05-13

Chikungunya virus TF inhibits SNX27-mediated endocytic recycling of GLUT1.

Journal: Microbiol Spectr

Authors: Shengnan Wang, Dan Zhang, Leiliang Zhang

See details

2026-04-27

Argininosuccinate synthase 1 (ASS1) orchestrates arginine metabolism and ornithine production to modulate CHIKV infection.

Journal: J Virol

Authors: Nimisha Mishra, Mothe Sravya, Sonali Hanjankar, Anjali Singh, Yash Chaudhary, Ranjan Kumar Nanda, Sujatha Sunil

ASS1 and L-arginine supplementation enhance CHIKV replication in Huh-7 cells by modulating ornithine, proline, and nitric oxide pathways, as well as STAT3 signaling. ASS1 silencing reduces viral titers, highlighting its role in CHIKV-host interactions.

See details

2026-04-27

Dengue and chikungunya interface in South and Southeast Asia: Epidemiology, challenges and future directions.

Journal: J Infect Public Health

Authors: Nurshad Ali

Dengue and chikungunya, transmitted by Aedes mosquitoes, are increasing in South and Southeast Asia due to urbanization and climate change. Co-infections and overlapping symptoms pose diagnostic and healthcare challenges. This review discusses epidemiology, vector ecology

See details

2026-05-09

A rapid multiplex platform for simultaneous detection of chikungunya virus, dengue virus, and dengue serotyping based on isothermal amplification and lateral flow dipsticks.

Journal: Infect Dis Poverty

Authors: Gaowen Liu, Xinlin Wu, Yingchao Chang, Mengyuan Zheng, Li Liu, Xueshan Xia, Yue Feng

This study developed a rapid, multiplex RT-MIRA assay for simultaneous detection of DENV and CHIKV, with nested RT-MIRA for DENV serotyping. The assay showed high sensitivity, specificity, and strong agreement with RT-qPCR, offering a promising tool for point-of-care testing in resource-limited settings.

See details

2026-05-03

Whole-genome phylogenetics of chikungunya virus from a clustered outbreak in China reveals IOL circulation.

Journal: Virology

Authors: Penghong Zhang, Zhifeng Pang, Shuying Zhu, Qianqian Xu, Qionglou Fang, Chen Yang, Xiaojing Yao, Bing Zhang

This study reports four CHIKV whole-genome sequences from a Jinhua City outbreak, all belonging to the India Ocean lineage (IOL). Phylogenetic analysis confirmed their IOL classification, with notable amino acid substitutions (E1-A226V, E2-L210Q, E2-I211T) and purifying selection in the E1 protein, suggesting evolutionary stability of IOL in China.

See details

2026-05-08

Expanding insect cell models for arboviruses: comparing the chikungunya virus replication and cellular host response in Spodoptera frugiperda Sf9 and Aedes albopictus C6/36 cells.

Journal: Virology

Authors: Yuri Mouzinho Ramos Tanaka, Pedro Henrique Couto Dos Santos, Lucas Matheus Barreto Santana, Tallyta Tâmara da Silva Monteiro, Thaíse Yasmine Vasconcelos de Lima Cavalcanti, Karina Lidianne Alcântara Saraiva, Rafael Dhalia, Rafael Freitas de Oliveira França, Osvaldo Pompílio de-Melo-Neto, Lindomar Pena, Regina Celia Bressan Queiroz de Figueiredo, Tatiany Patrícia Romão

This study compares CHIKV replication and host response in Sf9 (lepidopteran) and C6/36 (mosquito) cells. CHIKV infects both, with lower yields in Sf9. Both cell types show infection-induced morphological changes, but autophagy-like structures were only observed in C6/36. Sf9 cells are validated as a novel model for studying CHIKV-insect interactions.

See details

2026-04-19

Chikungunya virus virus-like particle vaccine (Vimkunya) induces a rapid and durable antigen-specific CD4 + T cell response.

Journal: Vaccine

Authors: Fernanda H Cortes, Rimjhim Agarwal, Calvin Ha, E Alexandar Escarrega, John Villalpando, Rosa Isela Gálvez, Alba Grifoni, Lo Vang, Christopher S Morello, Steven T Stoddard, Kelly L Warfield, Alessandro Sette, Daniela Weiskopf

Vimkunya, a CHIKV VLP vaccine, induces rapid and durable CHIKV-specific CD4+ T cell responses, detected as early as 8 days post-vaccination, increasing by 57 days and stabilizing by 182 days, supporting its potential for CHIKV disease protection.

See details

2026-05-15

Innate immune sensing of alphavirus chikungunya: balancing antiviral defense and pathogenesis.

Journal: Front Immunol

Authors: Juliane Santos de França da Silva, Célio Valdevino Ferreira Junior, Livian Maria Silva Dos Santos, Valter Feirreira de Andrade-Neto, Paulo Marcos da Matta Guedes, Juliana Navarro Ueda Yaochite, Rafael Freitas De Oliveira França, Ramayana Morais de Medeiros Brito, Manuela Sales Lima Nascimento

CHIKV infection triggers innate immunity via PRRs like TLRs and RIG-I, inducing type I IFN and inflammatory responses. Inflammasomes amplify IL-1β/IL-18, contributing to chronic joint inflammation. Cytokines/chemokines balance viral clearance and immunopathology. Review summarizes CHIKV sensing pathways, host-virus interactions, and therapeutic implications.

See details

Relevant news

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

2026-04-27

Maternal chikungunya infections linked to short and long-term neurologic problems in babies

Source: CIDRAP

Maternal chikungunya infection during labor/delivery increases risk of serious neonatal neurologic issues (48%) and long-term neurodevelopmental problems (nearly 2x).

See details

2026-05-07

In 2026: intensified mobilization against the tiger mosquito! Activation of the surveillance and control system for diseases transmitted by the tiger mosquito

Source: ARS

The Provence-Alpes-Côte d'Azur region, with 97% tiger mosquito exposure, saw 450 chikungunya and 16 dengue cases in 2025, with rising trends since 2022. ARS Paca and Santé publique France are enhancing surveillance, case reporting, and control measures.

See details

2026-04-29

Vector-borne disease prevention: The ARS Île-de-France is launching its enhanced surveillance campaign starting May 1, 2026

Source: ARS

ARS Île-de-France enhances tiger mosquito surveillance (May-Nov 2026) using 435 ovitraps, citizen reports, and healthcare-professional case reporting to guide anti-vector actions and curb dengue, chikungunya, and Zika transmission.

See details

2026-05-04

Evolution of reporting methods for notifiable diseases (ND)

Source: ARS

Terminology updated to "DSMR" for modern reporting. Digital pilot for urgent DSMR (dengue, chikungunya, Zika, West Nile, measles) launched in 2026. Complete, accurate reporting crucial for public health.

See details

2026-06-19

Health surveillance in French Guiana. Bulletin of June 18, 2026

Source: Santé Publique France

French Guiana epi update: Dengue inter-epidemic level. Chikungunya: 799 confirmed cases; epidemic in Littoral ouest & Savanes, foci on Île de Cayenne, sporadic transmission in Maroni. Malaria: 6 cases/2wks (1 P. falciparum, 5 P. vivax); 125 YTD, mostly in gold-mining areas. RSV bronchiolitis epidemic ongoing, severe cases reported. Influenza-like illness calm. SARS-CoV-2 low. Diarrhea declining but still elevated in CHU EDs.

See details

2026-06-02

Free chikungunya vaccination campaign: how and where to get vaccinated?

Source: France Info

513 confirmed cases as of May 28, including 101 hospitalizations, with the epidemic described as in an exponential phase. Two ANSM-approved vaccines (IXCHIQ, VIMKUNYA) provided free; 2,500 doses ordered, 1,000 already available. GP prescription required; vaccine dispensed at select pharmacies, injected by physician or nurse. Priority targets: age ≥65 and/or comorbidities. ARS fully funds procurement

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 1 to \<12 years of age.

See details

2026-03-09

An Efficacy, Safety, and Immunogenicity Study of CHIKV VLP Vaccine for the Prevention of Chikungunya Disease in Adolescents and Adults

Status: Not yet recruiting

Sponsor(s): Bavarian Nordic (Group), Walter Reed Army Institute of Research (WRAIR), Congressionally Directed Medical Research Programs, United States Department of Defense, Pharmaceutical Product Development, (PPD) LLC, Armed Forces Research Institute of Medical Services, Q-square Business Intelligence, Inc.

This study evaluates the efficacy, immunogenicity, and safety of the CHIKV VLP vaccine in adolescents and adults. It employs infectious disease models and advanced analytics to optimize study design, addressing challenges in assessing CHIKV vaccine efficacy.

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

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 aims to address infectious disease burden in Cambodia using a One Health approach, combining a national survey, social science, and multiplex diagnostics to study 57 pathogens. Mathematical modeling will forecast transmission dynamics and evaluate public health strategies, generating actionable evidence for targeted interventions and reducing disease burden.

See details

2025-04-15

Chikungunya Virus Detection in Semen

Status: Not yet recruiting

Sponsor(s): Hôpital Rangueil, Agence de La Biomédecine

This prospective 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

2025-02-27

Serological Measurement of Montpellier Professionals' Contacts with Infectious Agents Responsible for Animal-borne Diseases

Status: Not yet recruiting

Sponsor(s): Hôpital Lapeyronie, TransVIHMI UM, IRD UMI233, Inserm U1175, UMR 1058 Pathogenesis & Control of Chronic & Emerging Infections PCCEI

The study investigates serological evidence of exposure to 18 zoonotic and arboviral pathogens among professionals in Montpellier, Occitania, a region with favorable conditions for disease emergence. By detecting antibodies, the research aims to assess the circulation of these pathogens, implement public health measures, and evaluate occupational risks.

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): Hôpital d'Hautepierre

This study highlights the underdiagnosis of dengue, chikungunya, and zika in malaria-negative travelers, with 78% not tested for these arboviruses, posing a risk of autochthonous transmission in France. It aims to evaluate infection rates, clinical symptoms, diagnostic de

See details

2026-05-07

Effects Of A Rehabilitation Protocol On Muscle Strength, Muscle Fatigue And Postural Control In Post-Dengue And Chikungunya Patients

Status: Not yet recruiting

Sponsor(s): Universidade do Estado do Pará

This study assesses a rehabilitation protocol's effects on muscle strength, fatigue, and postural control in post-Dengue and Chikungunya patients, using a mix of aerobic, anaerobic, and respiratory exercises, aiming to improve physiotherapeutic strategies and public health policies.

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

2024-10-30

Trial of an Inactivated Chikungunya Virus Vaccine

Status: Completed

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 18-49.

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.