MONTHLY SCIENTIFIC REVIEW
ON CHIKUNGUNYA VIRUS

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EDITION **Nov. 2025** No. **7**

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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.

2025-10-13

The role of chikungunya virus capsid-viral RNA interactions in programmed ribosomal frameshifting.

Journal: J Virol

Authors: Jordan A Farrington, Erin E Rooney, Richard W Hardy

CHIKV capsid protein modulates programmed ribosomal frameshifting (PRF) in the 6K/Transframe (TF) region, influencing structural protein synthesis and TF production. Reduced capsid-vRNA interaction increases PRF efficiency, enhancing viral replication in immune-competent cells. This suggests capsid's role in immune response modulation and alphavirus gene expression regulation.

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2025-09-30

A quantitative high-throughput screening pipeline to identify small molecule inhibitors of Chikungunya nsP2 protease.

Journal: Sci Rep

Authors: Shuaizhang Li, Xin Hu, Yong-Mo Ahn, Angelica Medina, Lin Ye, Audrey Heffner, Simon Messing, John-Paul Denson, Dominic Esposito, Emily M Lee, Natalia J Martinez

This study established a high-throughput screening pipeline to identify small molecule inhibitors of Chikungunya virus nsP2 protease, a key target for antiviral development. Using a FRET-based assay, 31,000 compounds were screened, with hits validated against full-length nsP2 and additional peptides. Selectivity was assessed using assays for other proteases, and a cell-based proteolytic assay identified cell-active hits. Molecular docking and in vitro antiviral activity evaluations were performed on novel compounds, advancing

See details

2025-10-04

A retrospective investigation for the seroprevalence of Chikungunya virus and its co-existence with Dengue virus in Pakistani population, 2014-2015.

Journal: Sci Rep

Authors: Darakhshan Guhar, Kiran A Qadir, Fiza Khan, Shafqat F Rehmani, Sayyada G Nadeem

This retrospective study investigated the seroprevalence of Dengue (DENV) and Chikungunya (CHIKV) viruses in Pakistan (2014-2015), revealing 70% and 17% single infections, respectively, and 6% co-infections. The findings suggest CHIKV was present before its known outbreak (2018-19) and underscore the need for improved diagnostic capabilities and surveillance for arboviruses in Pakistan.

See details

2025-10-14

TIMP-2 as a Potential Indicator of Persistent Arthralgia in Chikungunya: Evidence From a Brazilian Cohort Study.

Journal: J Med Virol

Authors: Ana Clara Santos Costa, Anderson Felix Dos Santos, Gabriela Cavalcanti Lima Albuquerque, Michelle Melgarejo da Rosa, Jamile Taniele-Silva, Angela Luzia Branco Pinto Duarte, Maira Galdino da Rocha Pitta, André Machado de Siqueira, Amanda Pinheiro de Barros Albuquerque, Moacyr Jesus Barreto de Melo Rego

This study found lower MMP-2 and higher TIMP-2 levels in patients with persistent arthralgia post-Chikungunya. Multivariate analysis identified swollen joints, skin rash, and elevated TIMP-2 as predictors of chronic symptoms, suggesting TIMP-2's potential as an early indicator. Further validation is needed.

See details

2025-11-07

Post-authorisation experience and reported adverse events following use of a virus-like particle chikungunya vaccine, United States and Germany, up to August 2025.

Journal: Euro Surveill

Authors: Benedetto Simone, Florian Lienert

Early post-authorisation data from the US and Germany (up to August 2025) on the virus-like particle chikungunya vaccine (CHIKV VLP, VIMKUNYA) show no severe adverse events in individuals aged 65 and older, supporting its favorable safety profile in this age group.

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2025-11-19

Detection of Aedes (Fredwardsius) vittatus Mosquitoes, Yucatán Peninsula, Mexico, 2025.

Journal: Emerg Infect Dis

Authors: Rahuel J Chan-Chable, César R Rodríguez-Luna, Román Espinal-Palomino, Carlos N Ibarra-Cerdeña

We report detection of Aedes (Fredwardsius) vittatus mosquitoes in continental North America, in Yucatán, Mexico. Phylogenetic analysis clustered the sequence from mosquitoes collected in Mexico with Caribbean mosquito lineages, suggesting species introduction via the Caribbean. Given its arbovirus competence, urgent inclusion of the Ae. vittatus mosquito in surveillance programs is warranted.

See details

2025-10-21

Mosquito salivary sialokinin reduces monocyte activation and chikungunya virus-induced inflammation via neurokinin receptors.

Journal: Nat Commun

Authors: Siew-Wai Fong, Jeslin J L Tan, Vaishnavi Sridhar, Siti Naqiah Amrun, Vanessa K X Neo, Nathan Wong, Bernett Lee, Yi-Hao Chan, Anthony Torres-Ruesta, Liang Hui Loo, Anna X Y Loo, Sarah K W Tan, Rhonda S L Chee, Tze-Kwang Chua, Angeline Rouers, Guillaume Carissimo, Fok-Moon Lum, Yee-Sin Leo, Laurent Renia, R Manjunatha Kini, Lisa F P Ng

Sialokinin, a mosquito salivary protein, binds neurokinin receptors, reducing monocyte activation and CHIKV-induced inflammation. It enhances early viral spread, decreases CD169+ monocytes, and suppresses IFN-γ-driven inflammation. Severe CHIKV patients show higher anti-sialokinin IgG, correlating with higher viral loads and inflammation. Targeting sialokinin may mitigate CHIKV-induced inflammation and improve outcomes.

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2025-11-04

Neutralizing antibodies against Chikungunya virus and structural elucidation of their mechanism of action.

Journal: Nat Commun

Authors: Xiaonan Han, Chengfan Ji, Siyu Tian, Fengze Wang, Guo-Ping Cao, Ding Li, Xiaomin Duan, Zhou Tong, Jianxun Qi, Qihui Wang, Qingrui Huang, Bing-Dong Zhan, George Fu Gao, Jinghua Yan

This study identifies two neutralizing antibodies, C34 and C37, against CHIKV with high in vitro neutralizing activity and in vivo protective effects in a mouse model. Structural and functional analyses reveal that these antibodies bind to a conserved epitope, facilitating virion crosslinking and obstructing receptor binding, thereby inhibiting multiple stages of the virus infection cycle.

See details

2025-10-08

Expanding threat of chikungunya in 2025.

Journal: Lancet Microbe

Authors: Priya Venkatesan

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2025-11-11

Author Correction: Global burden of chikungunya virus infections and the potential benefit of vaccination campaigns.

Journal: Nat Med

Authors: Gabriel Ribeiro Dos Santos, Fariha Jawed, Christinah Mukandavire, Arminder Deol, Danny Scarponi, Leonard E G Mboera, Eric Seruyange, Mathieu J P Poirier, Samuel Bosomprah, Augustine O Udeze, Koussay Dellagi, Nathanael Hozé, Jaffu Chilongola, Gheyath K Nasrallah, Simon Cauchemez, Henrik Salje

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Relevant news

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

2025-11-05

VIMKUNYA (Chikungunya Vaccine [Recombinant, Adsorbed]) - Chikungunya

Source: HAS

VIMKUNYA, a recombinant adsorbed chikungunya vaccine, is approved for active immunization in individuals ≥12 years, mainly travelers per 2025 HCSP guidance. Service rendered is moderate, with minor therapeutic improvement (ASMR IV). Continued approval depends on ongoing study results, pharmacovigilance, and real-world data within 2 years.

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2025-11-05

Dr. Francisco Durán confirms that Cuba is facing a chikungunya epidemic: over 31,000 cases and 95 patients in serious condition

Source: CiberCuba

Cuba faces a severe chikungunya outbreak: over 31,000 suspected cases and 95 patients in critical condition, many of them children. The virus spreads across 14 provinces, worsened by lack of fumigation and resources. The weakened health system struggles to contain the crisis, with sanitation measures proving insufficient.

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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

2025-04-15

Chikungunya Virus Detection in Semen

Status: Not yet recruiting

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

Chikungunya is an arboviral disease transmitted by Aedes mosquitoes, present in intertropical zones and Europe. In August 2024, autochthonous cases appeared on Réunion, followed by a large epidemic. In March 2025, the incidence surpassed 2,000 cases per week. Due to a lack of data, the Haut Comité de Santé Publique issued an unfavorable opinion on using substances of human origin during the epidemic. Although the presence of Chikungunya virus genome in semen has been reported in 7 men, the incidence of viral excretion is unknown. This raises concerns about the risk of sexual transmission and infectivity, especially in assisted reproductive technologies. Previous studies on other arboviruses (Zika, dengue) have explored genital excretion. The goal of this prospective pilot study is to investigate Chikungunya virus presence and infectivity in semen, as well as to evaluate the effectiveness of sperm preparation methods in obtaining virus-free gametes. Fifteen patients with acute Chikungunya virus infection will provide blood, urine, and semen samples at different time points (7, 15, 30, 60, 90, and 180 days post-symptom onset). Seminal plasma, native sperm cells, and prepared sperm fractions will be tested for Chikungunya virus RNA at the University Hospital of La Réunion and Toulouse. This study will provide insights into viral excretion patterns and help improve the safety of medically assisted reproduction in epidemic situations.

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)

Against the backdrop of a growing chikungunya epidemic in La Réunion, this prospective study will assess the real-life efficacy, safety and immunogenicity of IXCHIQ® vaccine in vulnerable individuals (seniors, comorbid patients), defined by the French Health Autority (HAS) as at risk of severe or complicated forms and/or chronic disabling forms (chronic arthritis, chronic fatigue phenotypes). This study will also provide input for the preparation of a cluster randomized trial on a population scale.

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

2025-09-17

Against Chikungunya Virus and Neonatal Infection

Status: Not yet recruiting

Sponsor(s): Centre Hospitalier Universitaire de La Réunion

The goal of this clinical trial is to learn if administration of plasma, from a whole blood donation from an individual who has declared a Chikungunya infection for less than 6 months , to a newborn, whose mother has a peripartum chikungunya infection, will have an impact on the proportion of newborns surviving without encephalitis/encephalopathy (EE) within the first 5 days of life. Researchers will compare results to an observational study of 30 newborns who couldn't have been proposed to participate at the clinical trial, because of delay of diagnosis or delay of transfer to hospital which doesn't allow transfusion or parents not accepting plasma transfusion to the newborn. Participants of the clinical trial will: * receive a transfusion, * visit the clinic and undergo biological tests every day until day 7 and once between 1 and 3 months. Participant of observational study as part of their regular medical care, and biological data will be reused for the research from the mother's diagnosis until the newborn reaches 3 months of age

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 trial will be a randomized, placebo controlled, double-blind (within dosing group), dose escalation Phase 1 trial, evaluating dosages of 2.5 mcg and 8 mcg of HydroVax-005 CHIKV vaccine given intramuscularly on Day 1 and Day 29 in up to 48 healthy adults healthy adults ≥ 18 and \< 50 years of age. The primary objective is to assess the safety and reactogenicity of the HydroVax-005 CHIKV vaccine administered intramuscularly in a two-dose series on Days 1 and 29 at a dose of 2.5 mcg or a dose of 8 mcg.

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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: Enrolling by invitation

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.

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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

Background: Fiji, an archipelago in the South Pacific comprising 332 islands distributed among 4 health administrative divisions (Central, Western, Eastern, Northern), is particularly vulnerable to the (re-)emergence of arboviruses and respiratory viruses due to its sub-tropical climate, the presence of several mosquito vector species, and connections with many countries in the Pacific, Asia and North America. Over the past decades, the epidemiological landscape of arboviruses has shifted from the sequential circulation of each of the four dengue virus (DENV) serotypes to the emergence of Zika virus (ZIKV) and chikungunya virus (CHIKV), concomitantly to the concurrent circulation of multiple DENV serotypes. The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in 2020 significantly challenged Fiji's healthcare system, with the Delta variant alone accounting for approximately 700 deaths, while other respiratory viruses, such as influenza A and B, cause seasonal outbreaks. Despite these threats, comprehensive and up-to-date seroprevalence data remain scarce, limiting the capacity to inform and adapt public health policies. Methods: The cohort study of Arbovirus and other Emerging Virus Infections in Fiji (AEVI-Fiji cohort study) aims to estimate the prevalence of several arboviruses and respiratory viruses, track the evolution of individual immunity, and analyse transmission dynamics of these viruses within the Fijian population. This longitudinal study will span 38 months and will include about 900 willing participants aged six years and older, recruited from at least 210 households randomly selected across the Central Division. Four visits will be conducted 12 months apart in each household. During each visit, participants will complete a questionnaire capturing their demographic characteristics and history of infections with major arboviruses and respiratory viruses and will provide a blood sample for serological analysis. During the whole study period, participants with a suspected acute infection by an arbovirus or respiratory virus will be screened. Discussion: For the first time in Fiji, the AEVI-Fiji cohort study will generate longitudinal data to explore the determinants of both arbovirus and respiratory virus infections. The findings are expected to guide targeted public health strategies and enhance preparedness for future infectious disease threats in Fiji and the broader Oceania region.

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.