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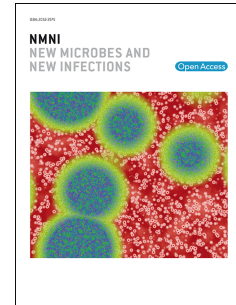
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## From the Rio 2016 Olympics to the Paris 2024 Olympics: Is There a Risk of Dengue Disease?

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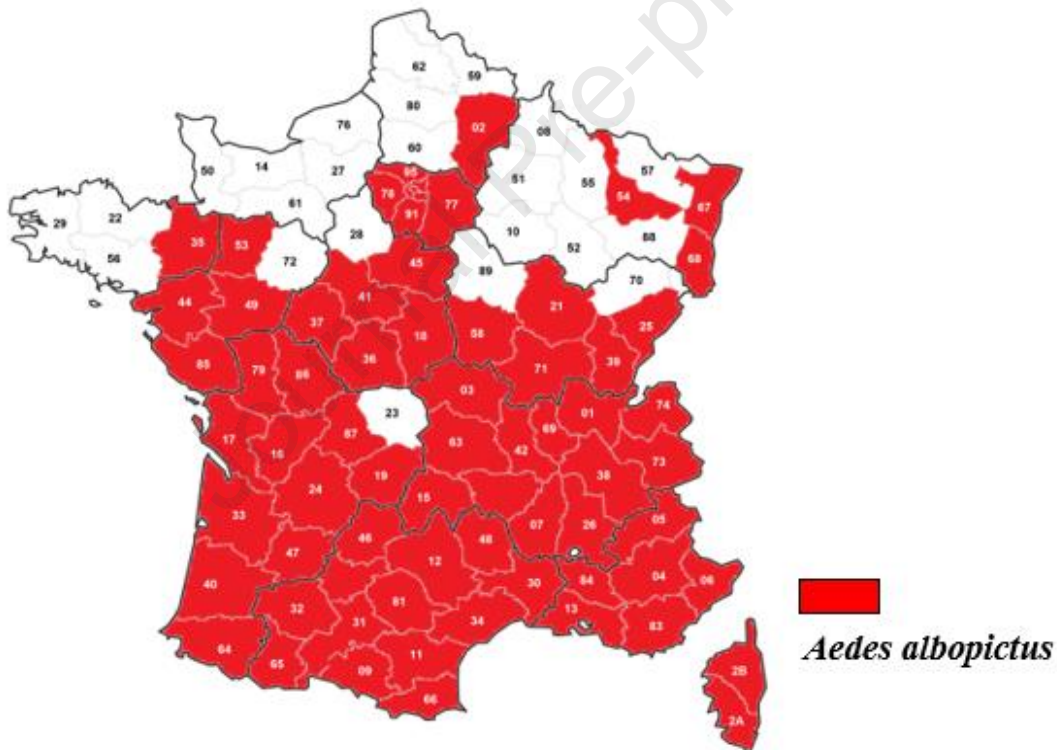
## 1 **From the Rio 2016 Olympics to the Paris 2024 Olympics: Is There a Risk of Dengue Disease?**

2 The potential risks posed by large international gatherings, like the Olympic Games, underscore the  
3 presence of arboviral diseases globally transmitted by arthropods, including dengue, Zika,  
4 chikungunya, yellow fever, and West Nile infection. During the Rio 2016 Olympics in Brazil, the  
5 re-emergence of the Zika virus, despite its low incidence, posed significant challenges for event  
6 authorities, emphasizing the need for robust preparedness and response strategies in the face of  
7 emerging infectious diseases during large-scale international gatherings (1, 2).

8 The upcoming Paris 2024 Olympic in France, scheduled to commence on July 26th and run until  
9 August 11th, are anticipated to attract millions of international visitors. In light of this, it is  
10 imperative to communicate a concern regarding the potential risk of dengue diseases during the  
11 event. Vigilance and proactive measures are essential to safeguard the health of participants and  
12 attendees, drawing on insights from past experiences with dengue diseases during major  
13 international gatherings. The collaboration between health authorities, researchers, and event  
14 organizers is crucial in addressing and mitigating any potential public health challenges associated  
15 with dengue diseases during the Paris 2024 Olympics.

16 The presence of dengue vectors including *Aedes aegypti* and *Aedes albopictus* in Europe has raised  
17 considerable concern (3). In the years 2022 and 2023, reports indicate the presence of dengue fever  
18 in Europe. Unfortunately, instances of autochthonous cases have been documented in countries  
19 such as France, Spain, and Italy. The Asian tiger mosquito (*Aedes albopictus*) is an invasive species  
20 that is a threat to Europe, now. Today, there is a public concern and in a study, the dengue was  
21 called in term "homegrown" in Europe (4).

22 France as a country in the heart of Europe has reported the vector and cases of dengue in recent  
 23 years. The vector of dengue fever, *Aedes albopictus*, was initially detected in the south of France  
 24 in 2004. This vector has spread northward of France over the years and has since become widely  
 25 distributed throughout the country (1). As of January 1, 2023, *Aedes albopictus* is distributed across  
 26 France, with a total of 71 out of the 96 areas detecting the presence of *Aedes albopictus* (Figure 1)  
 27 (5). Cases of autochthonous dengue fever infections have been identified in France since 2010 (6).  
 28 Dengue fever cases were reported in France in 2022 and 2023, with 65 and 43 cases, respectively  
 29 (4). Cases of dengue were identified in the vicinity of Paris (2, 5).



30

31 **Fig. 1.** The distribution of *Aedes albopictus* in France (5).

32 There is limited evidence to suggest that hosting the Olympic in France in 2024 will contribute  
 33 significantly to the global spread of arboviral diseases. There are numerous uncertainties

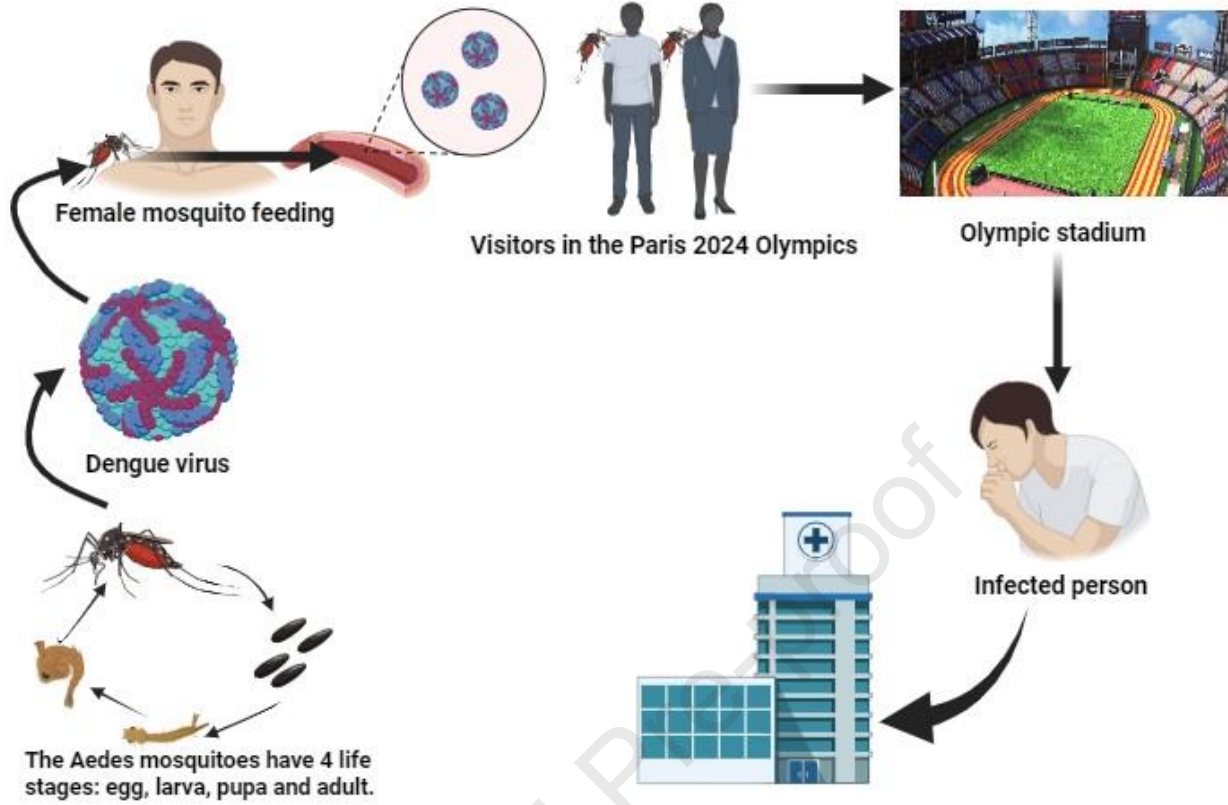
34 surrounding the potential outbreak of arboviral diseases at the Olympic Games in France in 2024.  
35 However, neglecting preventive measures against these diseases should be deemed unacceptable,  
36 representing the minimum action that Olympic authorities should undertake. Nevertheless, the CDC  
37 and WHO continue to recommend taking appropriate personal protective precautions for all  
38 arboviral diseases to minimize risks.

39 In conclusion, it is recommended to implement public health measures to limit the risk of arboviral  
40 diseases during the 2024 Olympic in France. This includes educating potential travelers and visitors  
41 about the risks associated with arboviral diseases before their trip and encouraging the practice of  
42 precautionary measures. Consideration should be given to travel restrictions for individuals coming  
43 from countries where arboviral diseases are epidemic. Additionally, enhanced surveillance is  
44 essential leading up to the Olympics. Post-Olympics, countries should diligently monitor for signs  
45 of arboviral disease transmission through robust epidemiologic surveillance.

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Graphical abstract

### **Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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