

## **Heart Attack and Stroke Risk Sharply Raised by Common Viruses**

Researchers synthesized and reanalyzed data from 155 different studies to investigate associations between viral pathogens and [cardiovascular disease](#) (CVD).

Study findings confirm that several common viruses, including those responsible for influenza, COVID-19, HIV, [hepatitis C](#), and shingles, are significantly associated with an increased risk of coronary heart disease and stroke. This work suggests that preventing infections, through measures like vaccination, may be a critical strategy for protecting future heart and cardiovascular health.



### **Study**

Cardiovascular diseases (CVDs), which encompass heart attacks and strokes, are the world's leading cause of human mortality. Responsible for over 20 million deaths in 2021 alone, public health campaigns have rightly and for decades focused on modifying traditional risk factors like high blood pressure, elevated [cholesterol](#), smoking, and poor diet.

While these traditional risk factors are well-researched, the role of viral infections is often overlooked. However, the [COVID-19 pandemic](#) brought this "other" potential trigger into sharp focus. Previous investigations in both animal models and human clinical trials have revealed this mechanism: when a virus invades, the body mounts an intense inflammatory response.

This systemic inflammation can damage the delicate lining of blood vessels (endothelial dysfunction) and make the blood more likely to clot (a hypercoagulable state). In COVID-19, an additional mechanism involving [neutrophil extracellular traps](#) (NETs), webs of DNA and proteins released by immune cells, has been implicated in triggering blood clots and heart attacks. In people with existing atherosclerotic plaques (hardening of the arteries), this acute response can cause a plaque to rupture, leading directly to a heart attack or stroke.

### **Results**

Data from all 155 publications were pooled to measure the association between specific viral infections and key cardiovascular outcomes, including [coronary heart disease](#) (CHD), stroke, and heart failure. This data was leveraged to calculate a pooled risk ratio (RR) for long-term risk and an incidence rate ratio (IRR) for acute-phase risk.

Meta-analyses revealed significant links between several common viruses and major cardiovascular events, though the strength of evidence varied across [pathogens](#). Both acute

infections (like influenza and SARS-CoV-2) and chronic infections (such as HIV, Hepatitis C Virus [HCV], and Herpes Zoster [Shingles]) were found to increase CVD risk.

Laboratory-confirmed flu was associated with a 4-fold increase (IRR of 4.01) in the risk of acute myocardial infarction (MI), or [heart attack](#), and a 5-fold increase (IRR of 5.01) in the risk of stroke during the first month after infection. The danger was revealed to be highest in the first seven days, when MI risk surged by over 7-fold (IRR of 7.20) but declined sharply to a 1.87-fold risk by days 8–14.

COVID-19 infections were similarly associated with an increased long-term risk of CHD (RR 1.74) and stroke (RR 1.69). SCCS studies confirmed the acute risk, showing a 3.35-fold increase in MI risk within the first 14 weeks. Substantial heterogeneity was observed in these SARS-CoV-2 findings, reflecting the methodological challenges encountered during the [pandemic](#).

### **Conclusion**

Viruses such as HPV, dengue, and [chikungunya](#) have shown associations in single studies but require further validation due to limited evidence.

Review findings demonstrate that the impact of a virus often extends far beyond the initial sickness, concluding that these viruses likely contribute to heart disease by promoting persistent, low-grade inflammation, activating pro-coagulant pathways, and even directly invading [arterial endothelial cells](#).

Vaccination emerged as a key preventive strategy, with direct trial evidence supporting influenza vaccines (34% CVD risk reduction), while [herpes zoster](#) vaccines show promising indirect potential. The authors stress that research gaps persist in underrepresented regions and for understudied viruses.

### **Source:**

<https://www.news-medical.net/news/20251030/Common-viruses-sharply-raise-heart-attack-and-stroke-risk-major-global-review-shows.aspx>