

## Increase in parvovirus B19 infections and impact on treating high-risk patients with blood products

Parvovirus B19 (Parvo B19) is a non-enveloped DNA virus. Infections with the virus are often asymptomatic or may cause *erythema infectiosum* (fifth disease). In high-risk patients, such as people with certain blood diseases, immunosuppressed people or pregnant women, infection can have serious consequences including aplastic crisis or *hydrops fetalis*.<sup>1,2</sup> Epidemics of the infection usually occur at the end of winter and start of spring, with transmission mainly via the respiratory tract.<sup>1</sup> During an epidemic, non-immune contacts are infected in 50% of cases.

Seroprevalence increases with age: from 10% at age 1 to 5 years to over 40% at age 20 to 30 years, to more than 60% in the over-50s. Initial infection occurs most frequently in children aged between 5 and 10 years, but is also not unusual in young adults, particularly women of child-bearing age.<sup>1</sup> The risk of vertical transmission is between 25 and 30 percent.

## Epidemiological situation

### International

An increase in parvo B19 infections has been reported in 2024 in Denmark, Ireland, the Netherlands, Norway and France. Reporting of the pathogen is not mandatory in most of these countries. Based on the available data, infection rates are increasing in various age groups, and particularly in young children.<sup>2</sup>

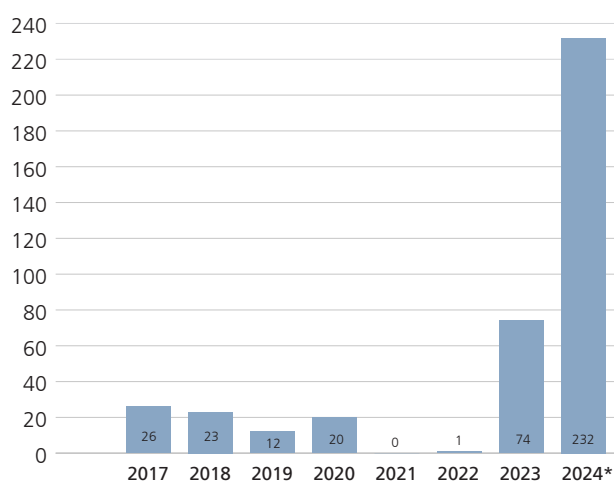
A rise in parvo B19 infections has been observed in France since May 2023. Since then, this trend has continued and had not yet peaked by March 2024. In 2024, the deaths of five children under the age of 1 year were recorded in connection with parvo B19 infection. By way of comparison, the pre-pandemic average was 1.8 deaths per year, mainly affecting adults.<sup>3</sup> A study of the prevalence in blood donors between 2015 and 2024 showed a considerable decline in evidence of parvo B19 during the COVID-19 pandemic, followed by a considerable rebound in 2023 and continued high rates of circulation in early 2024.<sup>4</sup>

## Switzerland

Parvo B19 infections are not subject to mandatory reporting in Switzerland. There are therefore no representative data on the spread of the pathogen at national level. However, data from testing of blood donors also show a considerable rise since 2023 in Switzerland (see Table 1).<sup>5</sup> This increase has also been confirmed by clinical observations, which report a Switzerland-wide rise in parvo 19 infections during pregnancy, with fetal anaemia requiring transfusion in some cases.<sup>5</sup>

Number of blood donors testing positive for parvo B19 in Switzerland (PCR testing)	
Year	Parvo B19 pos.
2017	26
2018	23
2019	12
2020	20
2021	0
2022	1
2023	74
2024*	232

**Table 1:** Number of blood donors testing positive for parvo B19 in Switzerland (PCR testing); data : Haemovigilance Swissmedic (\*to May 2024 inclusive).



**Figure 1:** Number of blood donors testing positive for parvo B19 in Switzerland (PCR testing); data : Haemovigilance Swissmedic (\*to May 2024 inclusive).

The reason behind the increase in parvovirus infections and diseases is highly likely to be the immunity gap following the COVID-19 pandemic, which has also been observed with other viral diseases.<sup>6</sup> People in contact with children in a professional capacity, e.g. in childcare facilities and schools, are particularly affected by infections.

## Blood products

During an infection with parvo B19, the virus can be detected in the blood of the patient and transmission via blood products is possible in principle. Swiss Haemovigilance data show the rise in blood donors testing positive for parvo B19 in 2024 (PCR testing) described above; currently, there is a downward trend in reports.

In Switzerland, everyone who donates blood is currently tested for the presence of parvovirus B19. Due to the short shelf life and to ensure supplies of platelet concentrate in particular, these products must sometimes be released for distribution before all parvo B19 test results are available.

Pathogen inactivation is also carried out in all platelet concentrates during production. While this process is effective with low viral titers, it is only of limited effectiveness with high viral titers due to the type of virus.<sup>7</sup>

Due to the general rise in parvo B19 infections and the higher numbers of blood donors testing positive, the Swiss Blood Transfusion Services have increased testing frequency so that in the event of a positive test the affected blood products can be destroyed or recalled quickly (usually within a few days), provided they have not yet been administered. In these cases the users will be informed by the Blood Transfusion Service.

While the presence of the virus in a blood product therefore cannot be ruled out entirely, the risk of parvo B19 transmission by blood products remains very low in Switzerland. Although infections are usually asymptomatic (see above), in rare cases they can have serious consequences in high-risk patients.

When prescribing and administering labile blood products, the transfusing doctor should carefully evaluate the possible risk of a parvovirus B19 infection: for **high-risk patients** (e.g. pregnant women, intrauterine transfusions, severely immunosuppressed patients and patients with certain blood diseases) giving **blood products for which a parvovirus B19 test result is already available** should be considered. Please contact the Blood Transfusion Service in this regard if necessary.

Evidence of a parvo B19 infection in a blood donor or transmission to a patient must be reported to Swissmedic Haemovigilance. Please also report suspected clinical cases that are still under investigation (further information: [website Haemovigilance \(swissmedic.ch\)](https://www.swissmedic.ch/haemovigilance))

Regarding industrially manufactured stable blood products, the increase currently being observed has no direct impact, as parvovirus B19 tests are carried out during production and the manufacturing processes include proven, sufficiently effective virus inactivation steps.

## References

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