

General remarks

- Blood transfusion can be lifesaving, but is not entirely without risk.
- Adverse events caused by infectious agents may originate from:
 - contamination of blood following incorrect collection, storage or transfusion;
 - transfusion of contaminated blood obtained from an infected donor.

Prevention of contamination

- Use strict aseptic technique during the multistep manipulation of syringes and other devices used for blood collection, even in an emergency.
- Limit the delay between collection and transfusion.
- Visually inspect blood bags prior to transfusion and discard if change in colour or other visible abnormality.

Prevention of disease transmission

- The worldwide core screening panel for donor cats includes:
 - feline leukaemia virus (FeLV provirus PCR)
 - feline immunodeficiency virus (serum/plasma FIV antibody test)
 - *Bartonella* spp (antibody immunofluorescence or PCR)
 - feline haemoplasma (blood PCR for *Mycoplasma haemofelis*, *Candidatus Mycoplasma haemominutum*, *Candidatus Mycoplasma turicensis*)
- In endemic areas, the panel should include tests for feline vector-borne infections, such as:
 - *Anaplasma phagocytophilum* (antibody detection and blood PCR)
 - *Leishmania infantum* (blood PCR)
 - *Cytauxzoon* spp (blood PCR) – rare in cats in Europe
 - *Babesia* spp (blood PCR) – rare in cats in Europe
 - *Ehrlichia* spp (blood PCR) – rare in cats in Europe

- Although there have been no reports of feline infectious peritonitis (FIP) following blood transfusion in cats, FCoV-antibody negative blood donors are preferred.
- In emergency cases, donors should at least be screened for FeLV/FIV (in-house rapid tests) and undergo a complete blood count, biochemical profile and urinalysis.
- Xenotransfusion (e.g. from dogs) should be restricted to exceptional circumstances (risk of delayed immune-mediated haemolysis, short life span of the transfused erythrocytes, transmission of certain vector-borne infections).

Blood donors

- The most useful, practical, rapid and cost-effective measure to reduce the risk of transmission of blood-borne infectious agents is to select low-risk donor cats.
- Ideal profile of a low-risk blood donor cat:
 - Healthy adult individual (> 3 years old, to reduce the risk of *Bartonella* bacteraemia)
 - Indoor-only lifestyle and living in the same single-cat household since a kitten
 - Absence of fleas and ticks and regularly treated against ectoparasites
 - Not adopted as stray or from a shelter
 - Not bought from a breeder or a pet shop
 - Never travelled abroad
 - Never suffered from vector-borne diseases
 - Vaccination status up to date
- For welfare reasons, the ABCD does not recommend the use of cats specifically bred for blood banks.



Blood transfusion in cats



■ When a closed system is not available for blood collection, the transfer of blood collected with syringes into a single, plain blood collection bag through the injection port must be performed under the strictest hygienic conditions.

Courtesy of Eva Spada, University of Milan, Italy.



Courtesy of Maria Grazia Pennisi, University of Messina, Messina, Italy.

■ Topical application of blood serum is used empirically as anticollagenolytic treatment in the medical management of deep corneal ulcers. When homologous serum is used, the donor should be carefully selected respecting the same criteria as used for blood transfusion.

■ List of core pathogens to be screened for candidate blood donors.

Pathogen	Diagnostic test*
FeLV	FeLV provirus PCR
FIV	Rapid anti-FIV antibodies test on blood serum
<i>Mycoplasma haemofelis</i>	Blood PCR
<i>Candidatus Mycoplasma haemominutum</i>	
<i>Candidatus Mycoplasma turicensis</i>	
<i>Bartonella</i> spp	Anti- <i>Bartonella</i> antibodies (IFAT) or PCR

* In life-threatening emergency situations, donors should at least be screened for FeLV/FIV (in-house rapid tests), but owners should be informed about the higher risk of the transmission of blood-borne agents.