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| **here Parasite name** | **Host range** | **Host encounter** | **Feeding behaviour** | **Life cycle** | **Length of infestation** |
| Flea spp. | Small to medium-sized burrowing mammals  Host specificity varies between flea species,  most fleas are associated with one or few principal hosts and some auxiliary hosts (Krasnov *et al.*, 2003, 2004) | Within a host nest or burrow  Direct transmission between host individuals during physical encounters | Several blood meals as an adult | Weeks-months  Several generations are produced per year  Seasonal cycles of reproduction and infection rates found for several flea species infecting voles in the UK  (Telfer *et al.*, 2007; Oliver *et al.*, 2009)  Longevity is influenced by environmental conditions and the host lifecycle  Reproductive diapause as adults (Krasnov, 2008) observed for several species  Diapause in egg and pupal stages observed for fleas infecting rabbits in NE Spain (Osácar *et al.*, 2001) | Unknown  Time spent on the host vs burrows or nests can vary between species of flea, host and season (reviewed in Krasnov, 2008)    Minutes – days per feed depending on species, host, age and season |
| *Ixodes trianguliceps* | Small mammals | Nidicolous, hosts nests and burrows  Some indications that larvae are exophilic | Once per life stage  (Randolph, 2004) | 2-5 years (Randolph, 1995, 2004)  Moults off-host  The time between moults (21-250 days)  Seasonal cycles well documented  Developmental and behavioural diapause  (Randolph, 1975) | Larvae: ~ 7 days  Nymphs: ~ 9.5 days  Adult females: 12-17 days  (Randolph, 1975) |
| *Ixodes ricinus* | Host generalist:  Small mammals, birds, lizards, and larger mammals (cattle, deer) | All stages exophilic  Questing behaviour in vegetation | Once per life stage  (Randolph, 2004) | 2-3 years  Moults off-host  Seasonal cycles well documented  Developmental and behavioural diapause documented in Scotland | Adult females: ~6-8 days  Up to 30 days observed  (Campbell, 1948) |

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| **Parasite name** | **Vertebrate hosts** | **Invertebrate hosts/Vectors** | **Transmission mode** | **Transstadial/transovarial transmission in vector** | **Length of infection (mammal host)** |
| Rodent-specific *Bartonella spp.* | Rodents | Arthropods  Fleas are known to be vectors and potential reservoirs (Birtles, 2005; Gutiérrez et al., 2015)  *I. ricinus* is indicated as a potential vector but transmission is not yet proven (Król *et al.*, 2021) | Flea-borne | No transovarial transmission  Alternative vertical non-transovarial transmission  (Morick *et al.*, 2013) | Acute  Bacteraemia lasts from a few weeks to several months, with evidence of recrudescence in some wild rodents  (Birtles *et al.*, 2001) |
| *Babesia microti (Babesia sensu lato)* | Rodents | *Ixodes* ticks (Jalovecka *et al.*, 2019)  *I. trianguliceps* main vector in natural rodent populations (Bown *et al.*, 2008) | Tick-borne | Transstadial transmission proven  Unlikely to persist in vector for more than one moult (Gray *et al.*, 2002)    No transovarial transmission (Jalovecka *et al.*, 2019) | Chronic  Laboratory studies suggest that transmission to ticks is only possible in the acute phase (several days); no evidence for this in wild rodents (Randolph, 1995; Gray *et al.*, 2002) |
| *Hepatozoon spp.* | Reptiles (Tomé *et al.*, 2013)  Mammals and birds (Smith, 1996) | DNA detected in fleas, tick, lice and mite spp. Fleas are indicated as the main invertebrate host for rodent-associated Hepatozoon (Rigó *et al.*, 2016)  Invertebrates are the definitive host (Smith, 1996) | Ingestion of infected definitive host | Some species are transstadially and transovarially transmitted | Unknown |

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