

# RATE OF TICK-BORNE PATHOGEN PREVALENCE AND A RISK OF MAN MIX - INFECTION IN A RECREATIONAL ZONES OF ST. PETERSBURG MEGAPOLIS

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In the recreational zone of St. Petersburg the regular collections of *Ixodes persulcatus* Schulze ticks were made during 1995-1998 within a tick activity season (April-July). Ticks were collected by flagging and their infection rates were estimated using darkfield microscopy for spirochetes, IFA methods for *Borrelia* and tick-borne encephalitis virus (TBEV) determination and PCR - for *Borrelia* and *Ehrlichia* species identification. The total number of the used ticks - 1,559. Spirochete prevalence oscillated between 26-36% during different seasons, near 80% of them were identified as *Borrelia garinii* or *Borrelia afzelii*. TBEV antigen contained 0.7-1.2% of specimens. The most epidemiologically important fact consists in the discover that mixt-infection is very typical for *I. persulcatus* vectors. 50% of TBEV infected specimens contained spirochetes; one among them contained virus, *B. afzelii* and *B. garinii* (neuroborrelioses agent) also. From 12.5 to 52% of *Borrelia* infected ticks contained *B. garinii* and *B. afzelii*. Most of dual infected ticks appeared in the middle of the vector seasonal activity period. Mixtinfected patients were bitten also within the middle or the second half of the season. Eight per cent of spirochete infected ticks contained at the same time *Ehrlichia* sp. There were dual infected specimens which contained *B. garinii* and *Ehrlichia* sp. Triple infected specimen, which contained both pathogenic *Borrelia* species (*B. garinii* and *B. afzelii*) and *Ehrlichia* sp. were discovered.

All mentioned above facts strongly suggest that the risk of dual and even triple infection of man in the St. Petersburg vicinity is very probable and high enough.