Lyme disease Surveillance Statistics in Alameda County From 2013-2022

Over the years we have performed surveillance by tick collection and testing them for Lyme disease. The basic process of utilizing tick drags for collecting ticks has remained fundamentally the same.

Some of the differences in testing have changed over the years. Now we have our own laboratory and utilize RT-PCR (reverse transcription to produce a DNA template from an RNA source that can then be amplified). In the past we have sent ticks out to various laboratories, and ticks were sometimes tested in pools (small groups of ticks). Another method we utilized was the culturing of the borrelia—a labor intensive method. Going forward all ticks will be tested in our laboratory using RT-PCR, at least until the technology changes.

It needs to be noted that surveillance of ticks only gives an idea of what is going on in the microhabitat at the time of collections. Conditions change (weather) and can be widely different every year for any given location. The big picture of the average infection rates for Lyme disease in our *Ixodes pacificus* ticks is generally about 2% in adult ticks and ranging from 2.9% to 11.7% in nymphal (immature) ticks.

A. Real-time PCR testing ticks tested in pools

Year	Adults tested	Number pos	Minimum infection prevalence adults	Nymphs tested	Number pos	Minimum infection prevalence nymphs
2017	20	0	0.0%	66	0	0.0%
2018	45	1	2.2%	207	6	2.9%
2019	438	11	2.5%	724	22	3.0%
2020	1069	20	1.9%	753	34	4.5%
2021	825	19	2.3%	552	24	4.3%
2022	1340	25	1.9%	670	34	5.1%
total	**3737**	**76**	**2.0%**	**2972**	**120**	**4.0%**

B. Testing by culturing   **ticks tested individually**

Year	Adults tested	Number pos	Infection prevalence adults	Nymphs tested	Number pos	Infection prevalence nymphs
2013	0	0		239	7	2.9%
2014	478	17	3.6%	712	83	11.7%
2015	678	23	3.4%	622	60	9.6%
2016	689	24	3.5%	1113	74	6.6%
total	**1845**	**64**	**3.5%**	**2686**	**224**	**8.3%**

C. Historical combined data 2013-2022

Year	Adults tested	Number pos	Infection prevalence/MIP adults	Nymphs tested	Number pos	Infection prevalence/MIP nymphs
2017-2022	3737	76	2.0%	2972	120	4.0%
2013-2016	1845	64	3.5%	2686	224	8.3%
	5582	140	**2.5%**	5658	344	**6.1%**