

Rat Lungworm Disease (RLWD)

Prepared By

Environmental Planning Office, Hawaii Department of Health



Overview:

Vectors:	Invasive snails and slugs, crustaceans (prawns), frogs, rodents ¹
Pathways to Humans:	1) Consuming undercooked vectors (small snails in produce) 2) Unwashed, fecal-contaminated produce or other food 3) Contaminated drinking water ²
Symptoms:	Nausea, vomiting, neck stiffness, severe headaches, abnormal tingling
Risks:	Eosinophilic meningitis, long-term neurologic dysfunction, death
Hosts:	Primarily rodents (rats and mice), but also other mammals
Causing Organism:	Larval stage of the nematode <i>Angiostrongylus cantonensis</i>
When symptoms begin:	1-3 weeks after infection
Length of symptoms:	2-8 weeks

Study of RLWD and Meningitis:⁵

Study length	50 months
Duration	Jan 01-Feb 05
# Eosinophilic Meningitis Cases	84
# Attributed to RLWD	24
% of Total (# RLWD /# EM)	29%

Incidence in HI, 2007-2015:⁶

Location	# Incidences	% Incidences
Statewide	42	100%
Hawaii Island:	38	91%

Citations:

¹ What is Rat Lungworm Disease? HI Department of Health. July 13, 2015.
<http://health.hawaii.gov/san/files/2013/06/ratlungworm-bulletin.pdf>

² WHO Model Prescribing Information: Drugs Used in Parasitic Diseases. World Health Organization. July 13, 2015.
<http://apps.who.int/medicinedocs/en/d/Jh2922e/3.3.html>

³ Hollingsworth RG, Kaneta RK, Sullivan JJ, et al. Distribution of *Parmarion cf. martensi* (Pulmonata: Helicarionidae), a new semi-slug pest on Hawai'i Island, and its potential as a vector for human angiostrongyliasis. *Pac Sci.* 2007;61:457-467.

⁴ York EM, Creecy JP, Lord WD, Caire W. Geographic range expansion for rat lungworm in North America. *Emerg Infect Dis.* 2015. Jul 13 2015. <http://dx.doi.org/10.3201/eid2107.141980>

⁵ Hochberg NS, Park SY, Blackburn BG, Sejvar JJ, Gaynor K, Chung H, Leniek K, Herwaldt BL, Effler PV. Distribution of eosinophilic meningitis cases attributable to *Angiostrongylus cantonensis*, Hawaii. *Emerg Infect Dis.* 2007 Nov; 13(11):1675-80.

⁶ Rat lungworm disease spreads fear across Hawaii Island. *Hawaii News Now.* 2015.
<http://www.hawaiinewsnow.com/story/28805733/rat-lungworm-disease-spreads-fear-across-hawaii-island>