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Loa loa- More Than Meets The Eye?

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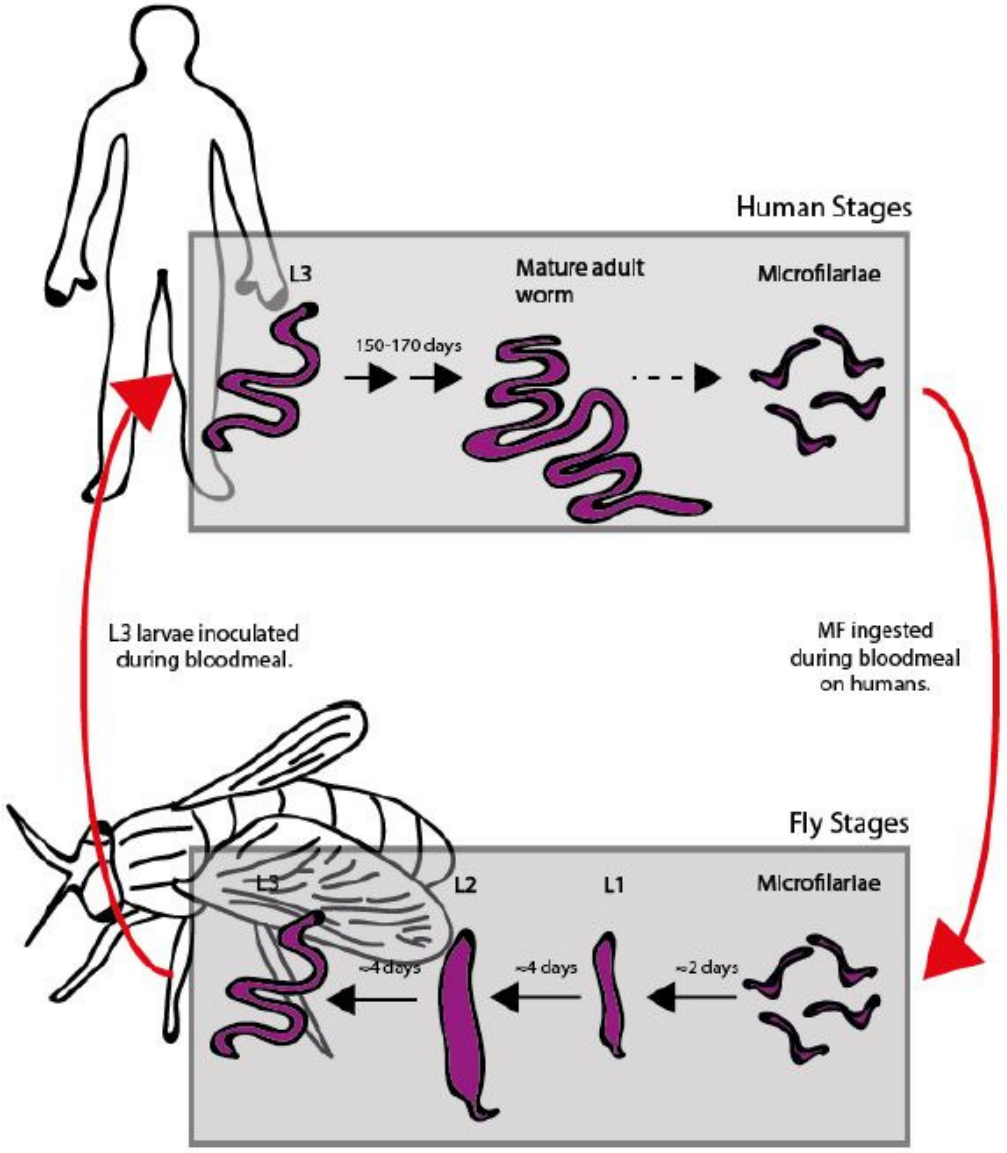
The Parasite, The Vector & The Host

- Parasitic nematode worm with a complex life cycle involving human and horsefly hosts.
- Transmission occurs during horsefly feeding on human blood.
- Causes the disease loiasis, characterised by “eyeworm” and Calabar swellings.
- Previously considered a benign infection, with little associated morbidity/mortality.



Whittaker et al, Trends In Parasitology, 2017

Loiasis As A Significant Public Health Issue?

Excess mortality associated with loiasis: a retrospective population-based cohort study

Cédric B Chesnais, Innocent Takougang, Marius Paguélé, Sébastien D Pion, Michel Boussinesq

Summary

Background The burden of loiasis has received limited attention and loiasis is still considered a benign condition. To assess whether loiasis bears any excess mortality, we did a retrospective cohort study in Cameroon.

- 2017 saw discovery of a significant association between infection with *Loa loa* and excess mortality.
  - Population attributable fraction for mortality of 15% in study area in Cameroon.

- Estimated 10 million infected individuals across Central Africa.
  - Suggests that loiasis warrants attention as a significant public health issue.

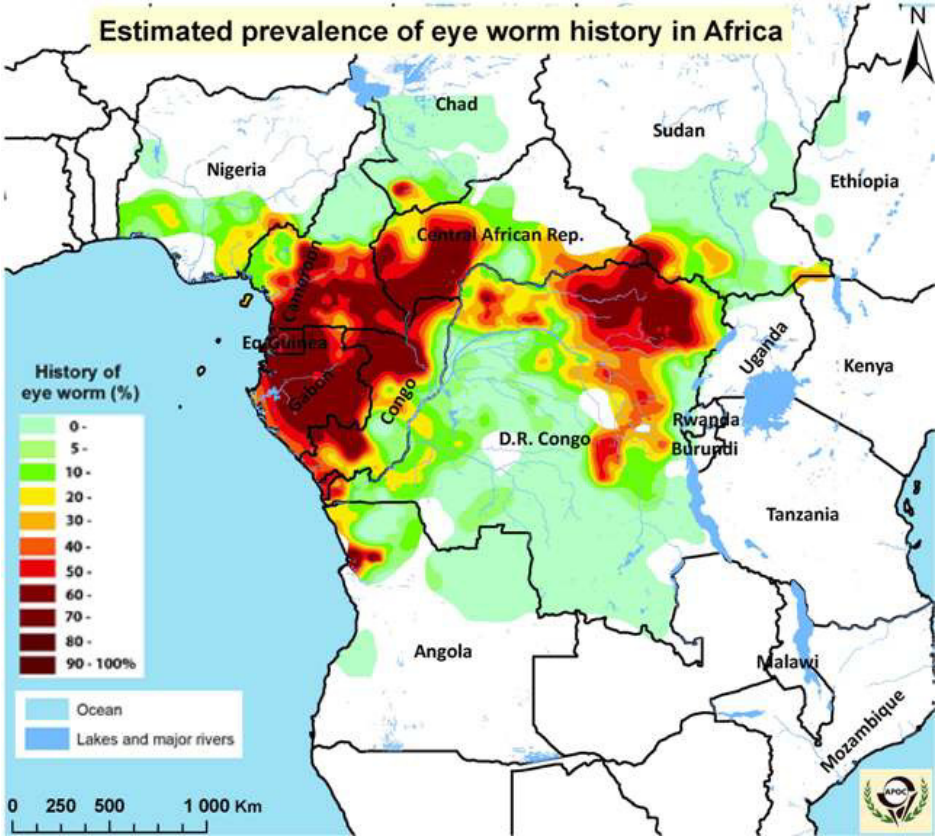
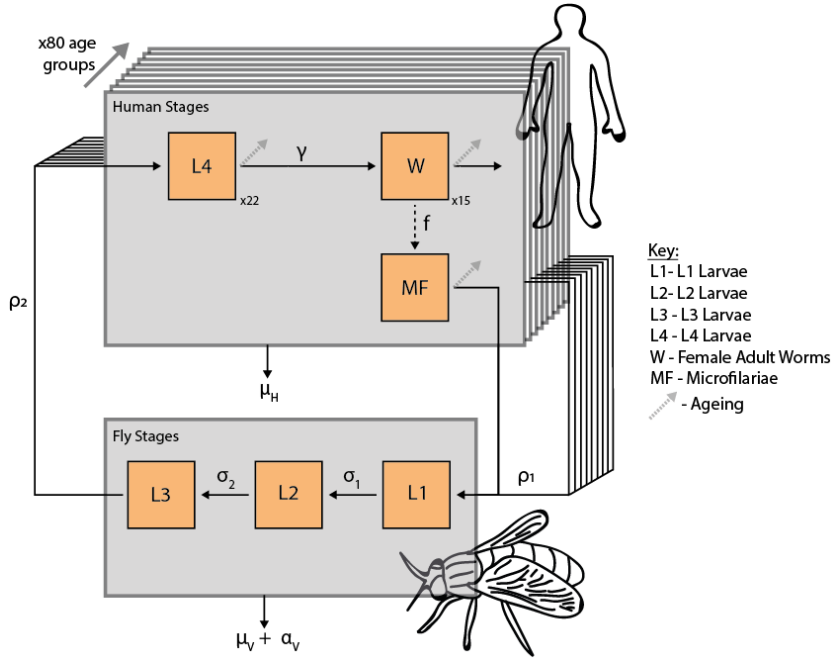
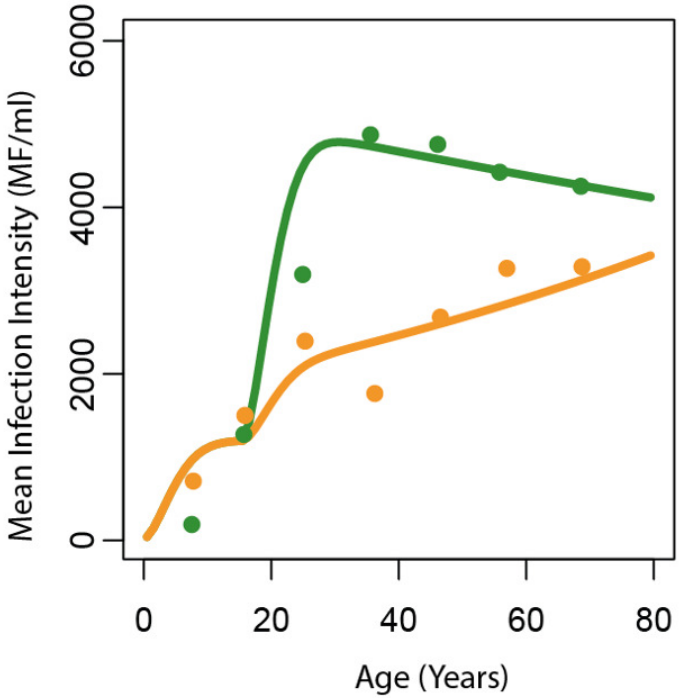


Image from: http://www.who.int/apoc/raploa/en/

EPILOA – A Tool To Explore The Epidemiology of Loiasis



- EPILOA- An age and sex structured mathematical model of loiasis transmission.



- Accurately captures the dynamics of the infection in Cameroonian communities.

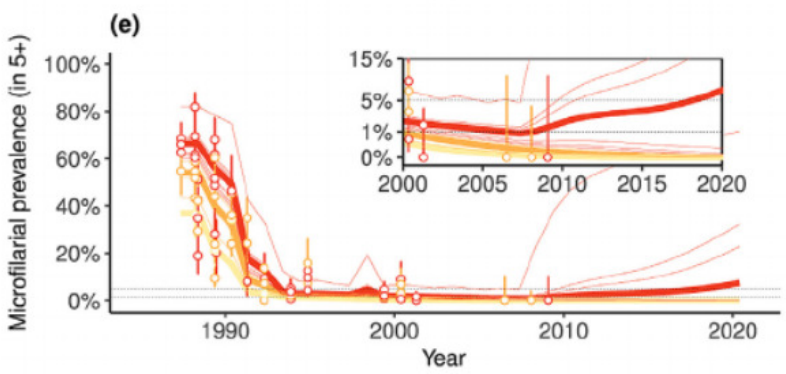
EPILOA Allows Us To Explore Complex, But Highly Relevant Questions

EPILOA

Exploration of Epidemiological Questions

- *Is elimination feasible?*
- *What is the burden of disease?*
- *Why do we see the patterns of infections we see?*

Evaluation of Interventions Targeting the Disease



Impact of annual mass drug administration on Onchocerca volvulus microfilarial prevalence.

Walker et al, Epidemics, 2017

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