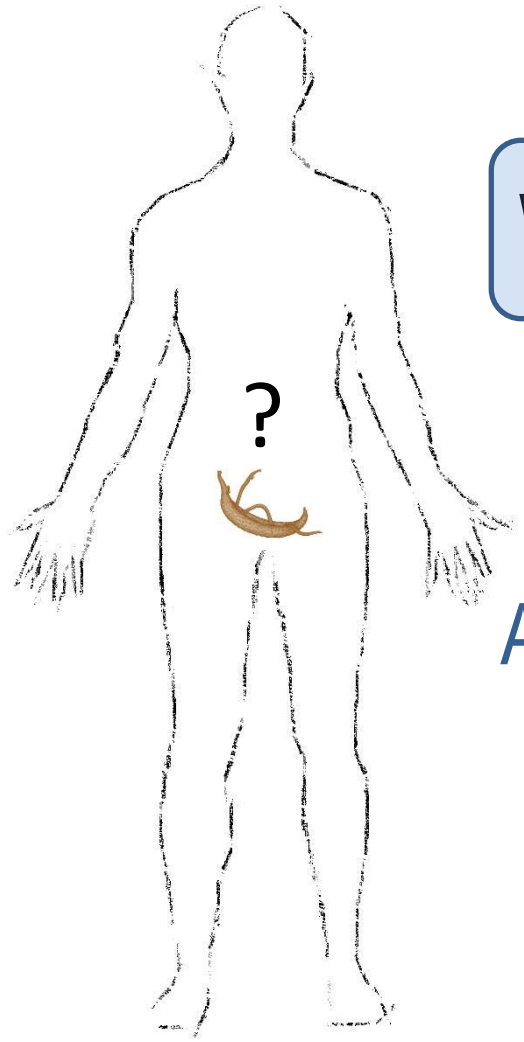
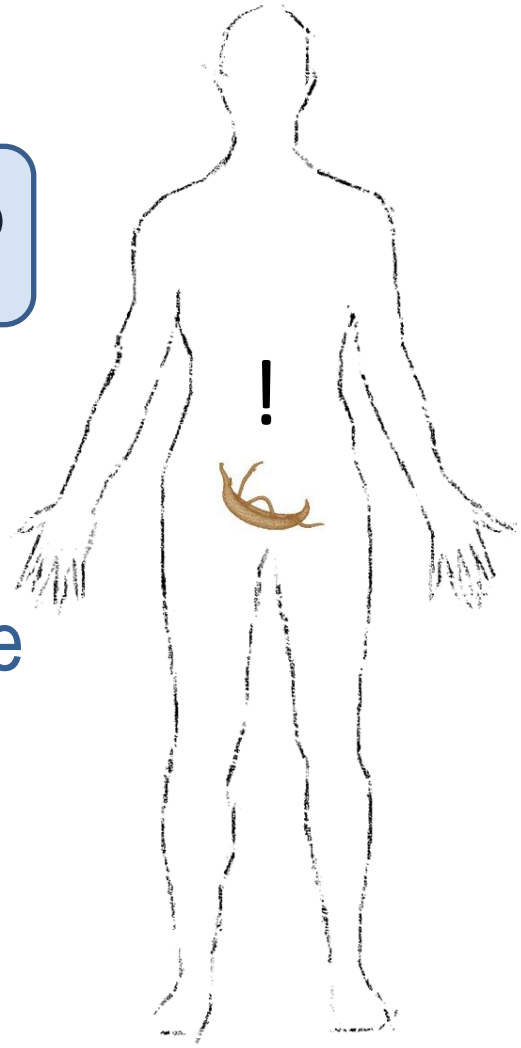


Worm of anti-Worm?

Daniëlle Hanssen

AIOS Medische Microbiologie

MUMC +

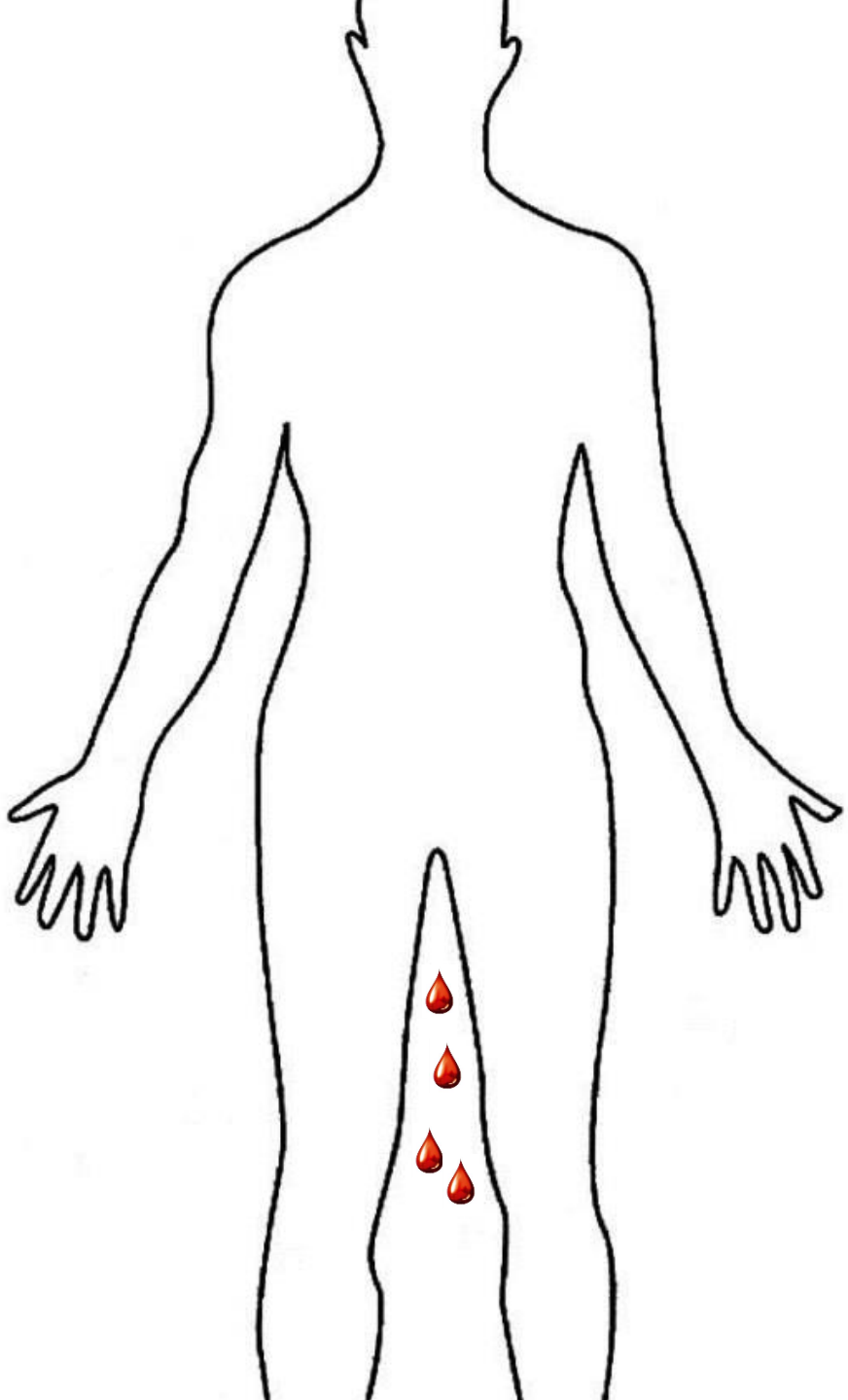


21 jaar
Sierra Leone
8 maanden NL

6 maanden
Intermitterend hematurie

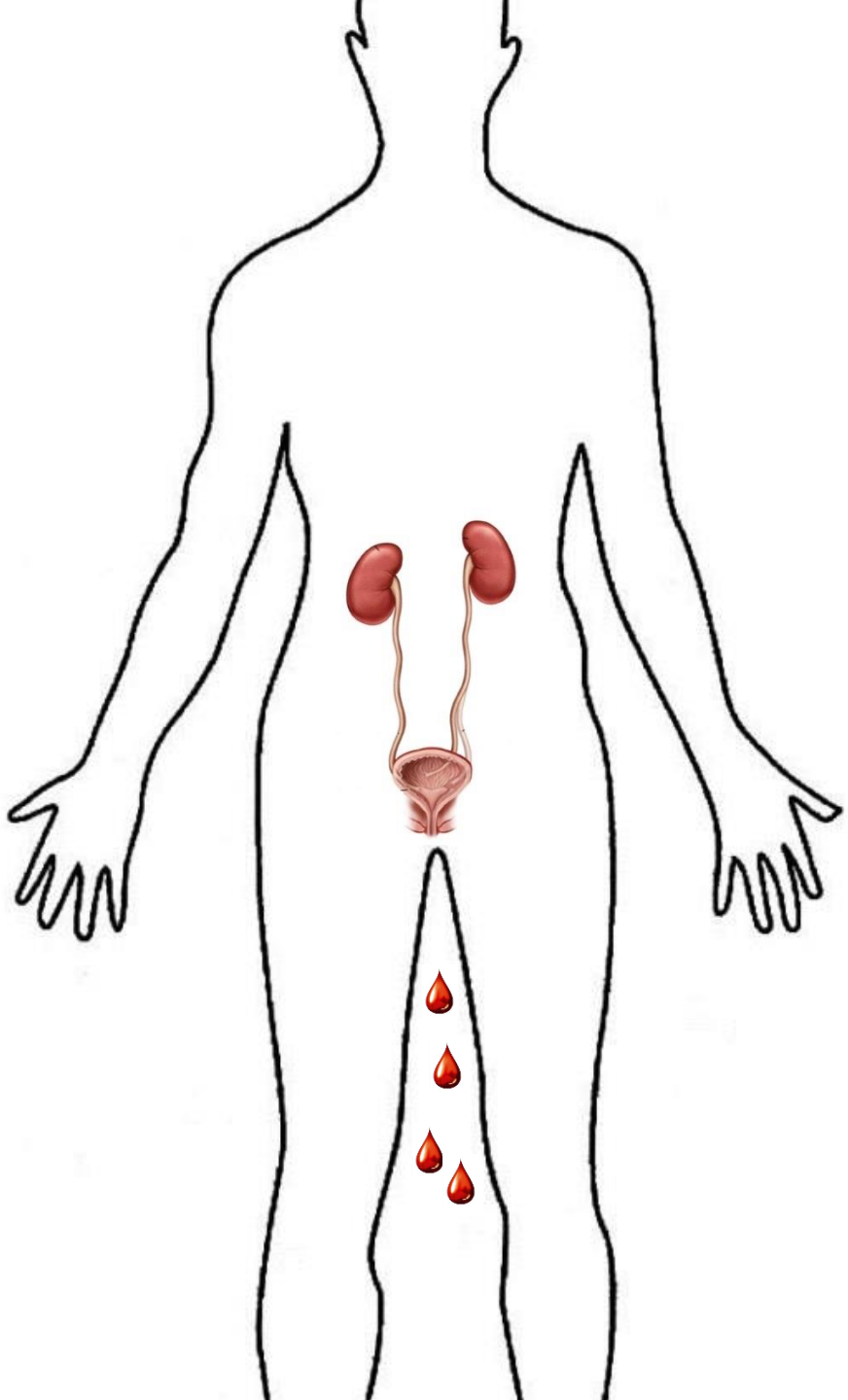
Oriënterend
laboratoriumonderzoek

Urinesediment, urinekweek

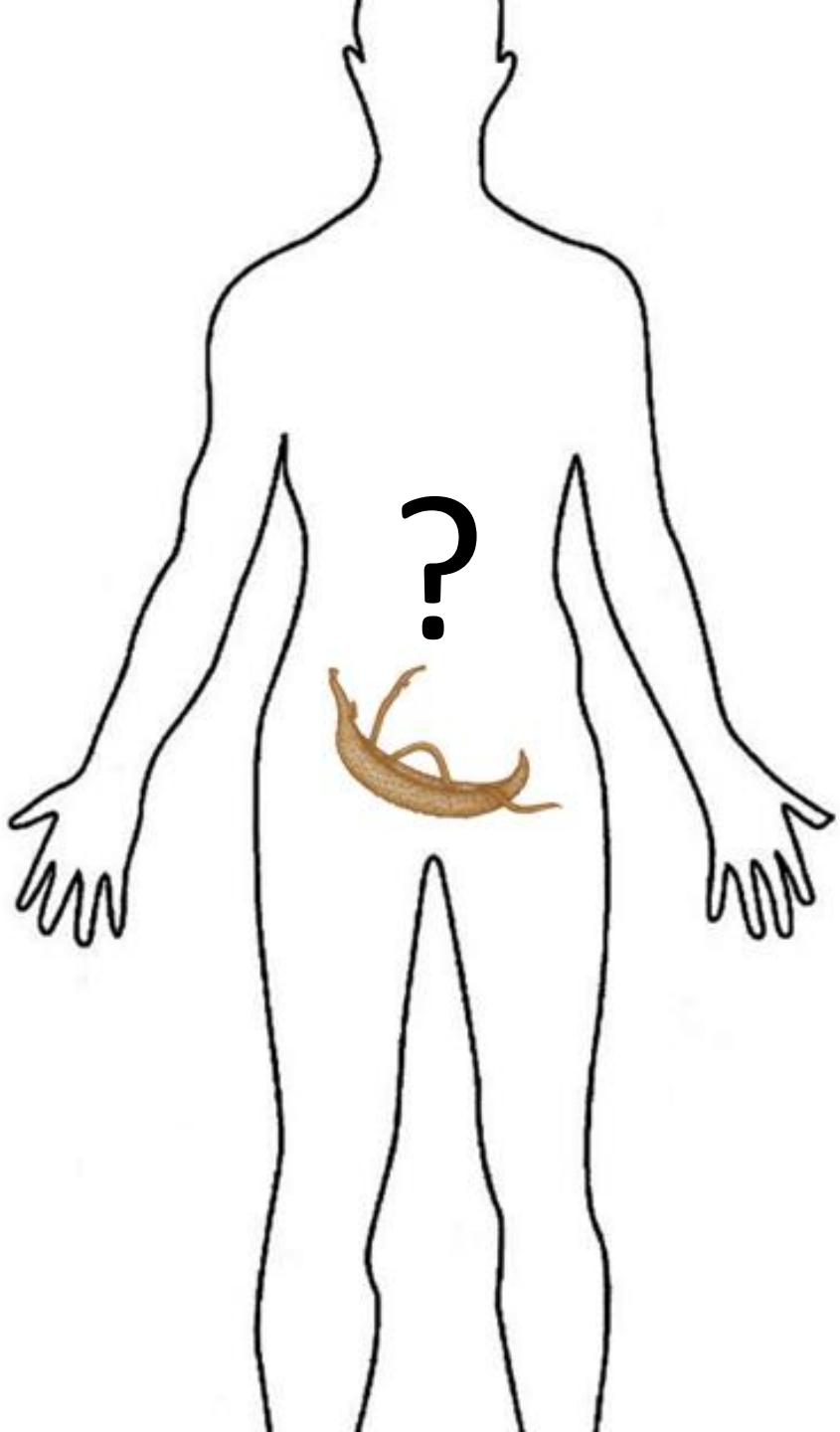


Echo urinewegen

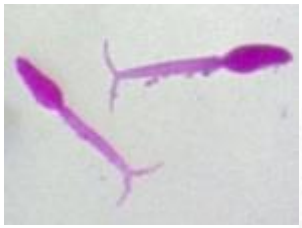
CT urinewegen, cystoscopie



Schistosoma haematobium?



Bulinus



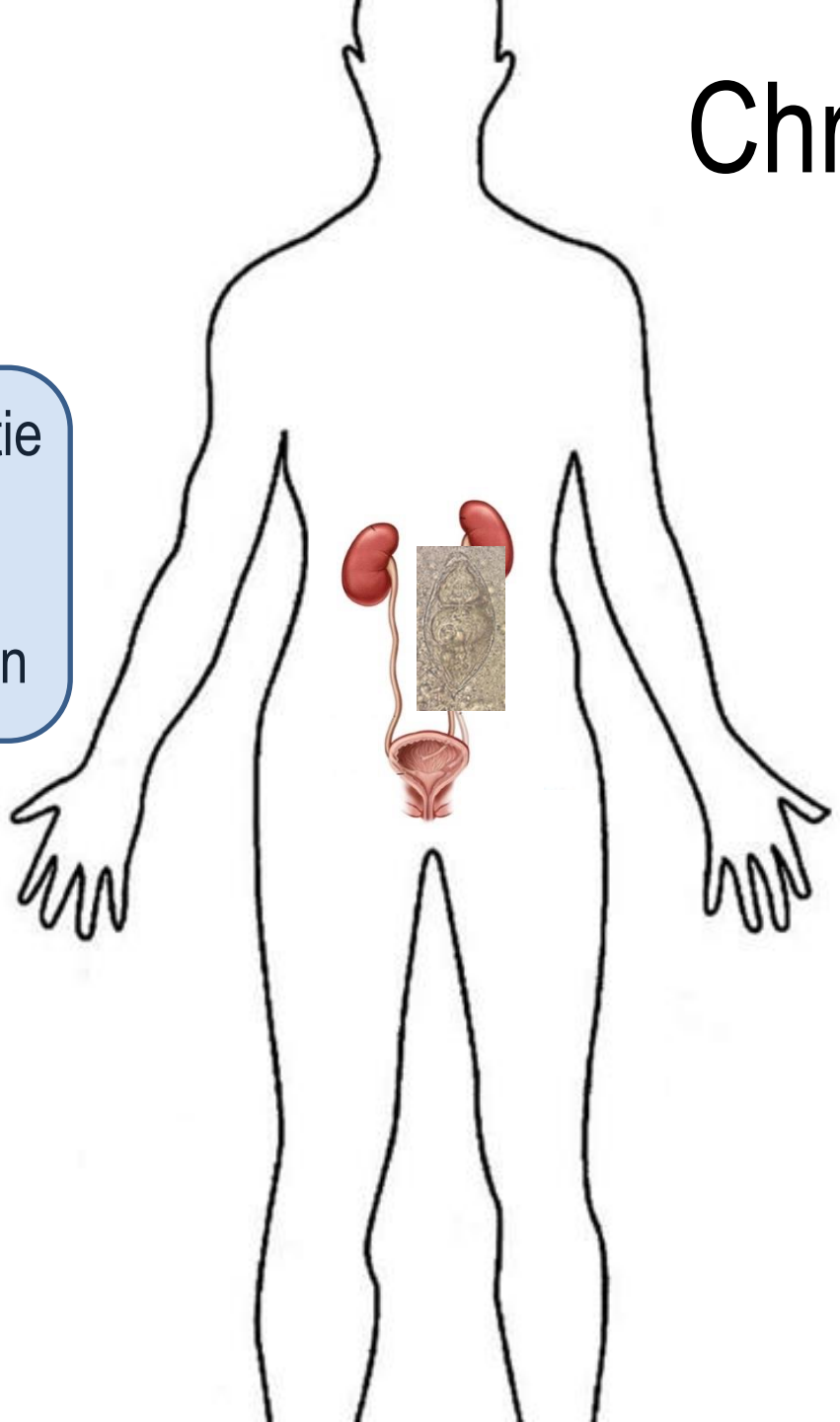
Acuut

"Swimmers itch"
"Katayama fever"

Chronisch

Symptomen door reactie op eieren

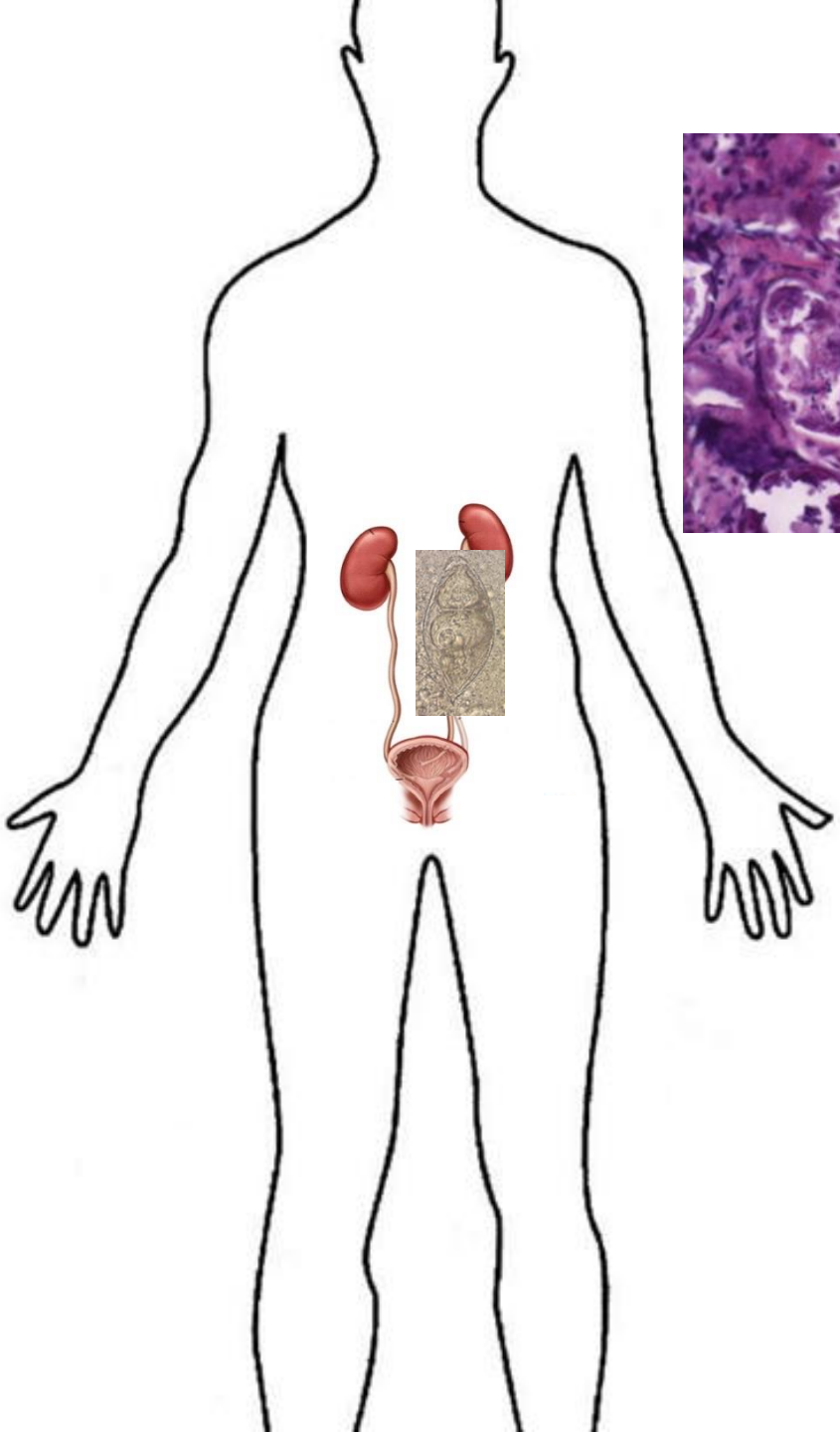
Proteolytische enzymen

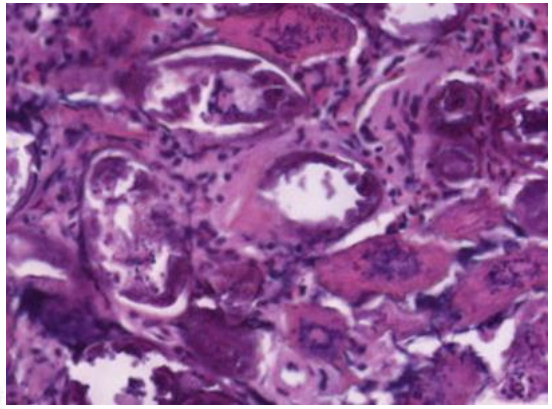


Inflammatoir respons

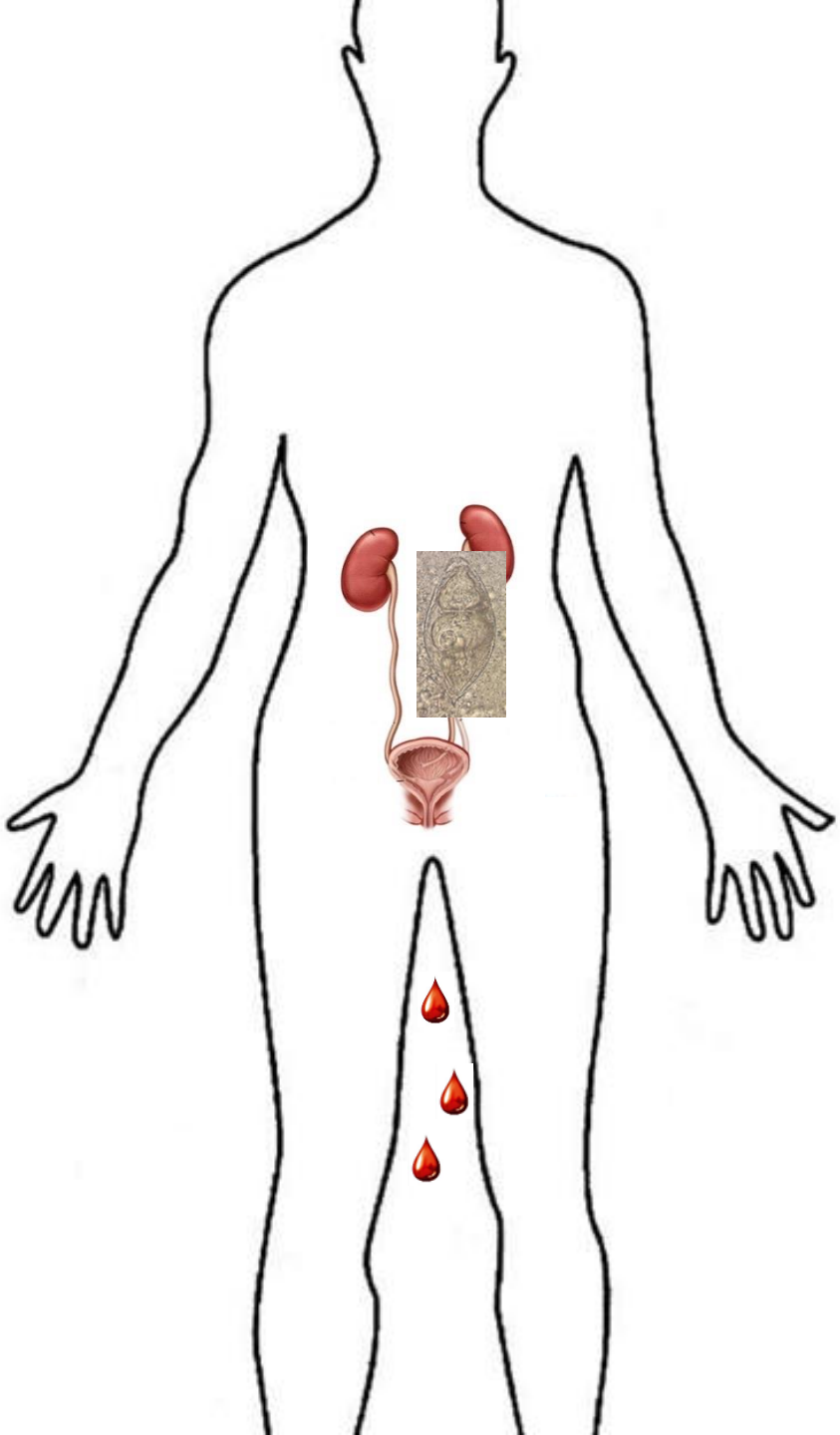
Granulomateuze reactie

Fibrotische deposities

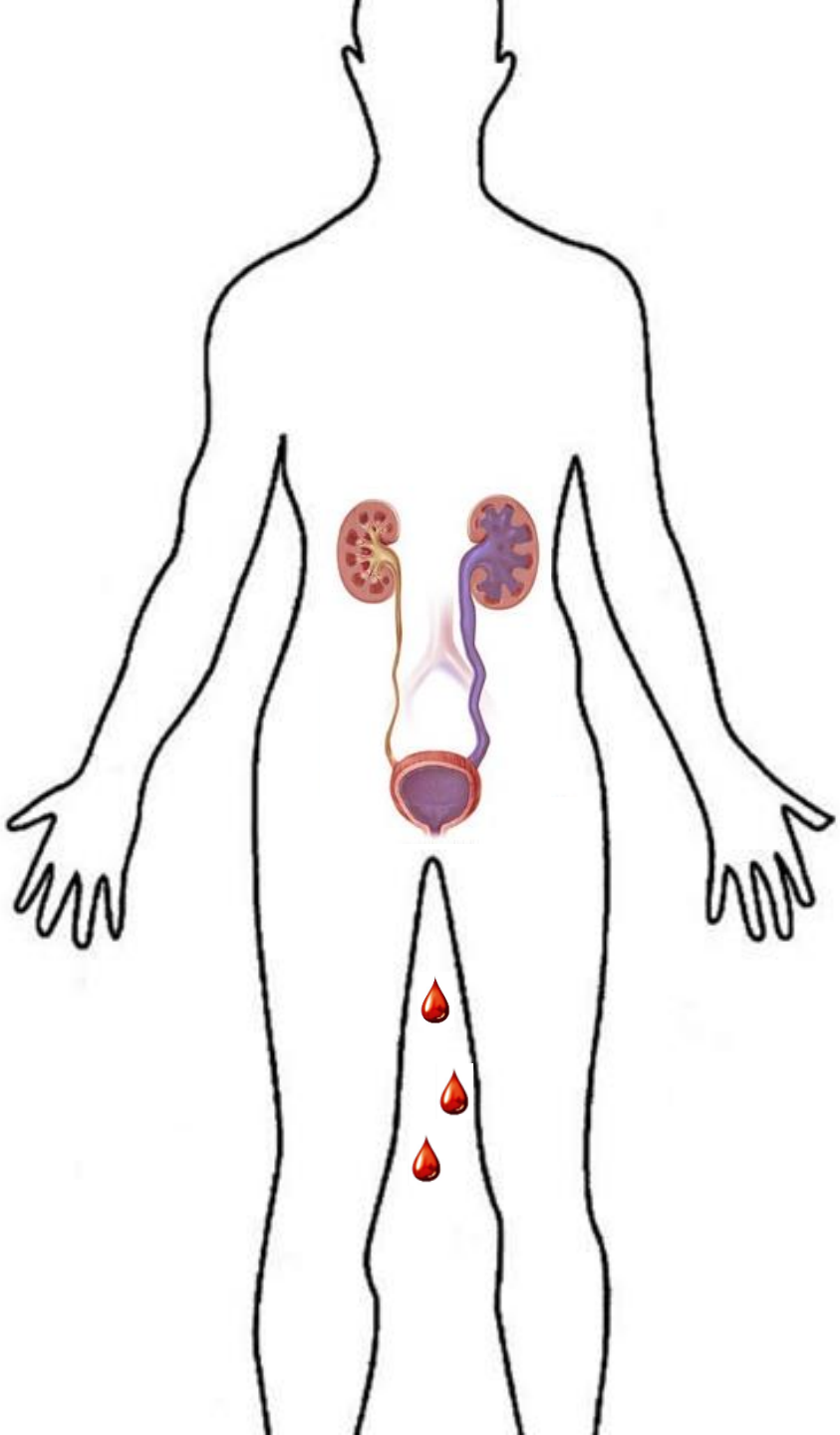




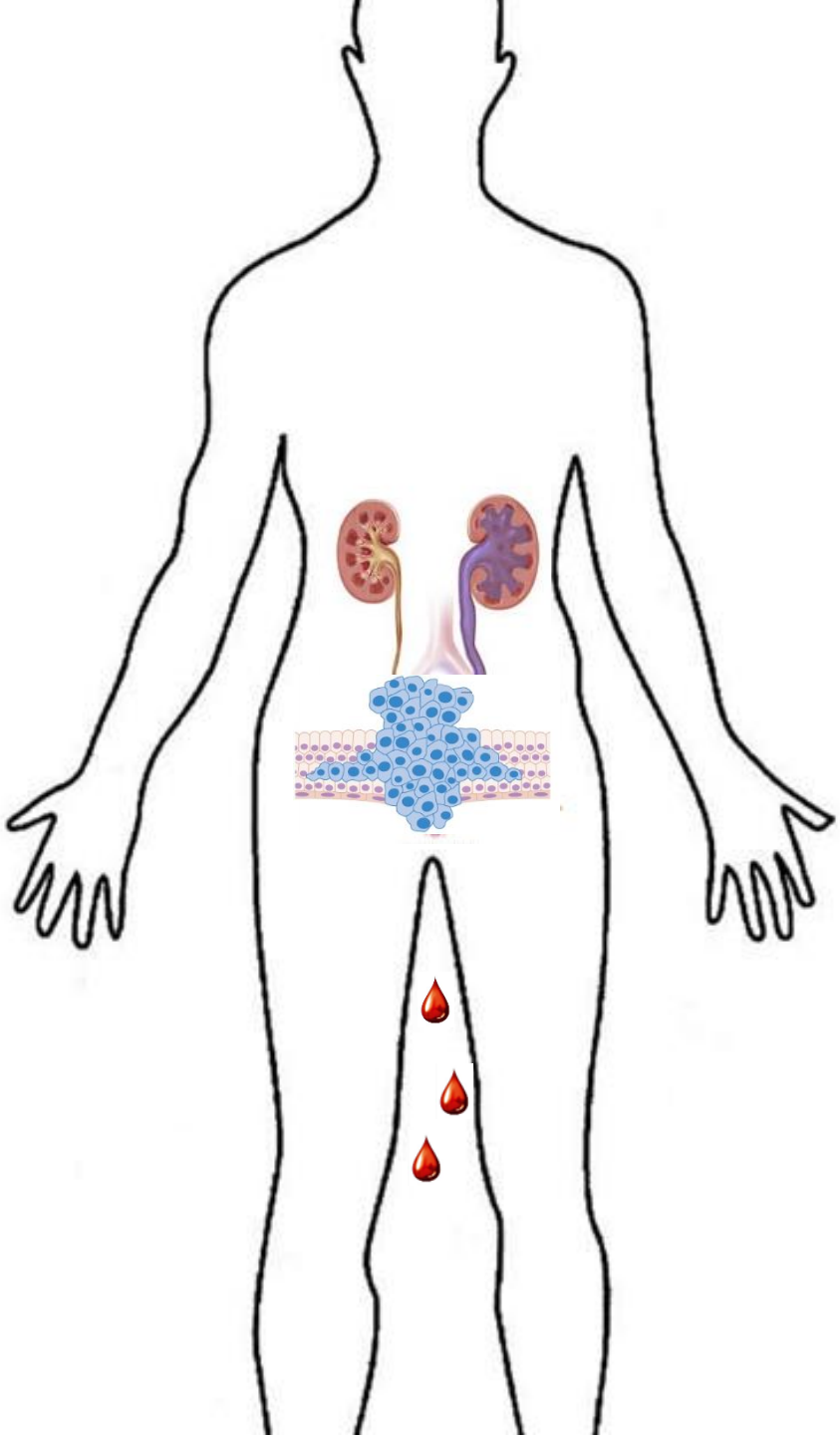
Hematurie



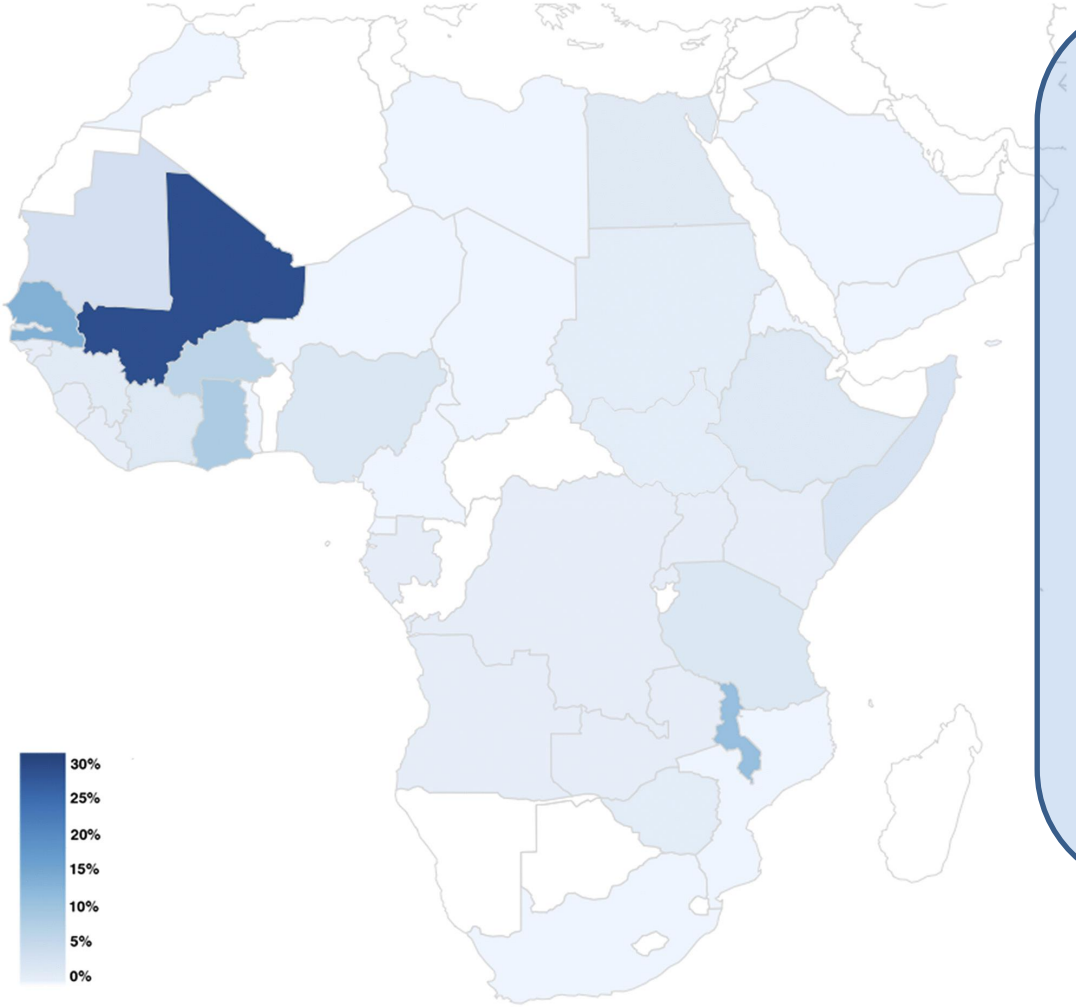
Hematurie
Hydronefrose



Hematurie
Hydronefrose
Plaveiselcelcarcinoom



TropNet Surveillance Data 1997-2010



1,465 casus

748/1,465 (51%)
niet-Europeanen

318/1,465 (22%)
Schistosoma haematobium

99% opgedaan in Afrika

Lingscheid et al. Am. J. Trop. Med. Hyg. 2017

TropNet Surveillance Data 1997-2010

Klachtenpresentatie

Chronic symptoms in cases of schistosomiasis urogenitalis (*Schistosoma haematobium*, *N* = 318)

Specific chronic symptoms	Total *N* = 318	European (%) *N* = 100	Expatriates (%) *N* = 15	Non-Europeans (%) *N* = 203
Chronic/urogenital symptoms	166 (52%)	40 (40%)	3 (20%)	123 (61%)

Subgroep urogenitale schistosomiasis meer niet-Europeanen

Significant vaker presentatie chronische/urogenitale symptomen

Lingscheid et al. Am. J. Trop. Med. Hyg. 2017

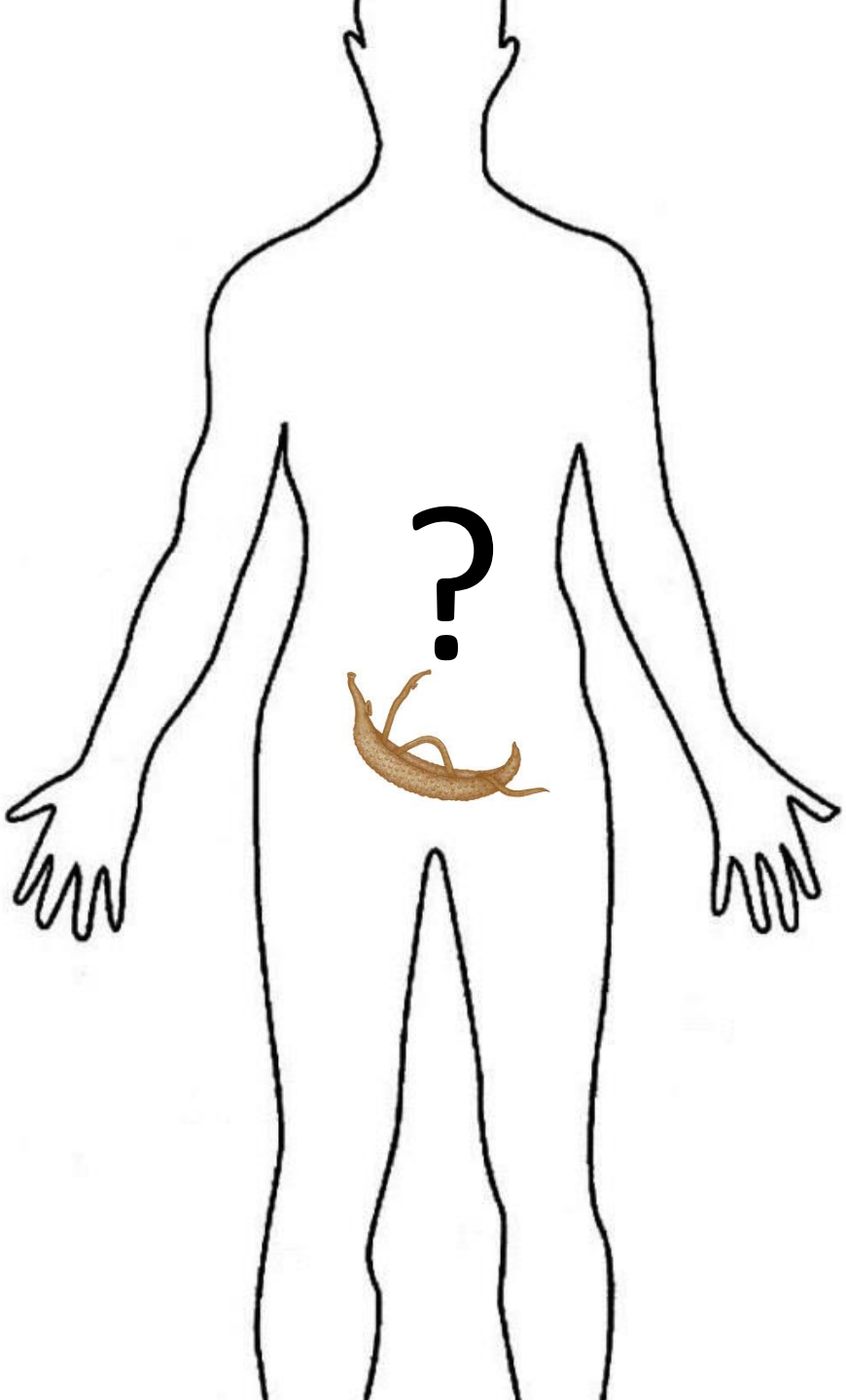
TropNet Surveillance Data 1997-2010

Methode van diagnostiek

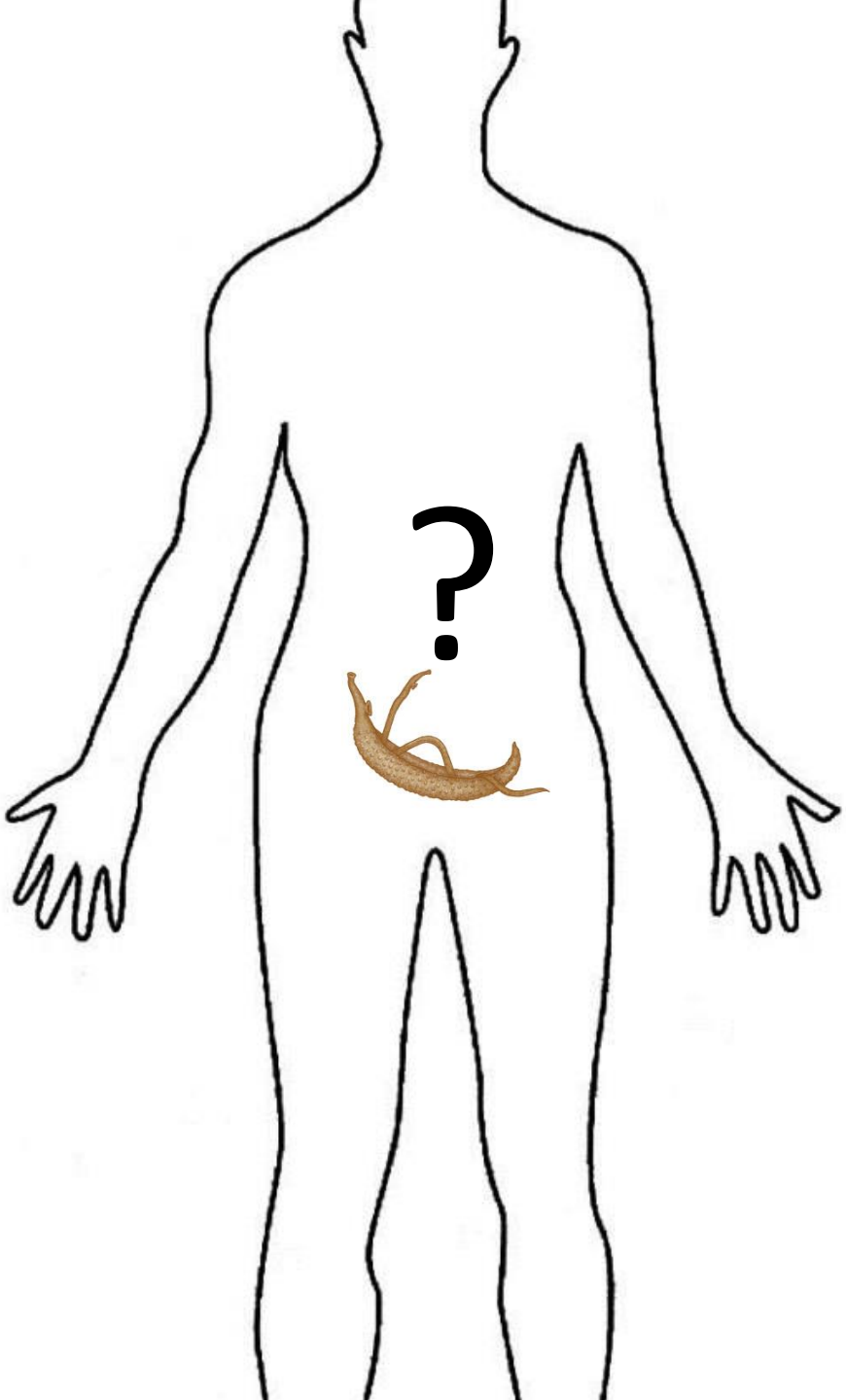
Directe pathogeen detectie
Niet-Europeanen 55.5%
Europeanen 43.3%

Asymptomatische patiënten (N = 623)	Non-Europeanen (N = 287)	Expatriates (N = 144)	Europeanen (N = 192)
Microscopie	62.4% (179/287)	52.1% (75/144)	21.3% (41/192)
Serologie / antigeen detectie	29.3% (84/287)	47.9% (69/144)	57.8% (111/192)

Lingscheid et al. Am. J. Trop. Med. Hyg. 2017

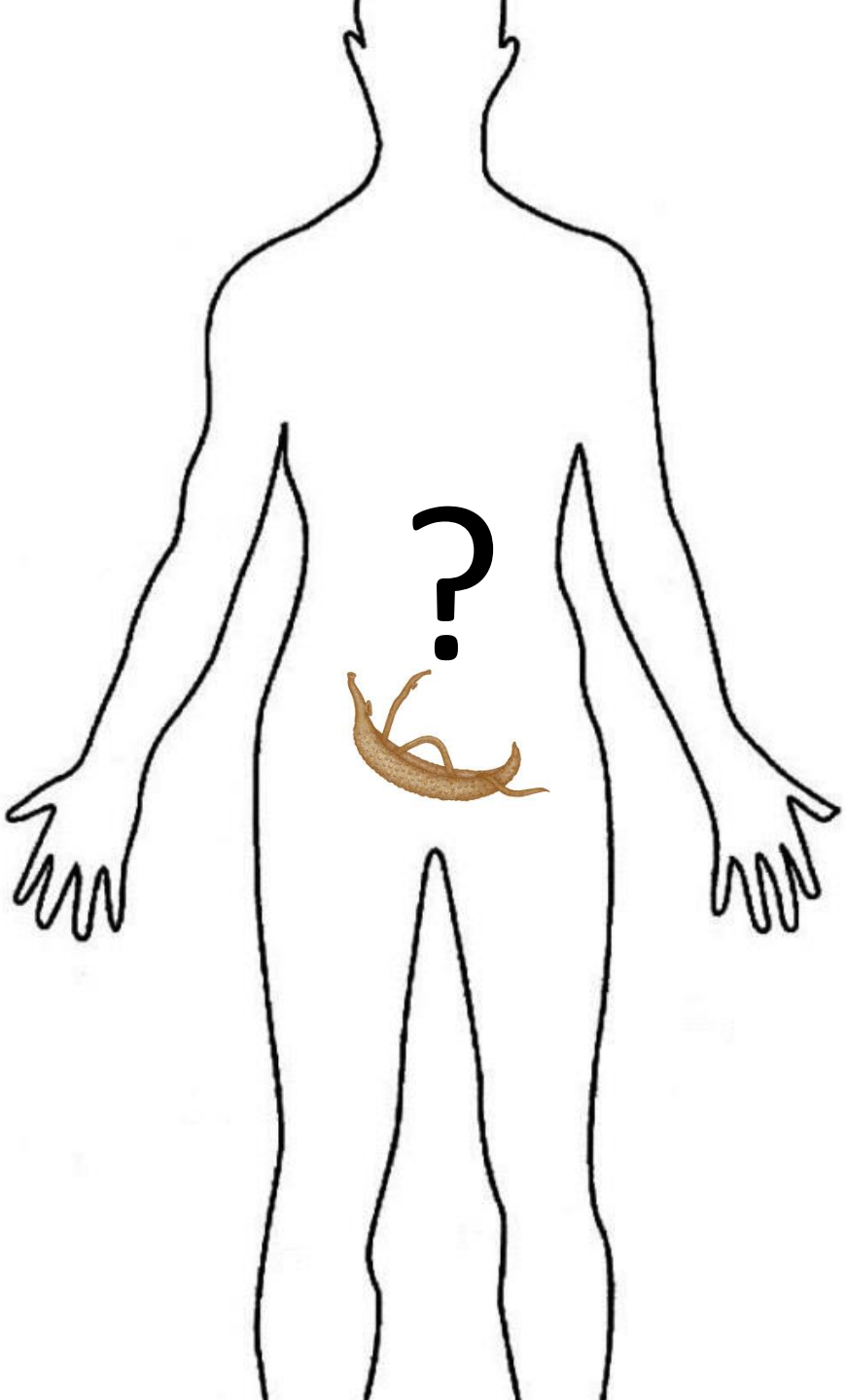


24 uurs urine: geen wormeieren



24 uurs urine: geen wormeieren

Variërende uitscheiding
Infectie met lage parasiet aantallen



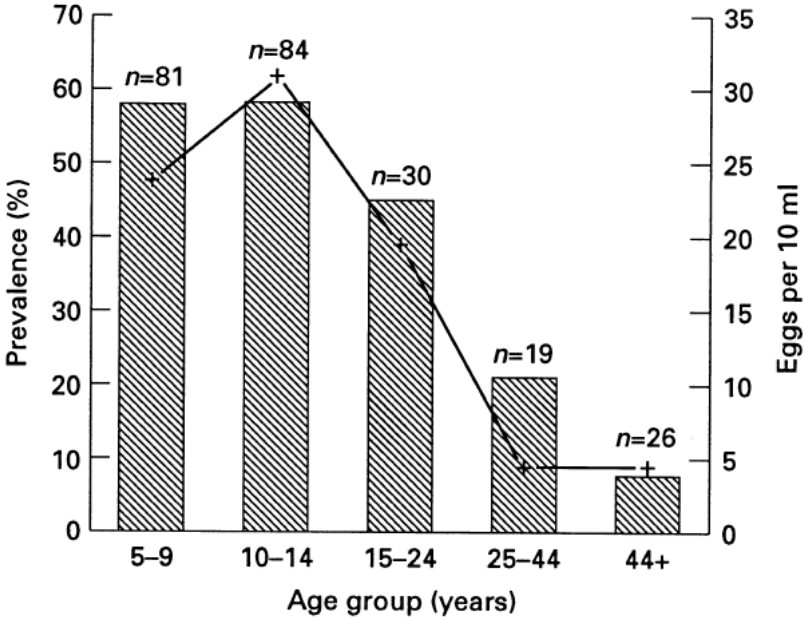
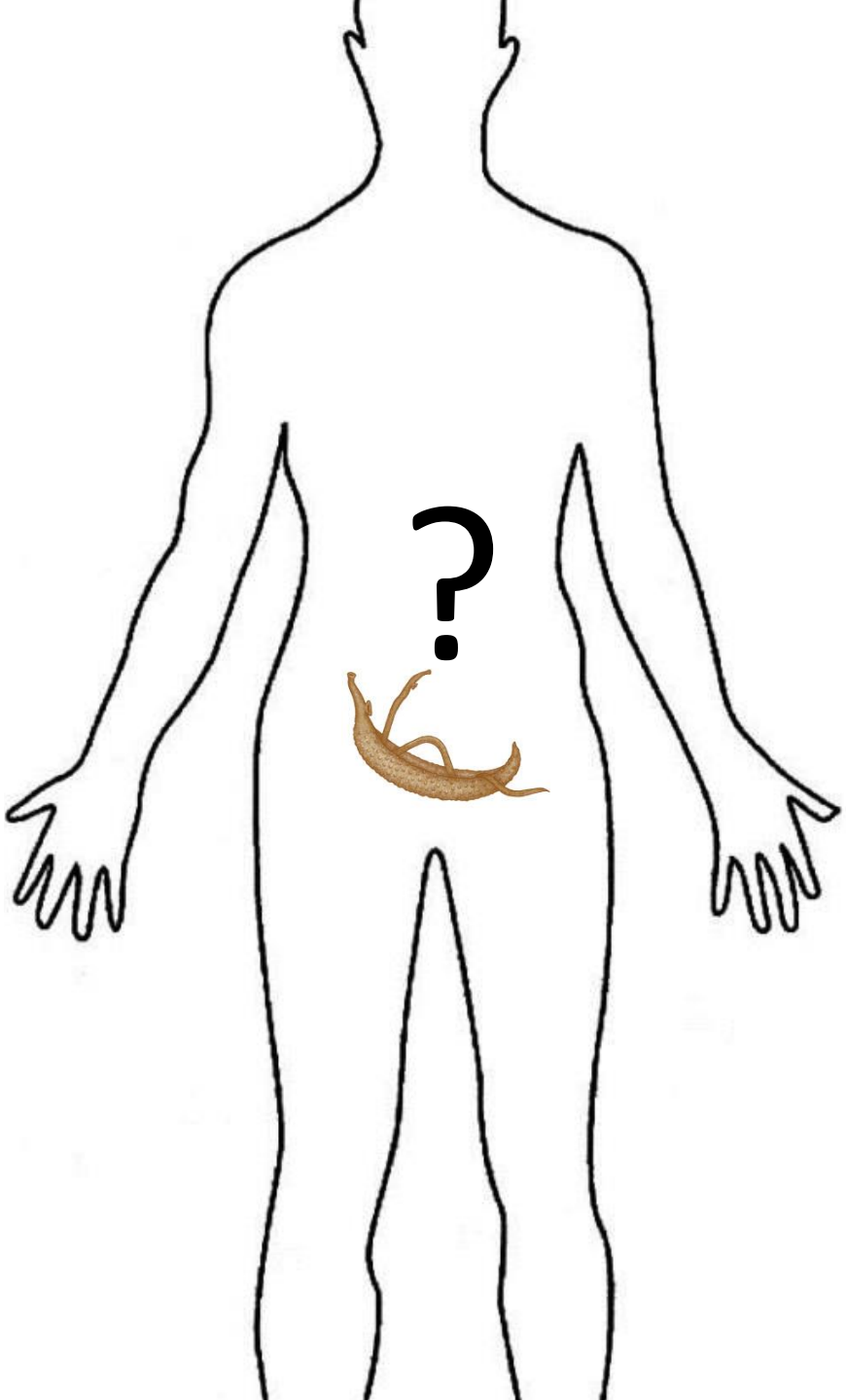
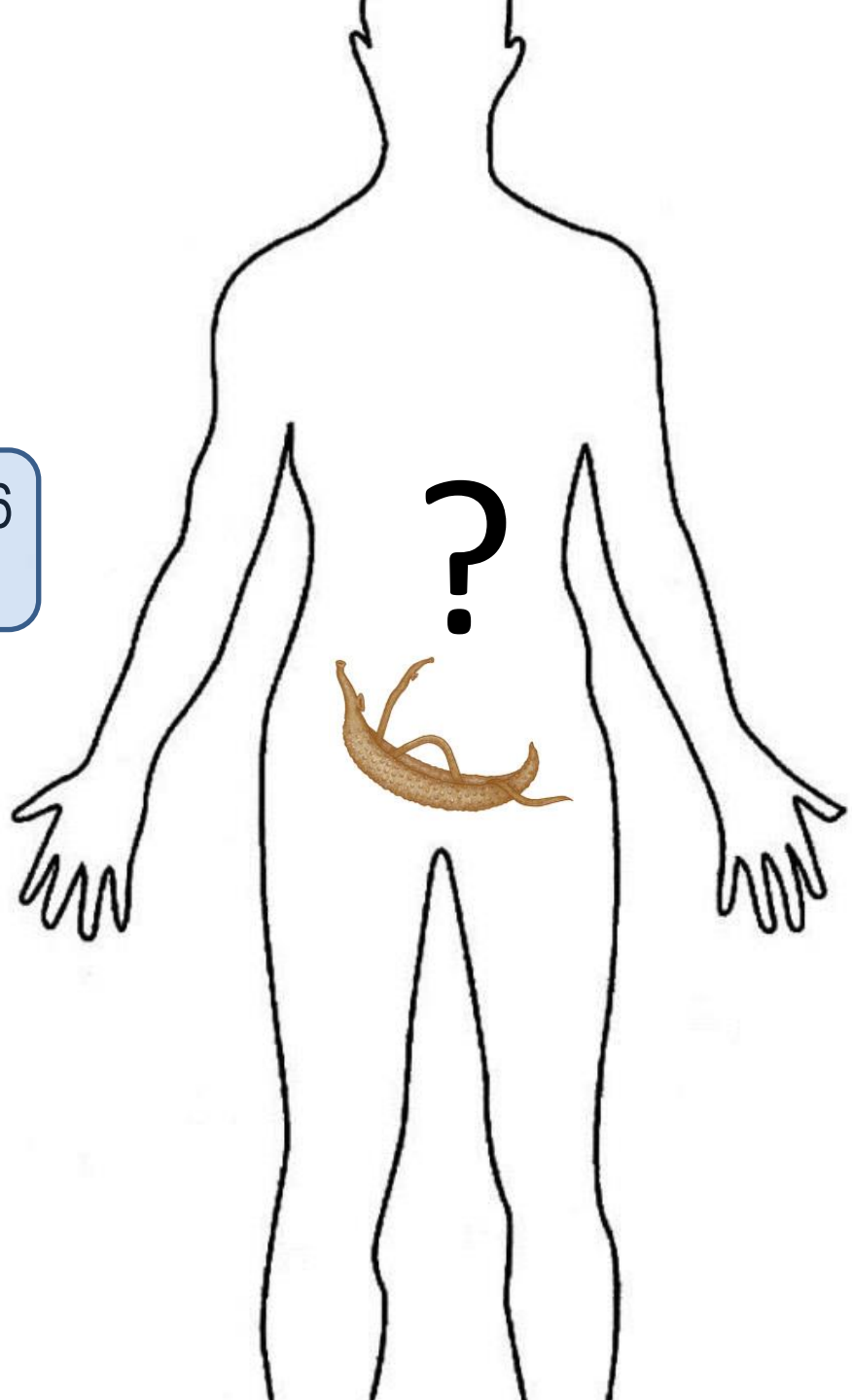


Figure 1 Age-related prevalence and intensity (geometric mean egg counts, positives only) of *Schistosoma haematobium* infection in the Dzvete village study population ($n = 240$). ▨ Prevalence; + Egg count.

Ndhlovu et al. Parasite Immunol. 1996 &
Marchese et al. Infect Dis Poverty 2018

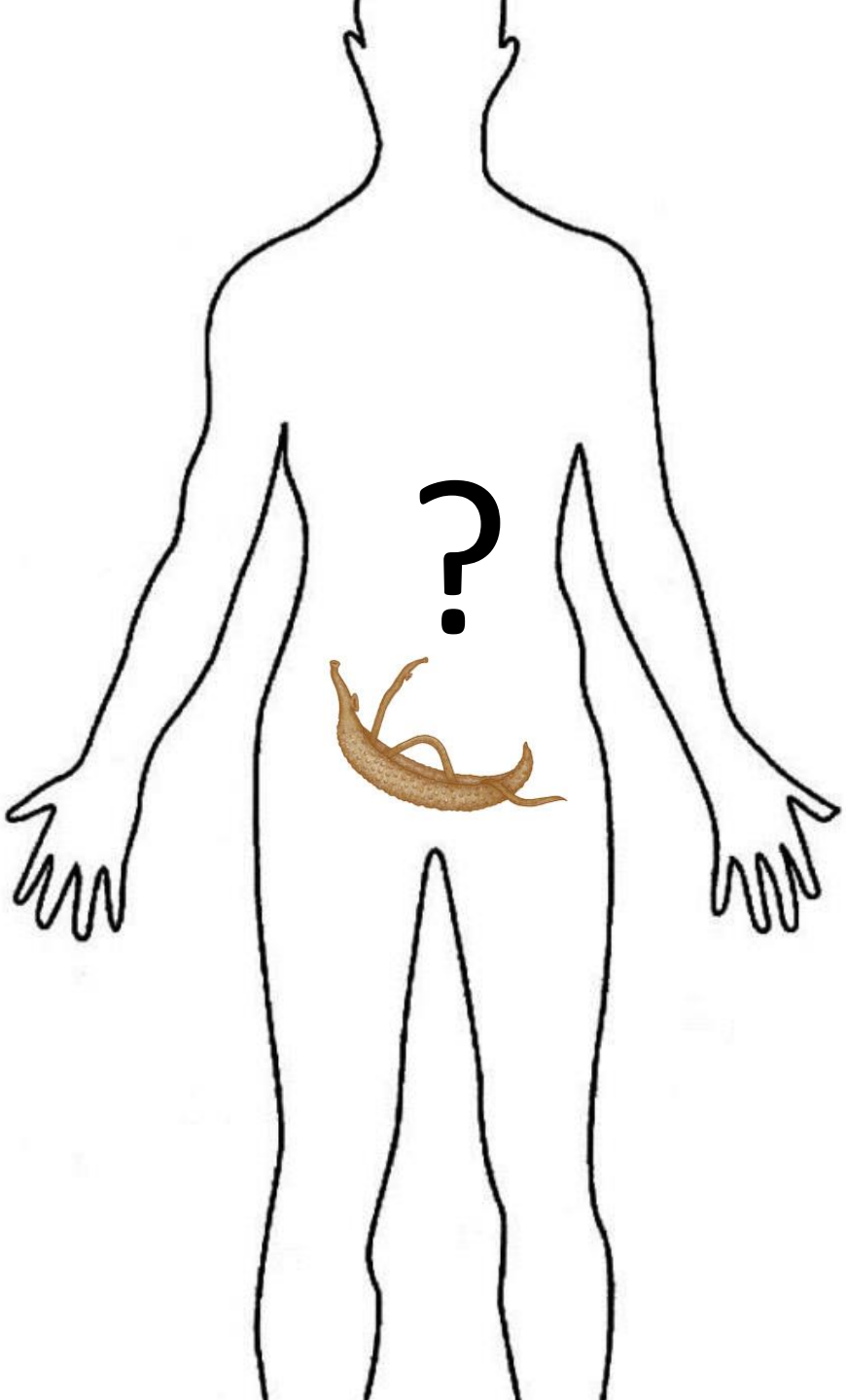


IFA IgM Schistosoma Worm-Ag <1:16
ELISA IgG Schistosoma Ei-Ag <1:32



IFA IgM Schistosoma Worm-Ag <1:16
ELISA IgG Schistosoma Ei-Ag <1:32

Auteur	Van Gool et al. 2002	Kinkel et al. 2012
N	25	14
Worm-Ag	92% IHA	21.5% (5.7-51.2%) ELISA
ELISA Ei-Ag Sensitiviteit	92%	57.1% (29.6-81.2%)



van Gool et al. J Clin Microbiol 2002 & Kinkel et al. Clin Vaccine Immunol 2012

IFA IgM Schistosoma Worm-Ag <1:16
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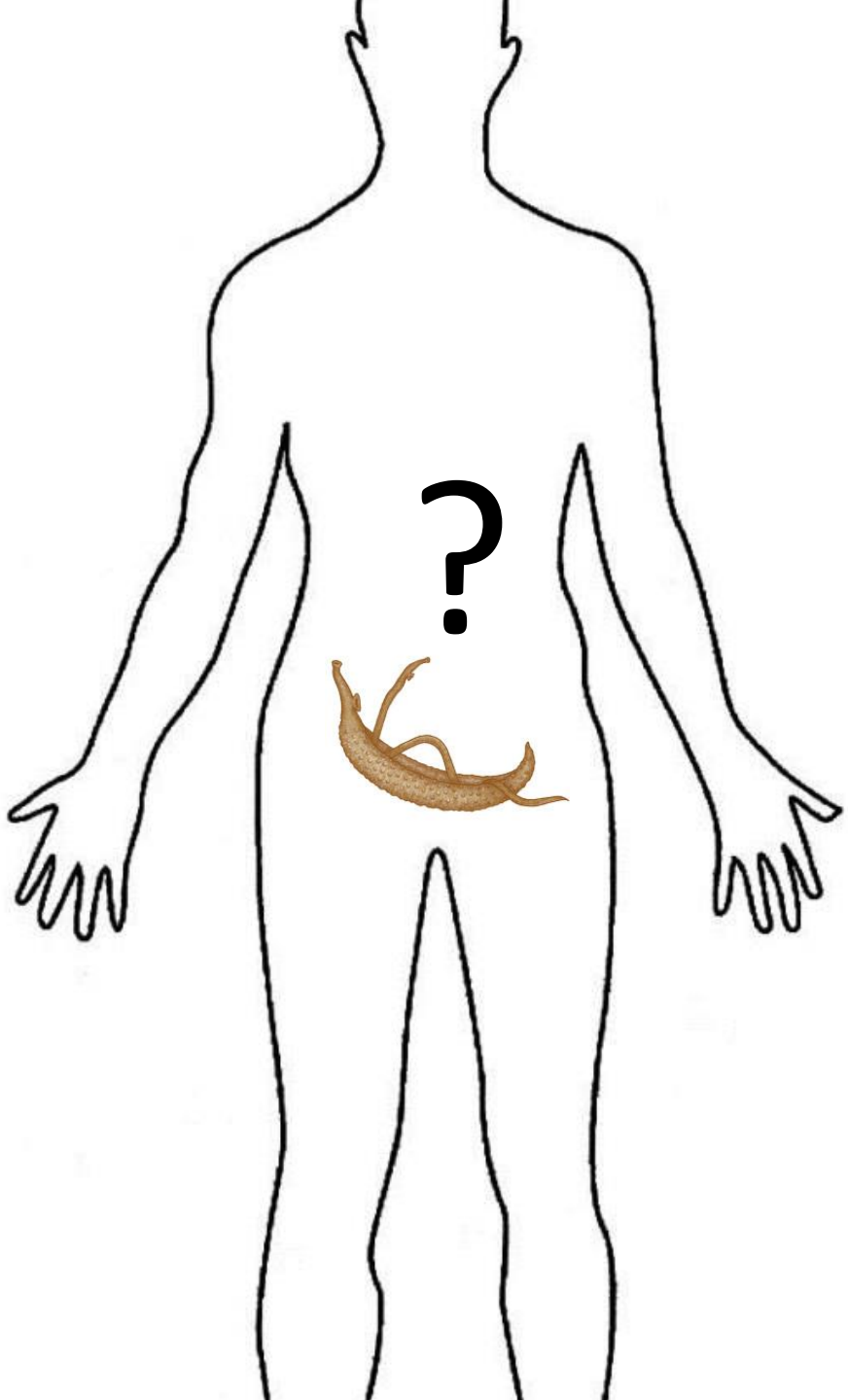
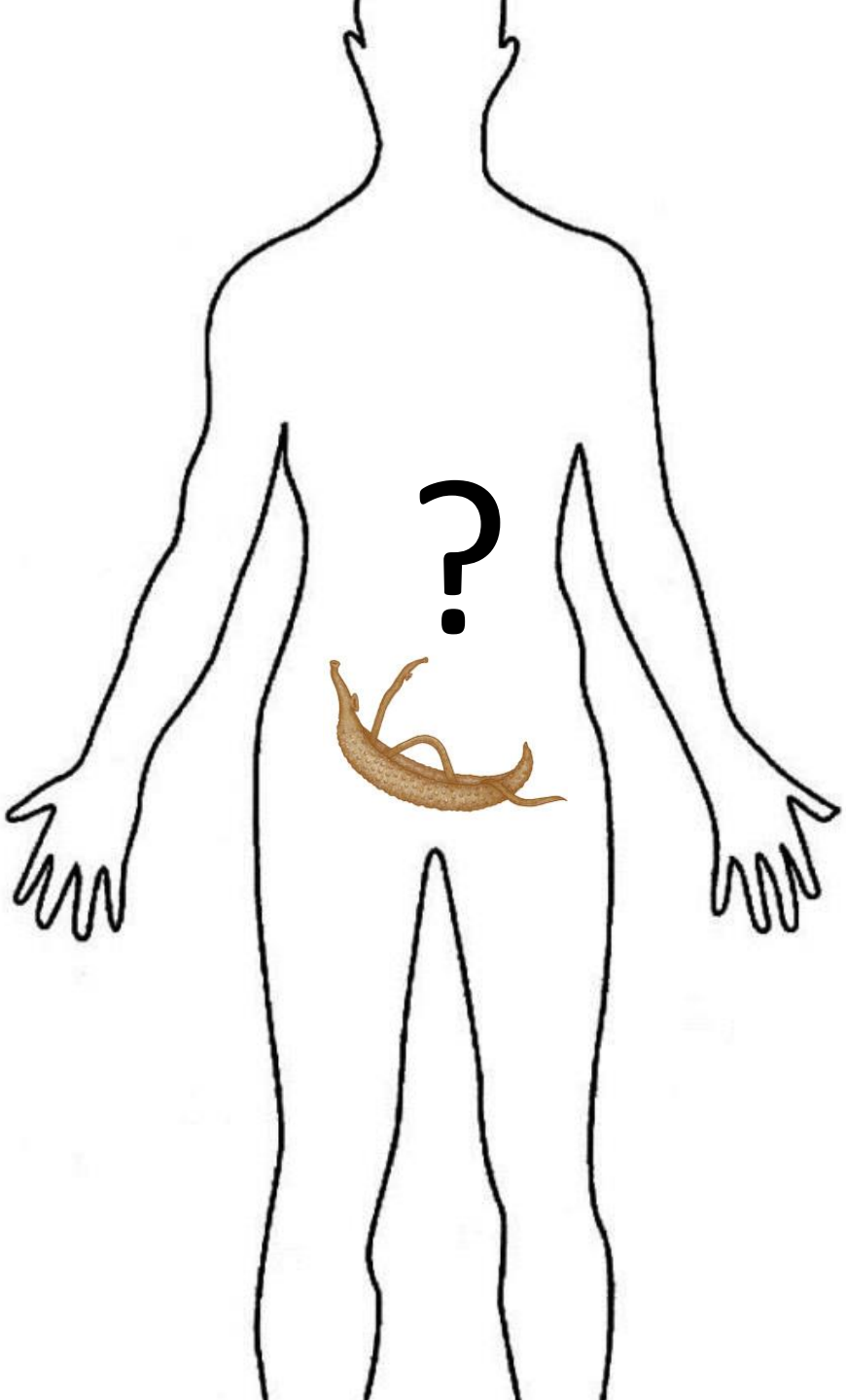
N	25	14
Worm-Ag	92% IHA	21.5% (5.7-51.2%) ELISA
ELISA Ei-Ag Sensitiviteit	92%	57.1% (29.6-81.2%)

Reizigers!



IFA IgM Schistosoma Worm-Ag <1:16
ELISA IgG Schistosoma Ei-Ag <1:32

HIV?
Expositie maternale antilichamen?
Shift naar IgE respons?
Uitgedoofde immuunrespons?



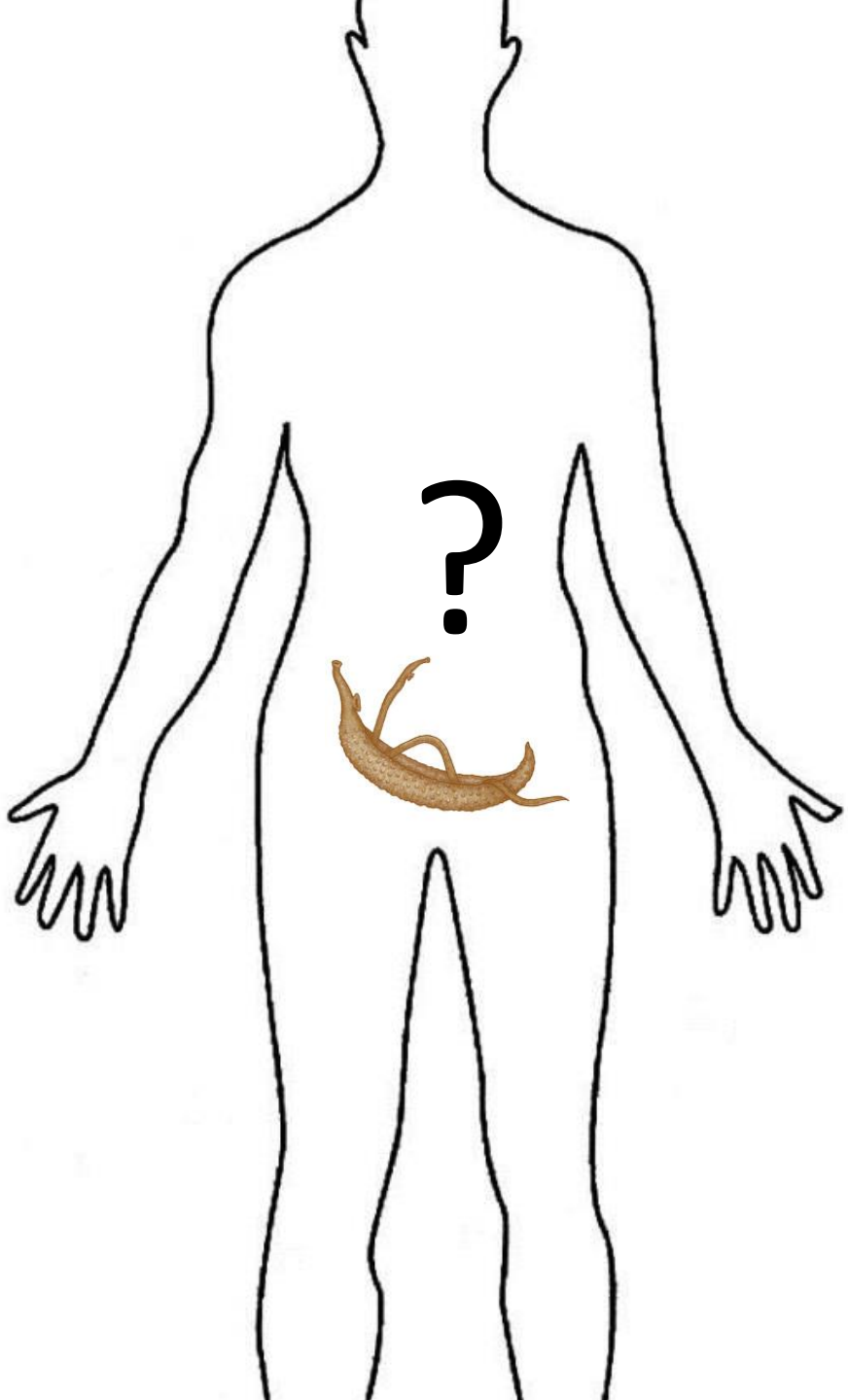
Ndhlovu et al. Parasite Immunol. 1996 & Naus et al. Infect Immuun. 1999

IFA IgM Schistosoma Worm-Ag <1:16
ELISA IgG Schistosoma Ei-Ag <1:32

Marchese et al. 2018
2010-2014
N = 272 (234 endemisch)

Positieve microscopie N = 103
18/103 (17.5%) serologie negatief
11/18 *S. haematobium*

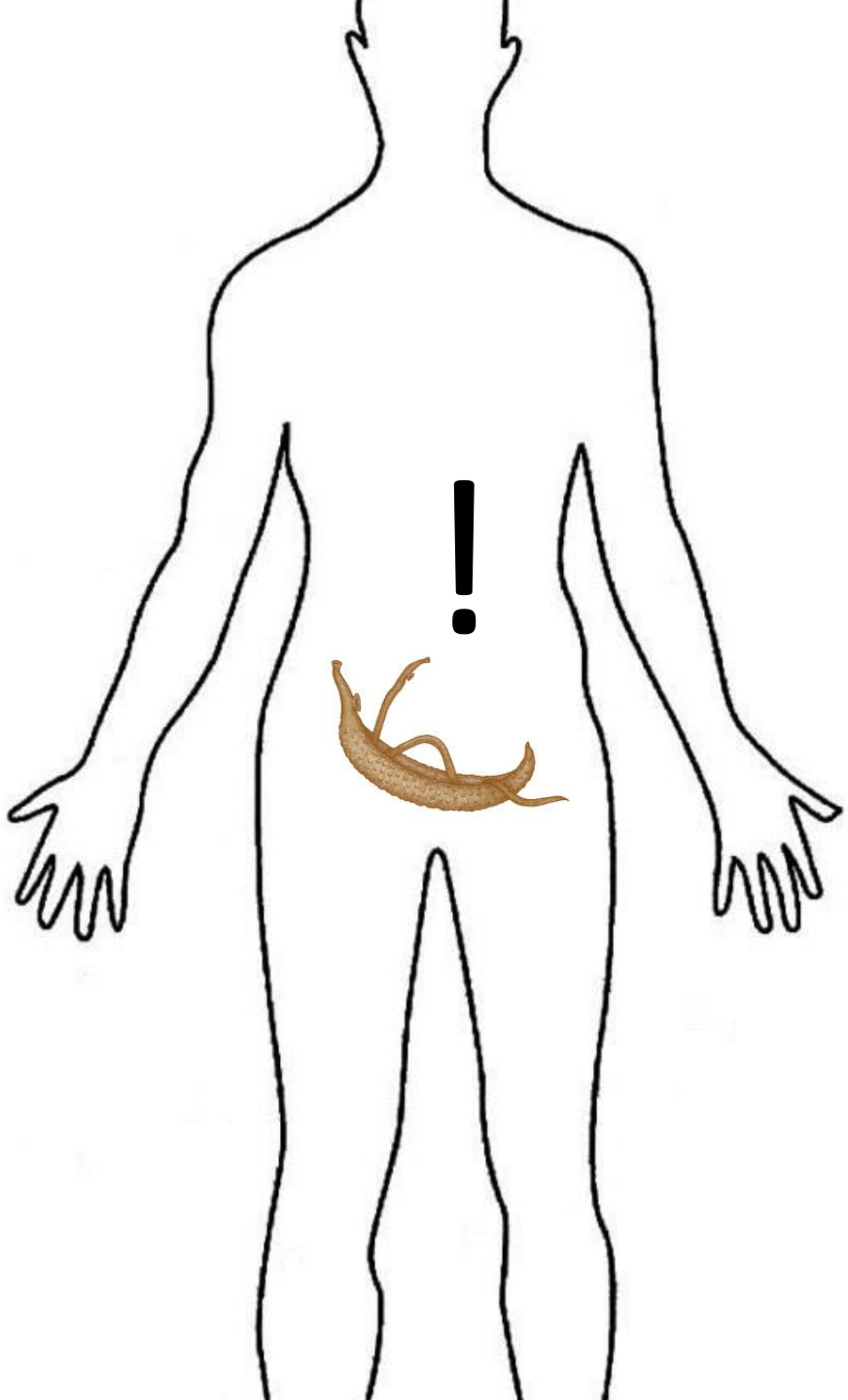
Marchese et al. Infect Dis of Poverty 2018

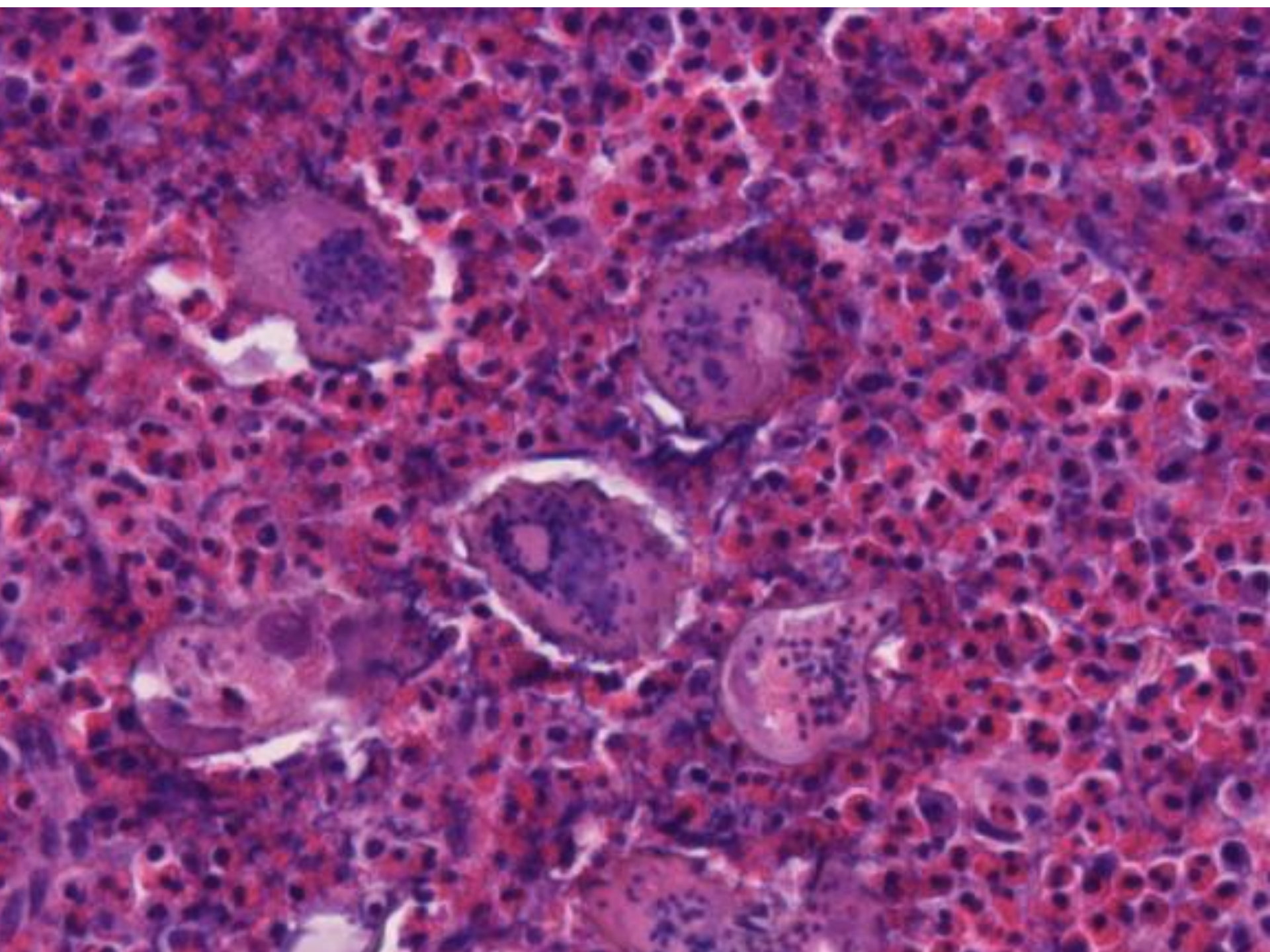


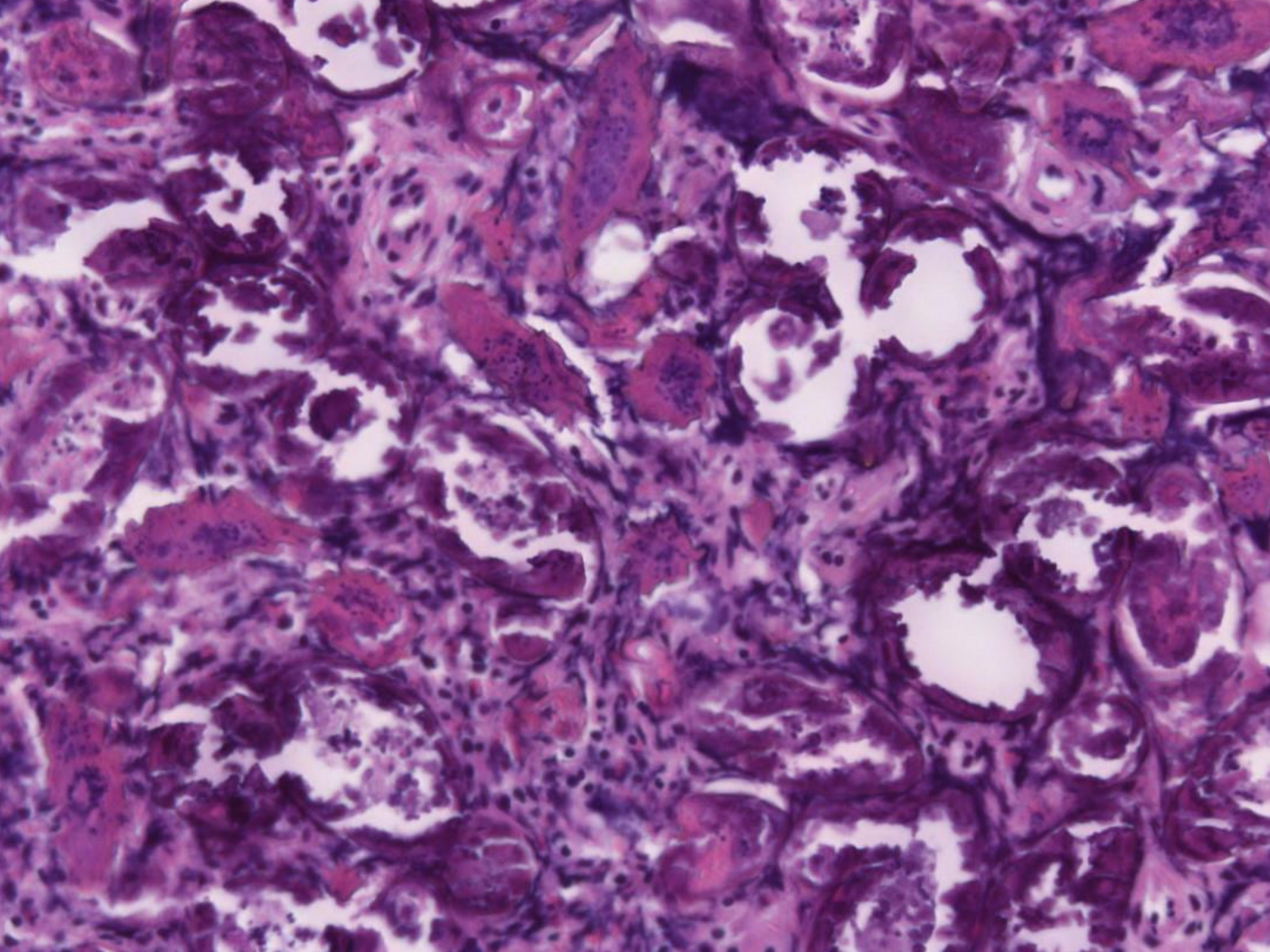
PCR urine *Schistosoma* spec.:
Positief
Ct 30

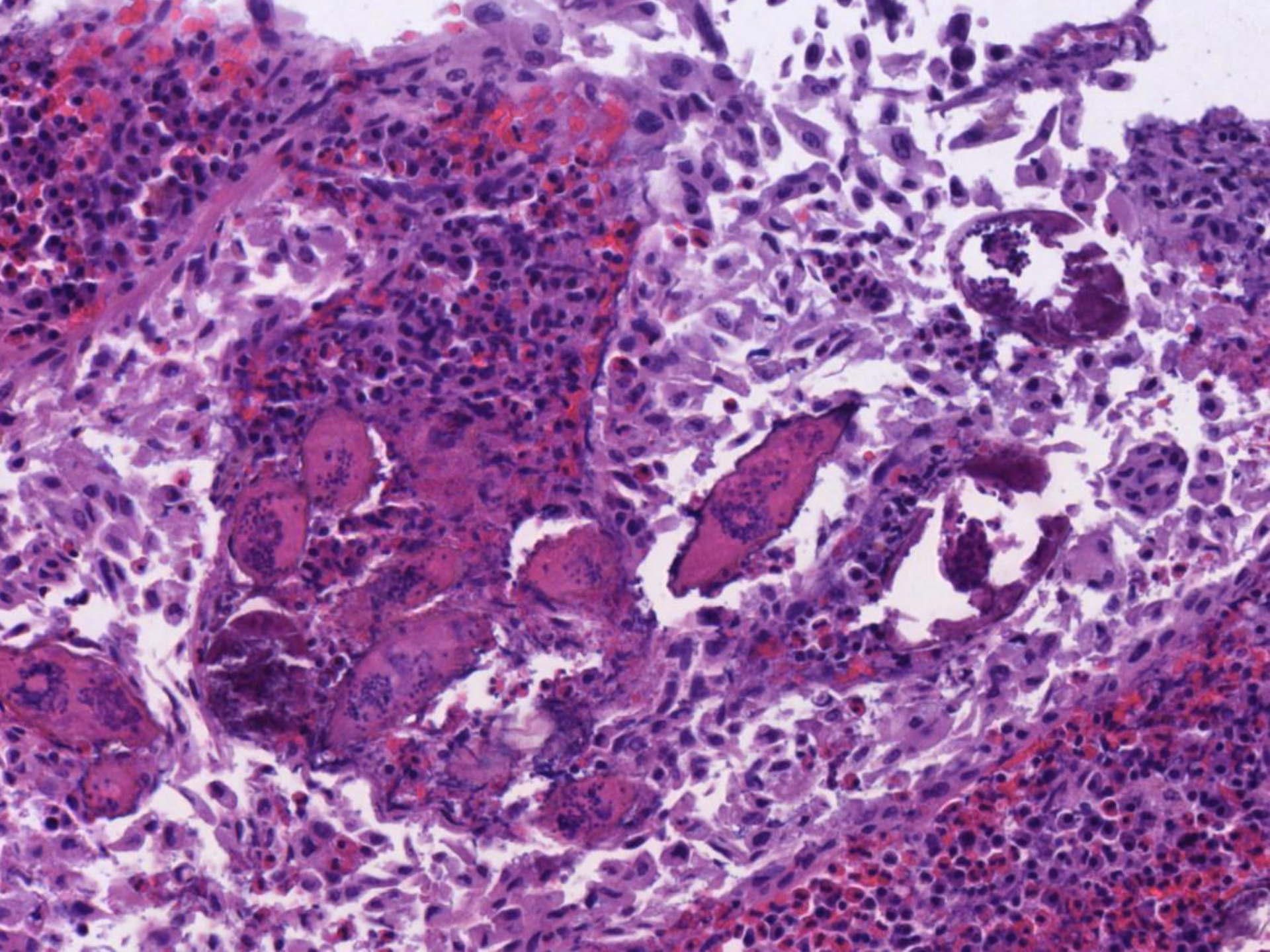
Microscopie urine:
Schistosoma haematobium, nog levende eieren

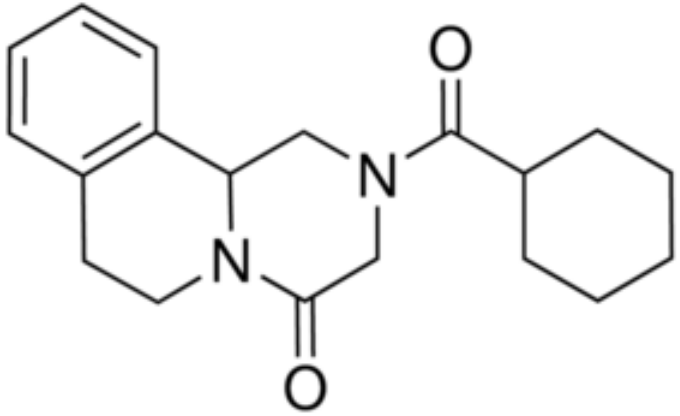
CAA urine: Positief, 10 pg/ml
CAA serum: Positief, 30 pg/ml



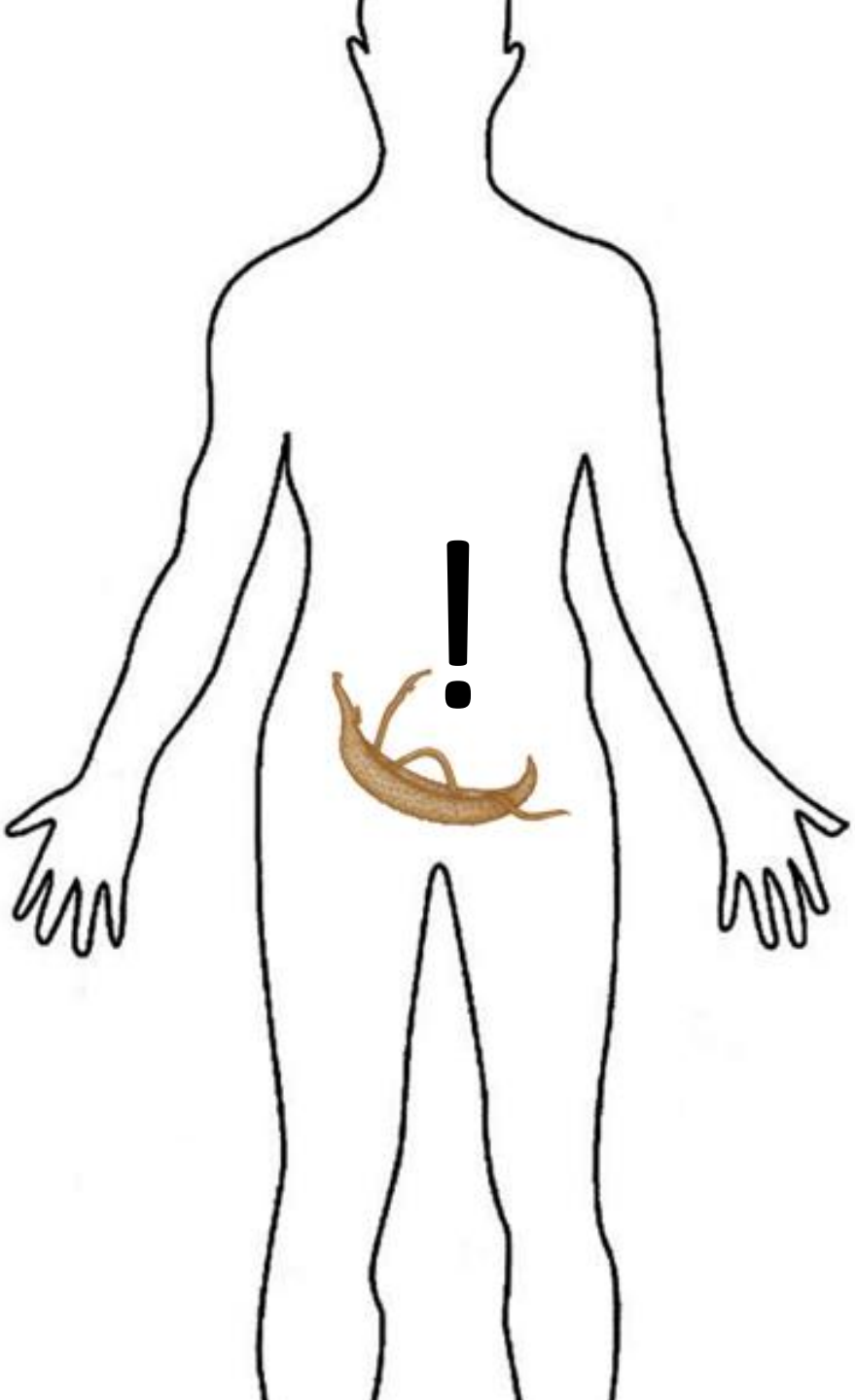








Praziquantel 60 mg/kg 3 dagen

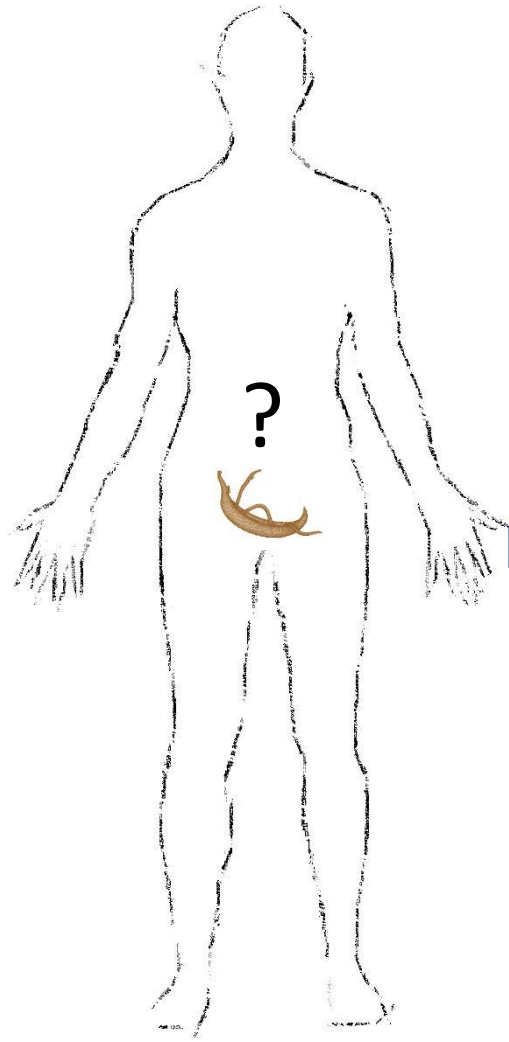


Worm of anti-Worm?
Take home messages

Chronische infectie → verminderde ei-uitscheiding

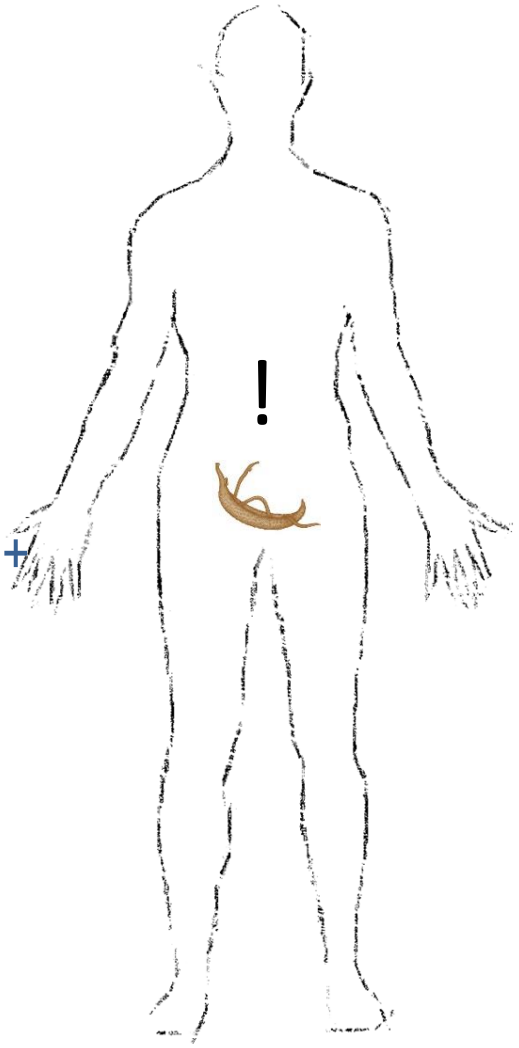
Fout negatieve serologie mogelijk

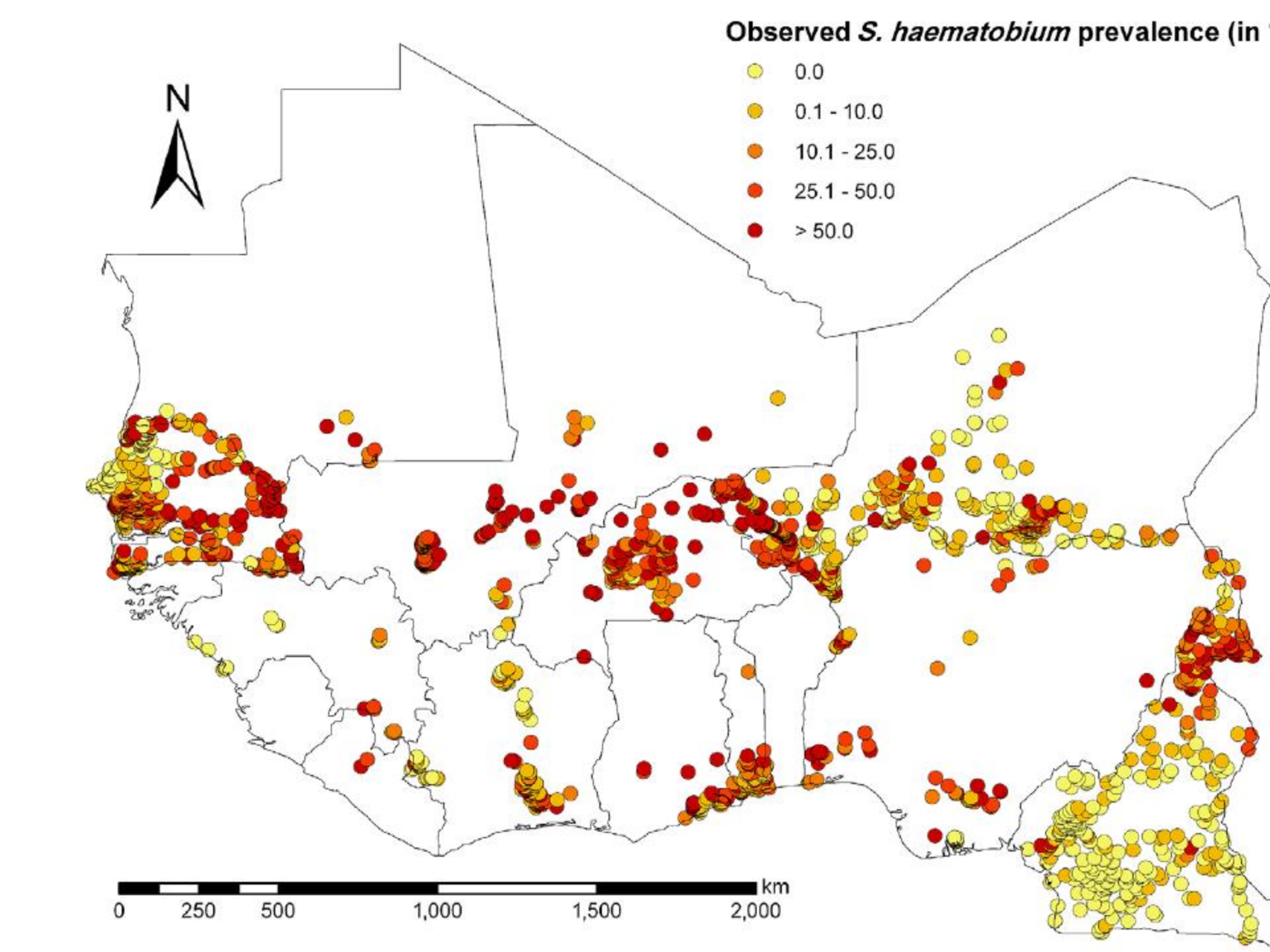
Herhaling microscopie, biopt, PCR, CAA



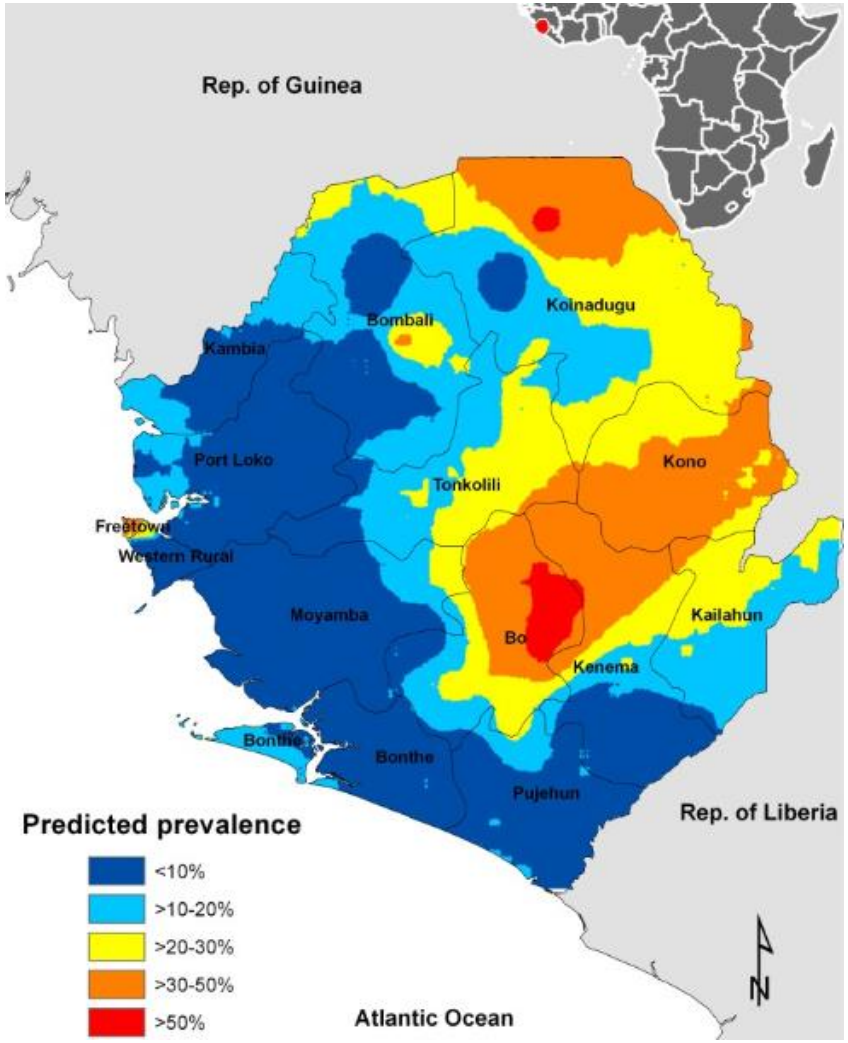
Met dank aan:

Dr. Callewaert, Uroloog MUMC+
Dr. Van den Hout, Patholoog MUMC+
Wanda Vriese, Analist MUMC+
Mariëlle Habets – Janssen, Analist MUMC+
Dr. van Lieshout, Parasitoloog LUMC




Observed S. haematobium prevalence (in
0.0
0.1 - 10.0
10.1 - 25.0
25.1 - 50.0
> 50.0
N
km
0
250
500
1,000
1,500
2,000

Prevalentie Sierra Leone



Schur et al. PLOS Negl trop Dis. 2011
&
Hodges et al. PLoS Negl Trop Dis. 2012

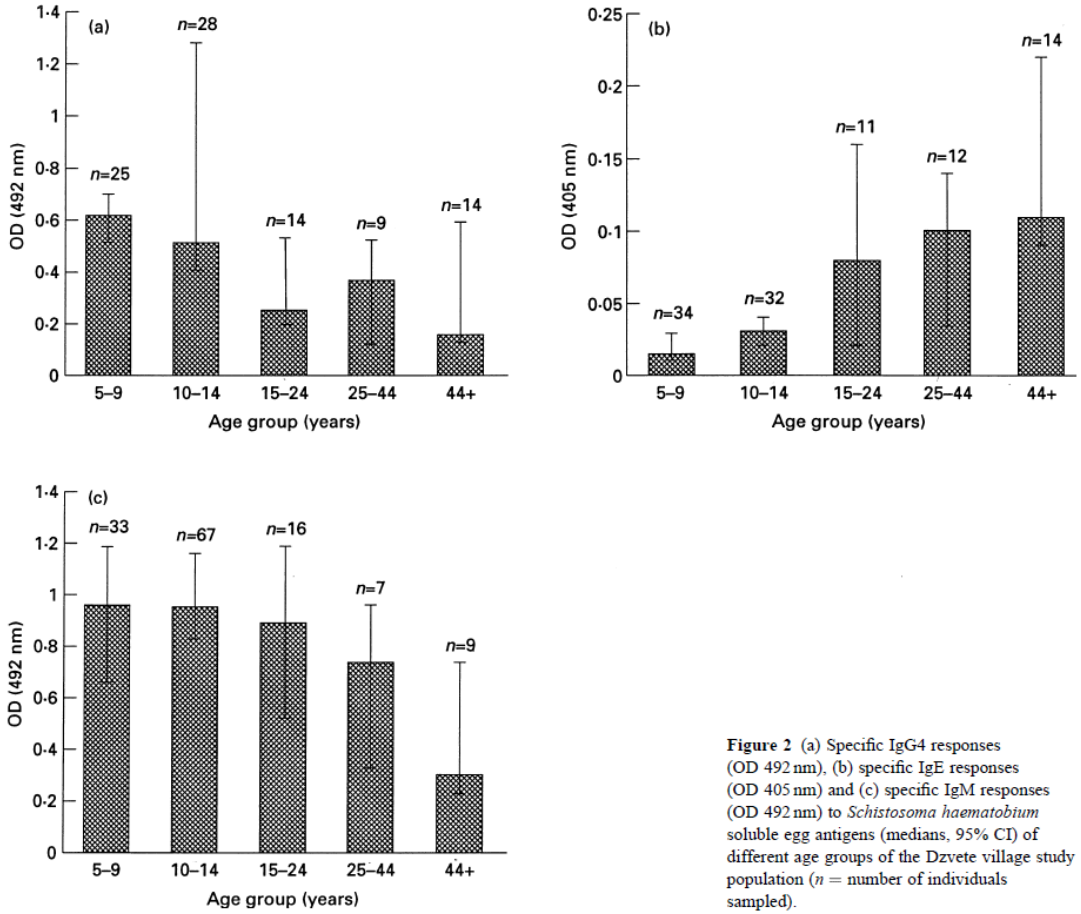


Figure 2 (a) Specific IgG4 responses (OD 492 nm), (b) specific IgE responses (OD 405 nm) and (c) specific IgM responses (OD 492 nm) to *Schistosoma haematobium* soluble egg antigens (medians, 95% CI) of different age groups of the Dzvete village study population (n = number of individuals sampled).