



Leiden University
Medical Center

10 februari 2022

SKML deelnemersdag

Rondzending

Morfologisch onderzoek van darm, weefsel- & ectoparasieten 2021



Dept. Parasitology

LEIDEN UNIVERSITY MEDICAL CENTER

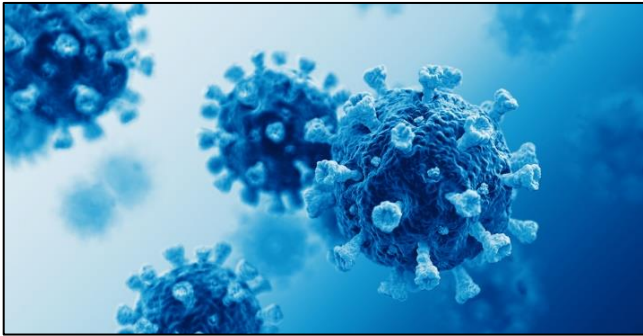
Eric Brienen



Stichting Kwaliteitsbewaking
Medische Laboratoriumdiagnostiek

Bespreking rondzendingen SKML 2021

Morfologisch onderzoek van darm, weefsel- & ectoparasieten



<https://www.niedersachsen.de/Coronavirus>

Corona – Moeilijk om aan veel en goed materiaal te komen.



Het **Trippenhuis** aan de Kloveniersburgwal (KNAW)

Ook samenkomst in Trippenhuis Amsterdam kon wederom niet doorgaan

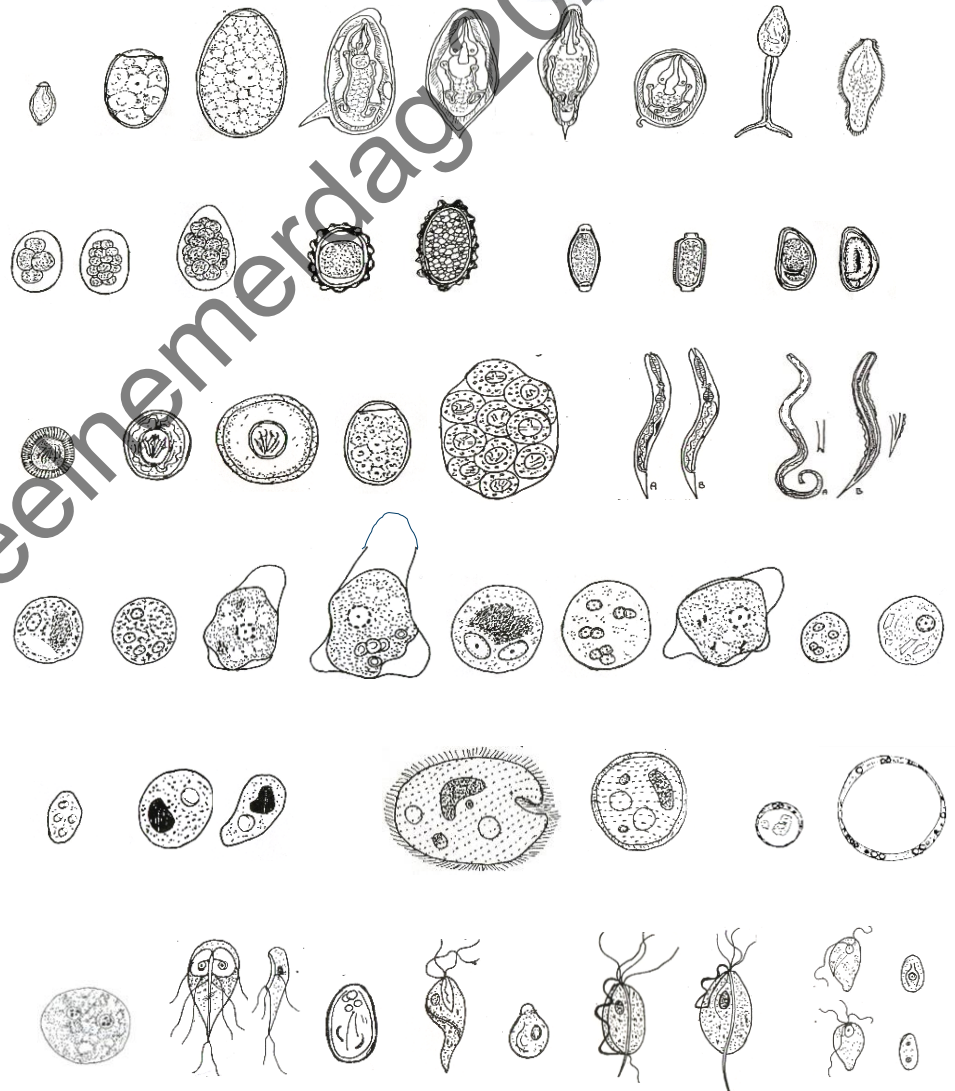
Bespreking rondzendingen SKML 2021

SKML Deelnemersdag
Bespreking rondzendingen 2021

*Morfologisch onderzoek van
darm, weefsel- & ectoparasieten*



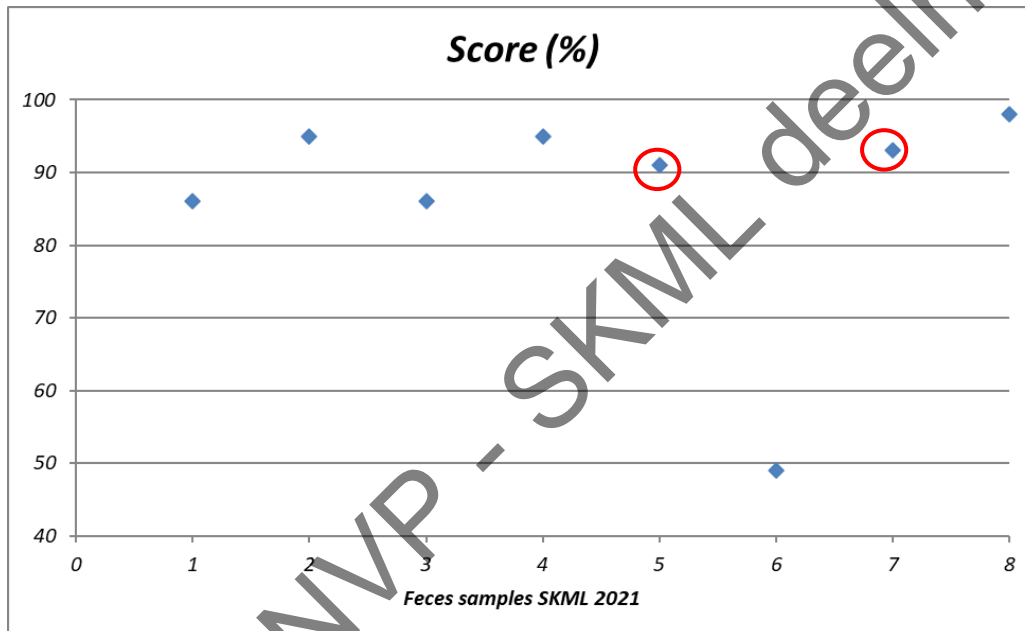
<http://powellrivergardenclubblog.blogspot.com/2011/03/another-way-to-improve-your-soil.html>



Feces rondzendingen SKML 2021

	Rond - zending	Parasiet 1	Parasiet 2	Extra parasieten
1	2021.1A	E. his/dis. (2)	G. lamblia (2)	(Ec, Cm, Df, Bh)
2	2021.1B	S. stercoralis (2)		
3	2021.2A	Mijnworm ei (2)		
4	2021.2B	E. his/dis (2)		(Bh)
5	2021.3A	A. lumbricoides (2)	T. trichiura (2)	
6	2021.3B	B. coli (educational)		(div. a-pathogenen, educational)
7	2021.4A	G. lamblia (2)		(A. lumbricoides, educational)
8	2021.4B	H. nana (2)		(E coli & div. a-pathogenen, educational)

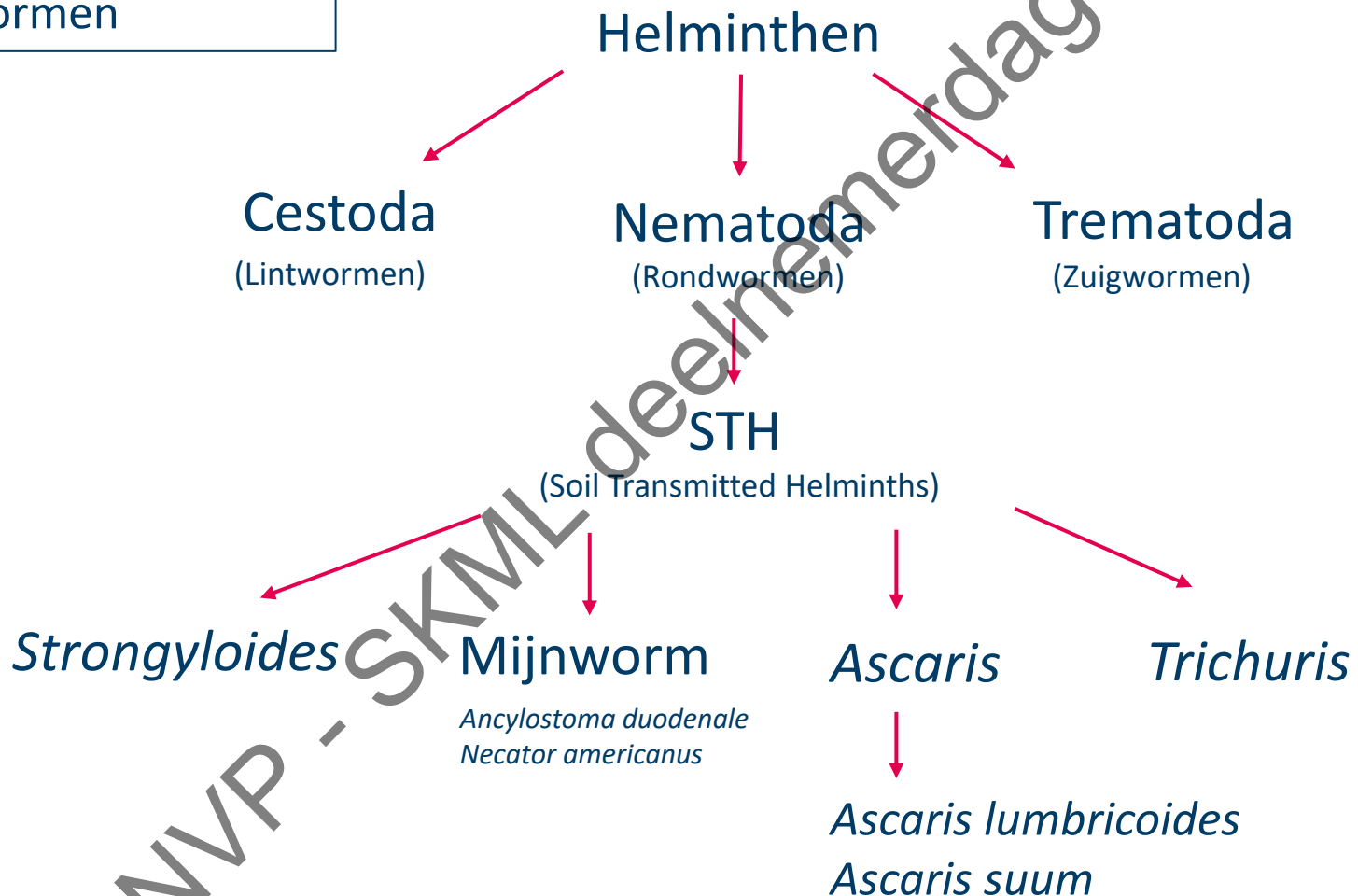
4 x Protozoa
4 x Wormeieren / Larven



Ascaris in sample 7 werd alleen door **17%** van de deelnemers gevonden !

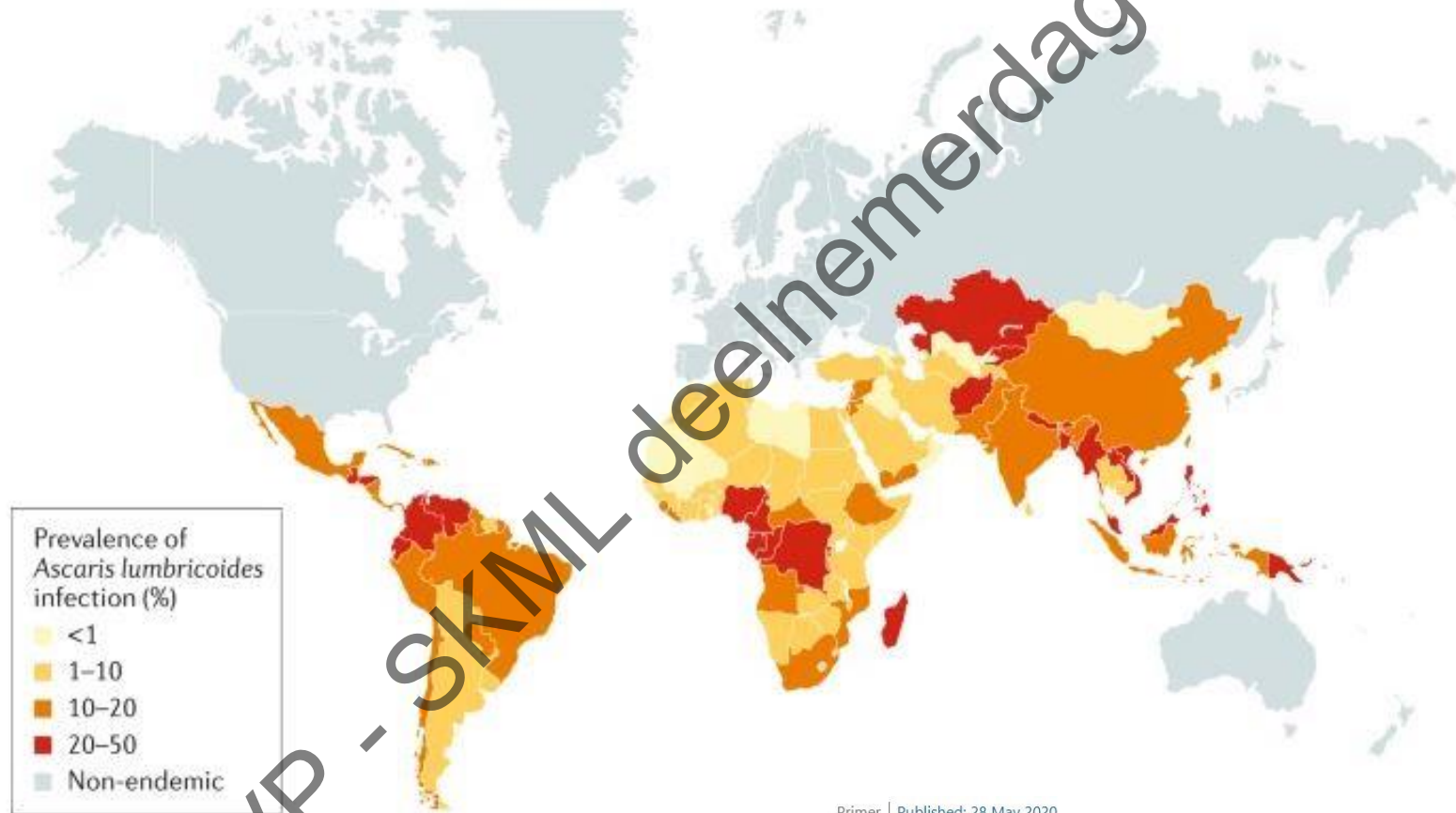
Feces rondzendingen SKML – *Ascaris sp.*

Even ter herinnering
→ Wormen



Feces rondzendingen SKML – *Ascaris sp.*

Prevalentie van *Ascaris* (2020)



Primer | Published: 28 May 2020

Whipworm and roundworm infections

Kathryn J. Else [✉](#), Jennifer Keiser, Celia V. Holland, Richard K. Grencis, David B. Sattelle, Ricardo T. Fujiwara, Lilian L. Bueno, Samuel O. Asaolu, Oluoyomi A. Sowemimo & Philip J. Cooper

Feces rondzendingen SKML – *Ascaris sp.*

- Nederlandse naam Spoelworm
- Gerelateerd aan slechte hygiene
- Vroeger ook in Nederland
- Eieren zeer resistent
- *Ascaris suum* (varken) nog steeds in Nederland



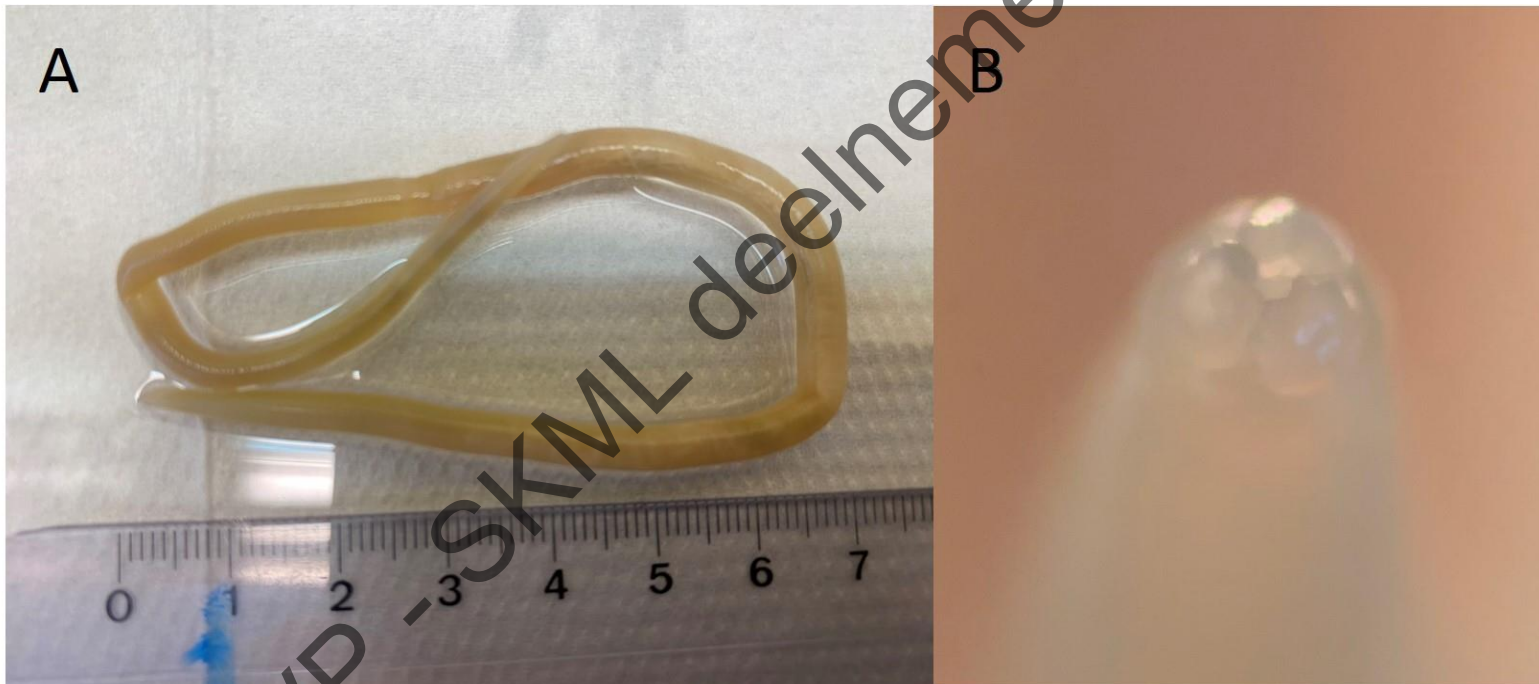
Een stronttonnetjesloper leegt een emmer met uitwerpselen in zijn boldoot kar in Amsterdam (circa 1910 – 1930).

<https://www.nemokennislink.nl/>

Feces rondzendingen SKML – *Ascaris sp.*

Rondzending → Digitale afbeeldingen 2021.3 C

Adulte *Ascaris spp.* worm



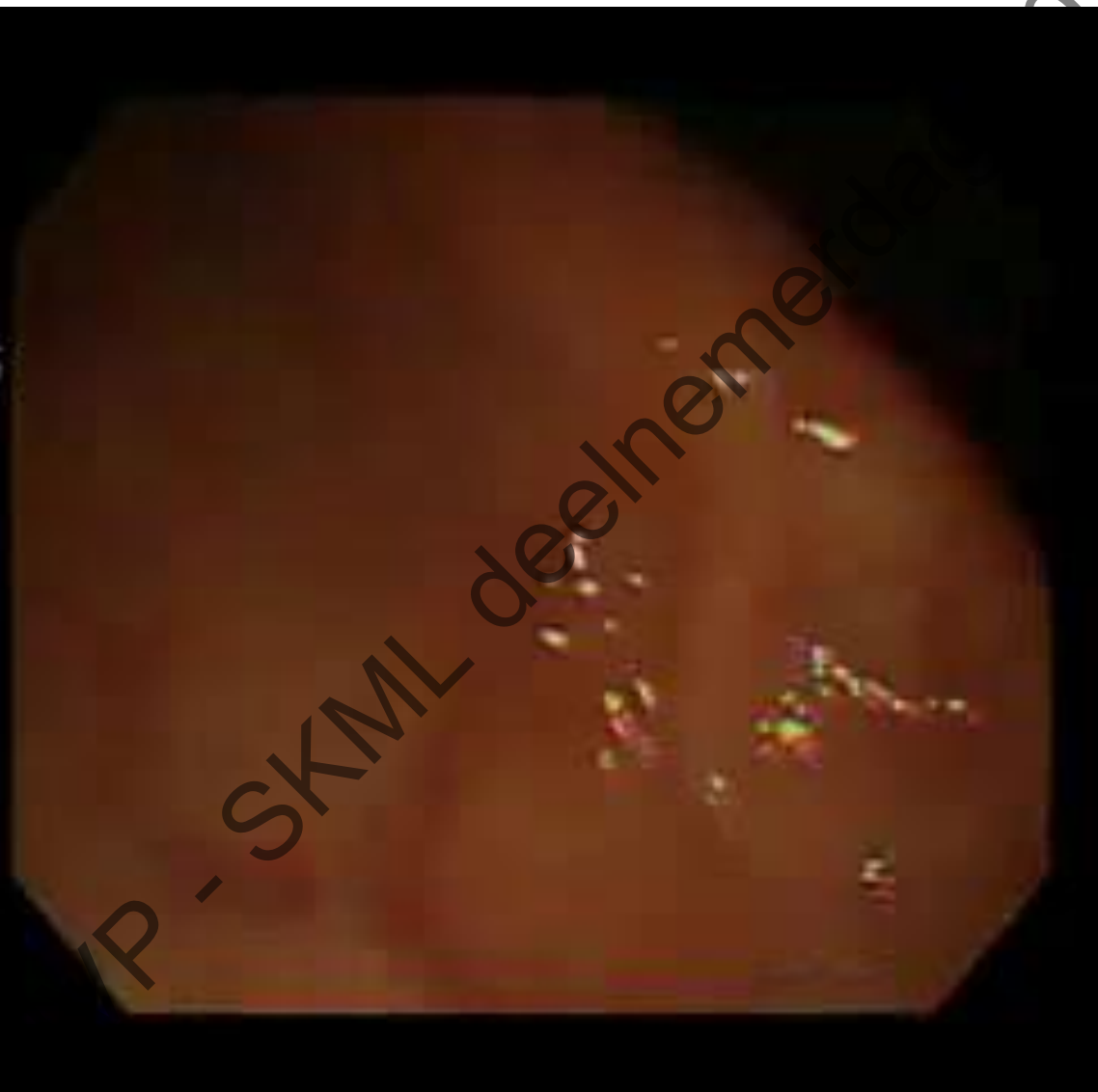
Score juiste antwoord (100%)

Feces rondzendingen SKML – *Ascaris sp.*

C
AUR
JS
F 60

09/30/2005
10:39:32

SCV-79
CVP-A3/4



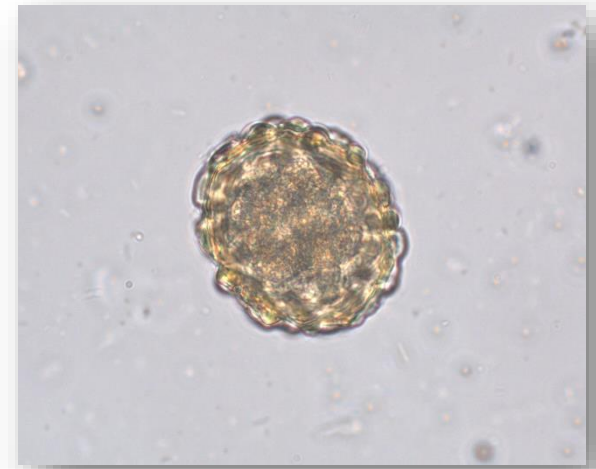
Feces rondzendingen SKML – *Ascaris sp.*



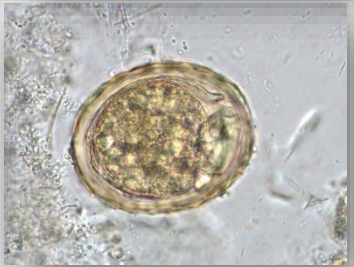
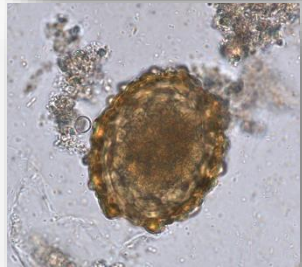
Wormen makkelijk maar eieren soms verraderlijk !

Bekende eieren maar :

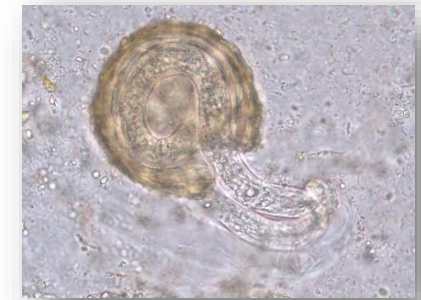
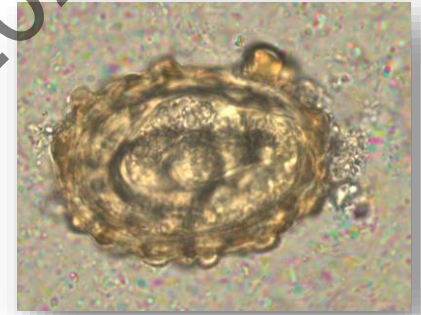
- Veel verschillende verschijnings vormen
- Dunne of dikke eiwitmantel (worm/gastheer)
- Kleur donkerbruin naar kleurloos (door galkleurstoffen)
- Kapotte eieren (druk niet te hard op het dek glasje)
- Bijna niet herkenbare eieren
- Larve in ei ? – kan niet , alleen na heel lang staan



Feces rondzendingen SKML – *Ascaris sp.*



Bevruchte
eieren
65 x 45 µm



Feces rondzendingen SKML – *Ascaris sp.*

Onbevruichte eieren

90 x 45 µm



Feces rondzendingen SKML – *Ascaris sp.*

Verschil met artefacten (stuifmeelkorrels) en andere eieren (als er geen eiwitmantel aanwezig is)

- Wand
- Afmeting
- Vorm



Bevruchte *Ascaris*
(65x46)



Enterobius vermicularis
(55x26)



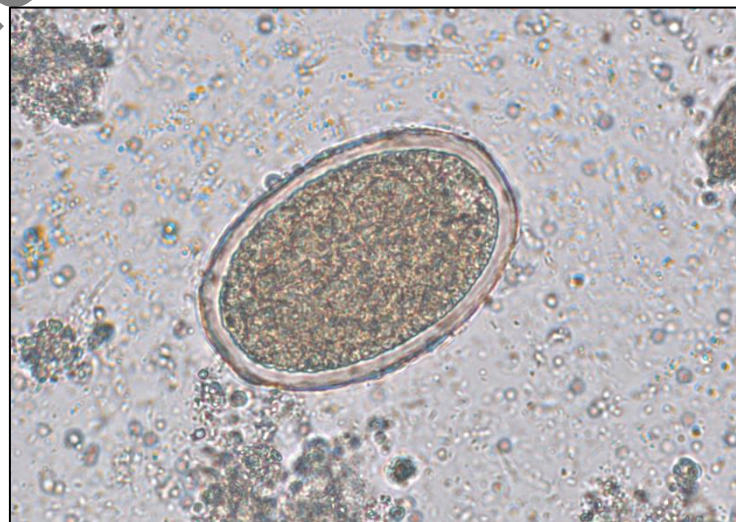
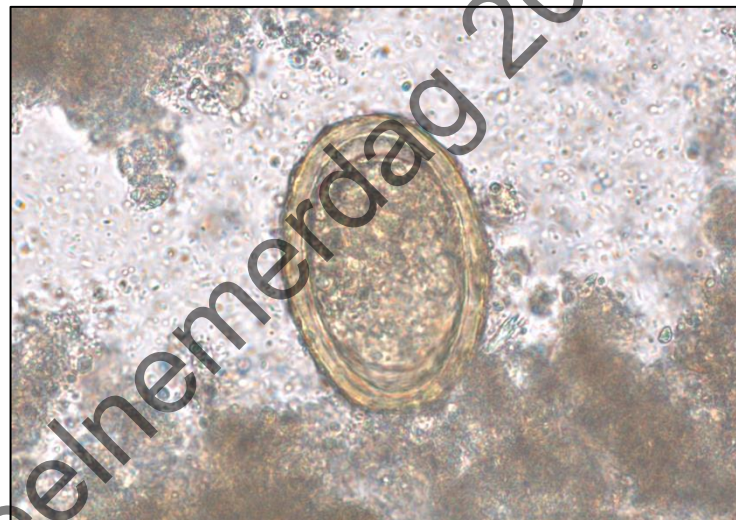
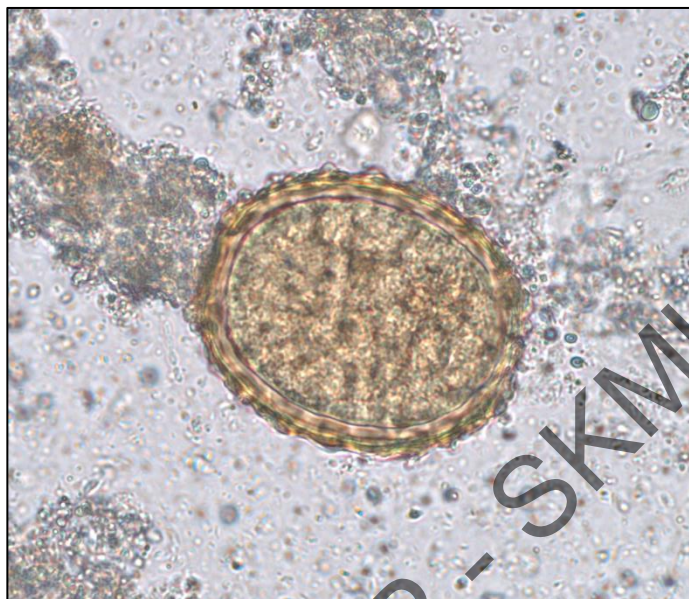
Mijnworm
(65x40)

Feces rondzendingen SKML – *Ascaris sp.*

2021.3 A

Trichuris trichiura

+ *Ascaris sp.*

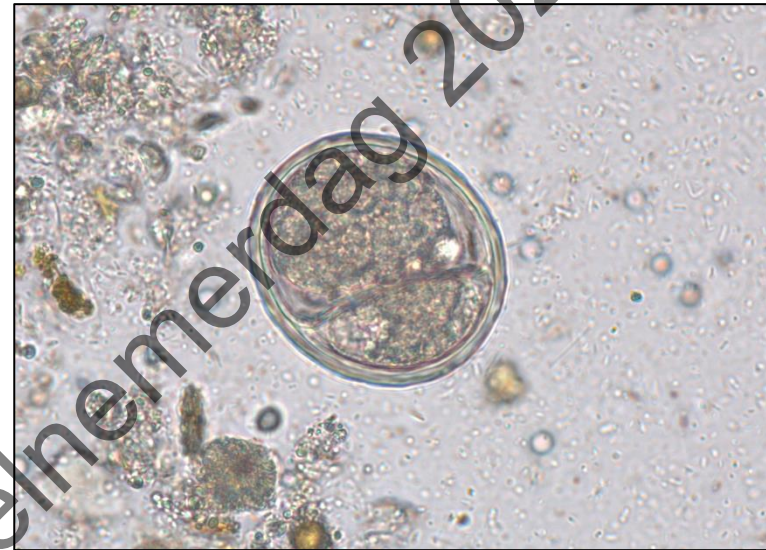
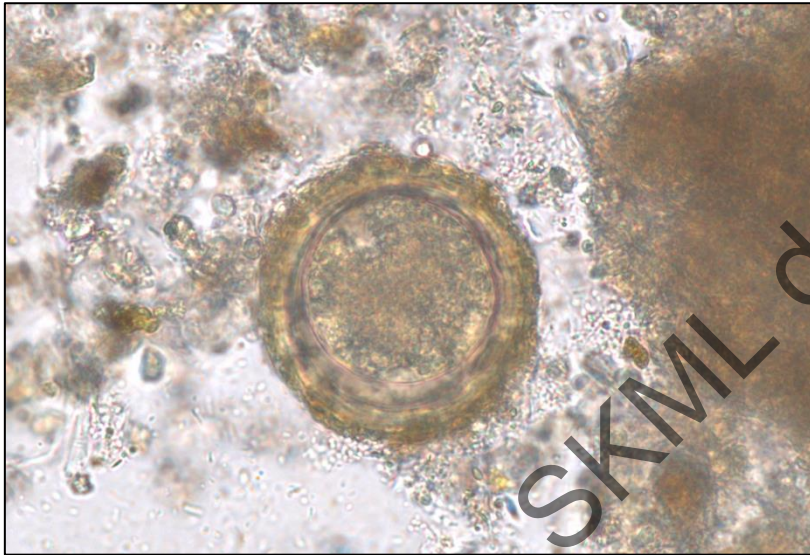


Feces rondzendingen SKML – *Ascaris sp.*

2021.4 A

Giardia lamblia

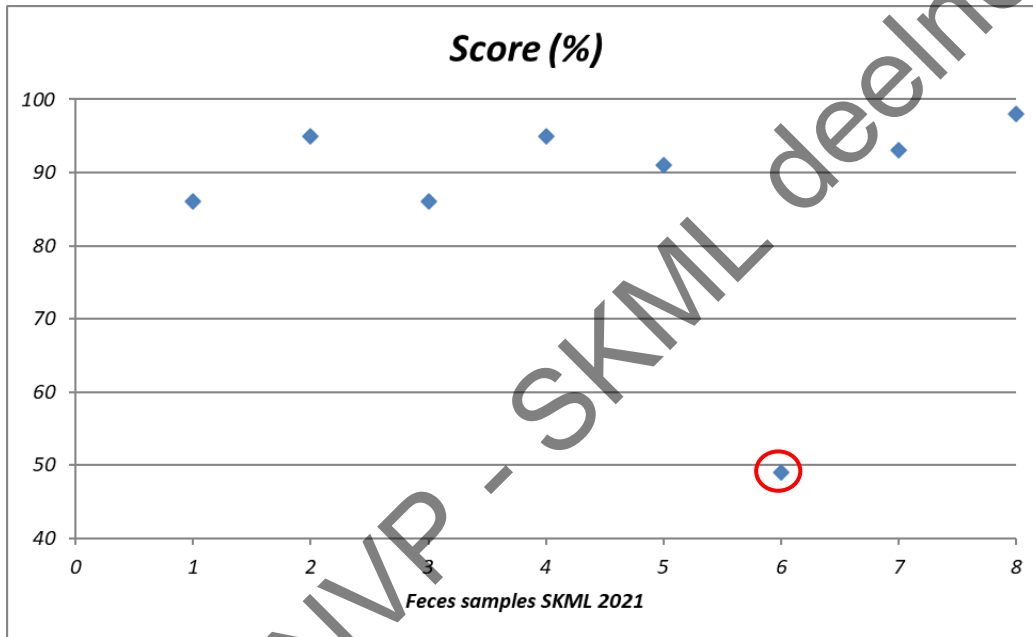
+ sporadisch *Ascaris sp.*



Feces rondzendingen SKML 2021

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4 x Protozoa
4 x Wormeieren / Larven



Balantidium coli

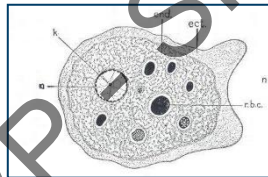
Feces rondzendingen SKML – *Balantidium coli*

Even ter herinnering
→ Darmprotozoa

Darmprotozoa
(1 celligen)

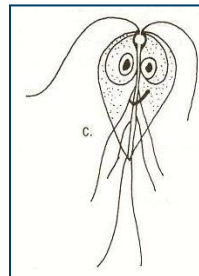
Amoeben

Langzame
beweging met
pseudopodien



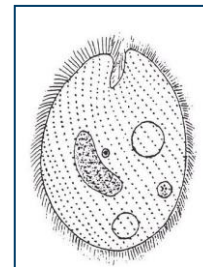
Flagellaten

Springerige
beweging met
flagellen



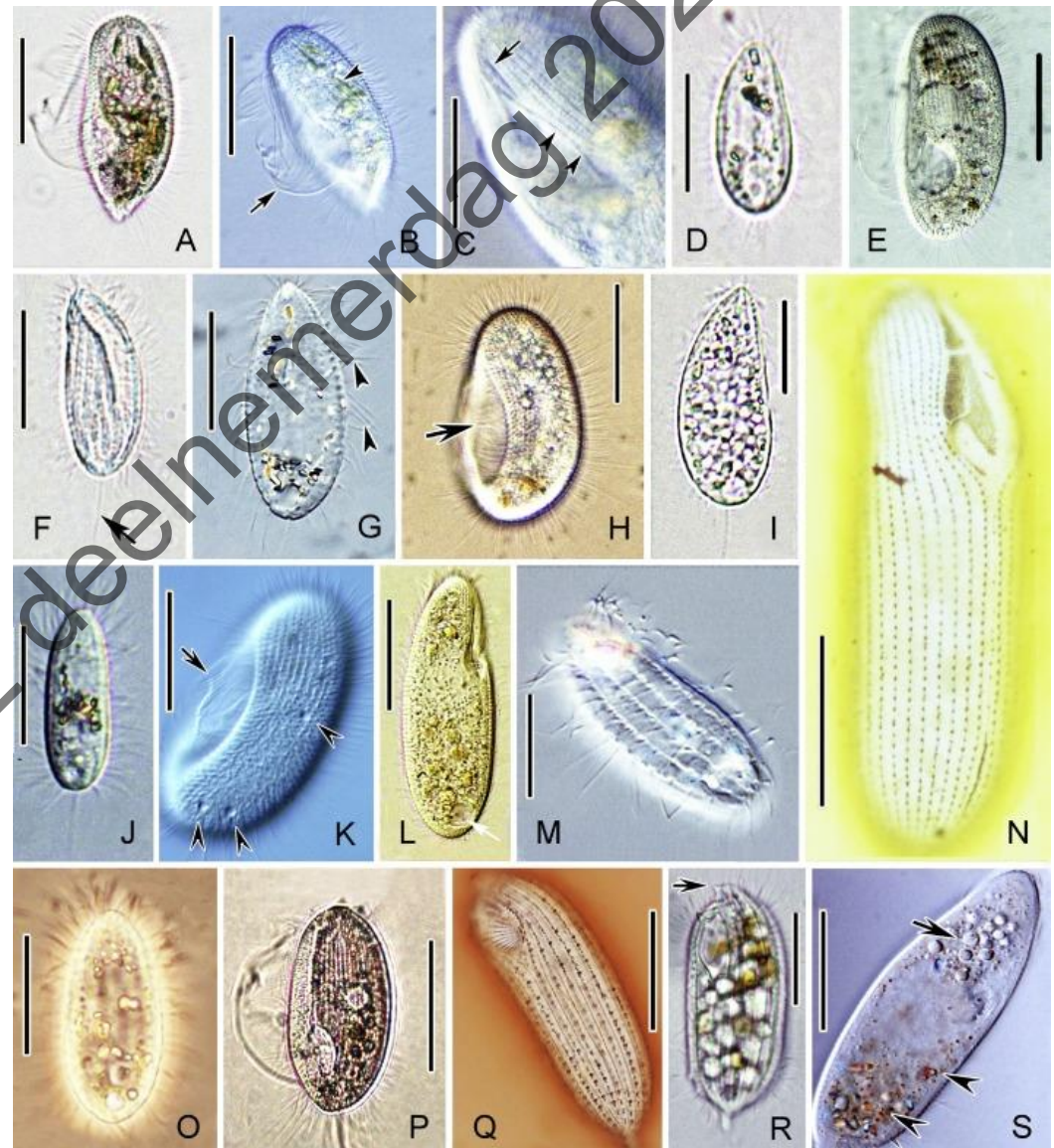
Cilliaten

Rondtollende
beweging met
trilharen



Feces rondzendingen SKML – *Balantidium coli*

Vrijlevende ciliaten
zijn er genoeg !
(vooral in water)



Diversity of free-living marine ciliates (Alveolata, Ciliophora): Faunal studies in coastal waters of China during the years 2011–2016

Weiwei Liu^{a, b, 1}, Jiamei Jiang^{a, c, h, 1}, Yuan Xu^{a, d, 1}, Xiuming Fan^{a, e, 1}, Zhishuai Qu^{a, 1}, Xiaotian Luo^{a, 1}, Hamed A. El-Serehy^f, Alan Warren^g, Honggang Ma^{a, g, h}, Hongshu Pan^{a, c, g, h}

Feces rondzendingen SKML – *Balantidium coli*



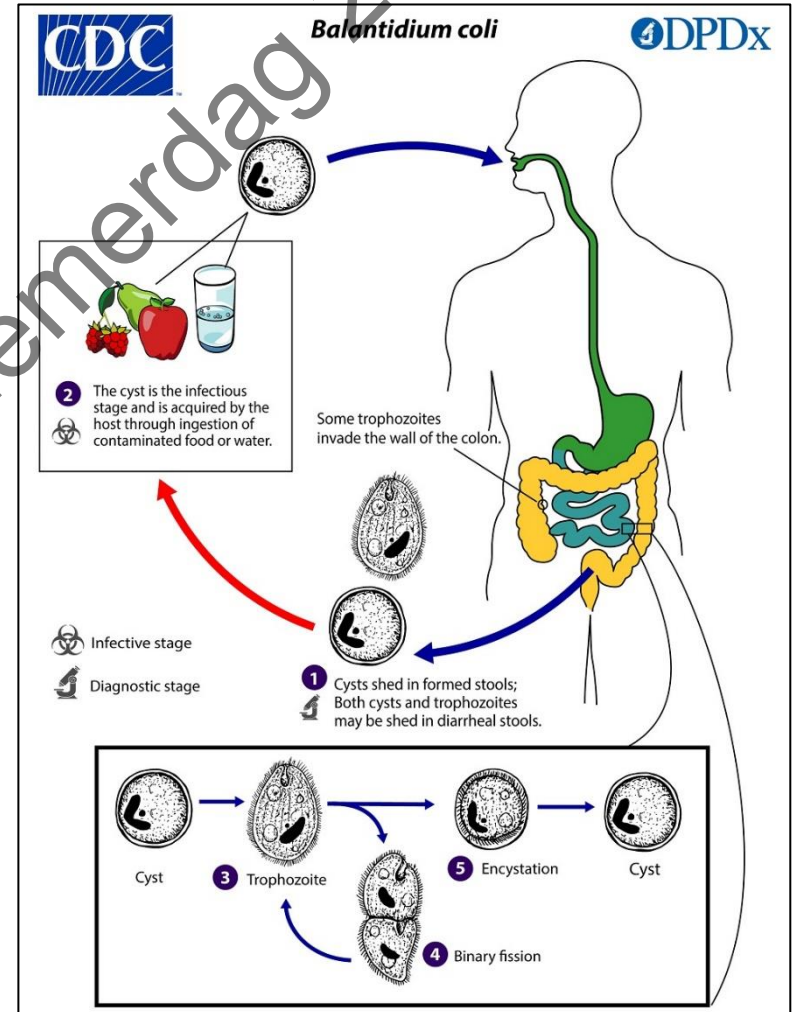
NVP - SKML deelnemersdag 2022

Feces rondzendingen SKML – *Balantidium coli*

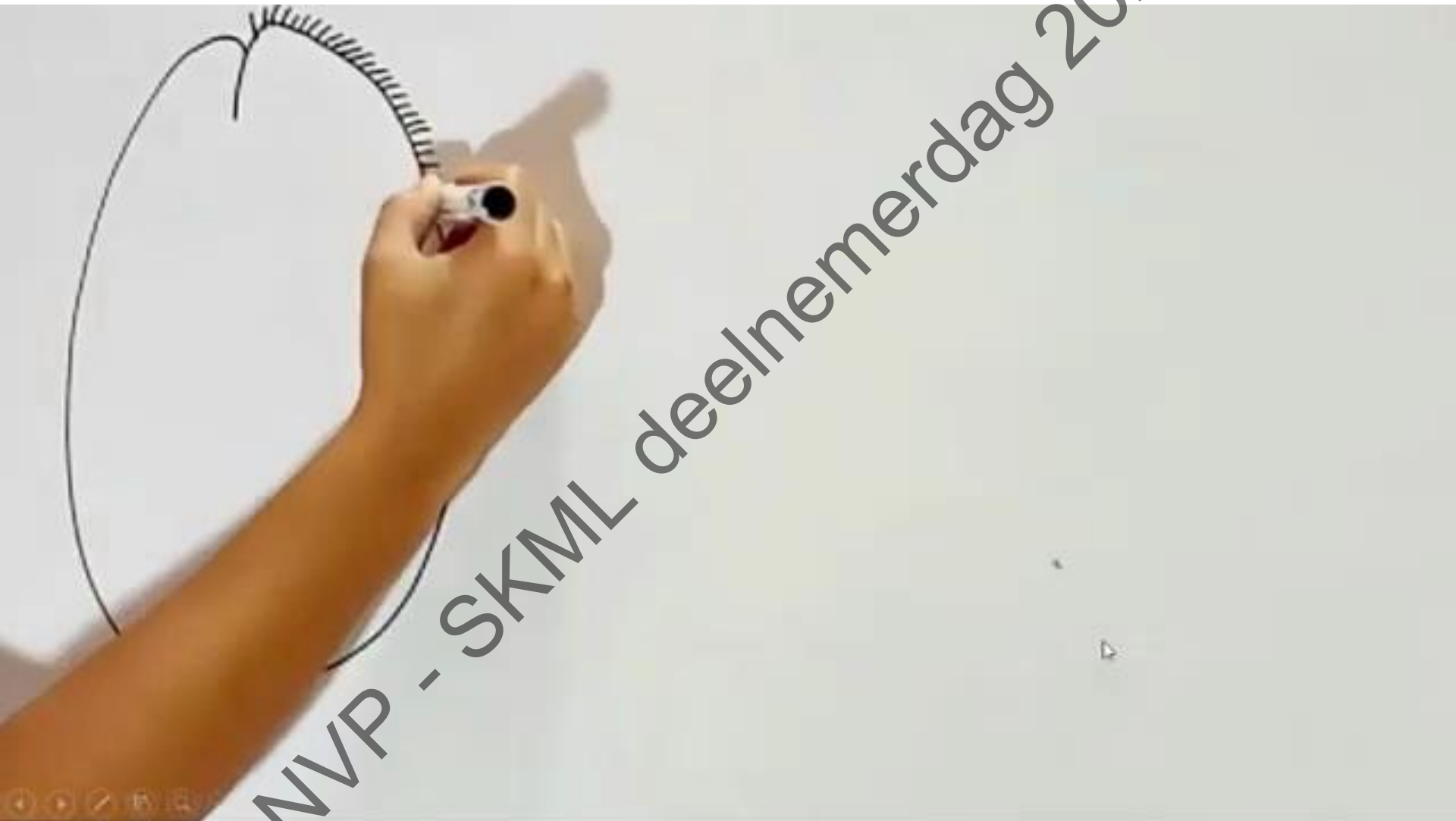


PARASITOLOGIA_Marielys Betancourt-YT

- Varkens maar ook andere dieren
- Cysten en trofozoieten
- Komt wereldwijd voor
- Humane infectie zeldzaam
- Zeer groot – daarom vaak gemist

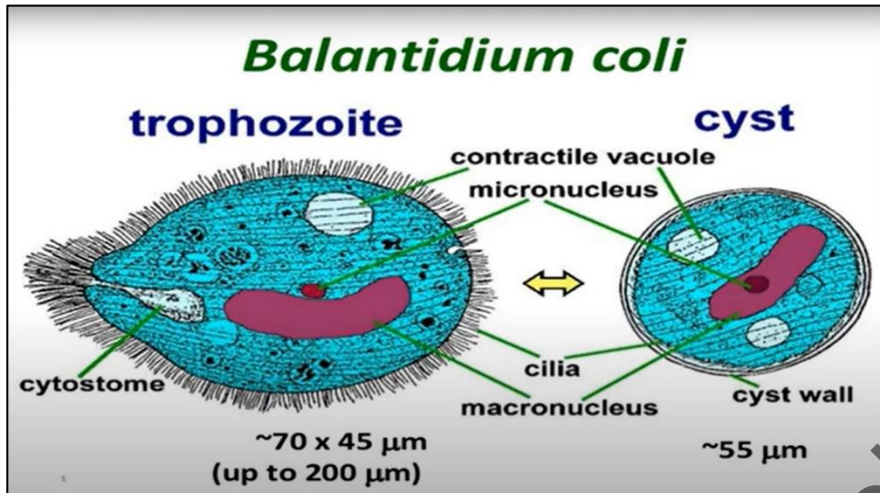


Feces rondzendingen SKML – *Balantidium coli*



NVP - SKML deelnemersdag 2022

Feces rondzendingen SKML – *Balantidium coli*



Waarom wordt het gemist

- Zeldzaam
- Onbekend
- Vorm / ciliaat
- Afmeting

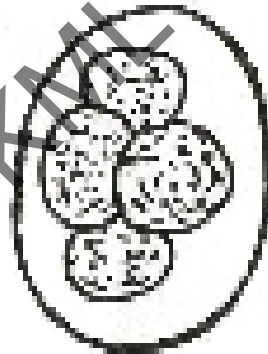
Balantidium_Haifa Mahmood



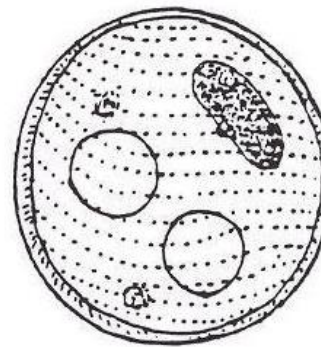
Entamoeba cyste
12,5 µm



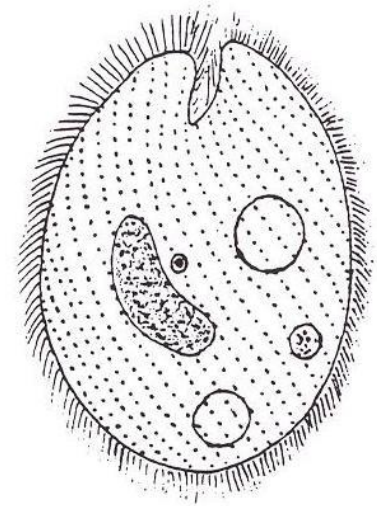
Giardia cyste
12 µm



Mijworm ei
65 µm



Balantidium cyste
40-70 µm



Balantidium trofozoiet
50-200 µm

Feces rondzendingen SKML – *Balantidium coli*

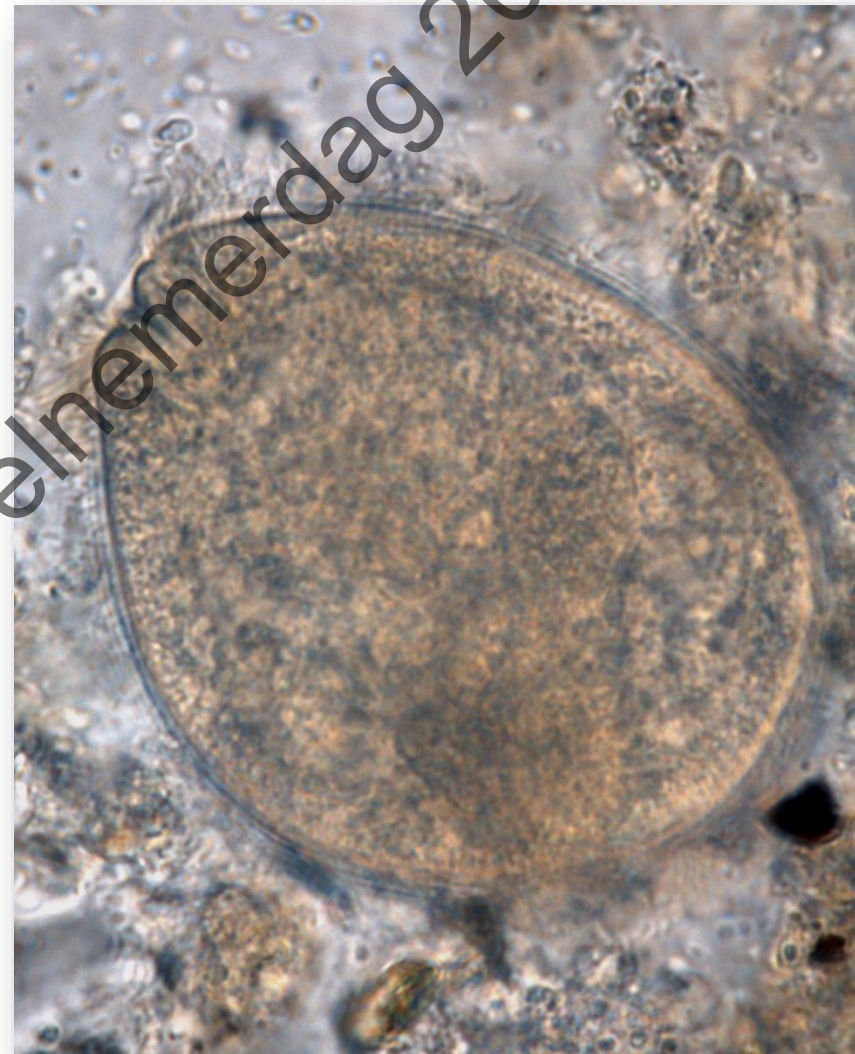
Balantidium coli
Trofozoiet (50-200 µm)



Feces rondzendingen SKML – *Balantidium coli*

Balantidium coli

Trofozoiet



Feces rondzendingen SKML – *Balantidium coli*

Balantidium coli

Cyste (40-70 μm)



Feces rondzendingen SKML – *Balantidium coli*

2021.3 B

Balantidium coli (Trofozoieten en cysten)

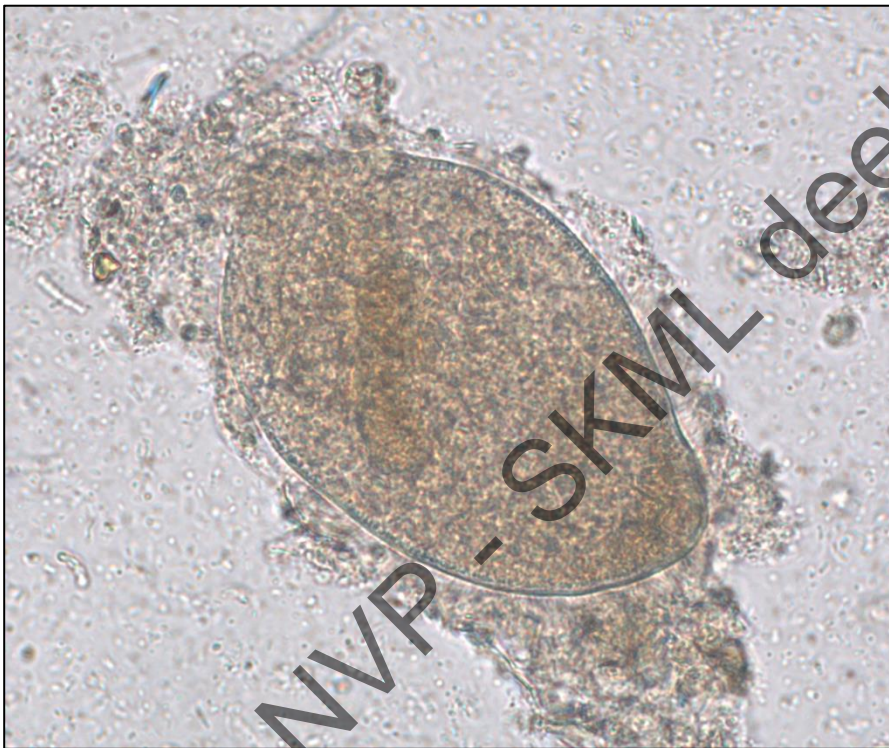
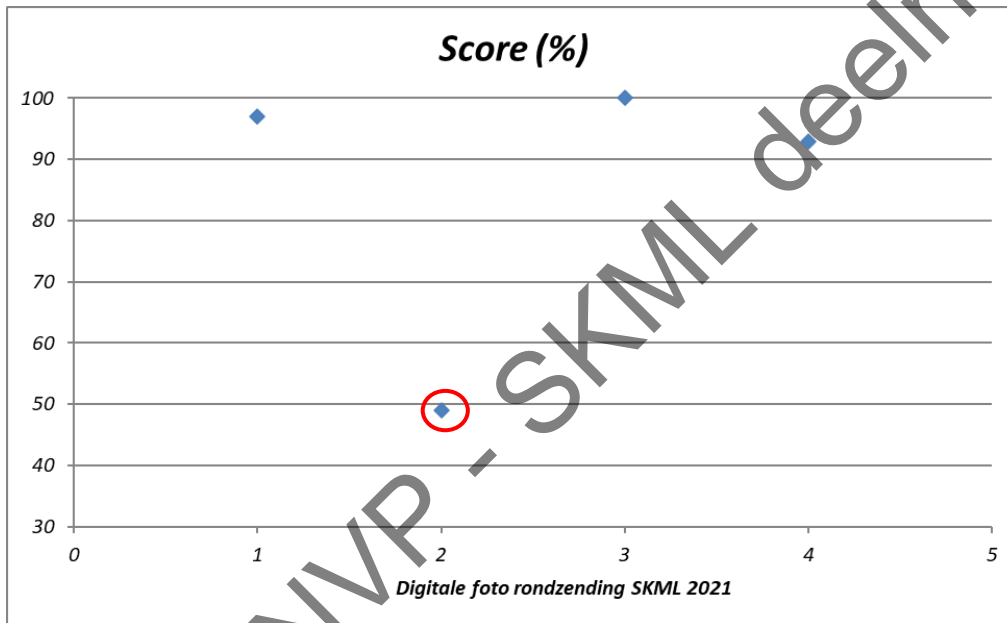


Foto rondzendingen SKML 2021

Steeds vaker digitale casussen voor en nadelen :

- Geen microscopiseer mogelijkheid (1 enkel beeld)
- Wel duidelijk wat er gezien is
- Makkelijk door meerdere mensen, op afstand, te beoordelen.
- Makkelijk beelden op te slaan voor herbeoordeling



2021.1C	<i>Pediculus humanus capitis</i> (Hoofdluis)
2021.2C	<i>Toxoplasma gondii</i>
2021.3C	<i>Ascaris sp.</i>
2021.4C	<i>Ixodes sp.</i> (Harde teek)

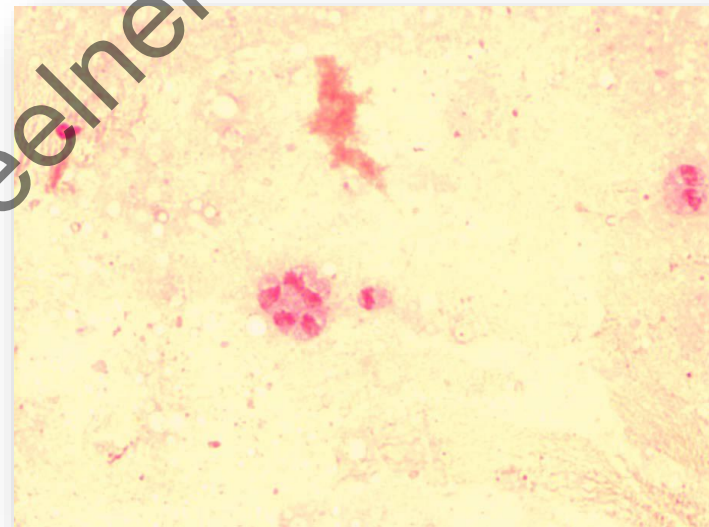
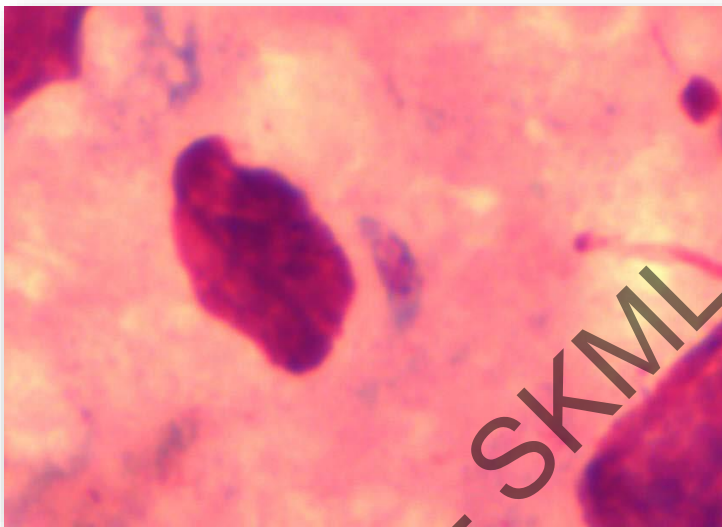
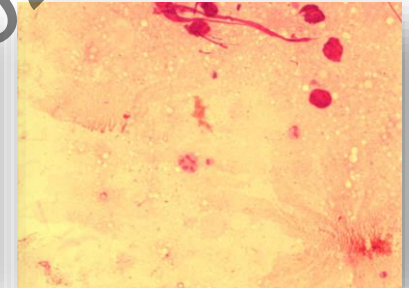
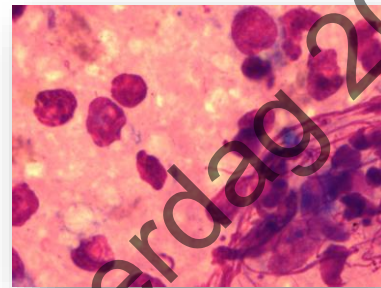
Toxoplasma gondii

Foto rondzendingen SKML 2021 - *Toxoplasma*

2021.2 C

Toxoplasma gondii

Een met Giemsa gekleurde bronchus spoelsel



Een bekende en veel voorkomende parasiet in Nederland maar komen deze morfologisch onder microscoop weinig tegen, dus toch ook weer onbekend !

Foto rondzendingen SKML 2021 – *Toxoplasma*

Vermoedelijk 25-30% of de wereld populatie

- Hoge regionale verschillen
- Trend tot afname prevalentie

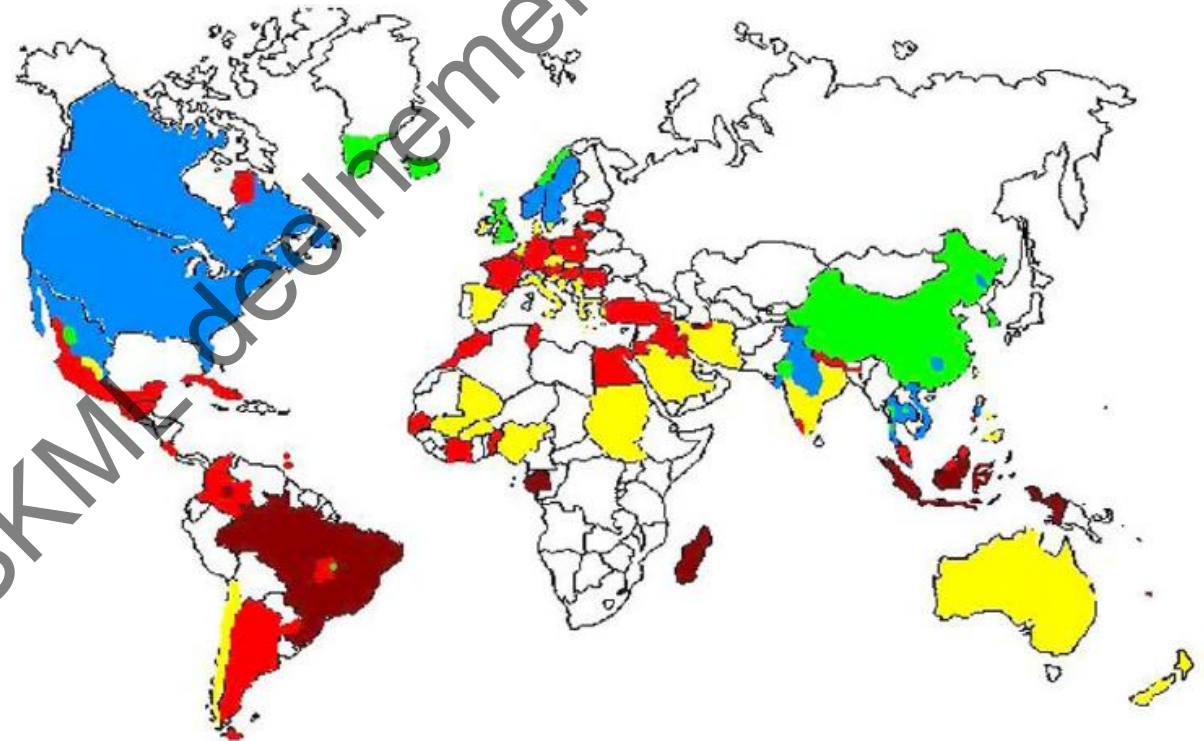
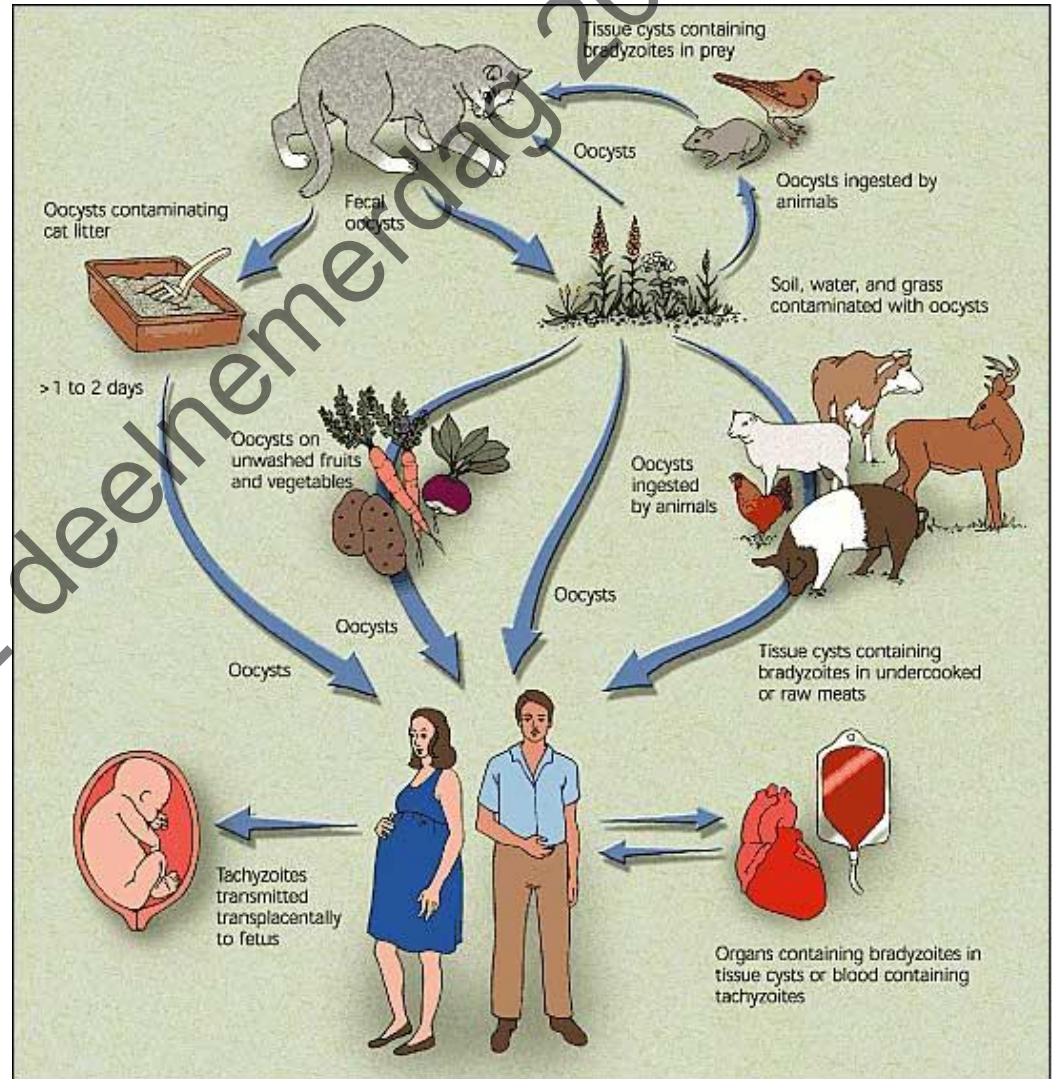
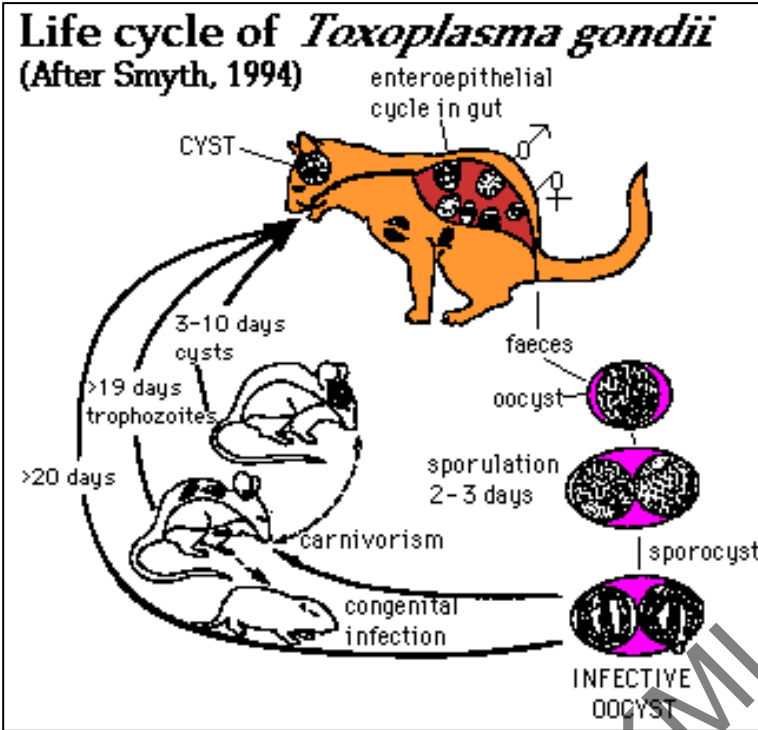


Fig. 1. Global status of *Toxoplasma gondii* seroprevalence. Dark red equals prevalence above 60%, light red equals 40–60%, yellow 20–40%, blue 10–20% and green equals prevalence <10%. White equals absence of data. Data as described in tables and text (Section 3).

Foto rondzendingen SKML 2021 – *Toxoplasma*



NVP - SKML deelnemersdag 2022

© 2003 MARCIA HARTSOCK

Foto rondzendingen SKML 2021 – *Toxoplasma*

- (weefsel) Protozoa
- Apicomplexa (ook coccidien en Plasmodium)
- Zoonosis

Kat = Hoofdgastheer

Mens = Tussengastheer

- Vlees (met cysten)
 - > 3 dagen invriezen
 - > 67 graden verwarmen
- Groenten met oocysten (goed wassen)
- Aantonen infectie :
Serologisch en Moleculair (PCR)

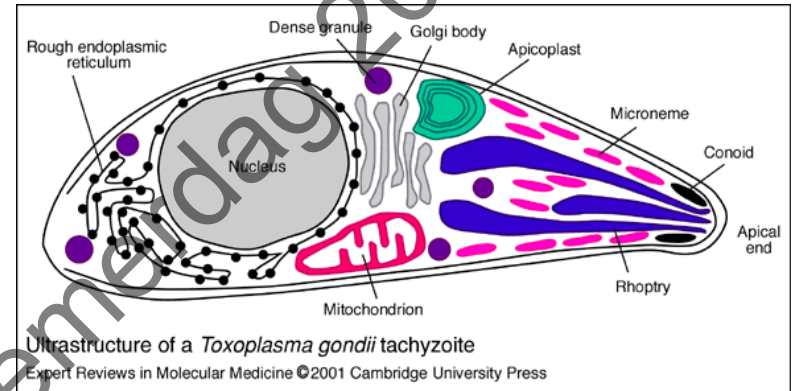


Foto rondzendingen SKML 2021 – *Toxoplasma*

Toxoplasma – Tachyzoieten in bloed
7-9 x 2-3 μm en banaanvormig

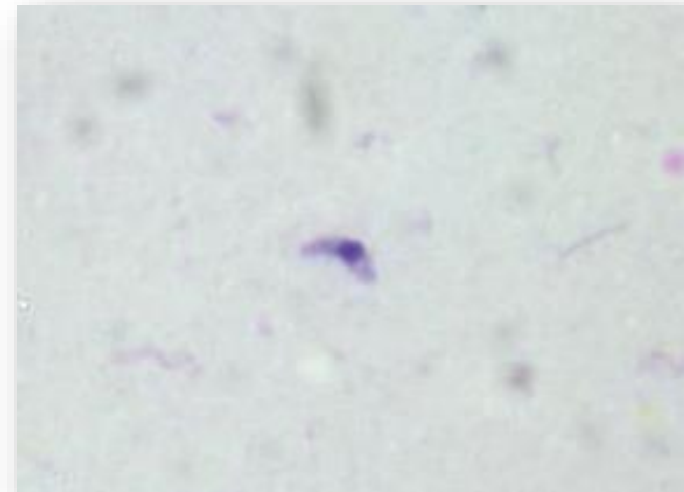
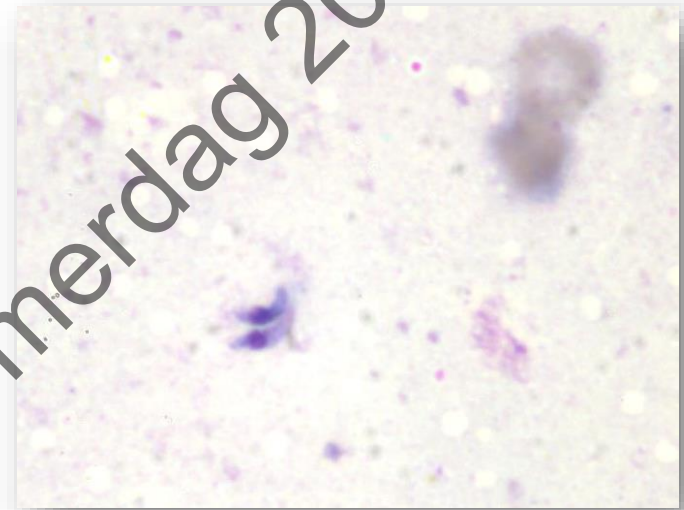
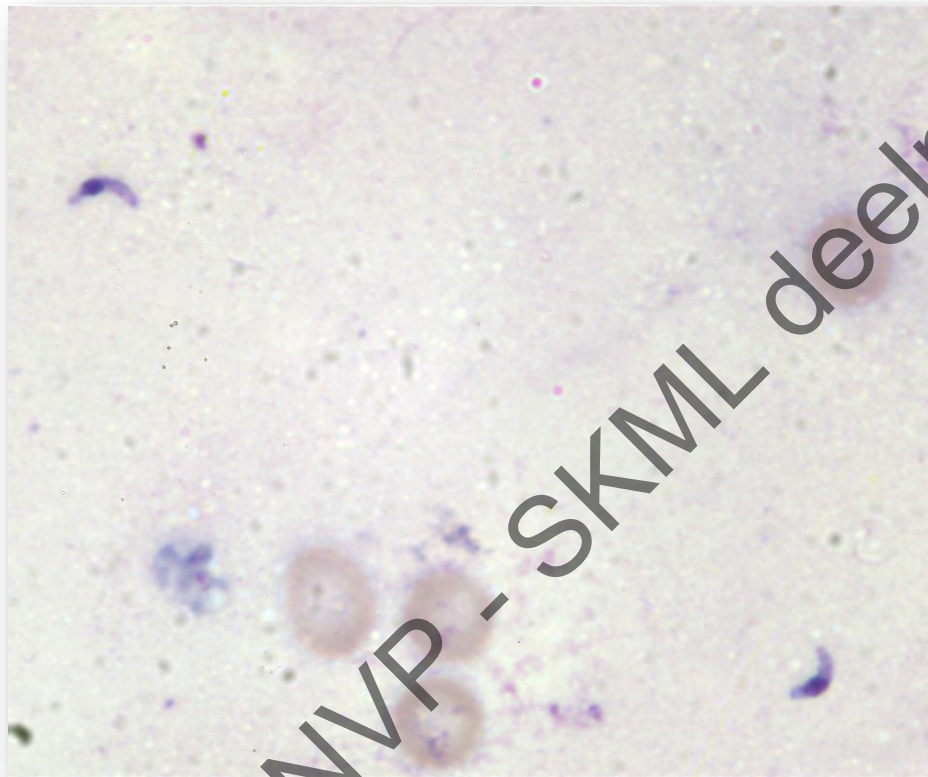
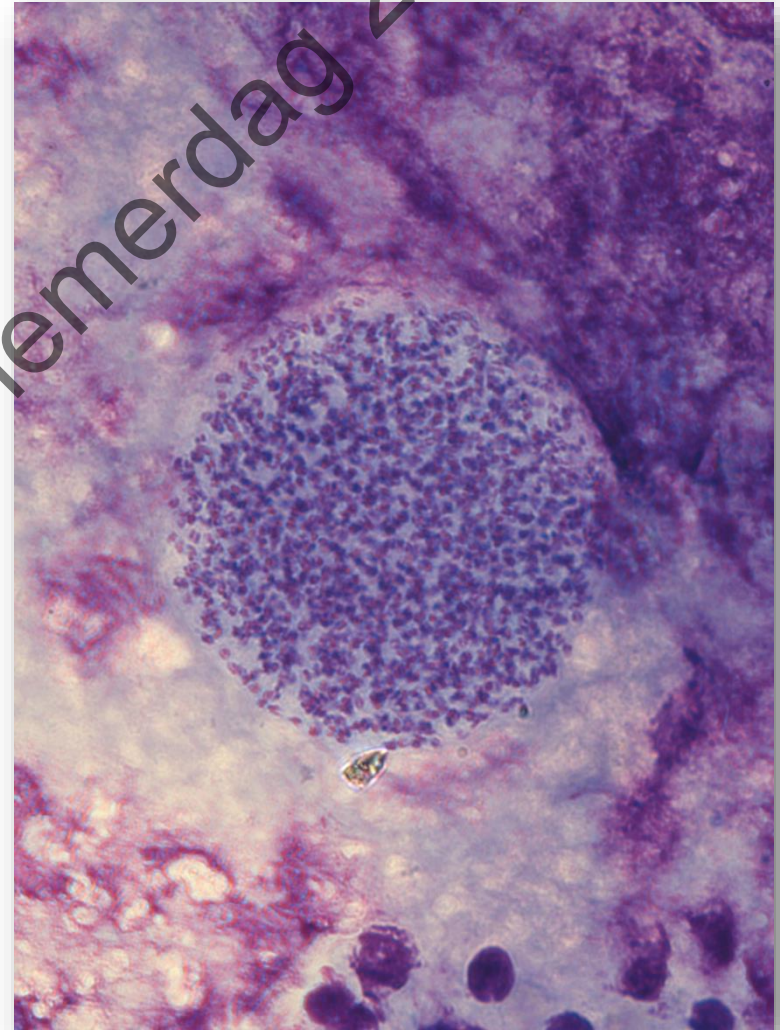
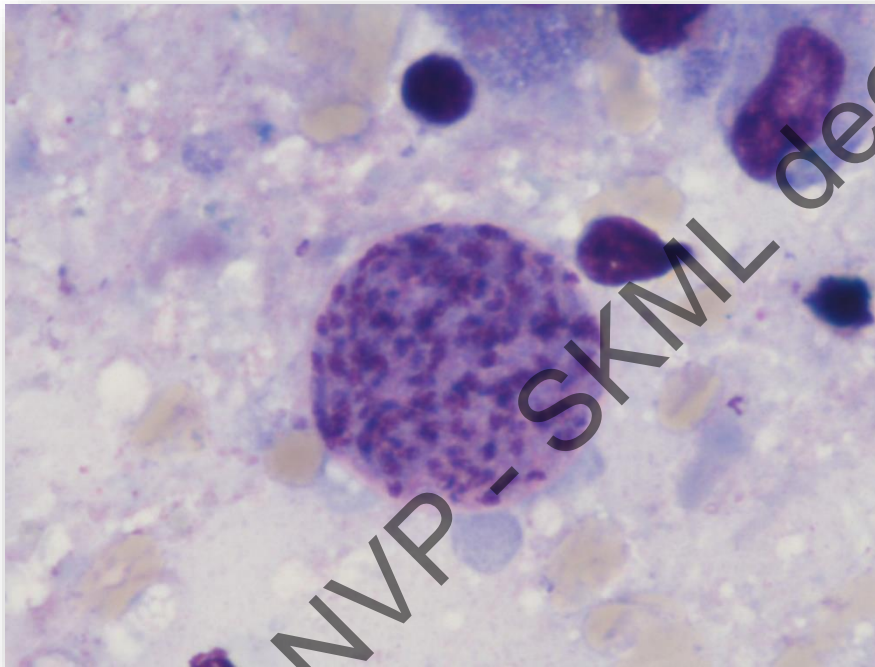


Foto rondzendingen SKML 2021 – *Toxoplasma*

Toxoplasma - Weefsel cysten tot 200 μm gevuld met bradyzoieten



Toxoplasma tachyzoiten in BAL

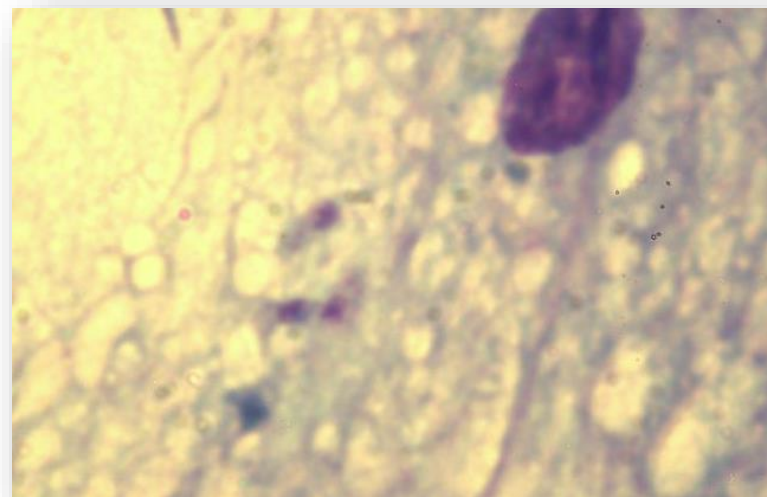
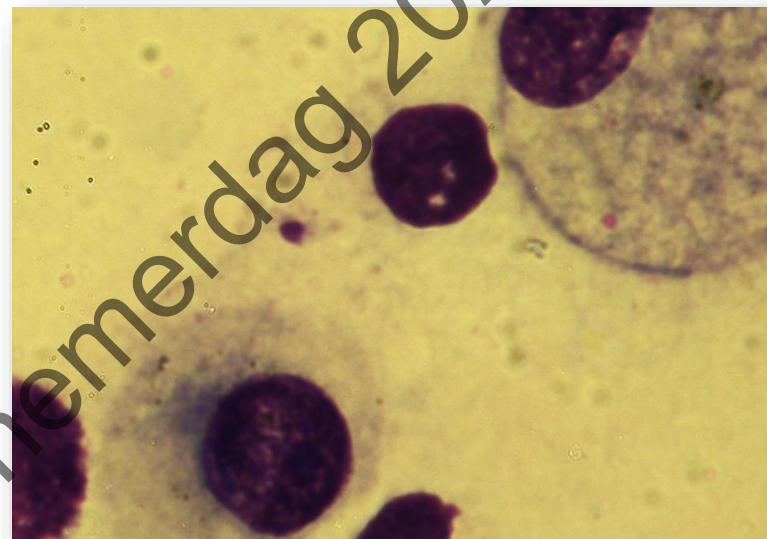
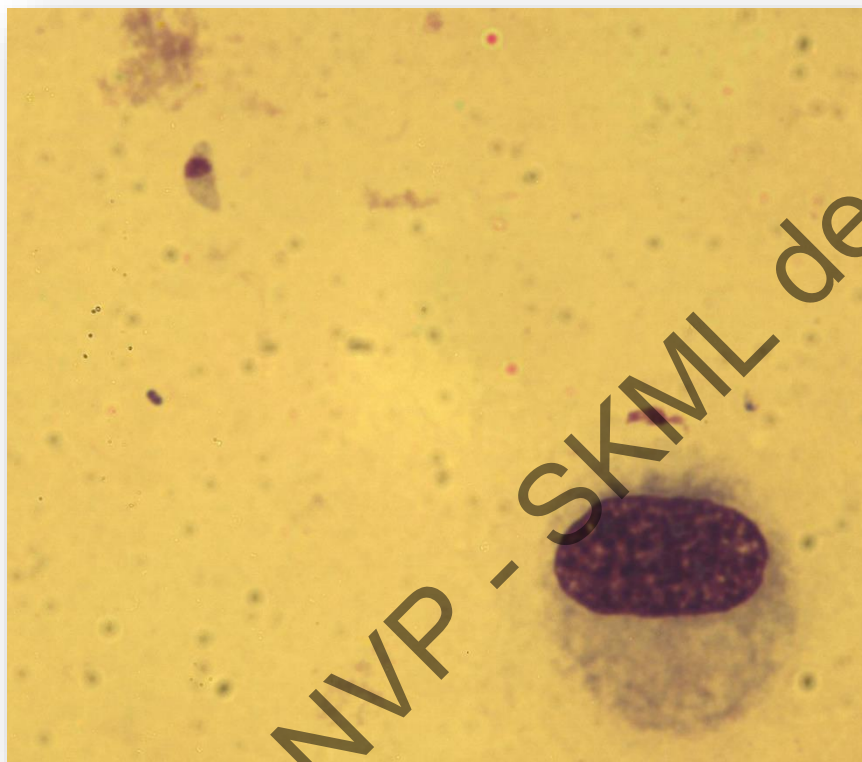
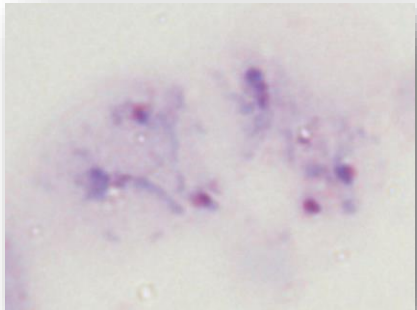


Foto rondzendingen SKML 2021 – *Toxoplasma*

Pneumocysten in BAL

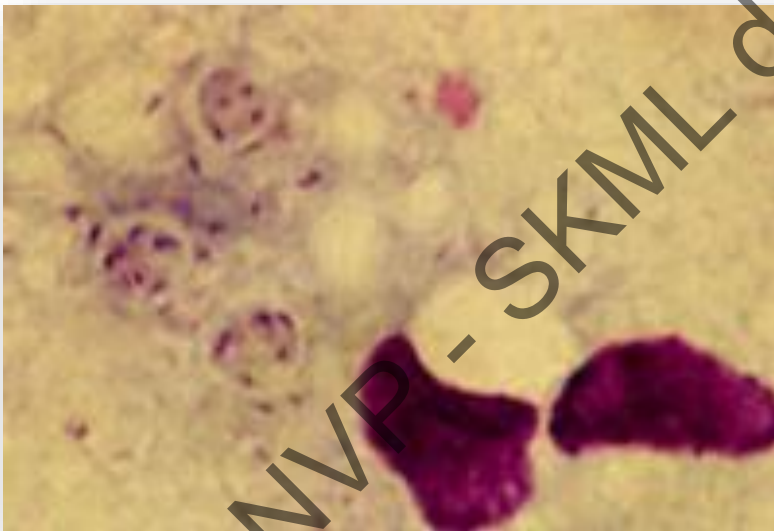


Trofozoiet

- 1 tot 5 μm

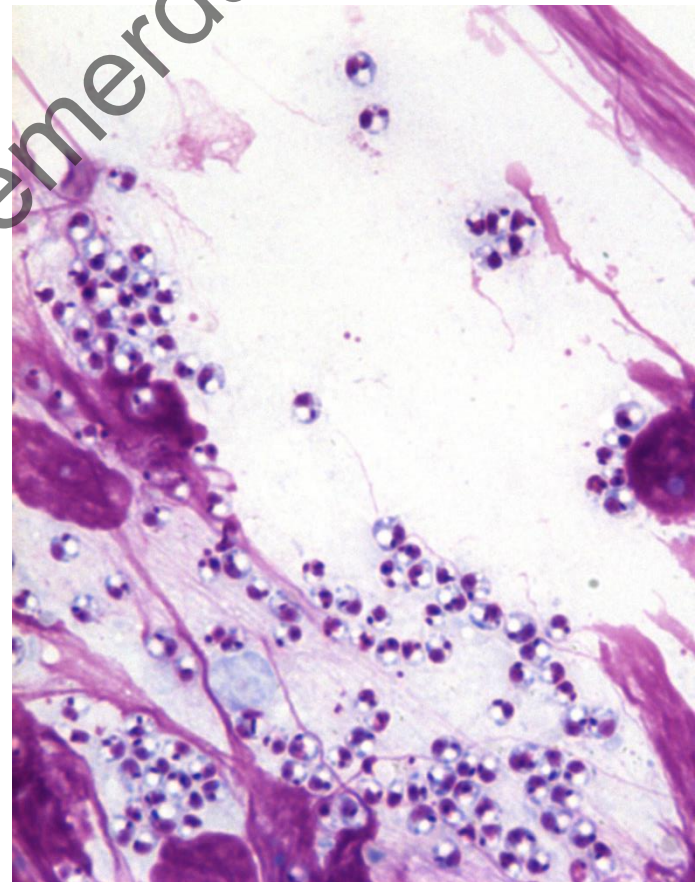
Cyste

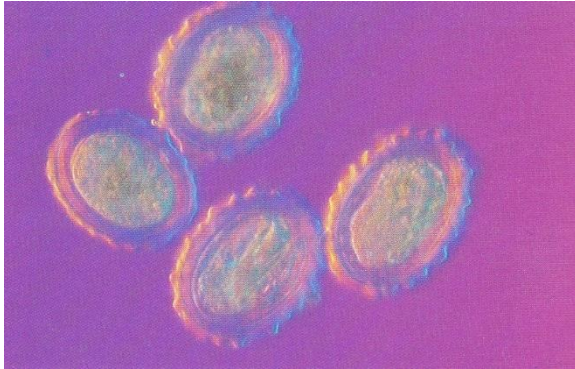
- 5 tot 8 μm



Leishmania sp.

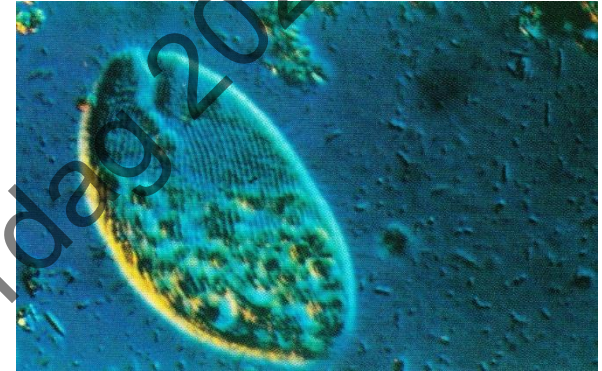
- amastigoten 2 tot 4 μm





Ascaris eieren

Dank !

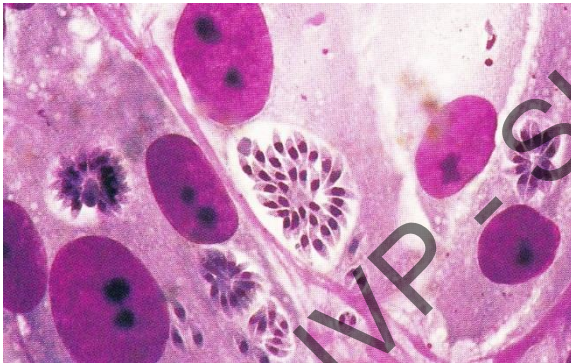


Balantidium trofozoiet



Ascaris eieren

Vragen ?



Toxoplasma tachyzoieten



Toxoplasma weefsel cyste