

Diagnostic keys for helminth eggs (in stool preparations)

	Question/Answers	Go to	Parasite
1	How big is the egg (maximal length)?		
1a	Smaller than 35 μm	2	
1b	35 – 110 μm	3	
1c	Larger than 110 μm	12	
2	The egg has an operculum and the following characteristics		
2a	Egg has a marked shouldering and a broad and round posterior end		Clonorchis sinensis
2b	Egg is more elongated, has no shouldering and has a small terminal knob		Opisthorchis felineus
3	How do the poles of the egg look like?		
3a	The egg has a plug at each pole	4	
3b	The egg has no plug at the poles	5	
4	How is the shape of the plugs?		
4a	The plugs are clearly protruding		Trichuris trichiura
4b	The plugs are less prominent, shell is striated		Capillaria ssp.
5	Does the egg have an operculum?		
5a	An operculum is present (needs careful observations!)	6	
5b	The egg has no operculum	7	
6	What is the size of the egg and what is the shape of the operculum?		
6a	Egg is small (approx. 40 μm) round oval, flattened operculum, no shoulder, embryonated eggs brown, unembryonated eggs light yellow (Be aware that eggs can be temporarily found after a meal; parasitized liver!)		Dicrocoelium dendriticum
6b	Egg has medium size (approx. 60 -70 μm), operculum oval, golden yellow egg not embryonated, sometimes a small knob at the abopercular end		Diphyllbothrium latum
6c	Egg is rather big (approx. 70-110 μm) oval, flattened operculum, golden brown egg is not embryonated (eggs mainly found in the sputum) (For the differential diagnosis of Paragonimus eggs a specialist is needed)		Paragonimus spp.
7	How does the egg-shell look like?		
7a	Shell is thin and smooth	8	
7b	Shell is thick	9	

8	What is the developmental stage of the egg?		
8a	Egg with miracidium, minute lateral spine (often not visible)		<i>S. japonicum</i> (or <i>S. mekongi</i>)
8b	Round oval egg with 2-8 blastomers (in freshly fixed stool)		Hookworm (<i>Ancylostoma duodenale</i> or <i>Necator americanus</i>)
8c	Elongated oval egg with more than 8 blastomers		<i>Trichostrongylus</i> spp.
9	What is the aspect of the thick shell?		
9a	Thick shell has a rough surface (fertilized eggs are broadly oval, unfertilized eggs elongated oval, longer than fertilized eggs)		<i>Ascaris lumbricoides</i>
9b	Thick shell is smooth	10	
10	What is the shape of the egg?		
10a	Egg is asymmetrical (one side convex, one side flattened)		<i>Enterobius vermicularis</i>
10b	Egg is round	11	
10c	Egg is oval (Fertilized and unfertilized eggs without a rough shell can sometimes be found)		<i>Ascaris lumbricoides</i>
11	Which characteristics can be seen?		
11a	Egg has a pale yellow to brown embryophore and a striated shell		<i>Taenia</i> spp. (<i>T. solium</i> or <i>T. saginata</i>)
11b	Egg has no embryophore but polar filaments, and is colourless		<i>Hymenolepis nana</i>
11c	Egg has no embryophore and no polar filaments and is pale yellow brown		<i>Hymenolepis diminuta</i>
12	Does the egg have an operculum (may be difficult to see)?		
12a	Operculum present; Egg is really big (125 -145 µm!) with a thin shell		<i>Fasciola hepatica</i> or <i>Fasciolopsis buski</i>
12b	No operculum; Egg has a spine	13	
13	Where is the spine located?		
13a	Spine is lateral		<i>Schistosoma mansoni</i>
13b	Spine is terminal, anterior end of egg rounded (eggs mainly in urine, rarely found in stool)		<i>Schistosoma haematobium</i>
13c	Spine is terminal, anterior end of egg tapered (gives "hour-glass shape" aspect)		<i>Schistosoma intercalatum</i>