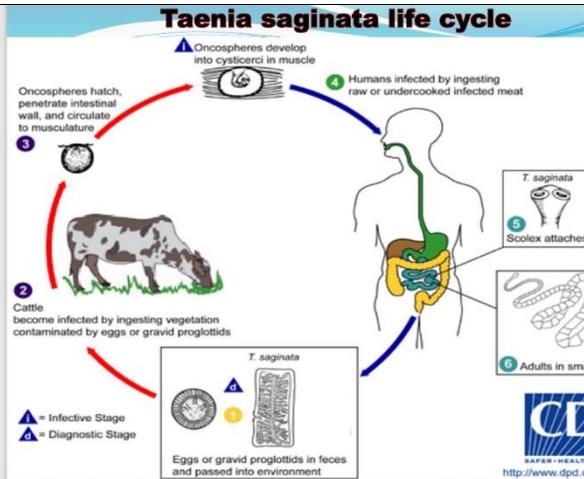
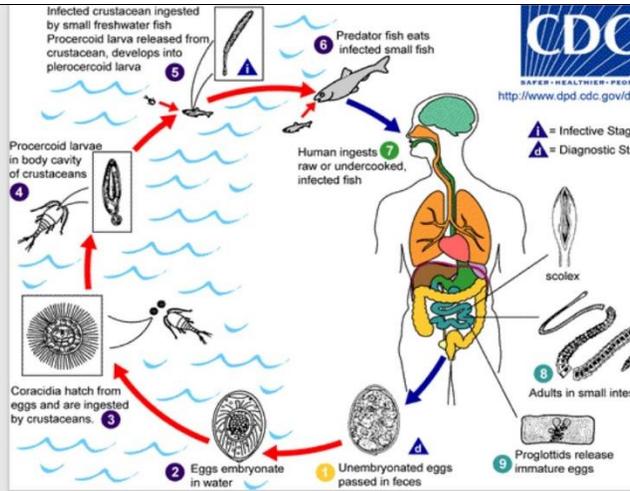


From where	1)Diphyllobothrium latum (broad tapeworm , fish tapeworm)	2) taenia saginata (beef tapeworm, bald tapeworm)	3) taenia solium (pork tapeworm)
Geographical distribution	Lake regions in Europe, America, Russia, Japan and Central Africa.	Cosmopolitan, especially in cattle-raising countries.	-Pork-eating countries e.g. America, Europe.
Habitat	Small intestine	Small intestine.	Small intestine.
D.H	Man and fish eating animals e.g. dogs and cats.	Man	Man
I.H	<ul style="list-style-type: none"> • 1st : Cyclops. • 2nd : Fresh water fish (Salmon). 	Herbivorous animals (cattle, sheep and camels).	Pigs and occasionally man.
Morphology	<p>Adult :-</p> <ul style="list-style-type: none"> ♥ Size : 3 - 10 meters. ♥ Scolex : Elongated, almond like with two grooves (bothria), one dorsal & one ventral. ♥ Strobila : More than 3000 segments: a- Immature segments b- Mature segments c- Gravid segments: Not present. 	<p>Adult :-</p> <ul style="list-style-type: none"> ♥ Size : 4-10 meters. ♥ Scolex : Globular, with 4 cup shaped suckers at the angles of the head. No rostellum or hooks. ♥ Strobila: 1000 - 2000 segments. <ul style="list-style-type: none"> ➤ Immature segments. ➤ Mature segments: <ul style="list-style-type: none"> • Squarish in shape • Contains male & female genital systems ➤ Gravid segments: <ul style="list-style-type: none"> • Longer than broad • Uterus with 15 - 30 (18) lateral branches on each side • Full of eggs. • Detached singly out of the anus(with feces). 	<p>Adult :-</p> <ul style="list-style-type: none"> ♥ Size: 4-6 meters. ♥ Scolex :- <ul style="list-style-type: none"> - Globular. - 4 cup shaped suckers. - Rostellum with 2 rows of taenoid hooks (short handle, guard & long blade) ♥ Strobila : About 1000 segments:- <ul style="list-style-type: none"> • Immature segments. • Mature segments : • Similar to T. saginata except :- *Smaller. *Testes Fewer. *Ovary : Trilobed. • Gravid segments :Similar to T. saginata except:- 1 - Smaller. 2 - Uterus: About 9 lateral branches on each side. 3 - Segments detach in groups. • Egg (D.S) & (I.S for pigs & man): Similar to T. saginata but highly infected to human.

			- immature form: <i>Cysticercus cellulosus</i> (I.S): Similar to <i>cysticercus bovis</i> , but detected in pork and the invaginated scolex carries 4 suckers, rostellum and hooks.
Pathogenesis and Symptomatology	<p>Disease: Diphyllbothriasis.</p> <ol style="list-style-type: none"> 1. General toxic manifestations and intestinal disturbances in the form of nausea, vomiting, hunger pain, dyspepsia, diarrhea & loss of weight. 2. Manifestations pernicious anaemia due to consumption of vit.B12 and folic acid by the parasite. 3. Intestinal obstruction by large number of worms. 4. Neurological manifestations are common (headache, insomnia & convulsions) 	<p>Mode of Infection:-</p> <ul style="list-style-type: none"> ✚ Man infected by eating beef either raw or improperly cooked e.g. steaks, hamburgers or grilled (kabab) containing viable <i>cysticercus bovis</i>. Pathogenesis and Symptomatology <p>Disease: <i>Taeniasis saginata</i></p> <ol style="list-style-type: none"> 1. Intestinal disturbance e.g. nausea, vomiting, hunger pains, colic, diarrhea or constipation. 2. Toxic manifestations: Due to worm products e.g. dizziness, headache, insomnia & delirium. 3. Intestinal obstruction. 4. Loss of weight. 5. Anxiety and nervousness due to continued migration of G. segments out of the anus ⇐ irritation & itching. 	<ul style="list-style-type: none"> ❖ <i>Taeniasis solium</i>: Due to ingestion of undercooked pork containing <i>cysticercus cellulosus</i> (the same clinical pictures as <i>taeniasis saginata</i>). ❖ <i>Cysticercosis</i>: It develops when man ingested the <i>T. solium</i> eggs with food or drink or autoinfection ⇐ development of larvae (<i>cysticercus cellulosus</i>) in his tissues (ms, brain, eye, subcutaneous tissues). <p>Symptomatology of <i>cysticercosis</i>: Symptoms depends on the size of cyst, number & site affected:</p> <ul style="list-style-type: none"> • Muscle: Myositis with fever, muscle swelling ⇐ later, progresses to atrophy and fibrosis. • Brain : Increase of intracranial pressure, epileptic fits and headache. • Eye : Retinal oedema, haemorrhage, decreased vision or even visual loss. • Subcutaneous tissues: Firm, mobile painful nodules mainly on the trunk and extremities.
Laboratory Diagnosis	<ul style="list-style-type: none"> ➤ Direct:- <ol style="list-style-type: none"> 1. Stool examination for detection of eggs (direct and concentration methods). 	<ol style="list-style-type: none"> 1- Detection of eggs by stool examination (direct and concentration methods). 2- Detection of gravid segments in the stool to differentiate between <i>Taenia</i> species. 	<ul style="list-style-type: none"> ➤ Direct methods: <ol style="list-style-type: none"> 1- Biopsy from nodules for detection of larvae. 2- CT and MRI for brain infection.

	<p>2. Finding mature segments in faeces.</p> <p>➤ Indirect: Blood picture for anaemia.</p>		<p>3- X ray for calcified cyst.</p> <p>4- Ophthalmoscope for eye infection.</p> <p>5- Surgical removal for detection of the larvae.</p> <p>6- Stool examination for detection of eggs or gravid segments (only in patients having the adult worm).</p> <p>➤ Indirect methods:</p> <ol style="list-style-type: none"> 1- Serological tests. 2- Eosinophilia.
Treatment	<ol style="list-style-type: none"> 1) Niclosamide. 2) Praziquantel (Biltracide). 3) Atebrine. 4) Vitamin B12 & folic acid for pernicious anaemia. 	<ol style="list-style-type: none"> 1) Niclosamide (Yomesan). 2) Praziquantel (Biltracide). 3) Atebrine. 	<p>Treatment of Cysticercosis:</p> <ol style="list-style-type: none"> 1) Brain cyst: Anticonvulsant and antiparasitic drugs as praziquantel in combination with corticosteroids to reduce inflammatory reaction. 2) Eye cyst: <ul style="list-style-type: none"> ➤ Cyst within the eye ⇐ surgical removal. ➤ Cyst outside eye globe ⇐ antiparasitic drugs with corticosteroids. 3) Subcutaneous cyst: Surgical excision. 4) Vitamin D and calcium to help calcification. <p>Treatment of Taeniasis solium: Anti-cestodal drugs for adult as taeniasis saginata but:</p> <p>1) Niclosamide is contraindicated because it disintegrates the worms, releasing large number of eggs in the intestine which</p>

Life cycle



increase the possibility of cysticercosis (internal autoinfection).

2) Atebrine causes nausea and vomiting. Anti-emetic must be given one hour before administration of Atebrine to avoid antiperistalsis and internal autoinfection.

