

# Laboratory diagnosis of Malaria – handout 2

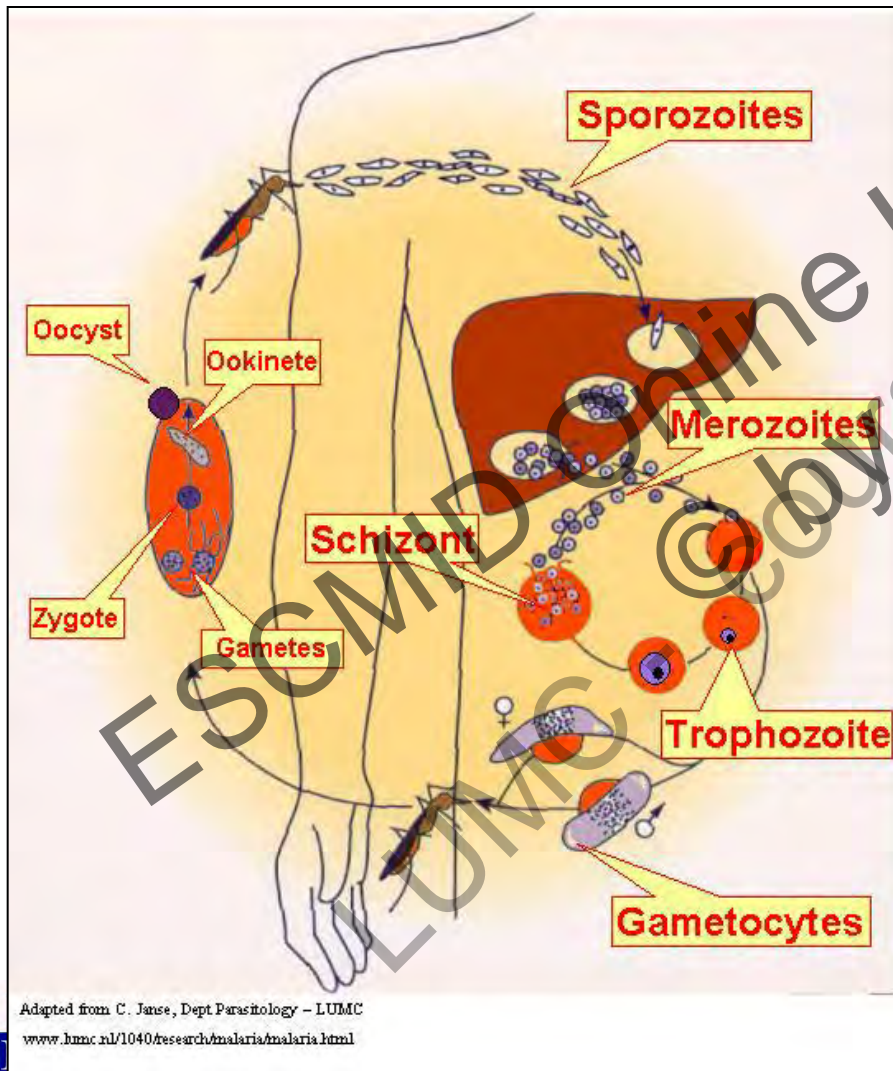
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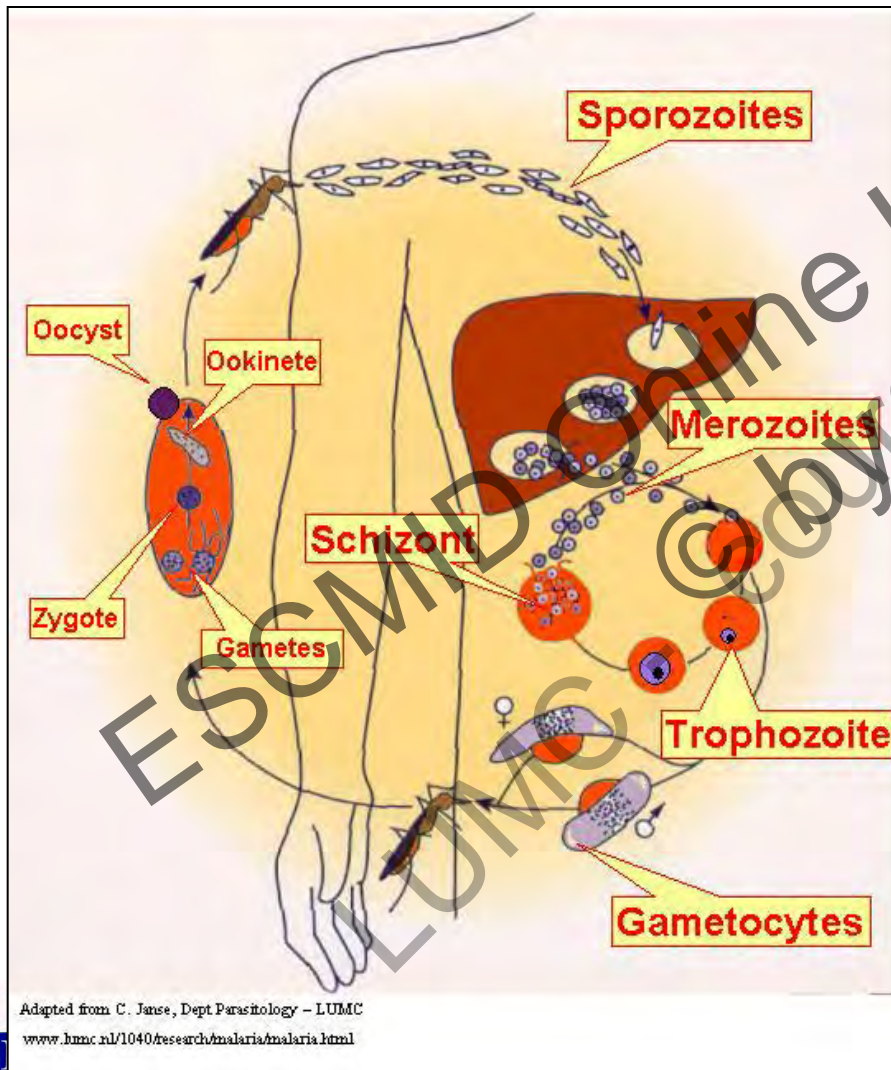
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# Plasmodium – transmission cycle

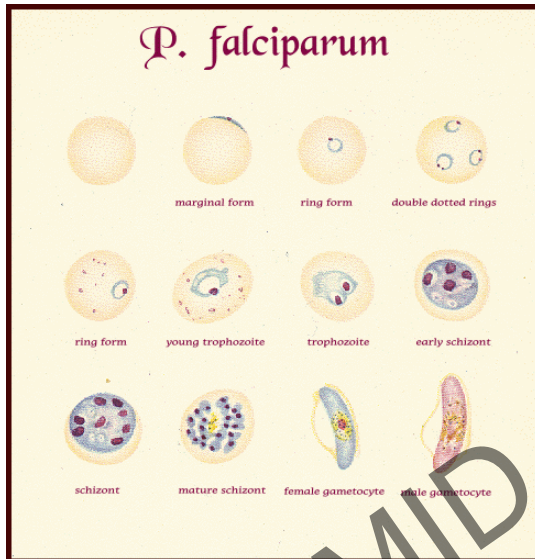


# Plasmodium – transmission cycle



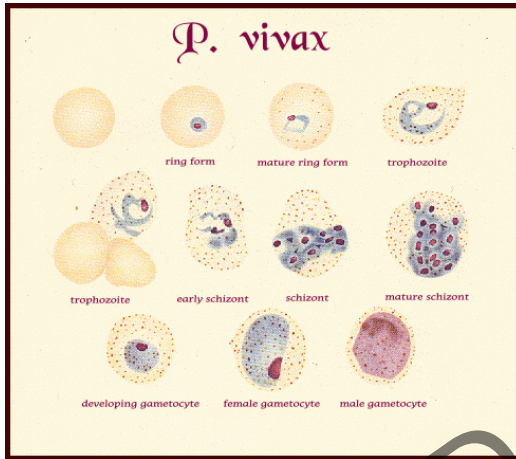
- sporozoites?
- hypnozoites?
- merozoites?
- clinical symptoms?
- all stages in circulation?
  - *P. falciparum*?
  - Synchronous infection?
- gametocytes?

# *P. falciparum*



- no enlargement of infected RBCs
- ring-form trophozoites (rings) thin and delicate
- on average 1/5 (max 1/3) diameter RBC
- one or two chromatin dots
- on the periphery of the RBC (accolé, appliqué)
- multiply-infected RBCs
- Maurer's clefts can be seen (in older stages), larger and more coarse, blue, staining depending
- gametocytes crescent- or sausage-shaped, (gametocytes rounded if older)
- exflagellation
- schizonts (rare) 8-24 merozoites, mature 2/3 RBC

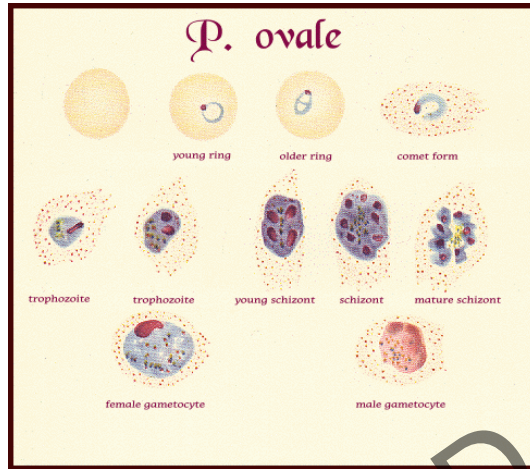
# *P. vivax*



- max 2-3% infected RBC
- trophozoites (rings) relative thick cytoplasm with a single, large chromatin dot
- multiply-infected RBCs possible
- amoeboid
- enlargement of infected RBCs
- Schuffners dot (fine pink/red dots)
- large gametocytes round-shaped,
- Schizont 12-24 merozoites

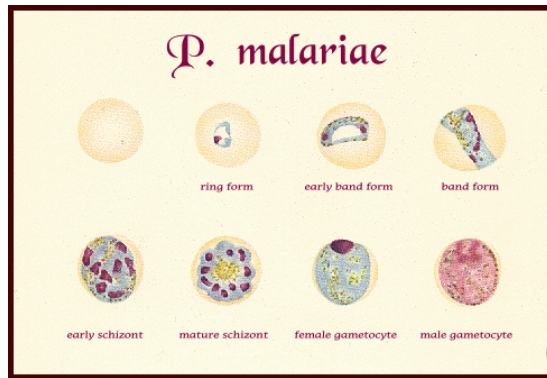


# *P. ovale*



- max 2-3% infected RBC
- trophozoites (rings) relative thick cytoplasm with a single, large chromatin dot
- parasite more compact
- occasional multiply-infected RBCs
- some enlargement of infected RBCs, oval shaped
- up to 30% fimbriated edges
- Schuffners dot (pink/red dots) / James's dots
- large gametocytes round-shaped,
- schizont 6 -12 merozoites

# *P. malariae*



- max 2% infected RBC
- trophozoites (rings or bands) compact
- coarse dark pigment
- all stages
- infected RBCs normal to small, no dots
- gametocytes round-shaped,
- schizont 8-12 merozoites (rosette, daisy)