



Malaria is a parasitic infection of the red blood cells, caused by *Plasmodium* and transmitted by the *Anopheles* mosquito.

ETIOLOGY

- Species of plasmodium
- ***P. falciparum***
 - *P. vivax*
 - *P. ovale*
 - *P. malariae*
 - *P. knowlesi*

EPIDEMIOLOGY

- 247 million global cases in 2023
- Accounts for 7.3% of global deaths in children under 5
- Approx. 500 cases identified in Canada yearly, 20% children
- Almost all cases in Canada associated with travel or immigration

PRESENTATION



MUST consider malaria when assessing fever in a returning traveler from endemic region
(incubation period: 7-30 days)

Uncomplicated malaria

- Headache
- Nausea/vomiting/diarrhea
- Anemia sx (lethargy, pallor)
- Abdominal pain
- Myalgias
- Tachycardia/tachypnea
- Splenomegaly
- Parasitemia <2%

Severe malaria

- Cerebral malaria
- Severe malarial edema
- Respiratory distress
- Jaundice
- 2 or more seizures
- Hypoglycemia
- Acidosis
- Parasitemia >2%

DIFFERENTIAL DIAGNOSIS BASED ON PRESENTING SX

- **Intermittent fever:** Lyme disease, brucellosis, other travel related infections, malignancy, rheumatologic
- **Fever & headache:** meningitis, encephalitis, sinusitis, influenza, typhus
- **Fever & GI symptoms:** Typhoid, viral or bacterial gastroenteritis, hepatitis, schistosomiasis, amebiasis
- **Fever & jaundice:** Dengue, viral hemorrhagic fever, yellow fever, hepatitis, leptospirosis, HUS

INVESTIGATIONS

Rapid Diagnostic Tests

- Detects malarial antigens & provides confirmation of diagnosis

Light microscopy

- Thin smear: confirmation of diagnosis
- Thick smear: identification of species & quantification of parasitemia

PCR

- Confirmation of species

Other Labs

- CBCd
- Liver enzymes
- Blood cultures x2
- Glucose
- Creatinine, BUN

If smears negative, repeat at 12 & 24h intervals until there are **3 negatives**

PROPHYLAXIS

Prophylaxis is recommended for travelers to endemic areas. See [CDC Yellowbook](https://www.cdc.gov/yellowbook) for more recommendations.

MANAGEMENT

Uncomplicated malaria

- Supportive management: respiratory support, hydration, pain & seizure management
- ID Consult - meds may include: chloroquine, atovaquone-proguanil, primaquine & are tailored to confirmed species

Severe malaria

- Monitor vitals & blood glucose closely, consider admission to PICU
- ID consult - meds may include IV artesunate, then oral treatment if improved

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