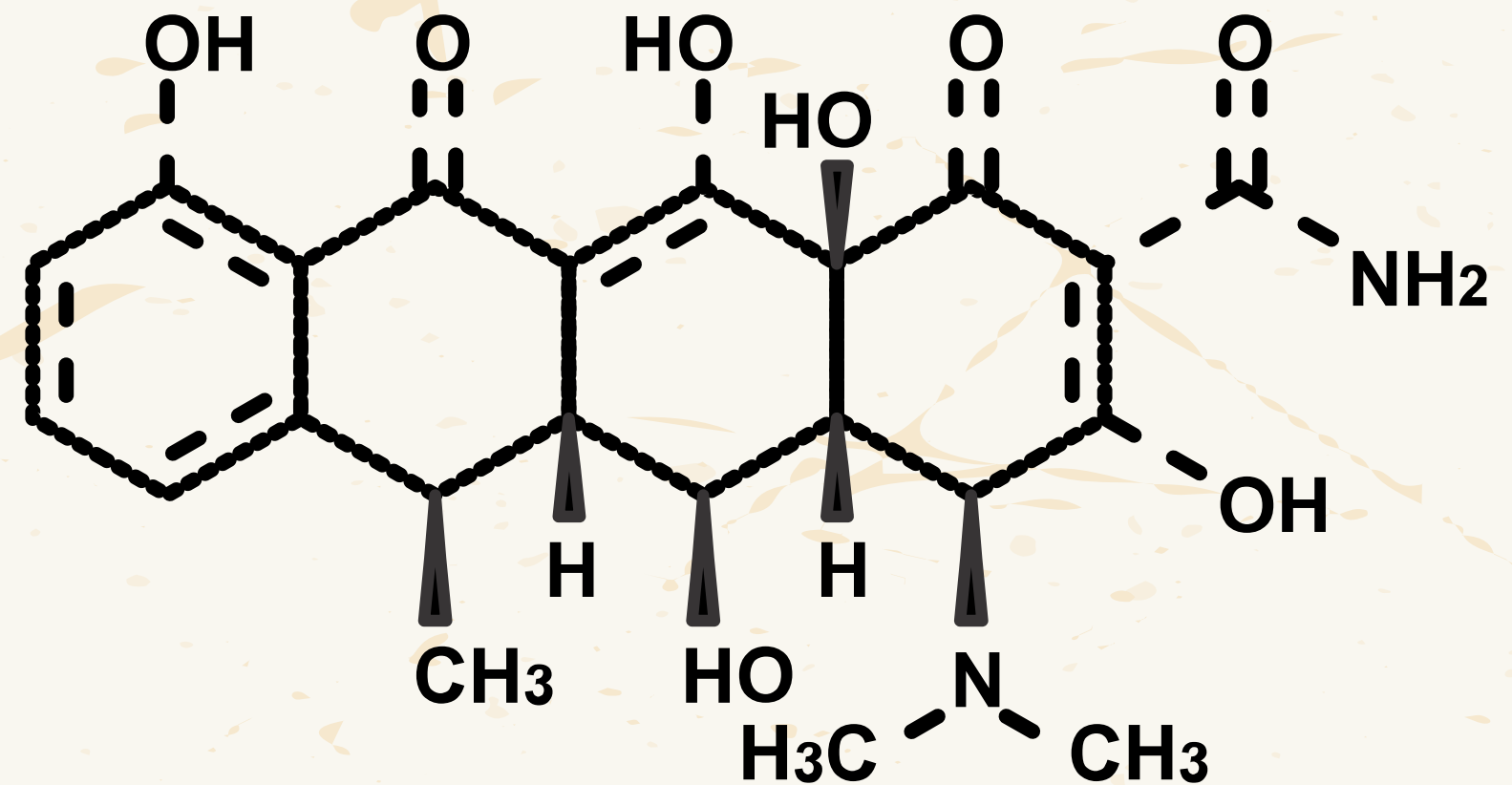


UNDERSTANDING DOXYCYCLINE

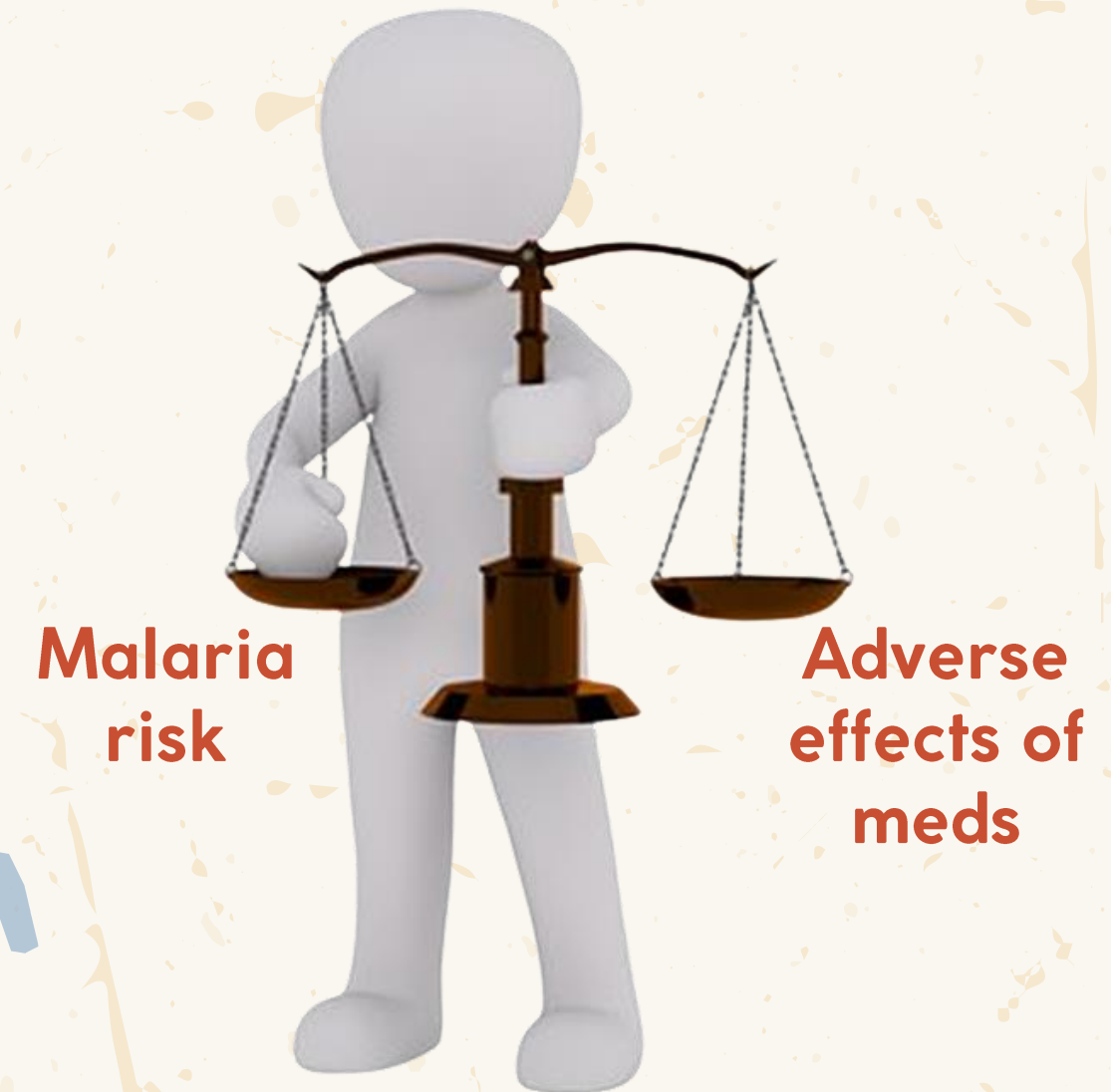


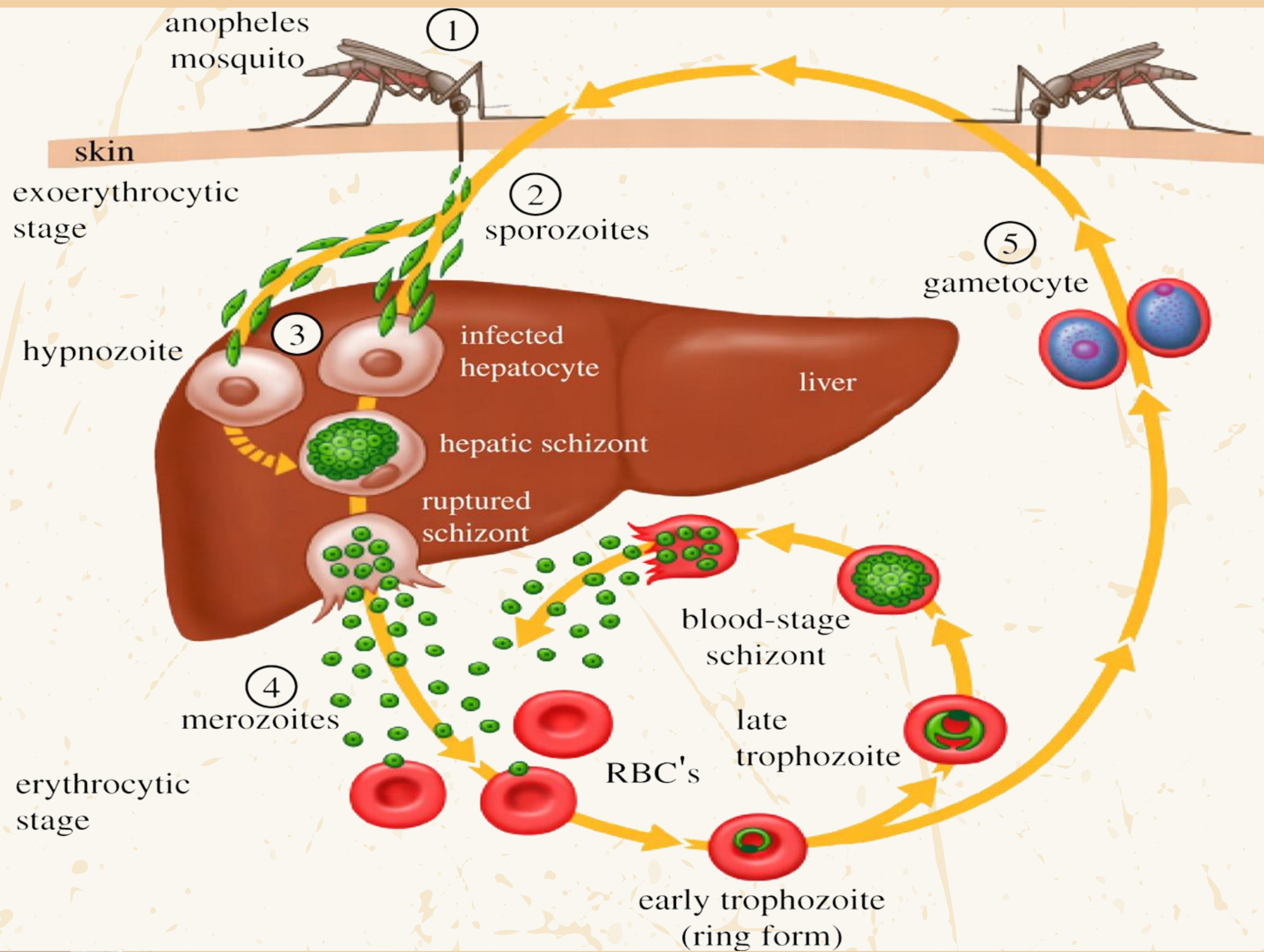
SUMARI DAVIS
AMAYEZA INFO SERVICES



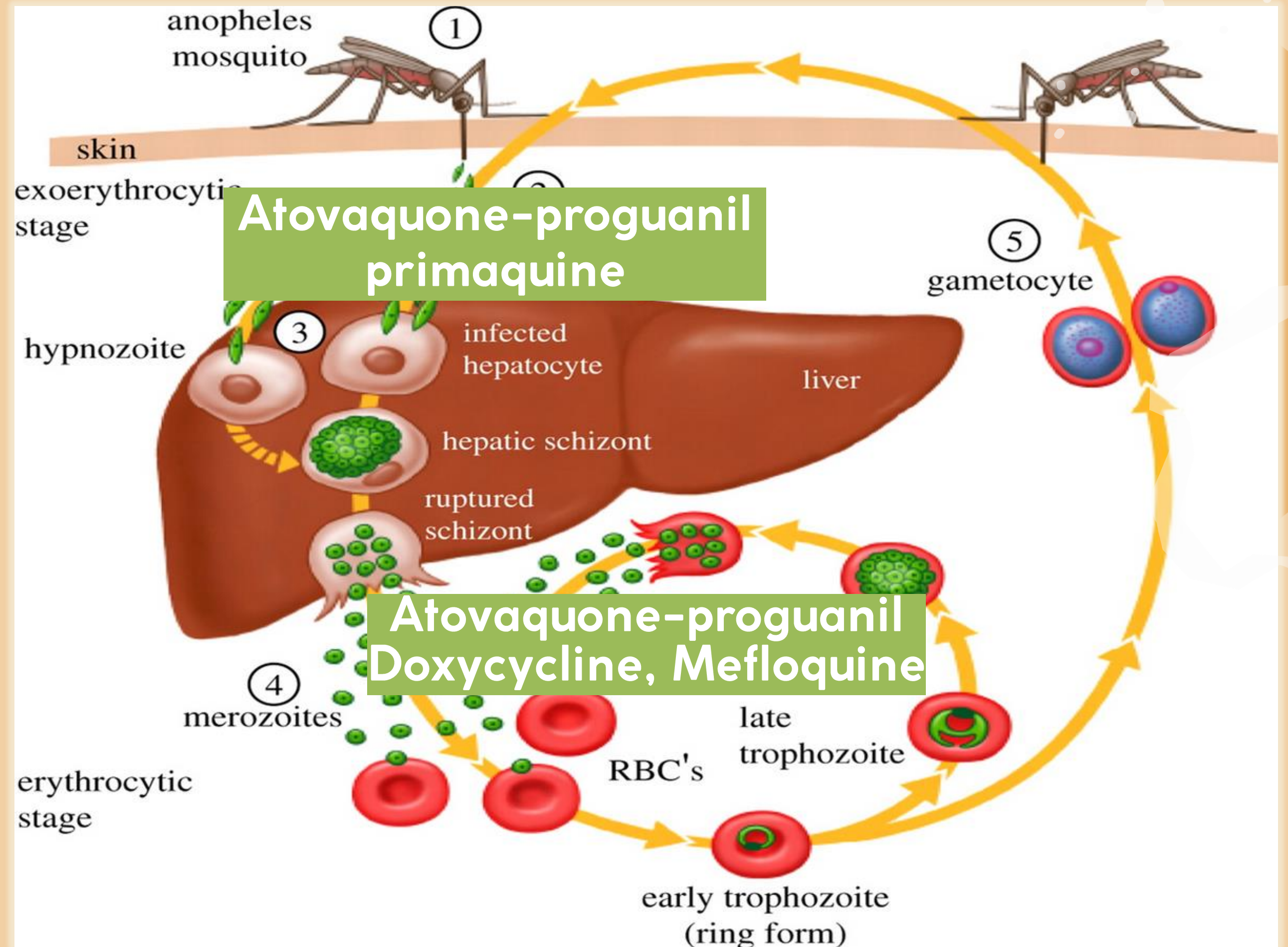
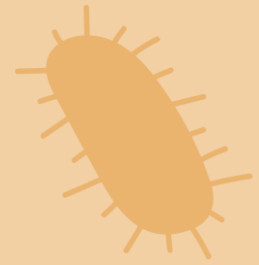
IDEAL CHEMOPROPHYLACTIC

- 👍 Effective
- 👍 Safe (well tolerated)
- 👍 Indicated for all
 - simple regime
- 👍 Readily available
- 👍 Affordable





MECHANISM OF ACTION



SUPPRESSIVE VS CAUSAL PROPHYLACTICS

Suppressive prophylactics:

Agents that act on the erythrocytic stages, (i.e. once the parasite has invaded the red blood cells. These are blood schizonticides. (Doxycycline and mefloquine)

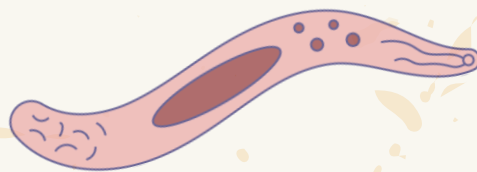
Causal prophylactics:

Agents that destroy the exo-erythrocytic forms of the parasite. These are tissue schizonticides. (Atovaquone/**proguanil**)

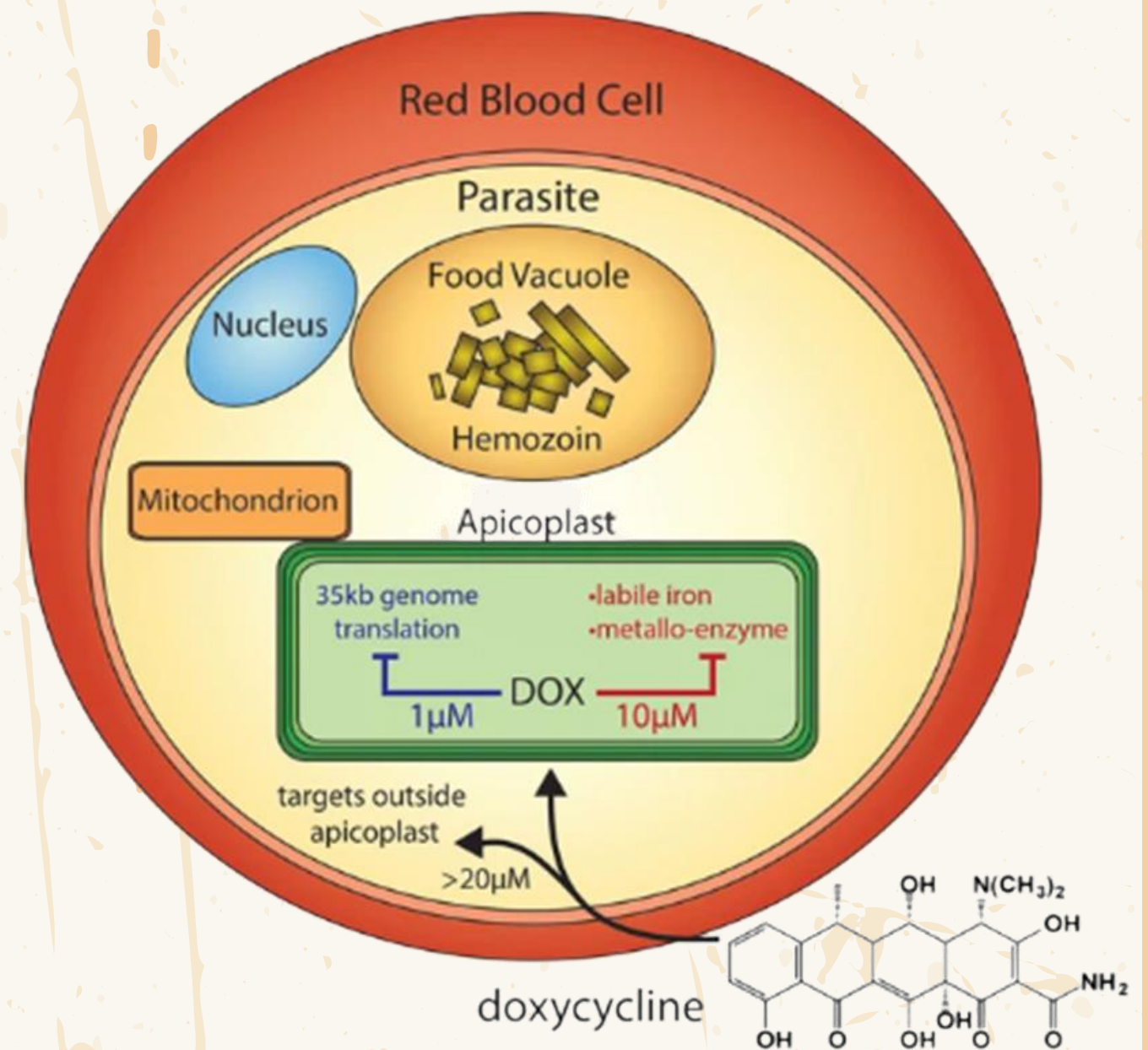
DOXYCYCLINE MECHANISM OF ACTION IN PREVENTING MALARIA

Suppressive prophylactic

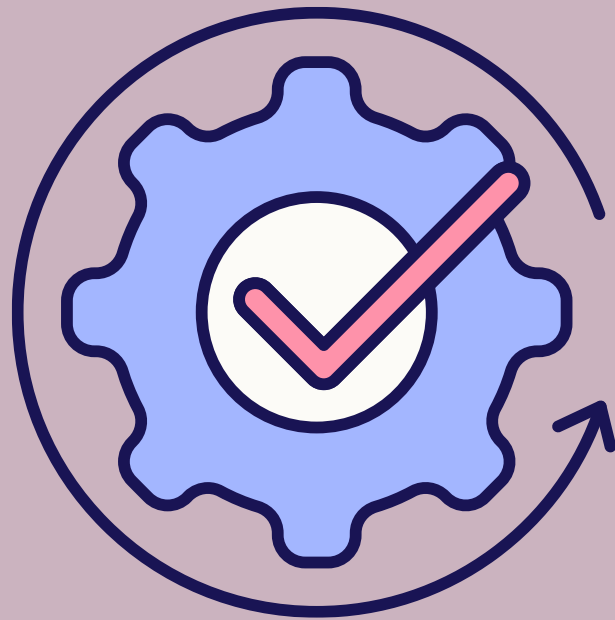
Slow acting blood schizontocidal agent



Thought to kill Plasmodium parasites by blocking protein translation in the essential apicoplast organelle (responsible for parasite survival and replication).



EFFICACY OF DOXYCYCLINE



**Kenyan study of 169
children ages 9-14
years:**

- 84% Effective at preventing parasitaemia
- 91% Effective at preventing clinical malaria

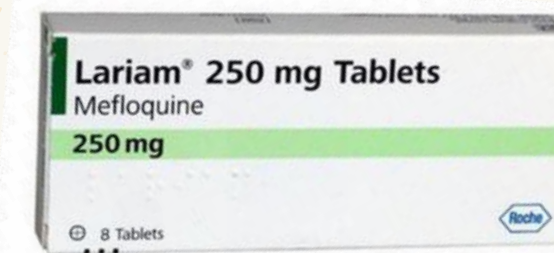
**3 Randomised
placebo-controlled
trials:**

- 92-96% Effective as prophylaxis for *P. falciparum*
- 98% Effective as prophylaxis for *P. vivax*

COMPARATIVE EFFICACY

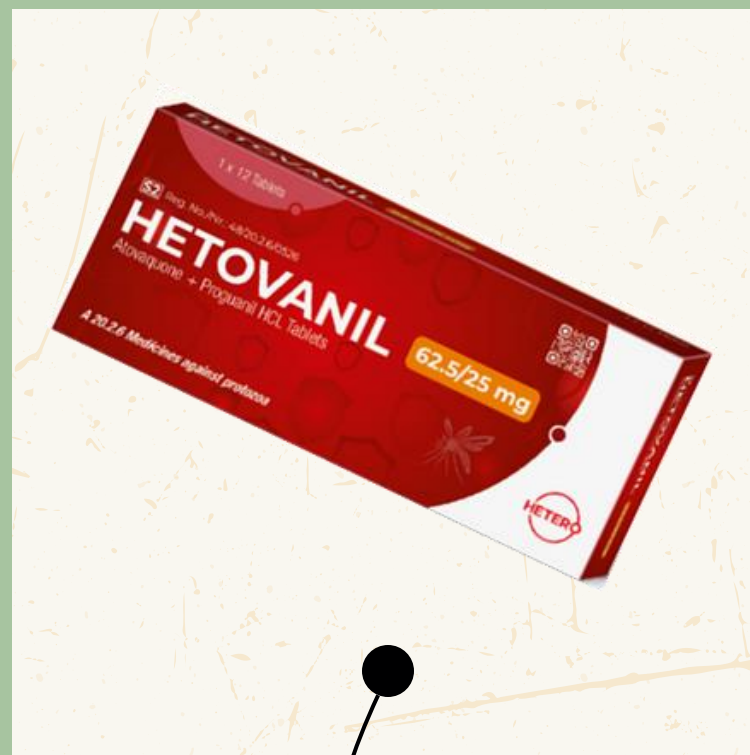


Doxycycline is as
effective as
mefloquine



>90% effective as
prophylaxis:

Mefloquine
Doxycycline
Atovaquone/proguanil



“the absolute risk of malaria during
short-term travel appears low with all
three established antimalarial agents”

SAFETY OF DOXYCYCLINE

	Mefloquine	Doxycycline	Atovaquone -proguanil
Pregnancy	use	CI	CI
Children	Use >5kg	>8 years	>11kgs
HIV +ve	Potential DI	Use	Potential DI
Epilepsy	CI	Use, but some DI	Use
Psychiatric conditions	CI, even if there is only a history	Use	Use
Long term travellers	3 years +	2 years +	1 year +

DOXYCYCLINE DRUG INTERACTIONS

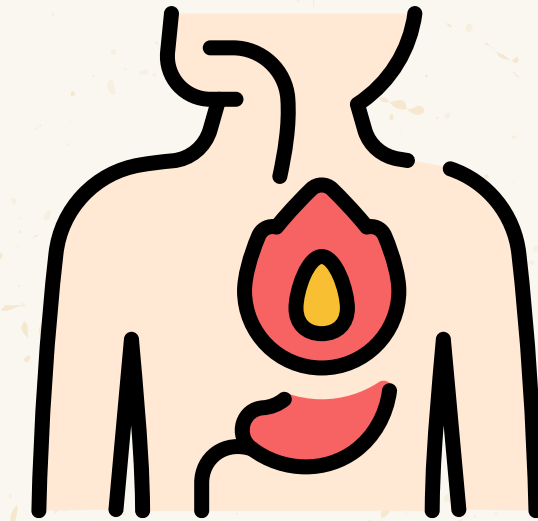
Other drug	Comment
Alcohol	Alcoholism may reduce doxycycline concentrations below therapeutic levels, does not apply to acute alcohol intake
Antacids	Reduce absorption of doxycycline, take 2 hours before or 4-6 hours after antacids
Iron	Reduce absorption of doxycycline, give iron 3 hours before or 2 hours after doxycycline
Carbamazepine, barbiturates and phenytoin	May reduce efficacy of doxycycline
Isotretinoin	Increased risk of pseudotumor cerebri
Rifampicin	Increase doxycycline clearance and reduce efficacy
Warfarin	May increase anticoagulation effect, monitor INR

SAFETY OF DOXYCYCLINE

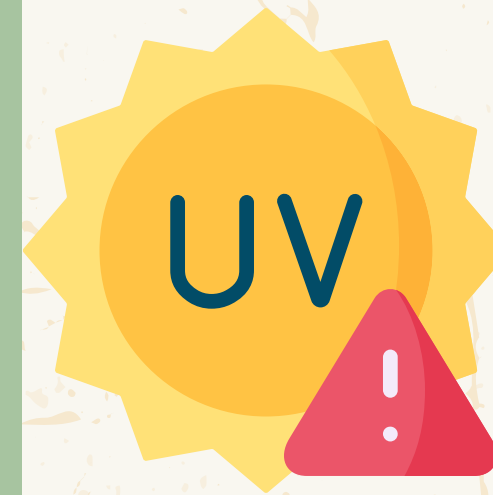


Take after a meal with a full glass of water and don't lie down immediately.

Apply effective sunscreen preparation.



Gastrointestinal symptoms especially oesophagitis



Photosensitivity (sunburn)

Vaginal candidiasis



SIMPLE REGIMEN[!]

Elimination half-life is 15–24 hours

Dose: 100mg daily or 2mg/kg daily (>8 years of age)

Start 1–2 days before entering and continue for 4 weeks after returning from high-risk area



**DOXYCYCLINE
IS AVAILABLE
FOR FREE IN
THE PUBLIC
SECTOR!**

PRIMARY HEALTHCARE LEVEL STG CHAPTER 10: INFECTIONS AND RELATED CONDITIONS

MEDICINE TREATMENT

Prophylaxis

CAUTION

Immunocompromised patients, pregnant women and children <8 years of age should avoid visiting malaria-endemic areas, as they are more prone to the serious complications of malaria.

However, if this cannot be avoided, malaria chemoprophylaxis should be considered (as recommended by the National Guidelines for the Prevention of Malaria (2018) found at: https://www.nicd.ac.za/wp-content/uploads/2019/03/National-Guidelines-for-prevention-of-Malaria_updated-08012019-1.pdf)

However, as only doxycycline is provided in the public sector, alternative options for pregnant women and children <8 years of age need to be purchased in the private sector.)

Non-pregnant adults:

- Doxycycline oral, 100 mg daily.
 - Take from 2 days prior to entering endemic area until 4 weeks after exiting the endemic area.

Children ≥8 years of age:

- Doxycycline oral, 2 mg/kg/dose daily.
 - Take from 2 days prior to entering endemic area until 4 weeks after exiting the endemic area.

Note: Doxycycline is contra-indicated in pregnant women, and in children <8 years of age.

PROFILE OF DOXYCYCLINE

ADVANTAGES

Need only start 1-2
days before entering
malaria area

Very few
contraindications

Available without a
prescription for malaria
prophylaxis

DISADVANTAGES

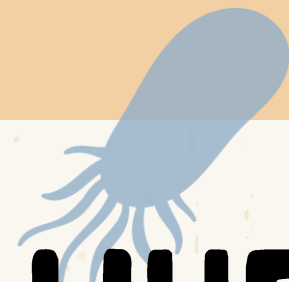

Daily dose for 4 weeks
upon return – compliance
may be a concern

Can't be used in
children under the
age of 8 years

Contraindicated in
pregnancy and
lactation

Side effects include
photosensitivity and
candidiasis

Risk of oesophagitis



POINTS TO REMEMBER WHEN TAKING DOXYCYCLINE



Compliance is of major importance.



Do not miss any doses – doxycycline is unforgiving, miss a dose, and prophylactic failure may occur.



Start before entering the malaria area.



Continue prophylaxis for 4 weeks after leaving the area.



Take after a meal with a full glass of water and don't lie down immediately.



Apply effective sunscreen preparation.

THANK YOU



“Doxie cycling”

Hi

