

What is *P. vivax* malaria & G6PD?

What is *P. vivax* malaria?

By the end of this session you should be able to:

- Describe *P. vivax* malaria and its importance in [insert country]
- Understand what G6PD testing and why it is needed in the treatment of vivax malaria

What is your experience with *P. vivax* malaria?

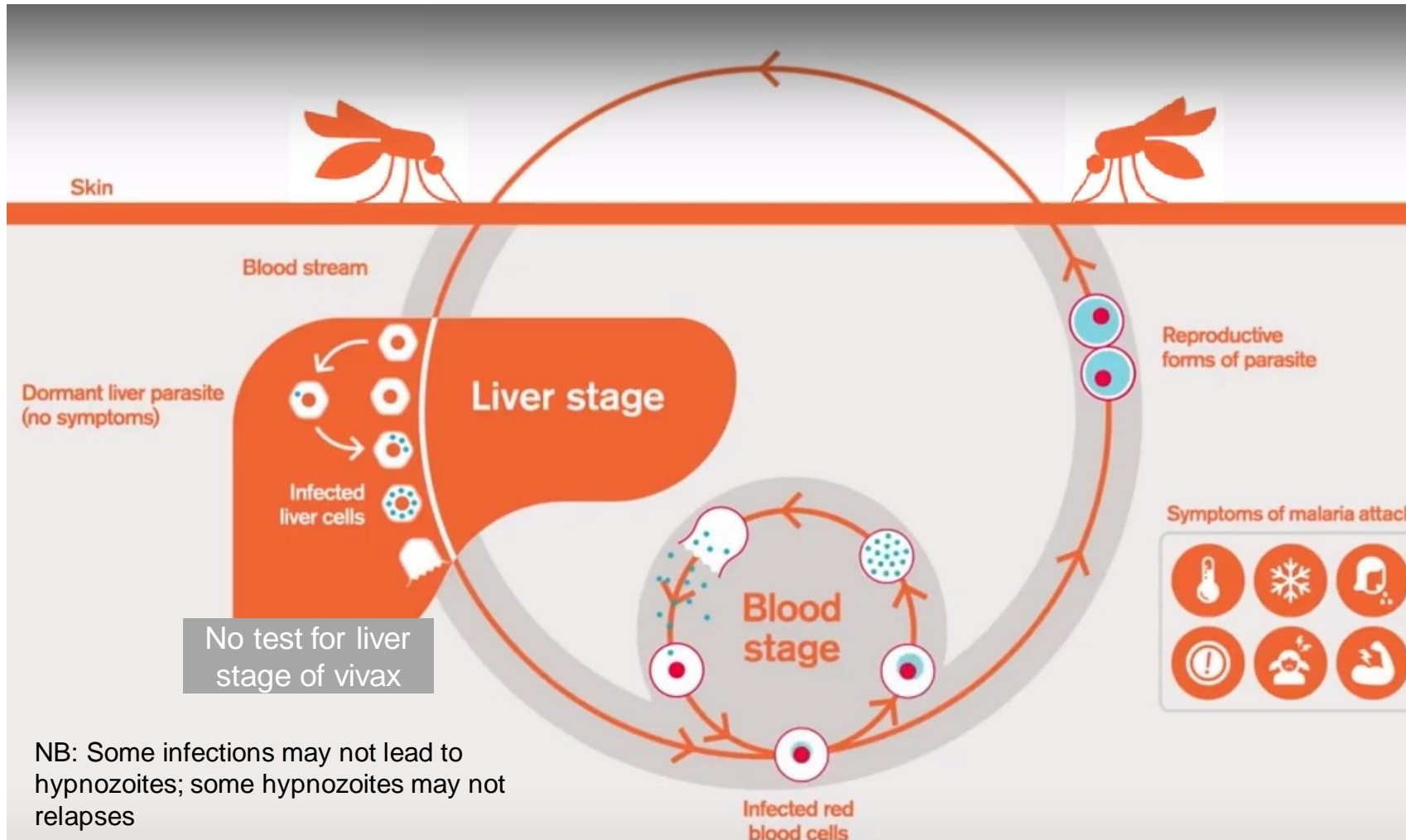
Participants share thoughts on, perceptions and experiences of *P. vivax* malaria and how to treat it



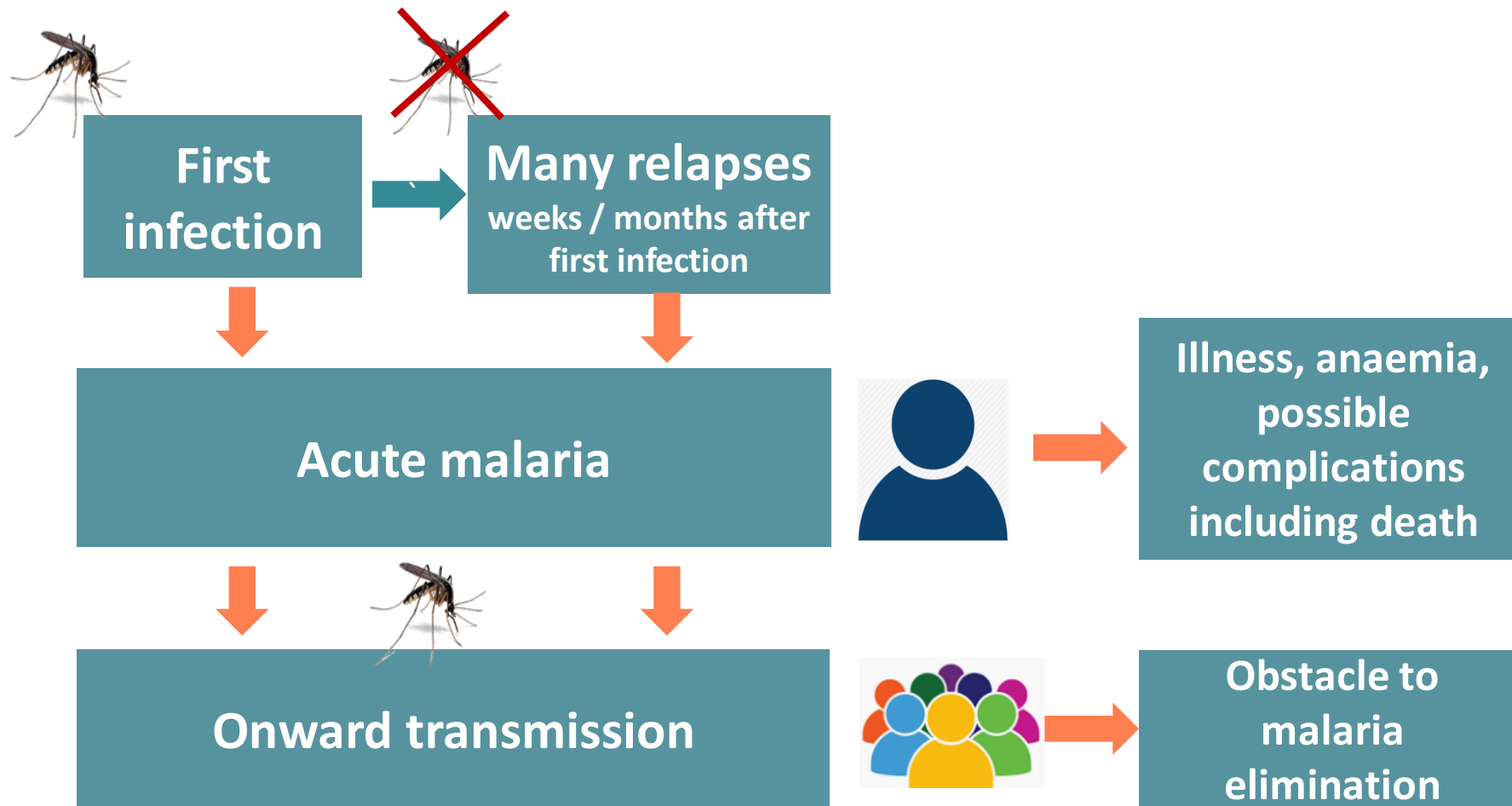
P. vivax malaria life cycle in the human host

- <https://youtu.be/Sf-e7YpBA7s>

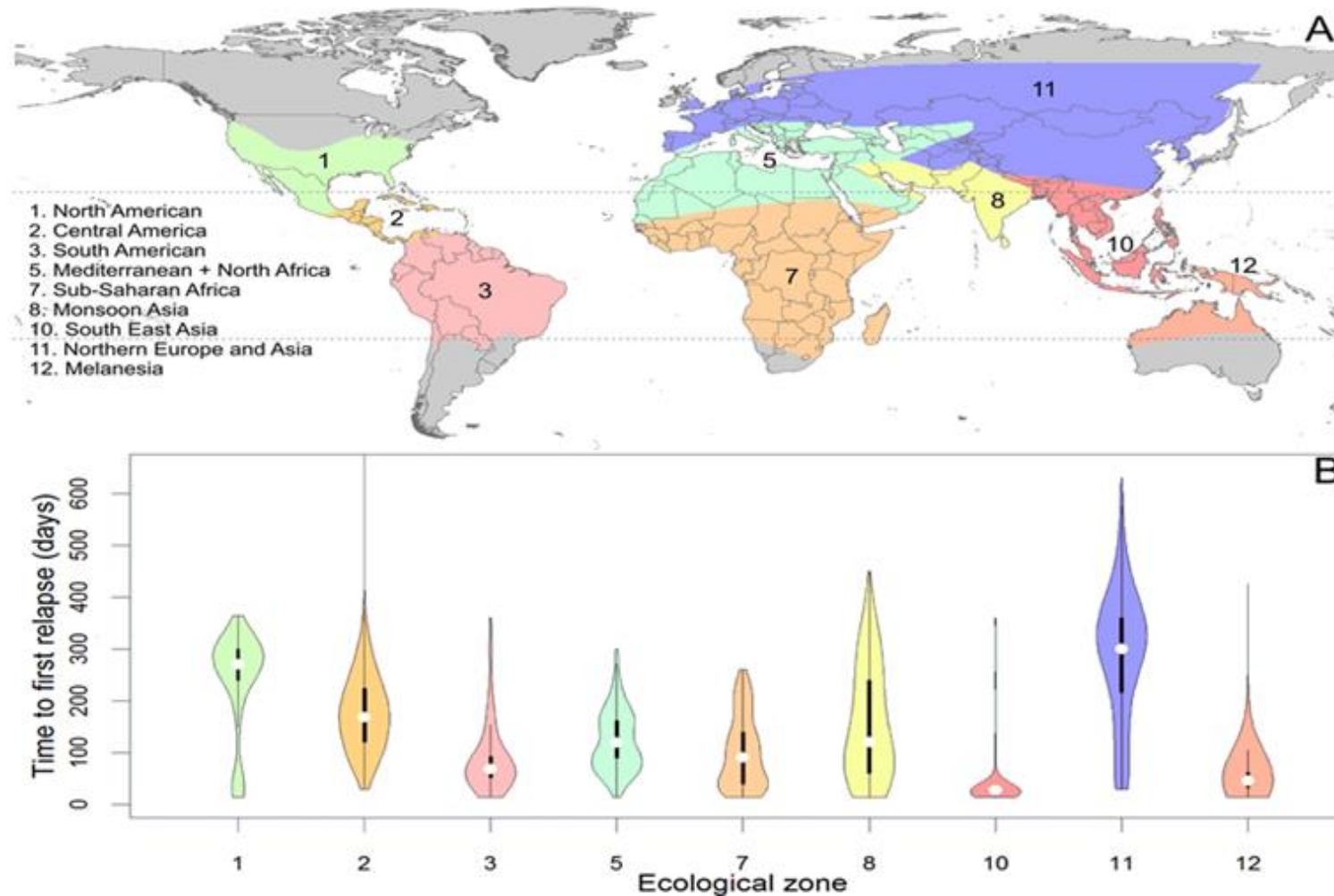
P. vivax life-cycle in humans



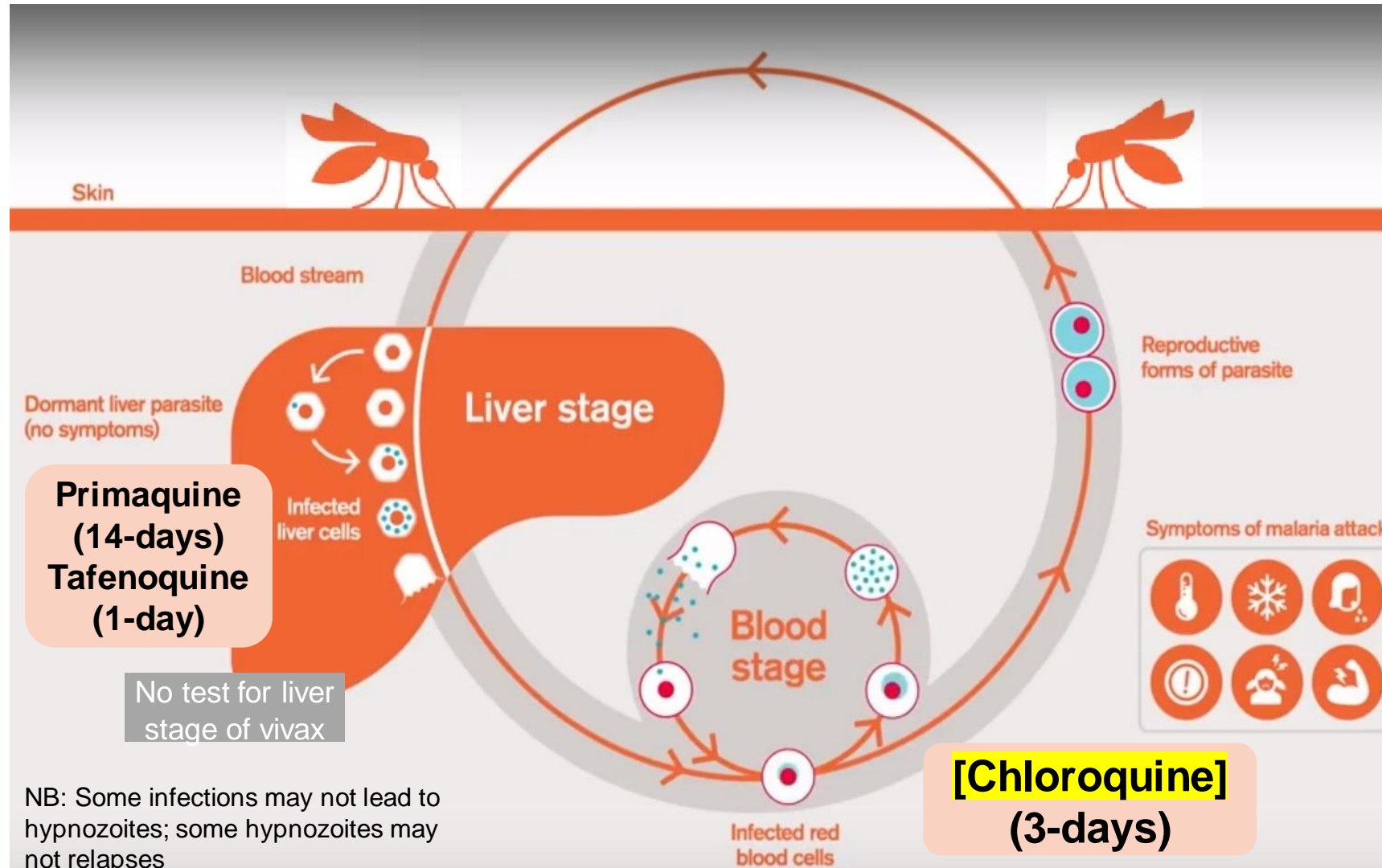
P. vivax malaria can relapse without a bite from an infected mosquito



First relapse can occur weeks or months after infection



P. vivax has a dormant liver stage which causes relapses



How do you normally treat *P. vivax* malaria?

Key points to remember:

- *P. vivax* malaria causes **relapse** of the malaria disease
- Relapse can lead to anemia, other illnesses and even death
- *P. vivax* malaria causes most malaria cases in [**your country**] and countries/areas close to malaria elimination
- *P. vivax malaria* is treated with chloroquine or an ACT to treat the acute malaria infection and primaquine to prevent relapses.
- When chloroquine is used as blood stage treatment, single dose tafenoquine can be used to prevent relapses.

Any questions?

What is G6PD deficiency?

By the end of this session you should be able to:

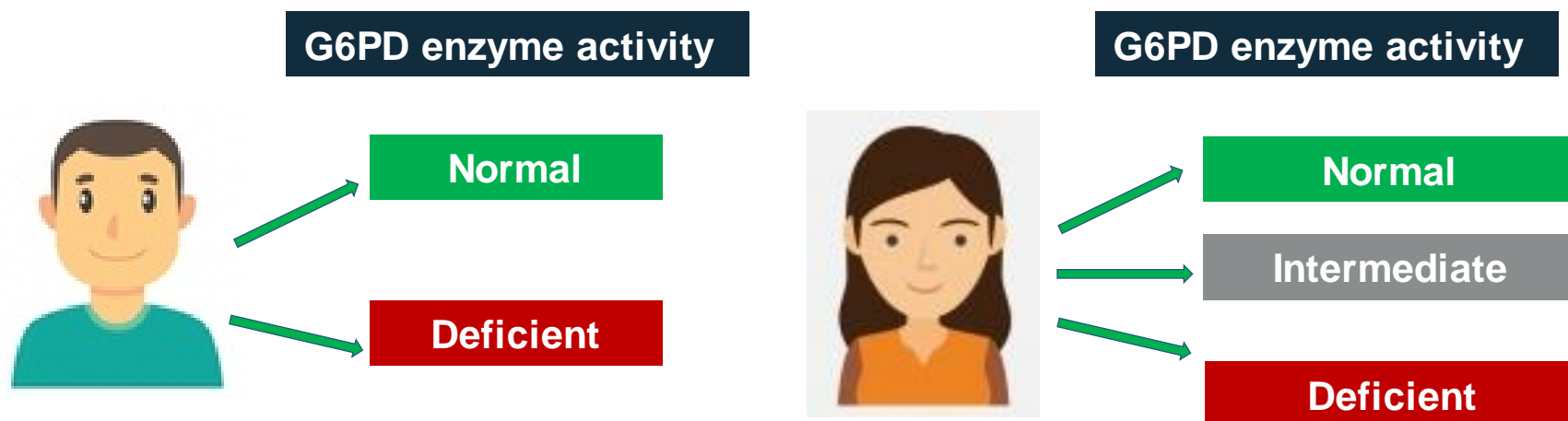
- Explain how G6PD deficiency affects the choice of treatment for *P. vivax* malaria

What does the G6PD enzyme do?

- G6PD stands for Glucose-6-Phosphate Dehydrogenase
- G6PD is an enzyme that protects red blood cells from being damaged and breaking down before they should
- Everyone has G6PD in the cells, but we do not all have the same level of the enzyme
- Extra care needs to be taken for patients who have medium (intermediate) or low (deficient) levels

What does it mean to have medium or low levels of G6PD?

- G6PD activity level is inherited and affects 400 million people globally
- More than 180 G6PD deficiency genetic variants ranging from mild to severe
- G6PD deficiency is more common in males
- People with low levels of G6PD activity can lead a totally normal life; they only need to avoid certain medicines and food



Why knowing the G6PD status is important

- Most people with G6PD deficiency never experience any symptoms unless exposed to certain foods or medicines
- One serious potential side effect of certain medicines including primaquine [and tafenoquine] to treat *P. vivax* patients with low or medium levels of G6PD activity is **Acute Haemolytic Anaemia**



- **Measuring patients G6PD activity level is essential** before treatment with primaquine [and tafenoquine]

What is Acute Haemolytic Anaemia?

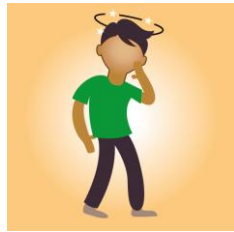
- Haemolysis can happen in a person when their Red Blood Cells are destroyed faster than the body can replace them – this is referred to as Acute Haemolytic Anaemia
- Potential signs of AHA:
 - Fatigue
 - Dizziness
 - Breathlessness or shortness of breath
 - Dark urine (Red or black colour)
 - Back pain
 - Yellowing of the skin and/or whites of eyes
 - Pallor – unhealthy pale appearance
 - Rapid heart rate
 - Fever
 - Nausea and/or vomiting
- AHA may lead to life-threatening anaemia requiring blood transfusion, dialysis and can lead to kidney failure or death

What are signs of Acute Haemolytic Anaemia?

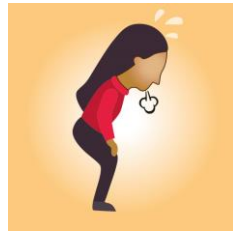
- Potential signs of AHA:



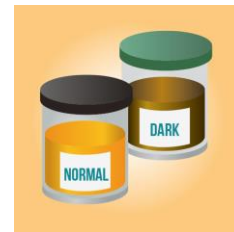
Fatigue



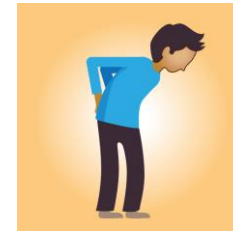
Dizziness



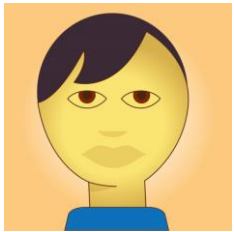
Breathlessness or shortness of breath



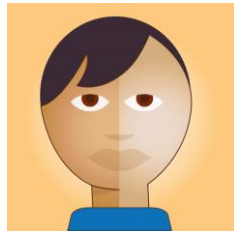
Dark urine (Red or black colour)



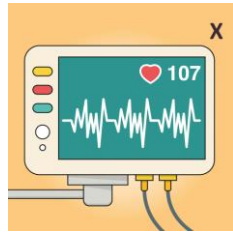
Back pain



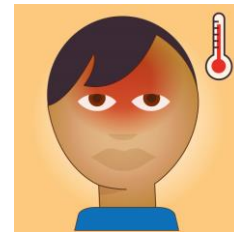
Yellowing of the skin and/or whites of eyes



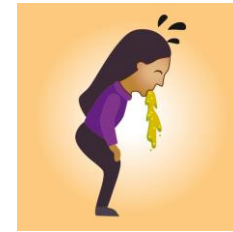
Pallor – unhealthy pale appearance



Rapid heart rate



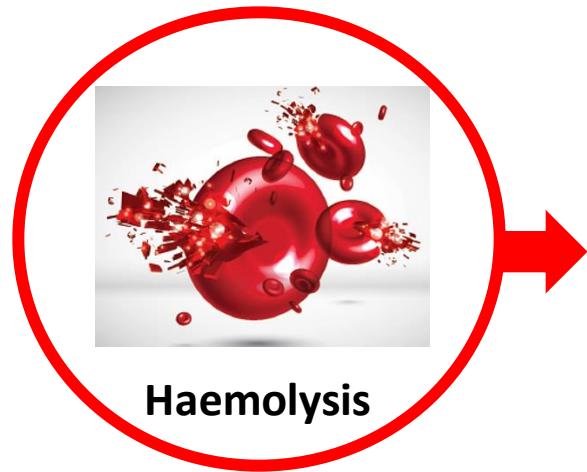
Fever



Nausea and/or vomiting

- AHA may lead to life-threatening anemia requiring blood transfusion, dialysis and can lead to kidney failure or death

Dark urine caused by acute haemolytic anaemia



DARK URINE

NORMAL URINE

Your experiences with G6PD, Haemolysis and Acute Haemolytic Anaemia (AHA)

[Malaria and G6PDd Distribution]

Prevalence of malaria

Prevalence of G6PDd

Key points to remember:

- The G6PD enzyme helps protect red blood cells from damage
- If people have **low or medium G6PD** enzyme activity, they are at risk of haemolysis with anti-relapse treatment
- About [X%] of the [Country] population have G6PD deficiency – it is important to identify them before treating with primaquine

Any questions?