

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

Coimbatore -641035

COURSE NAME: SOCIAL AND PREVENTIVE PHARMACY (BP 802 T)

B.PHARM. VIII SEM / IV YEAR

UNIT II: TOPIC 3: GENERAL PRINCIPLES OF PREVENTION AND CONTROL OF MALARIA

DESIGN THINKING

EMPATHIZE

Listen, observe, and map needs

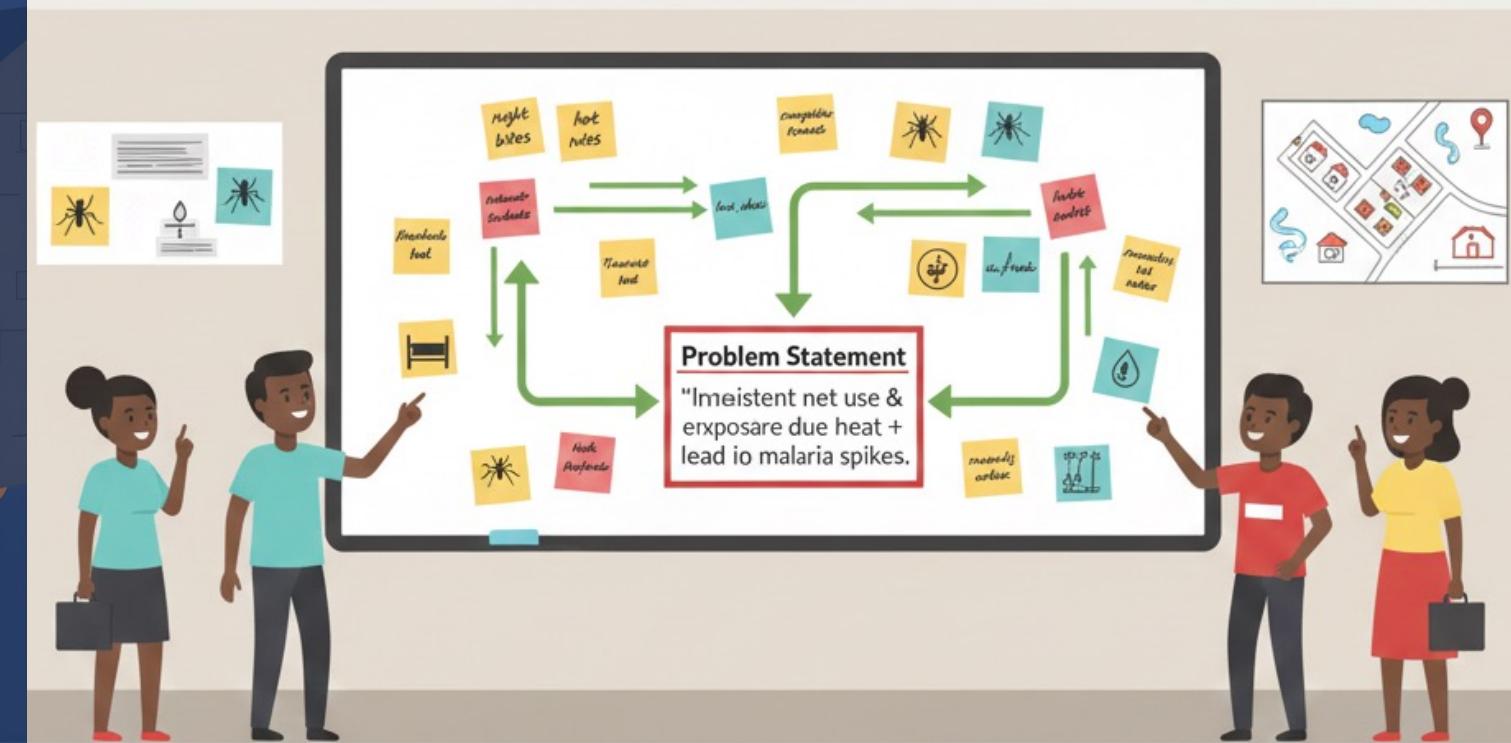
- Night bites
- hot nights reduce net use
- standing water
- clinic far



Define

Focus the problem

- Night exposure + heat → low net use;
- water near homes, limited RDT access



DESIGN THINKING

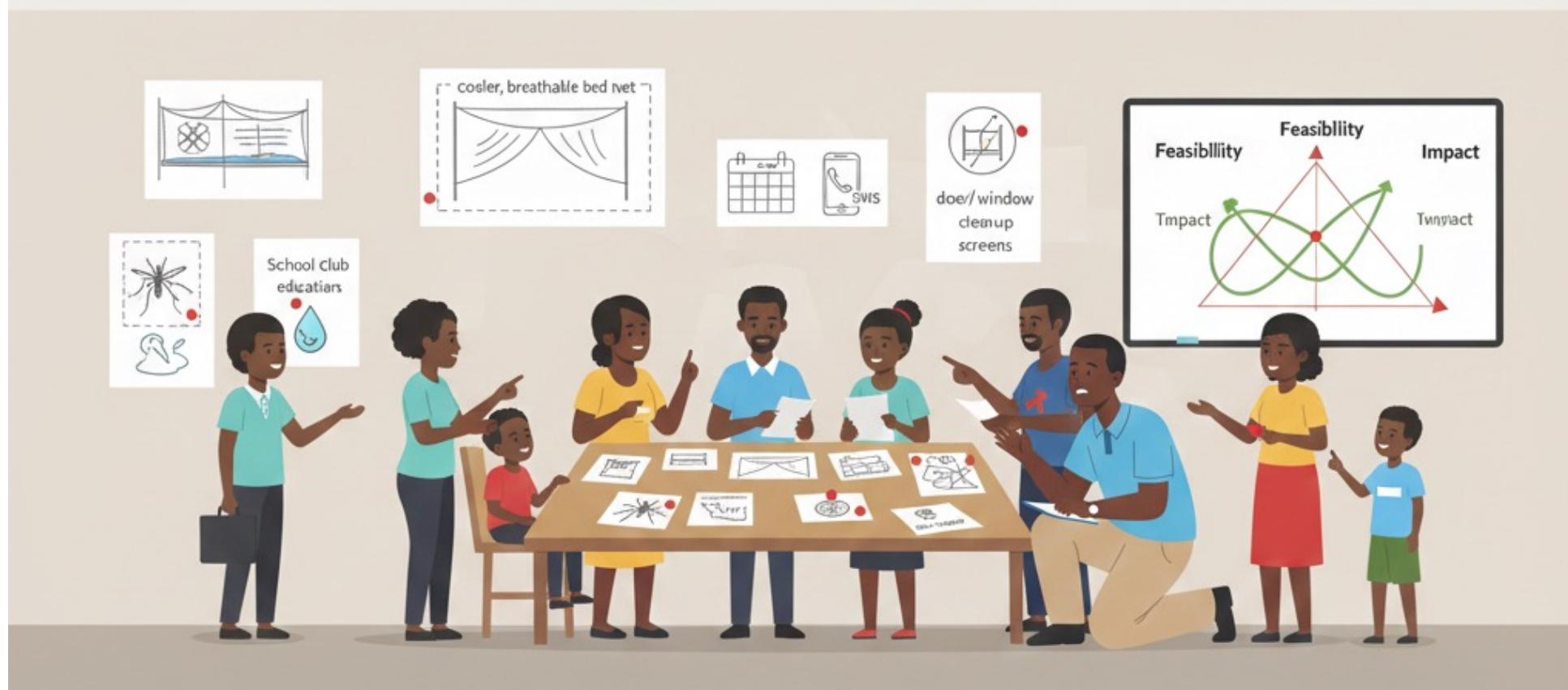


Ideate

Focus the problem

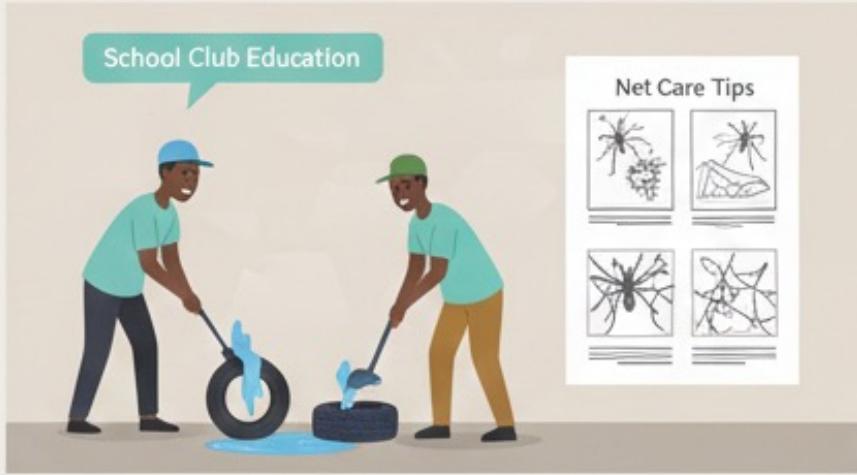
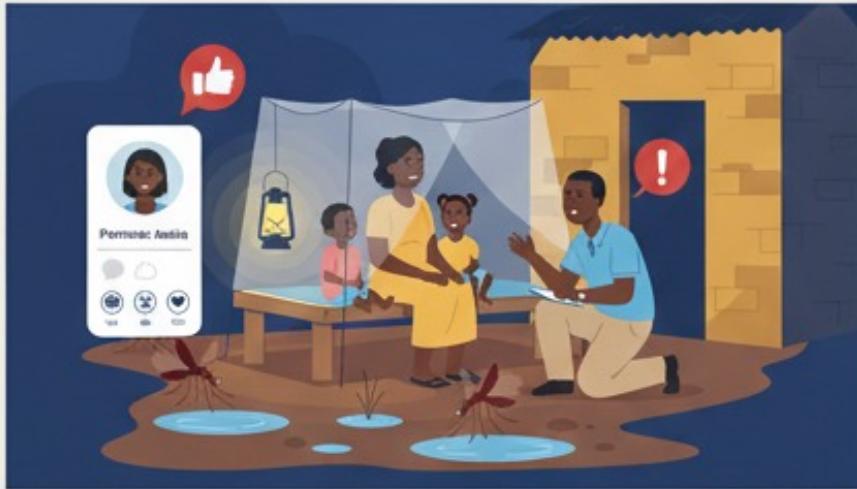
Many ideas, then choose

- Cooler-net designs,
- water cleanup days reminders
- SMS reminders



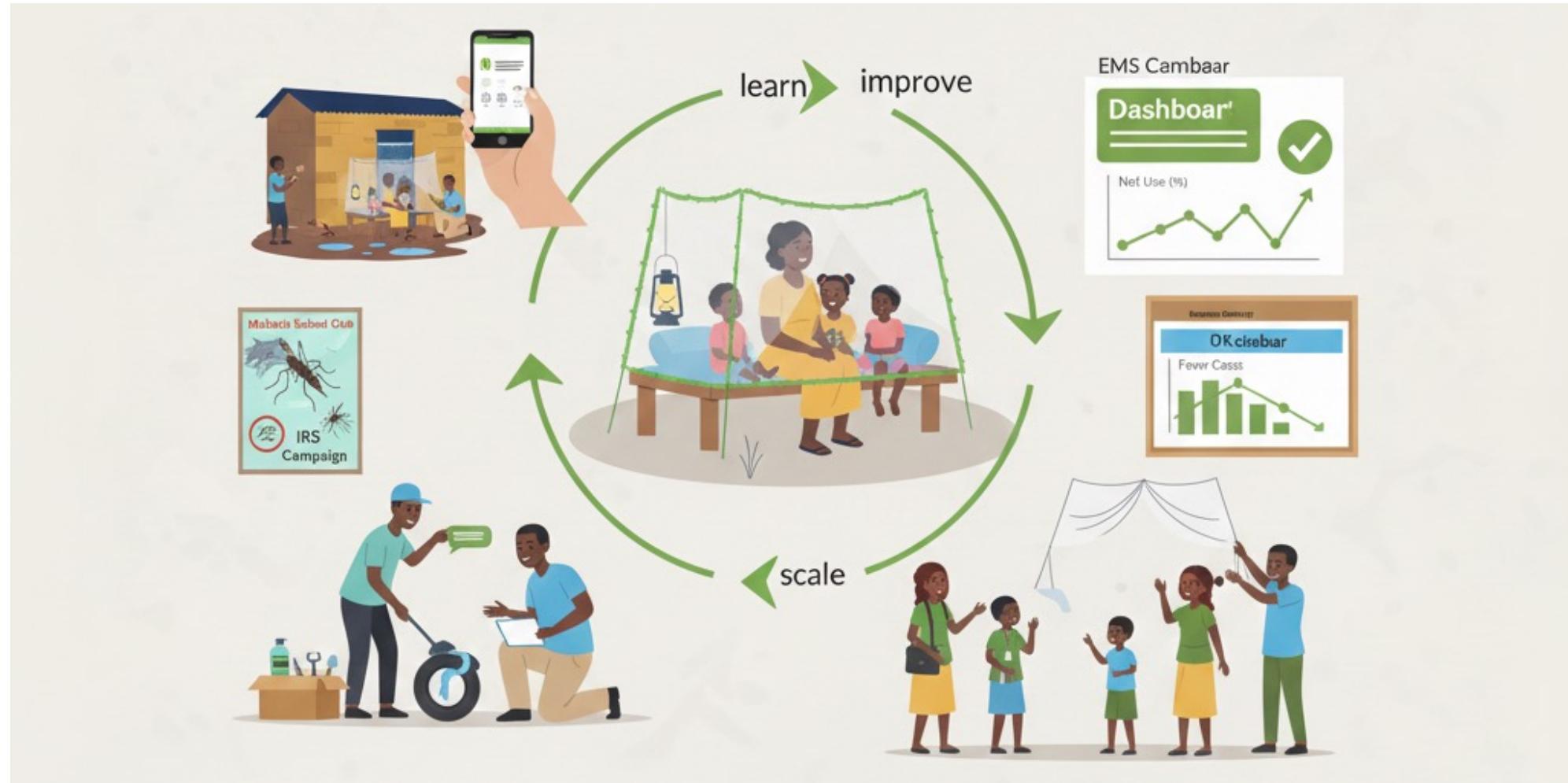
DESIGN THINKING

PROTOTYPE AND TEST



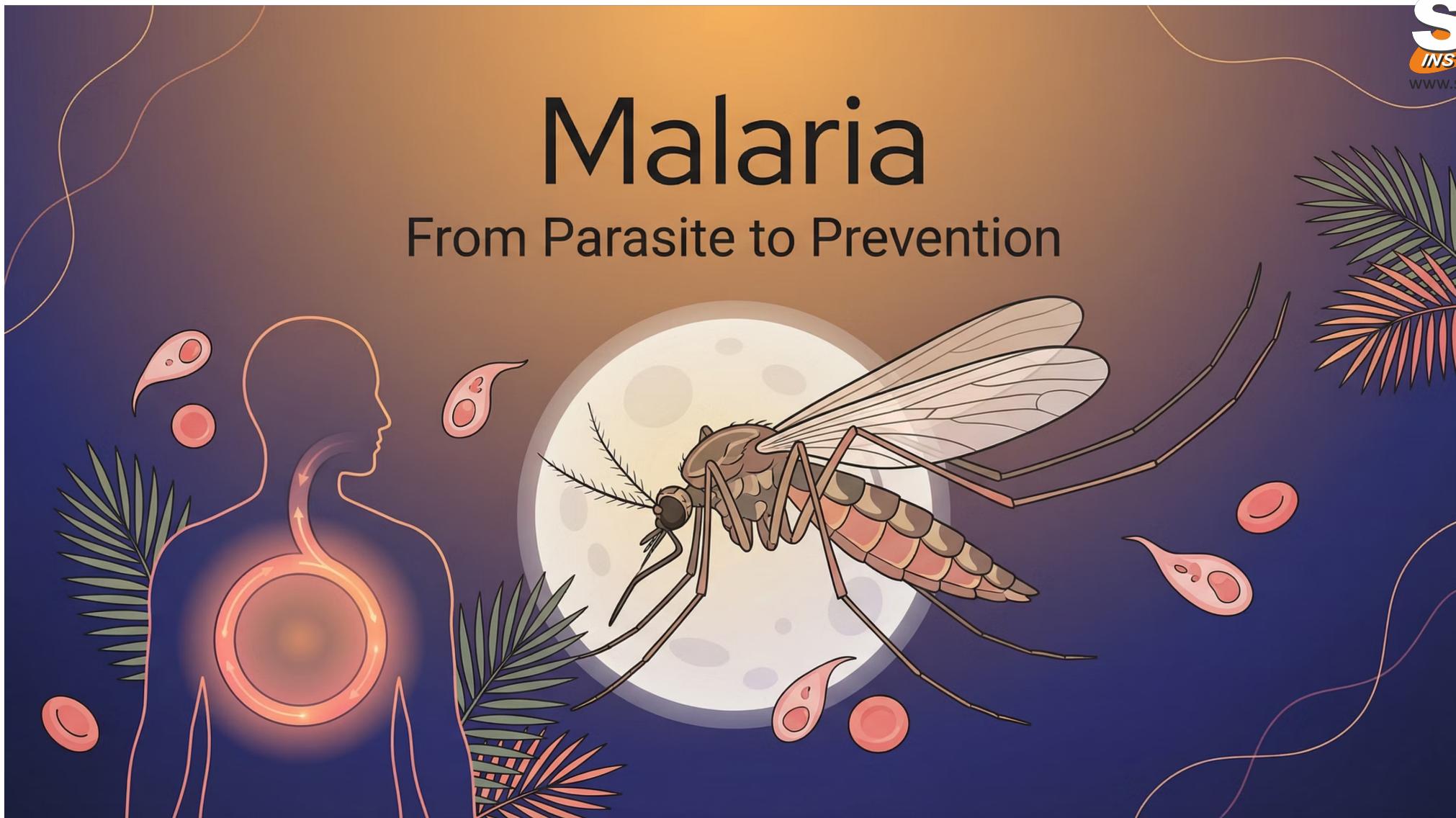
DESIGN THINKING

EVOLVE



Malaria

From Parasite to Prevention



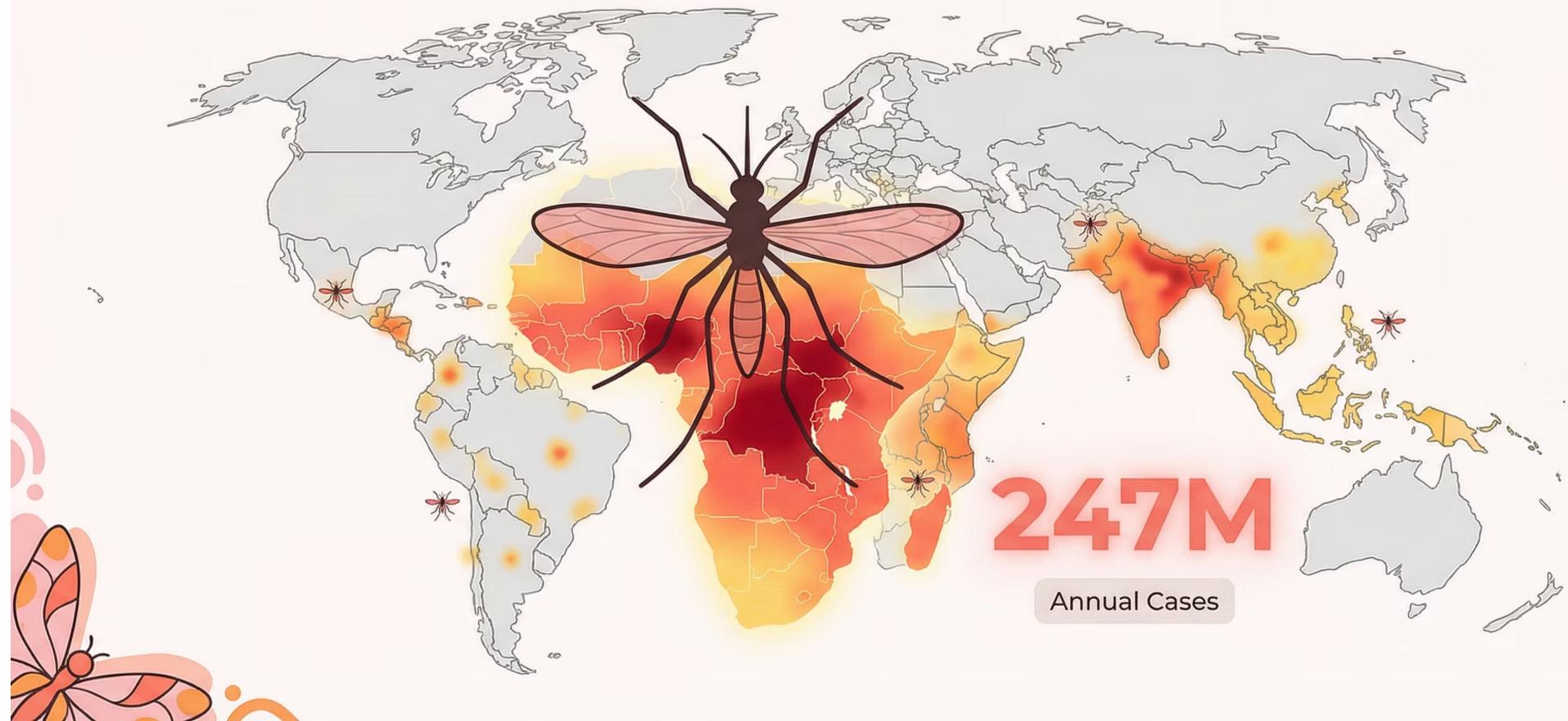
FEVER AND SWEATING



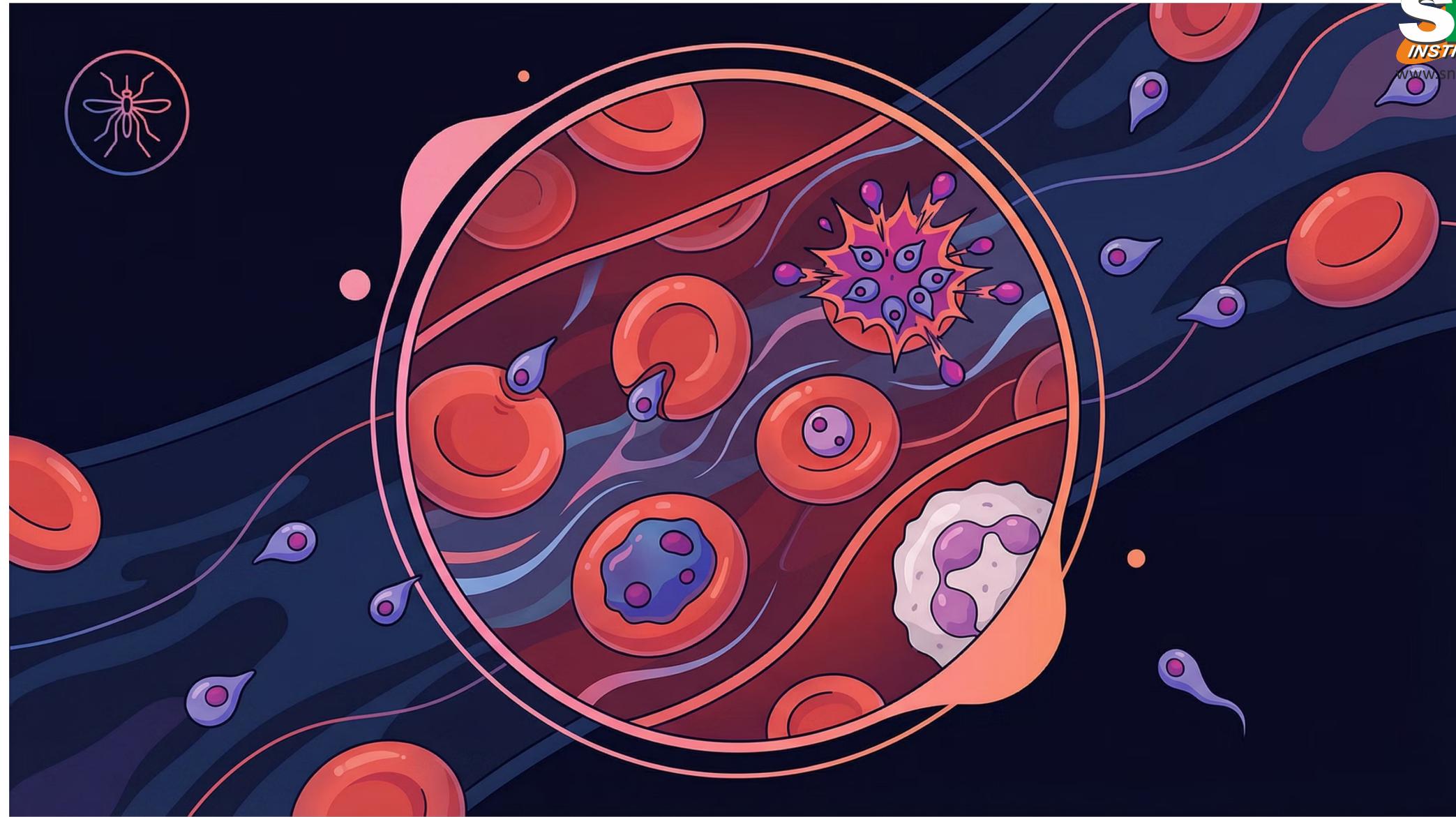


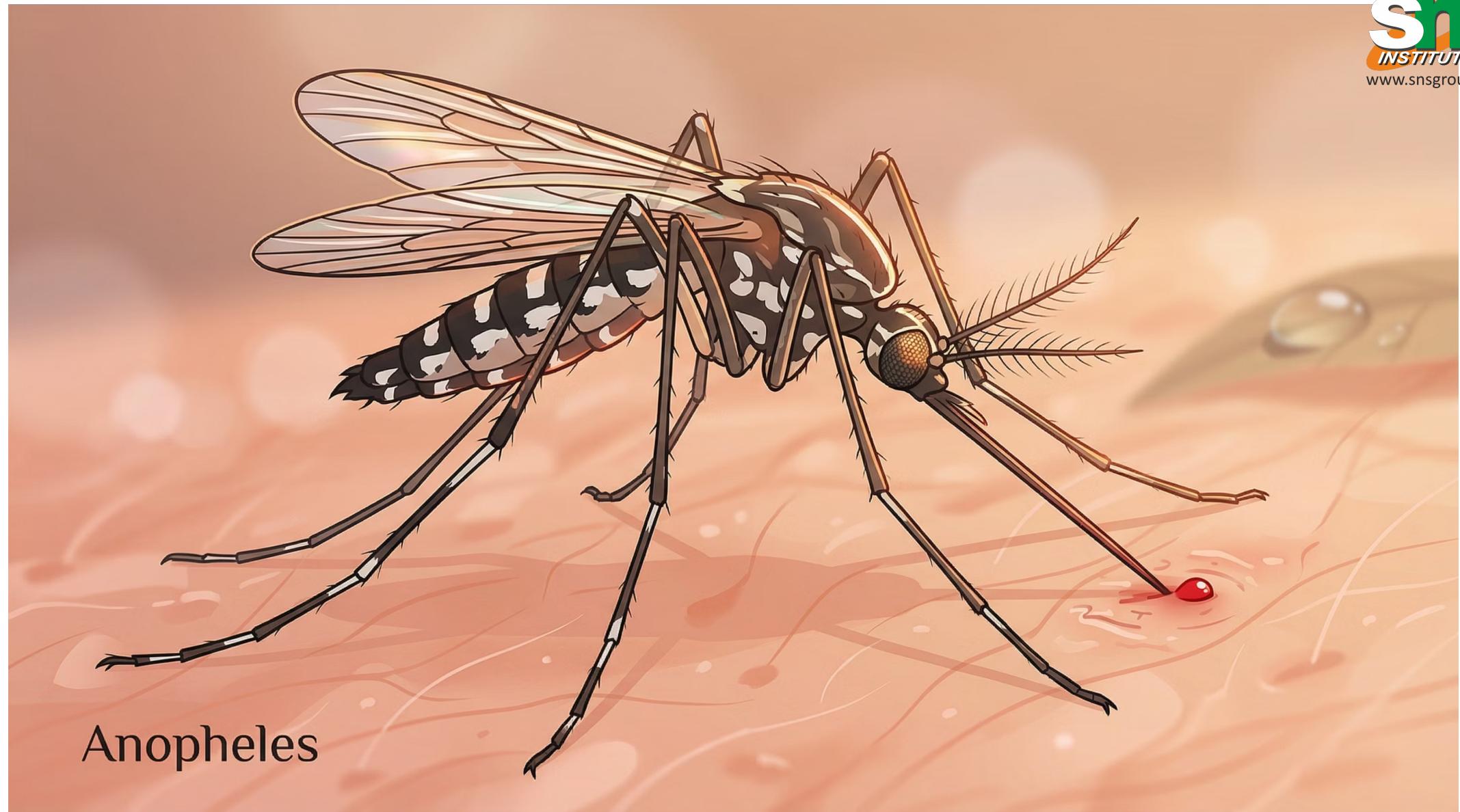
GLOBAL MALARIA BURDEN

Data-driven insights on epidemiology and urgent intervention needs



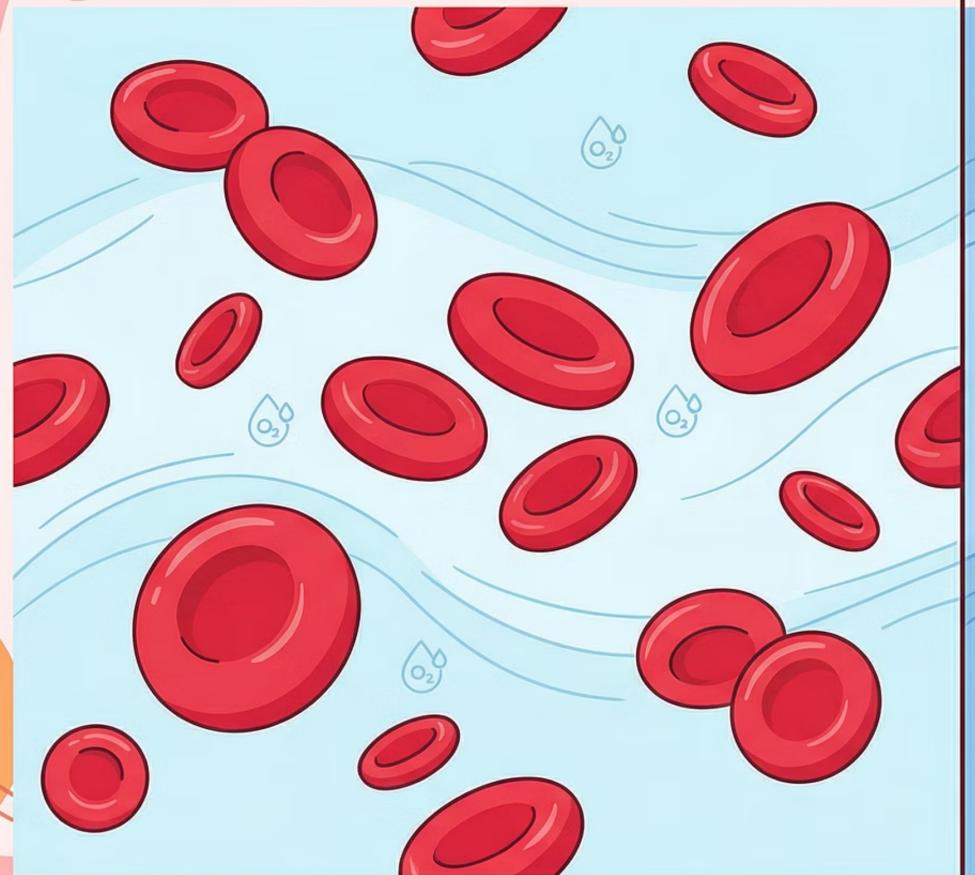
DESTRUCTION OF RED BLOOD CELLS



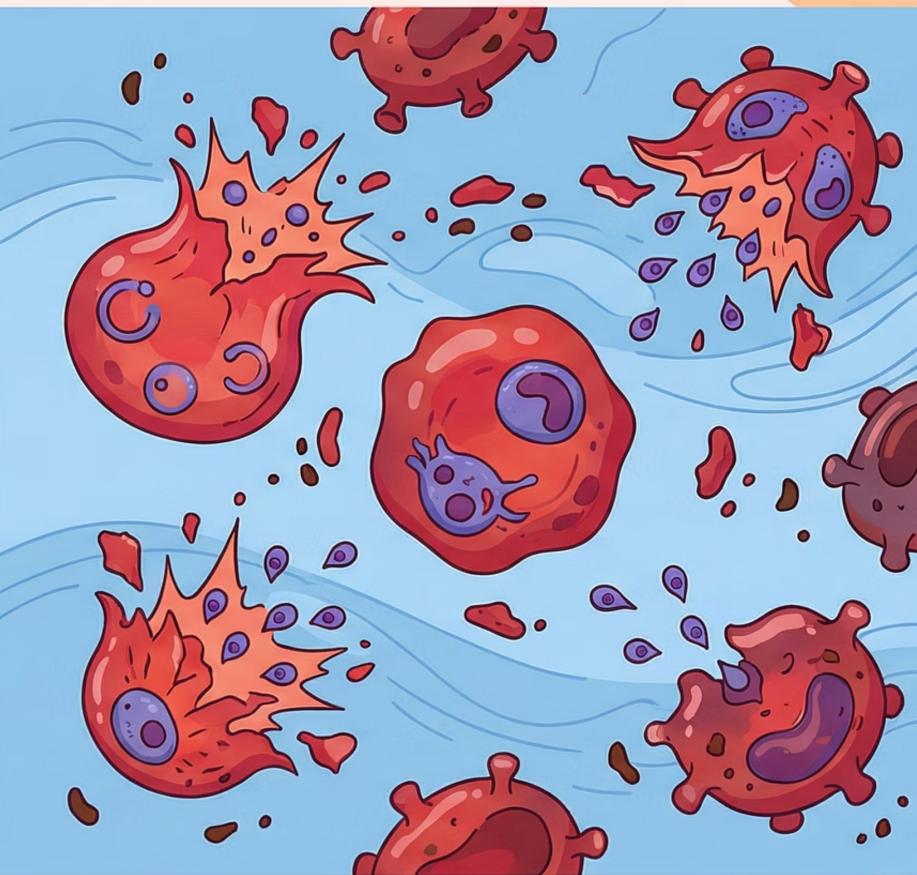


Anopheles

Healthy



Infected

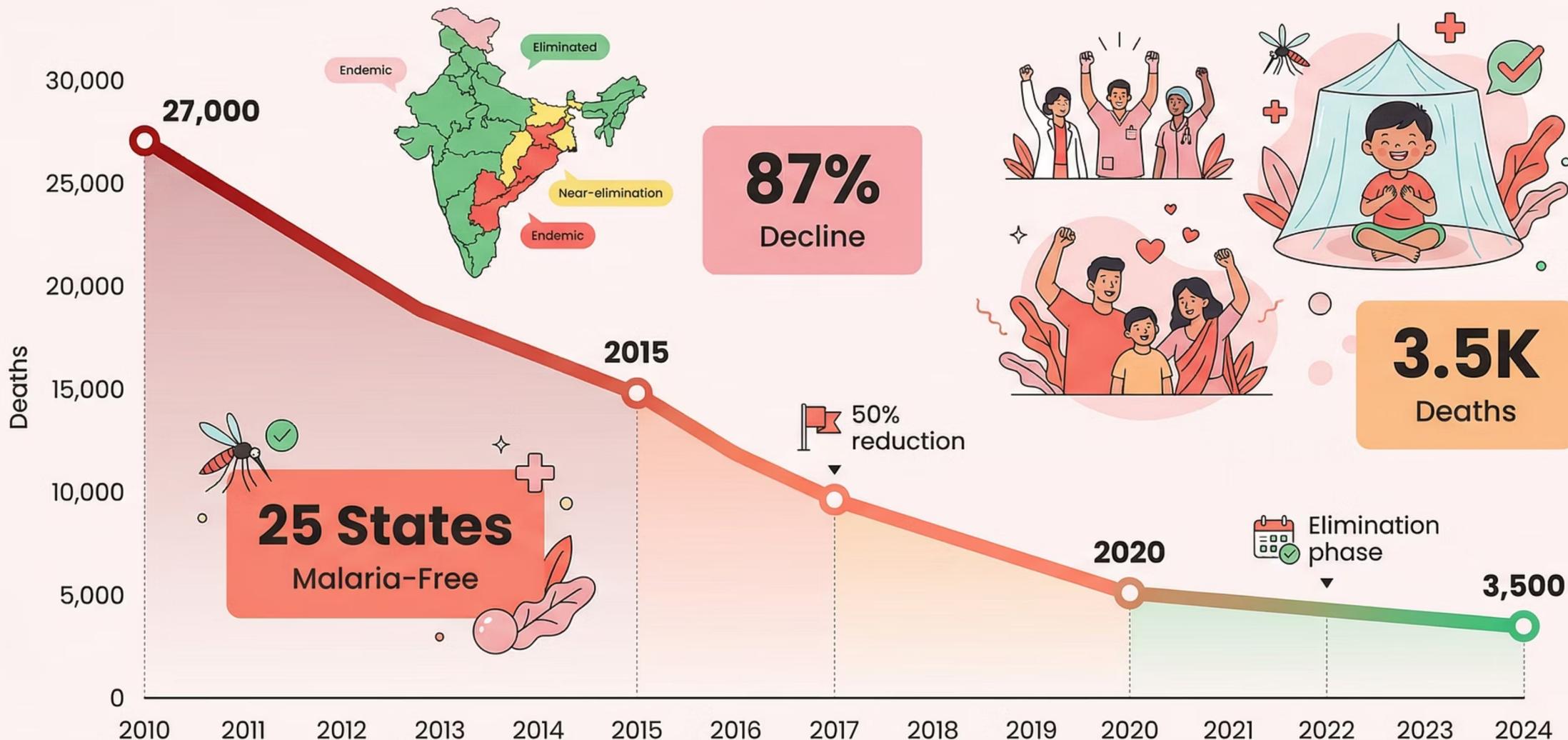




Malaria Control Evolution



India's Malaria Success



The Global Burden

Every 2 minutes, a child dies from malaria.
In 2022, there were 249 million cases
worldwide.

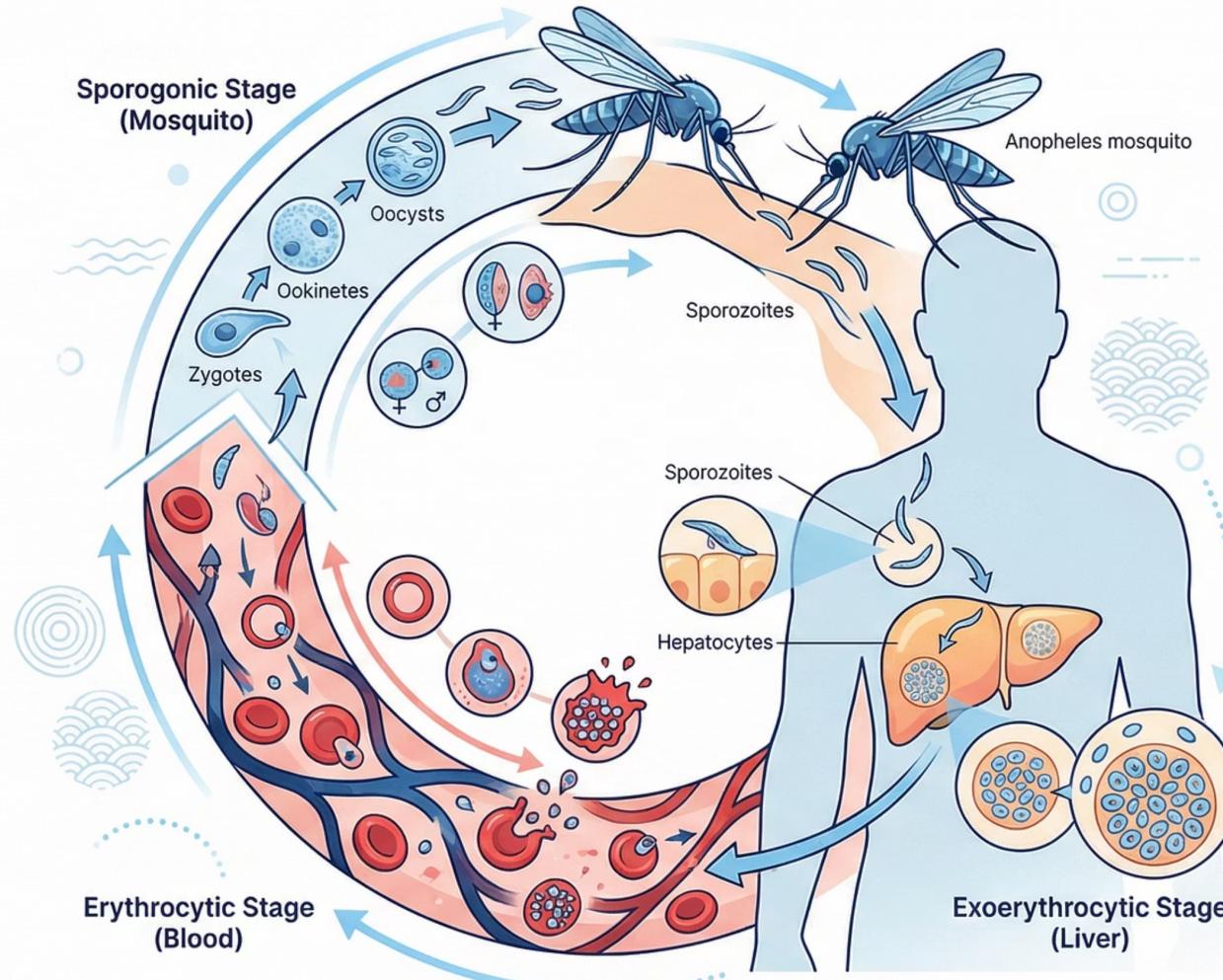


 Sub-Saharan Africa bears 95% of
malaria deaths, with children under 5
most vulnerable.

The Plasmodium Life Cycle

Complex Life Cycle

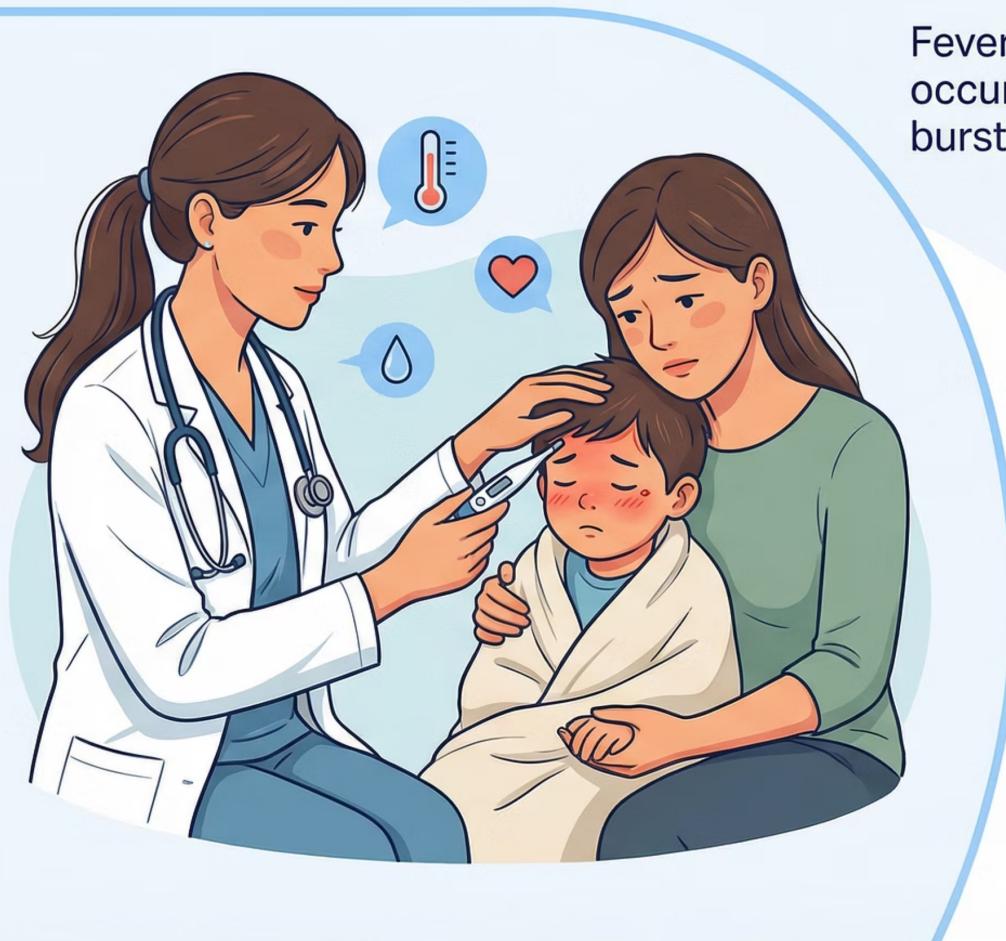
The malaria parasite has a complex two-host life cycle involving humans and Anopheles mosquitoes.



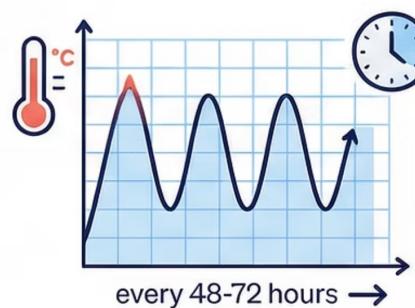
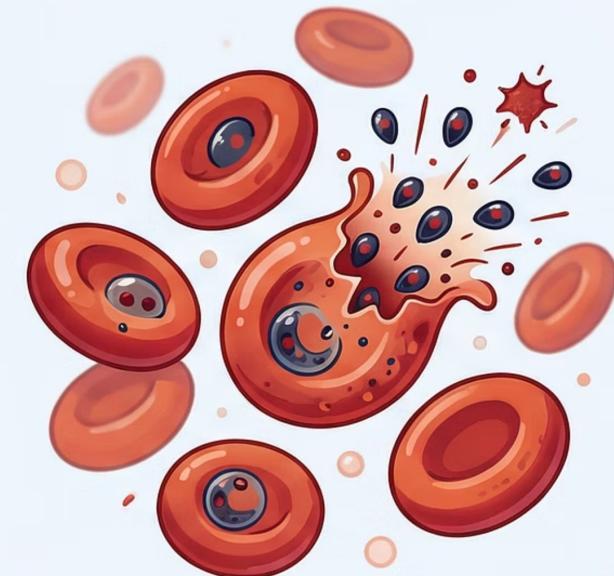
Targeted Interventions

Understanding this cycle is crucial for developing targeted interventions at each stage.

Clinical Manifestations



Fever, chills, and sweating occur in cycles as parasites burst from red blood cells.

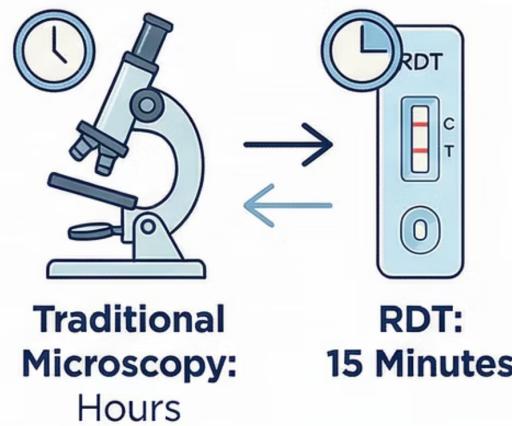


Severe malaria can cause cerebral complications, organ failure, and death within hours.

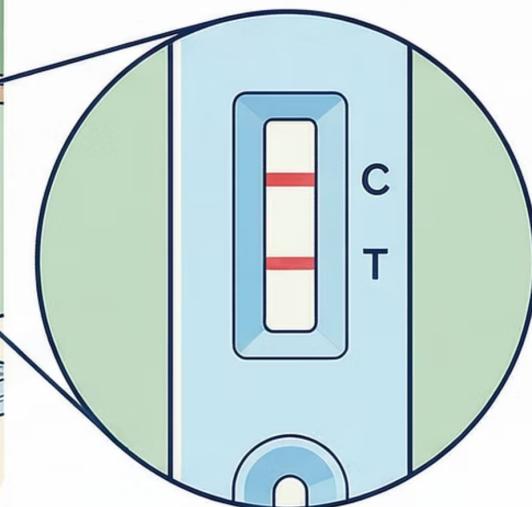


'Diagnostic Breakthroughs'

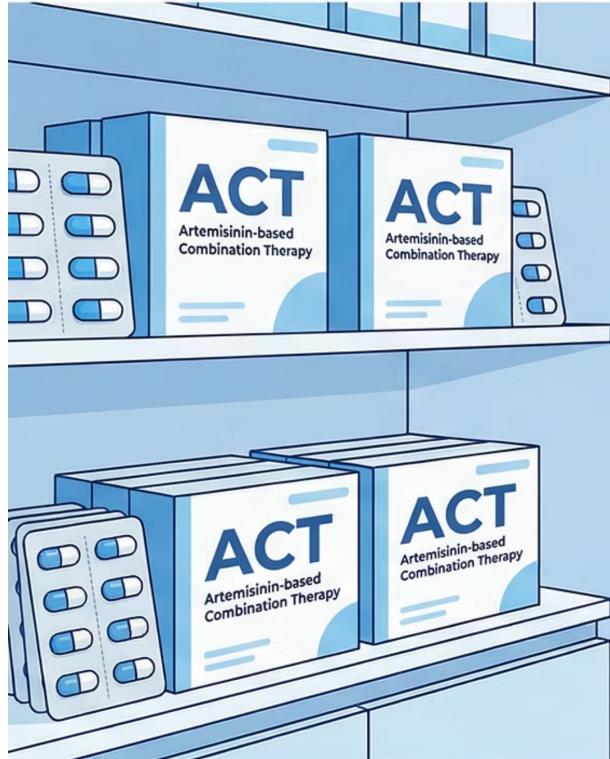
Rapid diagnostic **tests** have revolutionized **malaria detection** in resource-limited settings.



Early accurate diagnosis saves lives and prevents unnecessary **antibiotic use**.



Treatment Evolution



Artemisinin-based combination therapies (ACTs) remain the gold standard for uncomplicated malaria.



Drug resistance is emerging, threatening our most effective treatments.

Vector Control Strategies



Long-lasting insecticidal nets (LLINs) have prevented millions of deaths since 2000.



Indoor residual spraying targets mosquitoes where they rest after feeding.

Prevention in High-Risk Groups

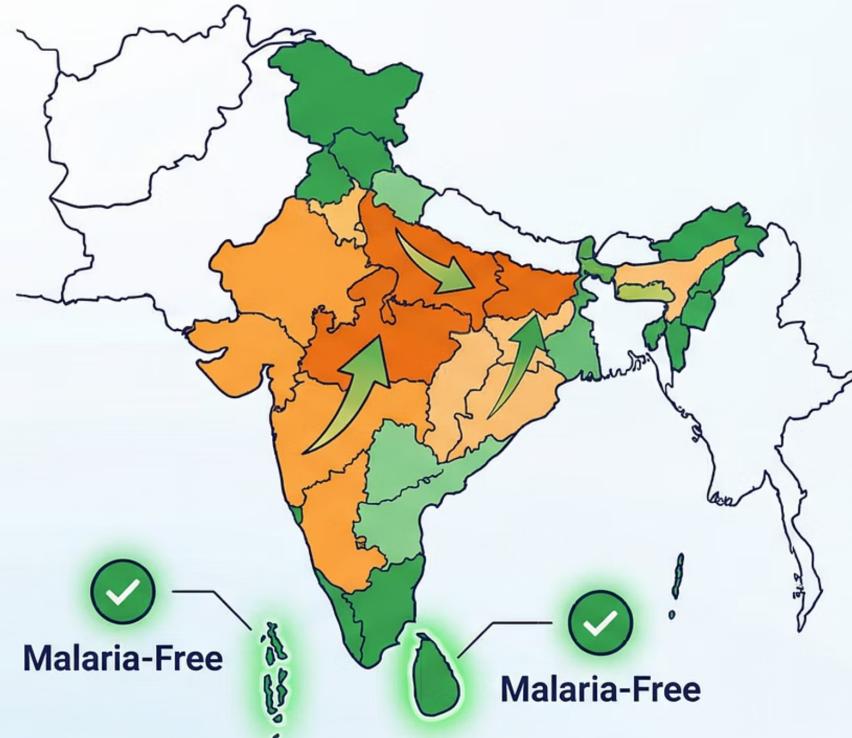


Pregnant women receive intermittent preventive treatment to protect mother and baby.



Travellers to endemic areas need prophylactic medications and protective measures.

Elimination Efforts



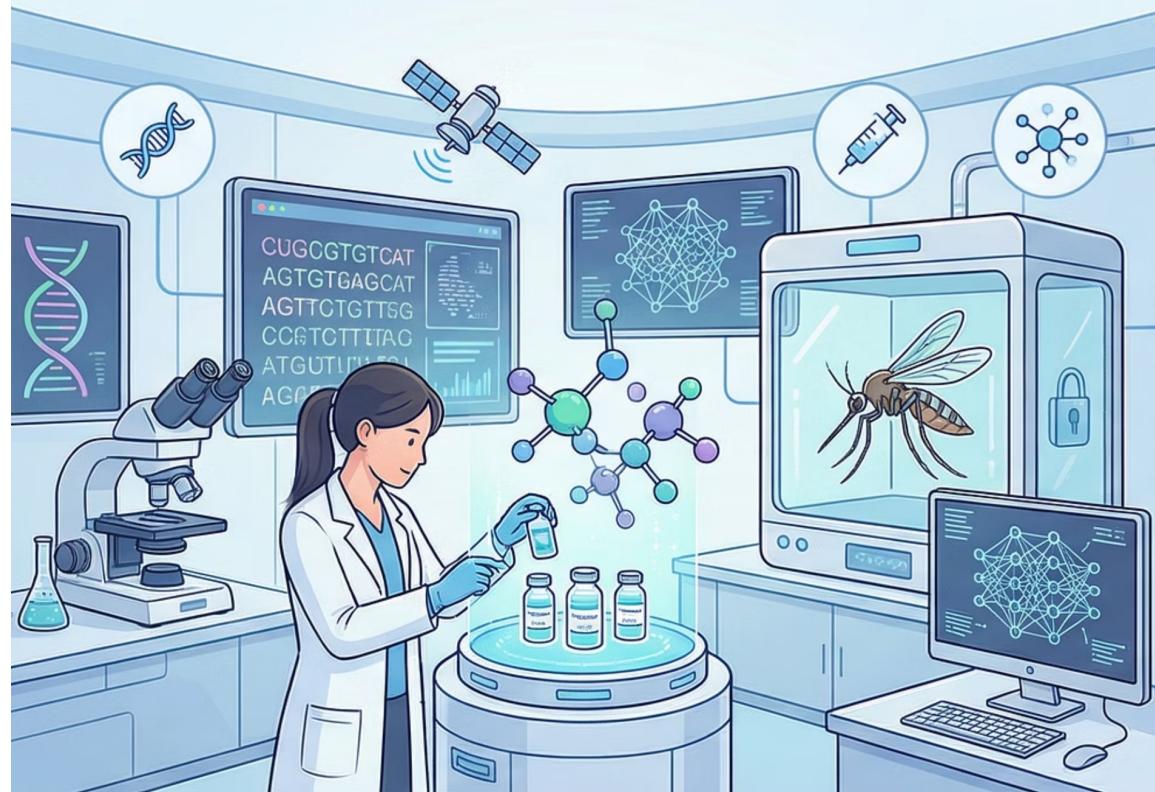
Countries like Sri Lanka and Maldives have achieved malaria-free status through sustained efforts.



India aims for malaria elimination by 2030 through integrated surveillance and response.



The Path Forward



New vaccines, genetically modified mosquitoes, and AI-powered surveillance offer hope.



Elimination requires sustained political commitment, adequate funding, and community engagement.

ASSESSMENT 1

MALARIA PREVENTION WORD FIND!

Find 5 hidden words related to Cholera Prevention.

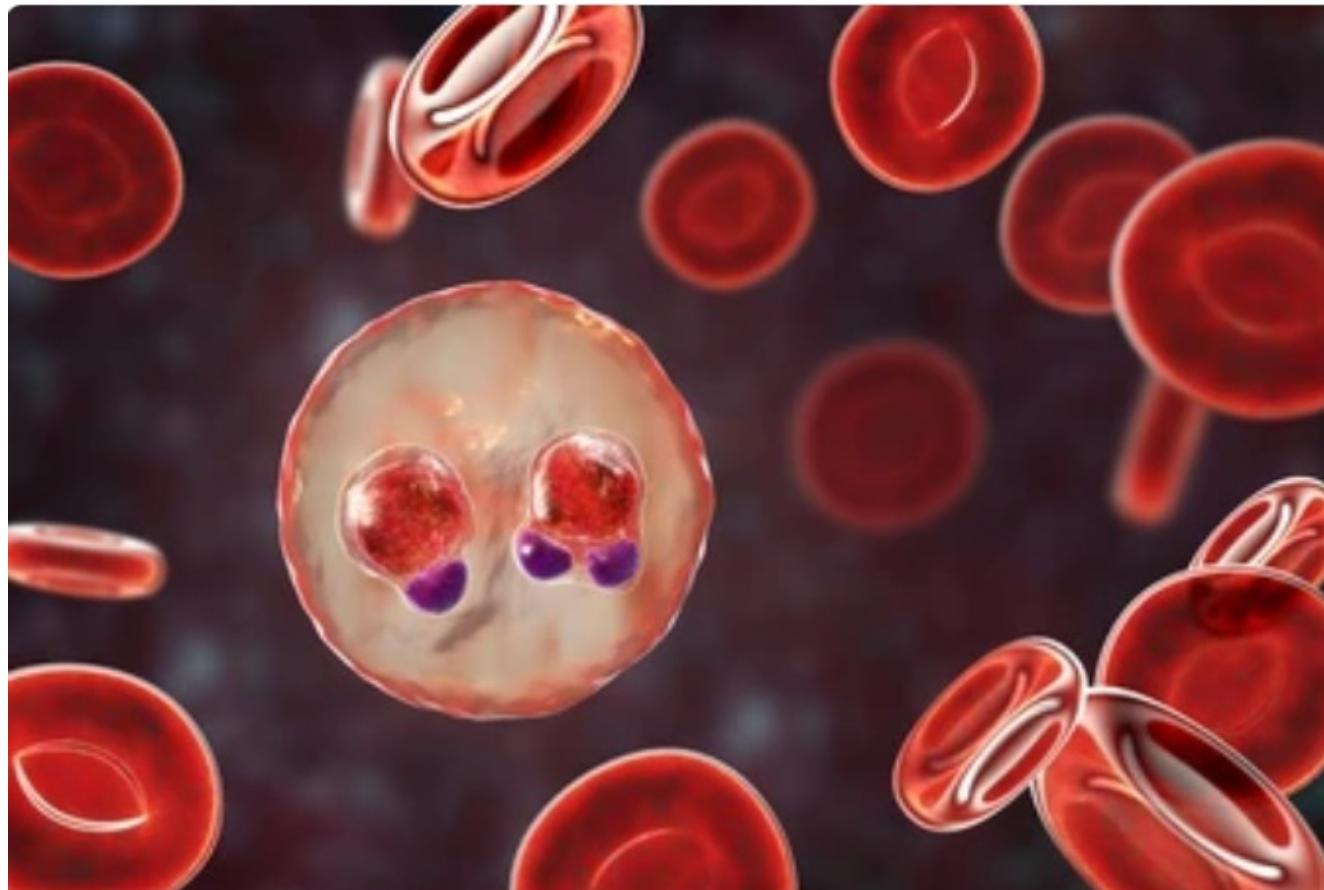
F	O	T	E	R	L	S	F	G	O	M
Q	O	H	T	F	E	P	F	G	E	F
W	E	R	A	T	U	P	S	E	D	F
P	E	R	T	E	U	S	J	A	N	T
P	E	A	P	L	R	E	O	F	L	E
C	F	O	N	G	E	N	H	A	D	E
P	L	N	E	T	O	H	N	K	O	P
H	E	L	O	N	D	M	T	X	N	D
S	M	G	L	N	A	T	C	E	Y	T

ASSESSMENT 2

Column A (Term)	Column B (Description)
1. Causative Agent	A. Female Anopheles mosquito
2. Vector	B. Drug class used for malaria treatment
3. Sporozoite	C. Parasite stage transmitted from mosquito to human host
4. Schizont	D. Plasmodium parasite (e.g., P. falciparum)
5. Artemisinin Combination Therapy (ACT)	E. Stage of the parasite multiplying asexually in red blood cells

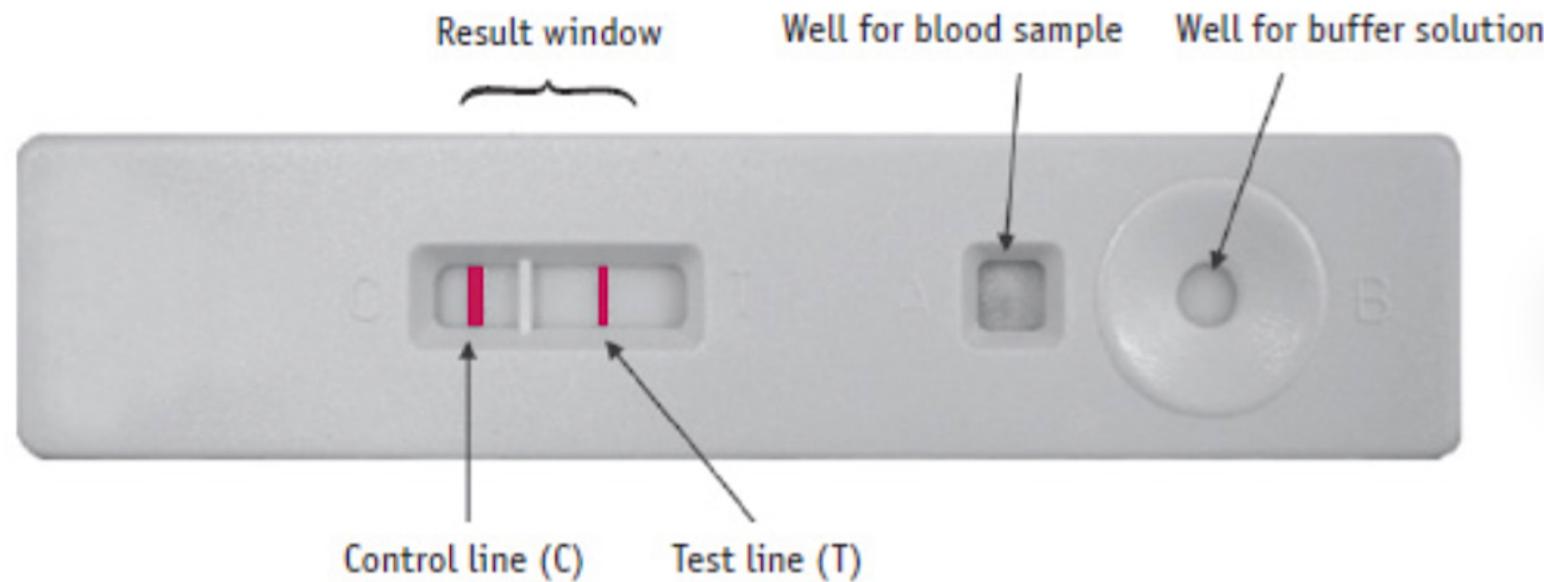
ASSESSMENT 3

Name the organism causing malaria?



ASSESSMENT 4

Name the test for diagnosing malaria?



ASSESSMENT 5

Find the missing words?

1. The dormant liver stage of *P. vivax* and *P. ovale* parasites is known as the _____.

2. The target of most antimalarial drugs, where the parasite reproduces asexually, is the _____ stage.

REFERENCES

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2. Textbook of Preventive and Social Medicine (Mahajan and Gupta), Edited by Roy Rabindra Nath, Saha Indranil, 4th Edition, 2013, ISBN: 9789350901878, JAYPEE Publications
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4. Essentials of Community Medicine—A Practical Approach, Hiremath Lalita D, Hiremath Dhananjaya A, 2nd Edition, 2012, ISBN: 9789350250440, JAYPEE Publications

Thank you