GAME

Quickly = suffix adverb

Heading = gerund (verb, adjective, noun)

Admit = verb

Or = conjunction

In = preposition

Controversial = adjective

Phrasal verbs

Break out – escape

Flare up – come back quickly / swelling?

Worn out – totally exhausted

Run down – when you need a holiday

Burn out – totally exhausted

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TODAY:

1. Listening practice
2. Read for answers
3. Key vocabulary

Homework: complete my worksheet

LISTENING PRACTICE

1. **How many deaths result from falciparum malaria?**

?

2. **According to the speaker, why is this not good enough?**

?

3. **How does the speaker describe the modern approach to vaccine design?**

?

4. **Where is the secret to a vaccine hidden?**

?

5. **Exactly how many proteins did they find?**

Over 200

6. **What did scientists do until recently?**

?

7. **What is the problem with that approach?**

?

8. **How many locations did the speaker obtain samples from?**

?

9. **Where did the speaker and her team remake the parasite?**

?

10. **What else is the speaker and her team trying to understand?**

?

11. **What is the problem stated at the end?**

?

Source: TED Medicine

Controversial:

No one agrees

Education:

Reading.

Can you teach reading understanding?

Vocabulary

TRANSCRIPT

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There are 200 million clinical cases of falciparum malaria in Africa every year, resulting in half a million deaths. I would like to talk to you about malaria vaccines. The ones that we have made **to date** are simply not good enough. Why?	**How many deaths result from falciparum malaria?** Half a million deaths
We've been working at it for 100 plus years. When we started, technology was limited. We could see just a tiny fraction of what the parasite really looked like. Today, we are **awash** with technology, advanced imaging and omics platforms -- genomics, transcriptomics, proteomics. These tools have given us a clearer view of just how complex the parasite really is.	**According to the speaker, why is this not good enough?** 100 years and we have lots of tech and STILL HAVEN'T found it.
However, in spite of this, our approach to vaccine design has remained pretty **rudimentary**. To make a good vaccine, we must go back to basics to understand how our bodies handle this complexity.	**How does the speaker describe the modern approach to vaccine design?** Basic level / elementary
People who are frequently infected with malaria learn to deal with it. They get the infection, but they don't get ill. The recipe is **encoded** in antibodies. My team went back to our complex parasite, probed it with samples from Africans who had overcome malaria to answer the question: "What does a successful antibody response look like?" We found over 200 proteins, many of which are not on the radar for malaria vaccines. My research community may be missing out important parts of the parasite.	**Where is the secret to a vaccine hidden?** Antibodies
Until recently, when one had identified a protein of interest, they tested whether it might be important for a vaccine by conducting a **cohort** study. This typically involved about 300 participants in a village in Africa, whose samples were analyzed to see whether antibodies to the protein would predict who got malaria and who did not.	**Exactly how many proteins did they find?** Over 200 **What did scientists do until recently?** Tried to understand problem through cohort study
In the past 30 years, these studies have tested a small number of proteins in relatively few samples and usually in single locations. The results have not been **consistent**. My team essentially collapsed 30 years of this type of research into one exciting experiment, conducted over just three months.	**What is the problem with that approach?** Not consistent

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Innovatively, we assembled 10,000 samples from 15 locations in seven African countries, **spanning** time, age and the variable **vehemence** of malaria experienced in Africa. We used omics intelligence to prioritize our parasite proteins, synthesize them in the lab and in short, recreated the malaria parasite on a chip. We did this in Africa, and we're very proud of that. The chip is a small glass slide, but it gives us incredible power. We simultaneously gathered data on over 100 antibody responses. What are we looking for? The recipe behind a successful antibody response, so that we can predict what might make a good malaria vaccine. We're also trying to figure out exactly **what antibodies do to the parasite**. How do they kill it? Do they attack from multiple angles? Is there **synergy**? How much antibody do you need? Our studies suggest that having a bit of one antibody won't be enough. It might take high concentrations of antibodies against multiple parasite proteins. We're also learning that antibodies kill the parasite in **a myriad of** ways, and studying any one of these in isolation may not **adequately** reflect reality. Just like we can now see the parasite in **greater definition**, my team and I are focused on understanding how our bodies overcome this complexity. We believe that this could provide the breakthroughs that we need to make malaria history through vaccination.	**How many locations did the speaker obtain samples from?** 15 **Where did the speaker and her team remake the parasite?** On a chip microchip **What else is the speaker and her team trying to understand?** . . **What is the problem stated at the end?** Antibodies kill the parasite in many different ways so the problem is we cannot each one alone.

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Vocabulary should learned in context.

Watch the video for the definitions!

Homework:

Complete the table:

Vocabulary	Word Form	Definition	Example sentence
to date	Adverb		
awash	Adjective		
rudimentary	Adjective		
encoded	Verb/Adjective		
cohort	Noun		
consistent	Adjective		
spanning	Gerund		
stratify	Verb		
vehemence	Noun		
synergy	Noun		
a myriad of	Noun phrase		
adequately	Adverb		
greater definition	Adj + noun		

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