

# Training dogs to sniff out malaria

Medical detection dogs could help stop this disease.

## BASIC

Dogs have a great sense of smell, and humans have trained them to do incredible things with it. For example, Freya, the dog pictured here, is learning to sniff out people who have a terrible disease called malaria.

**How do people get malaria?** (When they're bitten by mosquitoes that carry the disease.) **Who can read this quote aloud?** If someone is "infectious," it means they have the disease and can spread it to others, even if they don't feel sick themselves.

**Where are the cities of London and Durham, according to this map?**

## GENERAL

Freya, the dog pictured here, is a medical detection dog. **What do you think that means?**

Dogs like Freya are trained to use their sense of smell to detect, or identify, certain diseases in people. Freya is one of several dogs that have recently been trained to identify people with malaria. **What is malaria?** (A serious disease caused by a parasite that is transmitted through the bite of infected mosquitoes.) Malaria kills hundreds of thousands of people every year, so scientists are looking for ways to stop the spread of the disease. **Who can read this quote aloud?** Not everyone who has the malaria parasite gets sick or shows symptoms, as this quote suggests. Unfortunately, this means that infected people often wind up infecting others because they don't take precautions.

## ADVANCED

Dogs use their keen sense of smell to help humans in lots of ways. **What are some examples?**

(Finding missing people, sniffing out drugs and bombs, and so on.) Medical detection dogs can even learn to identify people who have certain diseases. Research groups from universities in London and Durham, England are training dogs to sniff out the malaria parasite in humans. The researchers developed an ingenious method to train dogs like Freya, pictured here. **How do you think they did it?** People who are infected with the malaria parasite release a particular scent. So the scientists collected socks that had been worn by people who have malaria and those who don't. They trained the dogs by rewarding them whenever they correctly identified the malaria scent, and when they correctly identified a sock that

(England.) Scientists at universities in both of these cities recently did an

experiment. They trained dogs to sniff out socks that people with malaria had worn. This is possible because all people who have malaria give off the same particular scent. The dogs were trained to recognize that scent. Scientists hope that dogs like these will get so good at identifying people with this disease that they can help stop the spread of malaria. NEXT

However, everyone with malaria — even those who don't show symptoms — have been found to release a very particular scent. And that is where the sniffer dogs come in.

Recently, researchers at universities in these two English cities worked together to train dogs to detect malaria. **Which two cities are they?** (London and Durham.) They collected socks worn by people with and without the malaria parasite. The dogs proved to be incredibly good at identifying whether each sock had traces of the scent or not. **Does this surprise you? Why or why not?** A lot more research needs to be done. But the hope is that soon, sniffer dogs could be used at places like airports, to stop people from spreading the disease into new regions. NEXT

did NOT have the scent. The dogs in the initial study had such incredible success rates that even more dogs have been trained.

The hope is that dogs trained to sniff out malaria can help stop the disease from spreading. **Who can read this quote?** These dogs could be stationed at places like airports. **How could this help?** (They could identify people who may not know they have malaria before they enter a country and spread the parasite into new regions.) Halting the spread of malaria is crucial. In 2016, it was estimated that half the world's population was at risk of contracting the parasite, which kills hundreds of thousands of people every year. **Do dogs seem like a promising way to combat this disease? What else could be done to reduce the number of people who contract malaria?** NEXT



# Training dogs to sniff out malaria (cont'd)

Dogs help humans in many ways.

**BASIC** Dogs are sometimes called “man’s best friend.” **Why do you think that is?** One reason is that dogs have been helping humans for thousands of years. Here you see a dog working for the Red Cross early in the 20<sup>th</sup> century. Dogs like this one were used in wartime. They stood guard and helped find wounded soldiers. Today, dogs help people in many different ways. **Can you name any?** Some dogs help people who are blind or deaf, or who need assistance because of a health issue. Service dogs can help people with disabilities lead independent lives. They can be trained to do all sorts of things,

**GENERAL** “Man’s best friend” got their nickname for a reason. Dogs have been helping humans for thousands of years. Because dogs are so intelligent and loyal, humans have trained them to do all sorts of things. Here you see a dog working for the Red Cross in 1909. **How do you think dogs helped the Red Cross?** The Red Cross used dogs during wartime to stand guard, find injured soldiers, and for many other reasons.

Today, many dogs work for police departments and law enforcement agencies, often because of their powerful sense of smell. **Can you think of ways dogs can help police?** (*Sniffing for drugs, missing persons, and so on.*) Many other dogs assist people who are blind or deaf or have another disability. You have probably seen a service dog with its owner on

**ADVANCED** Dogs have been domesticated for some 15,000 years. They have been helping their human companions, in one way or another, ever since. Here you see a dog working for the Red Cross in 1909. During both world wars, dogs were trained to serve on sentry duty and scouting missions. They also located wounded soldiers who might not otherwise have been found.

Today, many police departments have loyal “K9” officers who are valued for their loyalty as well as their powerful sense of smell. And many other dogs work as “service animals” for people with disabilities. These dogs devote their lives to providing a level of independence to their owners that might not be possible otherwise. German shepherds, golden retrievers, and Labradors are popular breeds to train as service dogs because

like turning on lights and opening doors. Police departments rely on dogs in many ways, too.

This police officer is pictured with a member of the “K9” unit. **Why is it called that?** (*It’s short for “canine,” which is another word for dog.*) Dogs can also be trained to provide comfort and support to people in the hospital, like the one in this photo. **How do you think this helps people?** END



the street or in a store. Certain breeds are often used as service dogs, including German shepherds, golden retrievers, and Labradors. **What’s your favorite dog breed?** Puppies are chosen to be trained as service dogs if they show certain personality traits. The dog must be self-confident but not aggressive, not easily startled or distracted, and have a calm personality. The right dog can be trained to do all sorts of things to assist its human companion, from opening doors and turning on lights to fetching laundry. Dogs can also comfort people in the hospital, or those who have been through a sad or scary experience. If you have a dog, you probably know what a comfort a damp nose and soft fur can be if you’re having a bad day! **Why do you think pets can help change our moods?** END

of their intelligence and disposition. **Have you ever watched a “K9” officer or a service dog in action? Do you think these “working dogs” enjoy being useful?** To be considered for training as a service dog, a puppy needs to show certain traits: self-confident but not aggressive, and a relatively calm temperament.

Other dogs have been trained to support hospital patients and those who have suffered emotional trauma. Dogs have even been brought to help survivors of school shootings. And after the 9/11 attacks, dogs were brought to Ground Zero, where they brought great comfort to many rescue workers. **Why do you think interacting with a dog could help someone dealing with anxiety or tragedy? What other ways, not mentioned here, do dogs help humans?** END