SCIENCE NEWS

DOGS DETECT COVID BETTER THAN TESTS

DOGS are better at detecting COVID-19 in humans than the most commonly used tests.

That's what a study from France has shown. Scientists there studied how sniffer dogs compared to lateral flow tests (LFTs), which offer results within half an hour and are being widely used in homes, workplaces and schools.

The original COVID-19 tests are called PCR (which stands for polymerase chain reaction). They are more accurate than LFTs but take longer to process because they are sent to a lab.

Several studies are underway around the world to work out how reliable "COVID sniffer dogs" could be. The French trial has reported its results and they're astonishingly good: dogs were able to detect the virus with 97% accuracy, and could detect negative samples 91% of the time.

That's much higher than a study of LFTs found earlier this year. That review, which looked at 64 other studies, said that LFTs correctly spot 72% of people who are infected with the virus and have symptoms. But in those with no symptoms, only 58% are picked up by LFTs.

Researchers in the French trial placed cotton pads under the armpits of 335 people aged between six and 76 who had gone for a coronavirus test at PCR testing centres in Paris. They took these sweat samples and sealed them in jars, then got the dogs to sniff the jars. The dogs' handlers did not know which samples were positive and the dogs had not met any of the volunteers in the trial.

The dogs detected 97% of the 109 people whose test later turned out to be positive, and 91% of those whose test was later shown to be negative.

Professor Jean-Marc Tréluyer, from Paris's Necker-Cochin hospital, said: "These are excellent results, comparable with those of a PCR test. [Dogs] could help identify those people who should undergo a full viral test and – because the dogs' response is so quick – facilitate [help] mass testing."

Dogs could also be used in locations such as airports, train stations and even schools to help identify people who are carrying the virus.

Sammy, a COVID sniffer dog being trained in Belgium

A separate study in the UK also had promising results: dogs were trained to detect coronavirus in body odour, and they spotted 88% of cases (but also wrongly identified 16% of people without COVID as having the virus).

In other COVID-19 news, sewage is being examined across the UK in order to find cases of the so-called Indian variant. COVID-19 appears in the poo of some infected people, so scientists can spot it in wastewater. Analysis of sewage has led to at least six places being identified as having cases of the variant, whose official name is B.1.617.2.

DOGS DETECT COVID BETTER THAN TESTS

GLOSSARY

COVID-19 – The name of the disease caused by the coronavirus currently circulating in the human population

lateral flow tests (LFTs) – COVID-19 tests that can be done at home and give a result in 30 minutes

facilitate – To make something possible

sewage – The dirty waste water that is flushed from toilets and other pipes in a building

Indian variant – A version of the coronavirus which was first detected in India and is thought to be more contagious

■ **Look at the article 'Dogs detect COVID better than tests'.**

1) Find **three** different ways of testing for COVID-19.

2) The study from France says that dogs are better at detecting COVID-19 than which of these tests?

3a) Where are LFTs used?
3b) How long does it take to get a result from this test?

4) Which is the most **accurate** of all the tests?

5) If these tests are the most accurate, why don't we just use these all the time? Why do we need other kinds of tests?

6) How were the dogs' skills tested in the French research? Write down the steps of the experiment.

7) Find the number to complete the summary of the research results.

- In the French study, dogs identified _____% of positive cases.
- In a UK study, dogs identified _____% of positive cases.
- A review of LFTs found that these quick tests only spotted _____% of positive cases.
- LFTs only identified _____ % of people who had the virus, but didn't have any symptoms.

8) How did the researchers make sure that the dogs did not have any clues about who had the virus?

9) Why do you think dogs would be a good way of detecting coronavirus in places such as airports, train stations and even schools?

10) Children at secondary school currently have to test themselves twice a week using the quick tests (LFTs), which involves sticking cotton buds in throats and noses. It would be much easier if all schools got sniffer dogs.

- Can you think of reasons why it might be difficult to use dogs in secondary schools?

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TEACHER ANSWERS

> **AIM OF THE NEWS COMPREHENSIONS:** News reports are unique non-fiction texts. Being real, they naturally engage students, and with the range of topics that are covered, help to develop pupils' knowledge and understanding of the wider world outside the classroom. The reports are ideal for short, focused comprehension or discussion activities. Along with the opportunity to find fascinating facts and appreciate the opinions of those involved, there is plenty to be inferred and deduced to understand in more depth what is being reported. Like authors, journalists play with language, so news 'stories' are rich nuggets of text to investigate and provide the opportunity for literacy programmes.
>
> **TEACHER ANSWER GUIDE:** The teacher answers are intended to provide a quick reference guide. Suggestions are given for the 'Expected response' or starting point that pupils could give. The 'Development' then gives more in-depth ideas that students can work towards as they develop their reading comprehension skills.
>
> For a list of the reading skills used, please email schools@firstnews.co.uk.

■ **Look at the article 'Dogs detect COVID better than tests'.**

1) Find three different ways of testing for COVID-19.
READING SKILL – Find and explain information
(NC 2a)

Expected response
Any of:
• PCR tests
• Lateral flow tests (LFTs)
• Sniffer dogs
• Testing sewage

2) The study from France says that dogs are better at detecting COVID-19 than which of these tests?
READING SKILL – Find and explain information
(NC 2a)

Expected response
• Lateral flow tests

3a) Where are LFTs used?
READING SKILL – Find and explain information
(NC 2a)

Expected response
• Homes, workplaces and schools

3b) How long does it take to get a result from this test?
READING SKILL – Find and explain information
(NC 2a)

Expected response
• 30 minutes

4) Which is the most accurate of all the tests?
READING SKILL – Infer information and justify with evidence
(NC 2c & 8)

Expected response
• PCR tests

Development
• Probably the PCR lab tests, although the article doesn't actually say that they are more accurate than the sniffer dogs!

5) If these tests are the most accurate, why don't we just use these all the time? Why do we need other kinds of tests?
READING SKILL – Infer information and justify with evidence
(NC 2c & 8)

Expected response
• PCR tests have to be sent off to the lab

Development
• PCR tests have to be sent off to the lab, so it takes time to get a result and there will be higher costs to get a result.
• We also need tests that give a quick result and can be used by very large numbers of people.

6) How were the dogs' skills tested in the French research? Write down the steps of the experiment.
READING SKILL – Summarise information from more than one paragraph
(NC 2e)

Expected response

1 – Cotton pads were put in armpits.
2 – The pads were put in jars.
3 – The dogs sniffed the jars.

Development

1 – Cotton pads were put in the armpits of 365 people who had gone for a coronavirus test.
2 – The sweaty cotton pads were put in sealed jars.
3 – The dogs sniffed the jars and reacted in some way to show whether the sample was positive or not.
4 – The dogs' decisions were compared with actual test results, to find out what percentage of samples the dogs had judged correctly.

7) Find the number to complete the summary of the research results.
READING SKILL – Find and explain information
(NC 2a)

Expected response

• In the French study, dogs identified 97% of positive cases.
• In a UK study, dogs identified 88% of positive cases.
• A review of LFTs found that these quick tests only spotted 72% of positive cases.
• LFTs only identified 58% of people who had the virus, but didn't have any symptoms.

8) How did the researchers make sure that the dogs did not have any clues about who had the virus?
READING SKILL – Find and explain information
(NC 2a)

Expected response

• The dogs did not meet the volunteers and the dog handlers did not know which of the samples were positive.

9) Why do you think dogs would be a good way of detecting coronavirus in places such as airports, train stations and even schools?
READING SKILL – Infer information and justify with evidence
(NC 2c & 8)

Expected response

• They are very quick – they just need to sniff.
• They could bark at people who have the virus.
• They could sniff lots of people.

Development

• These places have large numbers of people moving around quickly, so it's impossible to test them all properly.
• Dogs could sniff the people and give an instant response; people identified could be asked to go and have a proper test.

10) Children at secondary school currently have to test themselves twice a week using the quick tests (LFTs), which involves sticking cotton buds in throats and noses. It would be much easier if all schools got sniffer dogs.
Can you think of reasons why it might be difficult to use dogs in secondary schools?
READING SKILL – Infer information and justify with evidence
(NC 2c & 8)

Expected response

• There aren't enough dogs.
• The dogs would need to sniff every child – this might be difficult to organise.
• Some children are scared of dogs.

Development

• The dogs have to be trained to detect COVID-19; this takes time and costs money. There aren't enough trained dogs to use in schools at the moment.
• Every dog needs a handler. These people also have to be trained and have to be paid.
• Using sniffer dogs to detect COVID-19 is something which is at the research stage; it is not a proven test method yet.