

COVID-19 testing – Parliamentary briefing from the British *In Vitro* Diagnostics Association

Introduction

On 2 April, the Government set a target of carrying out 100,000 COVID-19 tests a day in England by the end of April. As the representative industry body for the in vitro diagnostics sector, we stand ready to do all we can to support the Government in this goal. This briefing is designed to give Parliamentarians an introduction to testing for COVID-19, and what we are doing to drive up testing. It sets out:

- **Why we need testing**
- **How testing works**
- **What industry is doing** to meet the Government's goals
- **Next steps**

The British In Vitro Diagnostics Association (BIVDA) is the national industry association of the manufacturers and distributors of in vitro diagnostic products in the UK, with over a hundred members employing over 8,500 people in the UK and representing 95% of the industry.

Why we need testing

Effective testing for COVID-19 is recognised internationally as a key component in the fight against the virus, and has been critical in countries which have been able to control it, such as South Korea. Early detection of COVID-19 is important for every stage of the pandemic. Early detection allows health systems to:¹

- **Minimise transmissions quickly**, by self-isolating people with COVID-19 as soon as possible after they are infected, or after they have already had the virus and cleared it
- **Protect NHS staff**, by supporting and isolating healthcare workers as soon as they contract the virus, and enabling those without the virus to return to work
- **Help reduce any second wave of the pandemic**, by putting in place robust measures for early detection and extensive contact tracing

How testing works

Scientists can test for COVID-19 in two ways:^{2 3 4}

1. **They can detect the virus itself to work out who is currently infected.** To do this, scientists can either look for signs of the virus' genes or analyse the presence of nucleic acid, or the viral antigen. This requires a swab sample from the upper and lower respiratory tracts, when a patient is exhibiting symptoms
2. **They can detect antibodies produced in response to the virus to help identify people who previously had the virus.** Our immune system produces antibodies in response to infection by the virus or bacteria, so if these can be identified, they show the patient has been infected at some point. This requires a sample of the patient's blood. This also identifies who could be immune

The table below gives an overview of these tests, and their benefits and limitations.

Test	Examples of tests	Results turnaround	Benefits	Limitations
Virus detection (swab sample)	PCR (polymerase chain reaction) test	2-4 days	Now that the genetic information of the virus is known, these tests are highly accurate and provide scientists with clear binary information on whether someone has the virus.	It requires large amounts of laboratory products and chemicals both to carry out the test and to deactivate the virus first to ensure the safety of scientists. It also only identifies those who currently have the virus, and not whether they previously had it and are now immune.
Antibody testing (blood sample)	ELISA and rapid antibody testing	10 minutes to 24 hours (if carried out locally)	Will be critical to understanding the population-wide infection rate, and who may be immune to the virus and therefore able to return to work.	Because of limited understanding of this novel virus, the tests are currently producing false positive and false negative results. It is also not yet known how long people are immune to the virus for.

What industry is doing

In order to help the Government meet its testing objectives, BIVDA is:

- **Supporting member companies to increase current testing capacity and roll-out new tests** to support the Government’s target of 100,000 tests a day by the end of April
- **Actively engaging with the Government on solutions**, in regular meetings with them. This provides them with an easy and simple way of working with industry
- **Running an online platform, alongside Government, for people to send new and novel testing solutions.** This platform has been developed by industry associations in partnership with the Department for Health and Social Care, and can be accessed [here](#).
- **Providing Parliamentarians and health leaders with regular updates on our progress**, including through digital video conferences with MPs

“Our companies are working flat out, 24 hours a day, increasing capacity for essential materials to tackle COVID-19 and providing Government and the NHS with additional diagnostics, expertise and facilities so that patients, healthcare workers and other critical workers are prioritised for testing quickly and safely. It’s absolutely vital for patients in the UK that we all work together to understand how we can increase testing capacity even further, build on the NHS capability and mitigate any potential shortages that could arise.”

Doris-Ann Williams, BIVDA Chief Executive

Next steps

This is the first in a series of briefings we will be producing for Parliamentarians, to provide you with vital information on testing. We are also looking to arrange video conferences with interested MPs, in order to provide you with an update on our progress with Government. Should you be interested in joining this video conference, or arranging a call separately, please do not hesitate to contact us at Doris-Ann@bivda.org.uk.

BIVDA, 14 April 2020

¹ House of Commons Science and Technology Committee, *Testing during the current Covid 19 (Coronavirus) outbreak*, 8 April 2020

² Verdict Medical Devices, *Different paths to the same destination: screening for Covid 19*, 3 April 2020

³ The Association for Clinical Biochemistry and Laboratory Medicine, *ACB expert briefing on Covid 19 diagnosis, patient assessment and monitoring*, 4 April 2020

⁴ Science, *The standard coronavirus test, if available, works well – but can new diagnostics help in this pandemic?*, 22 March 2020