[UKHSA launches study to better understand COVID-19 vaccine response](#)

The UK Health Security Agency (UKHSA) will lead a consortium of academic partners receiving £1.5 million in funding from the UK Research and Innovation (UKRI) to understand why some people become infected after vaccination or prior infection while others do not.

The Public Health England (PHE) landmark SARS-CoV-2 immunity and reinfection evaluation (SIREN) study, together with a number of other research cohorts and partners including the Protective Immunity from T-Cells in Healthcare workers (PITCH) study, the Humoral Immune Correlates of COVID-19 (HICC), the Genotype to Phenotype (G2P) Consortium, GenOMICC and the Francis Crick Institute will assess participants' detailed immune system response to COVID-19 infections and vaccinations.

The research will seek to answer a number of key questions, including why some people get reinfections or infections after vaccination while others do not. It will also assess how long immunity from vaccinations lasts, how the timeline differs between the different vaccines and how changes in the SARS-CoV-2 virus' genetic make-up might evade the immune response.

Nearly 50,000 healthcare professionals enrolled in the existing SIREN and PITCH studies are given PCR tests every 2 weeks as well as regular antibody blood tests. The antibody results of those individuals who test positive for COVID-19, despite having had 2 doses of the vaccine or a previous confirmed infection, will be analysed by further specialised clinical interviews and tests to determine whether there are aspects of their immune response that differ from individuals who do not contract COVID-19. This could help to identify factors that increase the risk of 'breakthrough' infections – where someone catches COVID-19 despite being vaccinated.

Participants may also be asked if they would like to participate in analysis of their genetic code, to see if there are particular mutations in their DNA that might predict a poor response to vaccination.

Dr Susan Hopkins, COVID-19 Strategic Response Director at PHE said:

> Understanding the immune response is essential, not only to determine who is most at risk of infections after vaccination, but also for vaccine developers who can target key components of the immune response effectively for future booster vaccines.
>
> We are pleased that this funding will allow us to better understand immunity and are very grateful to the nearly 50,000 participants who have given up their time to take part in the study.

Health and Social Care Secretary Sajid Javid said:

Alongside the recent launch of a new UK-wide antibody testing programme, this new study will help us gain valuable insights into the immune response following vaccination or natural infection.

Our historic vaccination programme continues to prevent millions of infections and save over 95,000 lives in England alone. I encourage everyone to get both jabs so they can protect themselves and those around them.

Dr Rupert Beale, head of the Crick's Cell Biology of Infection Laboratory, said:

Understanding immunity is crucial to the pandemic response. We are teaming up with PHE and partners across the UK to get the best measurements of the body's immune response after vaccination.

We would like to understand which aspects of the immune response are the best predictors of vaccine efficacy. This will let us target additional doses of vaccine to people who might need them, and will inform the design of next generation vaccines to get better protection against emerging viral variants.

UKHSA launches study to better understand COVID-19 vaccine response

UKHSA has been awarded funding to lead a consortium of research partners to better understand how individuals respond to the coronavirus (COVID-19) vaccines.

Guidance: Benin: migrant health guide

Advice and guidance on the health needs of migrant patients from Benin for healthcare practitioners.

[Guidance: Costa Rica: migrant health guide](#)

Advice and guidance on the health needs of migrant patients from Costa Rica for healthcare practitioners.

[Deeper Scan — a game-changer in hardware validation, threat and anomaly detection](#)

Airports are at risk of falling victim to a wide array of threats, but one that is persistently challenging to overcome is detecting explosives inside baggage. Both from an operational and a governance perspective, airport security is incredibly complex. Authorities need to provide effective, efficient and passenger friendly screening systems, whilst staying ahead of evolving security threats. Airports employ reliable processes and technologies to detect threats in baggage, however, these are invasive for passengers and resource intensive for airlines and airports.

In 2018, DASA launched a themed call: Finding Explosives Hidden in Electrical Items as part of the Future Aviation Security Solutions (FASS) programme managed by the Home Office and the Department for Transport.

Bedfordshire-based NWPRO Ltd received £80,000 to develop Deeper Scan — a whole object detection system which uses innovative artificial intelligence and x-ray technology to scan airline baggage and identify electronic contents, with accurate results ready in less than 15 seconds.

Deeper Scan has received significant interest from major airports, and NWPRO Ltd are working to integrate the technology with off-the-shelf CT scanning capabilities, to reduce the resource burden for airlines and airports.

Jay Richards, Managing Director of NWPRO Ltd said:

> During the early stages of product development, it's difficult to get feedback from end users and stakeholders. Being part of a FASS project enabled us to form a bridge between our business and the user which ultimately helped us to develop a better product for their needs.

The technology has also found an additional use in cyber security. Deeper Scan can be used to validate electronic assets, scanning and identifying components within new electronic devices to detect tampered and counterfeit hardware.

This is hugely beneficial for government departments and other official agencies who handle and rely on sensitive information every day, and need to ensure that it is secure at all times. NWPRO Ltd has already received great feedback on their contribution to a safer cyber resilience through the supply chain from Government agencies.

In June 2021, Deeper Scan was selected as one of the UK's most innovative cyber security products in a competition run by the Department for Digital, Culture, Media and Sport (DCMS), highlighting its capability need.