

# **Press release: Space tech to fight bowel cancer and exposure to air pollution**

The projects are being funded with a share of £5m from the UK Space Agency to mark the 70th birthday of the NHS.

Science Minister Chris Skidmore said:

It's incredible that artificial intelligence technology that was first developed decades ago and is being used to examine distant planets, will now help detect some of the hardest to treat cancers at their earliest stages.

With bowel cancer the second most common cause of cancer-related deaths, this kind of innovation will be crucial in helping the NHS prevent more than 20,000 cancer-related deaths a year by 2033 – a key aim of our modern Industrial Strategy.

## **Early diAgnosis Real-Time Healthcare System for CANcer (EARTH SCAN) from Odin Vision, a University College London (UCL) spinout**

Thanks to a £1 million grant, space technology could improve early detection and diagnosis of bowel cancer through a revolutionary artificial intelligence (AI) system developed by Odin Vision and UCL researchers that identifies and characterises polyps by analysing live colonoscopy video, leading to early treatment and saved lives.

Controlling a spacecraft millions of miles away requires a reliable, as well as fast data connection. In a similar way doctors using technology to diagnose cancer depend on data reliability and not just speed.

The EARTH SCAN project will use secure, high speed satellite communications combined with bespoke data compression software, which is normally used for operating space missions. The project will create a cloud-based AI system that can support doctors when identifying cancer in patients.

Through the use of this space technology, the system can be deployed reliably anywhere on Earth, giving patients a consistent, high level of care.

Bowel cancer is the second most common cause of cancer related deaths in the UK and detecting it using traditional colonoscopy methods can be challenging for doctors. With a survival rate of 90% through early diagnosis, new ways of identifying and diagnosing cancerous growths sooner are vital.

Peter Mountney, Odin Vision, Early diAgnosis Real-Time Healthcare System for CANcer (EARTH SCAN) project said:

We are moving into a new era of healthcare where Artificial Intelligence (AI) will support doctors to identify and diagnose cancer faster and more effectively.

The EARTH SCAN project is an exciting opportunity to use satellite technology to bring this AI support to doctors in real time. Real time support means doctors can make immediate decisions regarding treatment and patients can receive the results of their scan straight away instead of waiting weeks.

## **Personalised Space Technology Exercise Platform (P-STEP) from the University of Leicester**

Exercise is recognised as a miracle drug for health, however judging the right exercise for sufferers of long-term health conditions like asthma can be challenging due to conflicting advice and exposure to air pollution.

Thanks to £2 million funding the University of Leicester will develop a new mobile application that uses data from Earth Observation satellites that can map pollution hotspots in towns and cities. It combines this with AI to provide personalised exercise routes that take into account any medical conditions the user suffers from which could be exacerbated by pollution, such as asthma. Pollution warnings are then generated at the local level to within 10 metres.

One of the main satellites used is Sentinel 5P which was built by Airbus Defence and Space in Stevenage, UK, and launched in October 2017.

Professor Andre Ng, University of Leicester, 'Personalised Space Technology Exercise Platform' (P-STEP) project said:

Whilst we know physical activity is good for many patients with long term conditions including heart and lung diseases, clinicians are often anxious about recommending exercise and often unable to prescribe accurate and effective exercise for their patients. We are really pleased to have been given the NHS/UK Space Agency award, which enables us to harness our expertise in Space, Health and Environment sciences here at Leicester.

We will develop a patient-centred mobile app that takes in satellite data with unique resolution including that of air quality that delivers precise guideline-based exercise advice tailored to their condition and ability. This greatly enhances the confidence of both healthcare professionals to prescribe and patients to put into practice, effective physical activity which improves well-being and reduces healthcare utilisation.

The projects are being funded by the UK Space Agency in partnership with NHS England and the European Space Agency (ESA). In June 2018 innovators were

asked to bid for a share of £5 million to turn technology originally designed for space into medical applications that improve NHS treatment and care.

These projects will help to address the key NHS 70th Anniversary Challenges of managing Long Term conditions (LTC) including joined up health and care services, transforming GP services and other primary care and meeting mental health needs.

Emily Gravestock, Head of Applications. UK Space Agency said:

The demanding environment of space presents challenges which our world-leading engineers and experts meet with creative ideas like these solutions for the NHS.

Supported by the Industrial Strategy, the UK is a global leader in using space technologies to save lives and enhance quality of life back on Earth.

Professor Tony Young, NHS England's national clinical director for innovation, said:

The NHS has a long and impressive track record of world class innovation that improves patient care – from hip replacements to vaccines, medical scans to organ transplants and now genomics.

The NHS is open to innovations from any industry, anywhere in the world – or even out of this world – if they can improve the care we provide to patients and help us to deliver our Long Term Plan to save half a million more lives.

The Personalised Space Technology Exercise Platform and EARTH SCAN projects are two projects receiving a share of a £5 million innovation fund drawn from ESA's Business Applications and Space Solutions programme, to which the UK is the largest subscriber.

On April 8 £1 million was also awarded to Adaptix to develop a portable 3D X-ray scanner, which could also revolutionise cancer diagnosis. Support for a fourth project will be announced in due course.

A report by the UK Space Agency in March this year, revealed that for every £1 of public money spent in the space industry produces £4 in value for the recipients in the space industry, with additional benefits to the UK economy.

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New health technologies inspired by working in space will provide real-time diagnosis of bowel cancer and freedom from air pollution.

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## News story: Caledonian Sleeper launch new carriages with £50 million of UK Government funding

Tonight [Sunday 28 April] Secretary of State for Scotland, David Mundell, welcomed the launch of the new Caledonian Sleeper service at Central Station in Glasgow. The UK Government contributed £50 million to the replacement of the Caledonian Sleeper fleet to improve on-train facilities.

Welcoming the news, Mr Mundell said:

It is fantastic to see the launch of the new Caledonian Sleeper service. The UK Government has invested £50 million in the new fleet, improving vital connectivity between Scotland and England, and improving the service for the thousands of passengers.

I am pleased to travel on their debut journey and look forward to using this service for years to come.

The investment highlights the UK Government's commitment to invest in infrastructure benefitting the whole of the UK, safeguarding a prominent economic link between Scotland and England.

The launch event marks the public introduction of the new carriages on the "Lowlander Service" between London Euston and Glasgow Central or Edinburgh Waverley.

This will be followed by the introduction on the "Highlander" route between London and Aberdeen, Inverness and Fort William in the coming weeks.

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## Press release: UK exports of trainers sprint to glory ahead of London Marathon

A record 414,168 runners applied to take part in this Sunday's (28th April) London Marathon and UK exports have also been smashing records, as sales of trainers and sports footwear overseas reached £392 million in 2018, a 21% increase since the previous year.

The most popular destination was the Irish Republic, which imported British products worth £94 million. Exports to other economies also raced up; China by 233% to £2.3 million, UAE 181% to £1.6 million and the largest growth came in the Thai market, with exports growing by 1157% to £1.1million.

Trainers and Sports footwear have been a high performer for British exports, increasing at an average annual growth rate of 21% and have more than tripled in value.

London took 1st place in the regional race for most footwear exports in the UK, worth over £1.8 billion in 2018. They were followed by North West England in 2nd (£1.1 billion) and the East of England in 3rd (£634 million).

**Secretary of State for International Trade, Dr Liam Fox, said:**

Exports of UK trainers and sports footwear are doing brilliantly all over the world, the record number of applicants for this year's London Marathon is truly inspiring, and it's encouraging to know that more runners than ever will have British made trainers on their feet.

The export success of companies like Norman WALSH and New Balance, which have large headquarters in the UK is testament to the economic benefits of selling overseas. I encourage like-minded businesses to get in touch as my international economic department stands ready to offer its expertise in helping all companies to unlock their exporting potential.

Norman WALSH Footwear are a UK exporter of specialist running shoes who were established in 1961 and based in Bolton. They have had great success exporting overseas through the help of the Department for International Trade.

**A spokesperson from Norman WALSH, said:**

Currently we are exporting to Japan, China, Korea, Europe and we have just opened accounts in Kuwait. The Department for International Trade has been very helpful on a number of occasions by sourcing new distributors, trade exhibitions and helping with contract negotiations.

Our turnover has increased and approximately 60% of our sales coming from exports, future plans are in place to continue our export sales drive with the USA, our next target for expansion.

New Balance, who are proud sponsors of the London Marathon, were founded over 100 years ago in the United States before investing in the UK. They employ approximately 400 people in the U.K. almost evenly split between the company's factory in Flimby and its European headquarters in Warrington, Cheshire.

**A spokesperson from New Balance UK, said:**

New Balance exports to all major global markets, with 80 per cent of the production from the company's manufacturing facility in Flimby, West Cumbria, going in exports.

New Balance has built a strong relationship with the DIT over a number of years with the Department offering the company assistance in areas such as exporting and international retail expansion.

As well as working with individual businesses, DIT has worked side by side with the British footwear industry to ensure people across the globe continue to enjoy British brands.

BFA and DIT have maintained a long standing and close dialogue on international trade, and of course particularly recently in relation to Brexit. We were delighted to be invited to create one of the first industry specific trade panels and continue to share information with government colleagues.

BFA is committed to working with DIT to ensure the best possible outcome and clear guidance, for our industry whatever the detail of Brexit brings.

## Notes to editors

1. Norman Walsh are a British sports footwear manufacturer. Contact [info@walshsports.co.uk](mailto:info@walshsports.co.uk) or visit their website [www.normanwalshuk.com](http://www.normanwalshuk.com) for more information.
  2. New Balance are a US based sports footwear manufacturer, who have factories in the UK. They can be contacted on [nbukcs@newbalance.co.uk](mailto:nbukcs@newbalance.co.uk).
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## [Press release: UK exports of trainers sprint to glory ahead of London Marathon](#)

Ahead of this year's London Marathon, UK exports of trainers and sports footwear topped over £300 million.