

# Worms on a mission to research muscle loss in space

Led by scientists from Nottingham and Exeter University, with hardware designed by Oxford-based Kayser Space, a research team aims to determine the causes of muscle changes during spaceflight and find ways to mitigate these biological changes.

Discovering more about muscle loss in space will expand our understanding of how ageing affects our muscles; this could lead to more effective therapies and new treatments for muscular dystrophies here on Earth.

Science Minister Amanda Solloway said:

Experiments in space push the frontiers of knowledge and provide real-life benefits for the rest of us back on Earth.

It is astonishing to think that sending worms into space could improve our health and help us lead longer lives, and I am thrilled that UK researchers are leading this effort.

The worms, *C. elegans*, share many of the essential biological characteristics of humans and are affected by biological changes in space, including alterations to muscle and the ability to use energy.

The research will build on an experiment from 2018 and will test new molecular causes of, and potential therapies for muscle loss during spaceflight.

Dr Bethan Philips, Associate Professor of Clinical, Metabolic and Molecular Physiology, at the School of Medicine at the University of Nottingham, said:

Since the dawn of the space age, there have been concerns that space travel can be harmful to astronauts. We are very excited that this latest mission will enable us to build on the work we have already done to not only further explore what causes muscle loss with spaceflight, but to also look at how to prevent it. This work will have implications not only for astronauts but also for many situations on Earth.

Dr Tim Etheridge, Associate Professor at the University of Exeter, said:

The experiment will give us even more new information on the molecules that cause muscle decline in space, and whether targeting these with novel drugs and interventions can help. This information

can then build the foundations for safely sending humans on long-term missions into deep space.

Kayser Space, based in Oxfordshire, has developed the hardware for the experiment. The worms will be housed in culture bags inside 24 matchbox-sized experiment containers, each containing three culture bags. Once on board the ISS, these containers will be placed into the incubator in the station's Columbus Module. The experiment will take place over 5-6 days.

David Zolesi – Kayser Space Managing Director, said:

This launch is the second of a series of three life science payloads developed by Kayser Space to fly to the ISS within three years. It is an important achievement that will help Kayser to bolster its position as a leading partner to the UK scientific community for implementing experiments in space.

The experiment is due to launch to the ISS on the SpX-22, a Commercial Resupply Service mission contracted by NASA and flown by SpaceX using a Cargo Dragon 2 from the Kennedy Space Center in Florida.

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## **A global leader in the fight against corruption: Foreign Secretary statement to General Assembly**

Mr President, your Excellencies,

Corruption is a scourge.

It is the acid burning away the rule of law, democracy and public trust in their institutions.

It stunts development, it drains poorer nations of their wealth, and keeps their people trapped in poverty.

Over 2% of global GDP is lost to corruption every single year.

And it adds 10% to the costs of doing business right around the world.

So, we really need to take action.

I'm proud that the UK is a global leader in the fight against corruption.

Since 2006 the National Crime Agency's International Corruption Unit has frozen, confiscated or returned over £1.1 billion of assets that were stolen from developing countries.

Most recently, we signed an agreement to return £4.2 million to Nigeria.

That was money that was recovered from associates of the former Governor of Nigeria's Delta State, James Ibori.

The UK was the first in the G20 to establish a public register of the beneficial owners of companies.

It was an important step in tackling the use of anonymous shell companies to move corrupt money around the world.

Over 4.6 million companies are now listed on that register.

Over 100 countries are now committed to some form of beneficial ownership transparency.

Four years ago, we established the International Anti-Corruption Coordination Centre in London...

Which has helped freeze over £300 million of suspected corrupt assets worldwide, and it has also led to dozens of arrests.

We know that the UK's status as a global financial centre makes us an attractive location for investment. That's hugely welcome.

But it also means that we must redouble our efforts to stop corrupt actors and their cronies from laundering their dirty money through British banks or British businesses.

So, with our Anti-Corruption Strategy we are pioneering innovative methods of asset recovery such as Unexplained Wealth Orders and Account Freezing Orders.

We imposed sanctions on individuals who have been involved in serious corruption from 6 different countries.

And that included sanctions slapped on 14 individuals involved in the \$230 million tax fraud in Russia, perpetrated by an organised criminal group, and disclosed by Sergei Magnitsky.

It includes sanctions on a Sudanese businessman for the misappropriation of state assets in one of the poorest countries in the world, fuelling instability and conflict.

Through asset freezes and travel bans, we can help prevent corrupt actors from using the UK as a haven for their dirty money, while also at the same time deterring corruption around the world.

But if we are going to stop corruption, it must first be exposed..

By the spotlight of the media and investigative journalists,

By strong civil society bodies,

And by the authorities who are prepared and able to act.

And we have got to stand up for these institutions.

So, the UK is the co-chair of the global Media Freedom Coalition which now has 47 countries signed up. We are dedicated to supporting journalists doing their vital work without fear or favour.

And through our G7 Presidency this year, we are taking action to strengthen open societies, shared values and the rules-based international order.

We have agreed a G7 statement for this Special Session that demonstrates our united resolve.

And G7 Interior Ministers will take further action on corruption in their meeting in September.

So, we urge all countries to follow through on the declaration that we have signed up to today, to deliver transparency of company ownership through establishing beneficial ownership registers, more open procurement, greater transparency in the management of public finances, and a safer environment for journalists to shine a light on corruption.

In addition to all of that, we call for the participation of NGOs and others in the UN Convention Against Corruption reviews, to make sure that that process is as robust and as rigorous as it possibly can be.

Because corruption is not a victimless crime.

By lining their own pockets, corrupt actors cause untold damage and hardship on the countries and communities which they exploit for their own predatory greed.

We must work together to bring these corrosive practices to an end.

By doing so we will promote trust and certainty,

Boost investment to help re-build economies that work for everyone,

And take a vital step towards delivering on the Sustainable Development Goals.

And as a force for good in the world, global Britain will play our full role in that effort.

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# [Calling on Russia to immediately cease its aggression against Ukraine and end its occupation of Crimea](#)

The following is a joint statement by Albania, Australia, Canada, Costa Rica, Estonia, Federated States of Micronesia, Georgia, Marshall Islands, Moldova, Montenegro, New Zealand, North Macedonia, Ukraine, the United Kingdom, and the United States.

Russia held its fourth informal Arria-formula meeting since December 2020 at the UN today to once again promote a false narrative about Ukraine. We regret Russia's deliberate and repeated misuse of the Arria-formula process to pervert the truth and obfuscate Russia's malign activities. As we saw today, Russia invited speakers sanctioned by UN member states for their violations of Ukraine's sovereignty and territorial integrity. Russia's false narratives about Ukraine are part of a disinformation campaign designed to destabilize and divert the attention of the international community. We recognize and appreciate the statement by the European Union, further demonstrating the international community's unwavering support for Ukraine.

The 2014 Revolution of Dignity saw Ukrainians exercise their right to peaceful assembly, demand a prosperous, democratic, and peaceful Ukraine, and reject Moscow's influence. Russia's response was to brazenly violate international principles, occupying Crimea and launching the conflict in eastern Ukraine that it perpetuates to this day. Russia is a party to the conflict, not a mediator. We fully support the Euro-Atlantic aspirations of the Ukrainian people, and continue to work with the government of Ukraine to help it fulfill the demands of the Revolution of Dignity in the face of continued Russian aggression. We reaffirm our resolute commitment to Ukraine's sovereignty and territorial integrity, within its internationally recognized borders and territorial waters.

We call on Russia to immediately cease its aggression against Ukraine and end its occupation of Crimea and the egregious human rights abuses it inflicts on the Crimean population. We urge Russia to fulfill its Minsk commitments, including implementing an immediate and comprehensive ceasefire and withdrawing its military personnel and materiel from the territory of Ukraine.

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## Three quarters of UK adults vaccinated with first dose

- Over three quarters of UK adults have been vaccinated with a first dose of the COVID-19 vaccine

- Public urged to come forward for second doses to help protect against the threat of new variants

More than three quarters of UK adults have received a first dose of a COVID-19 vaccine, the latest figures published today (2 June) show, as the vaccination programme continues at pace.

Health services across the UK have now administered over 65.6 million vaccines between 8 December and 1 June, including over 39.5 million people with their first dose (75.2%) and over 26 million with both doses (49.5%), ensuring they have the strongest possible protection against COVID-19 from a second dose.

This week, G7 health ministers will gather ahead of the leader's summit where the Health Secretary will praise the fantastic efforts of the NHS, volunteers, and scientists over the last year in developing and rolling out the vaccine programme at pace.

The G7 Health Ministers' summit follows the announcement last week that Janssen's single-dose COVID-19 vaccine has been authorised for use by the UK medicines regulator, the MHRA. This is yet another weapon in the UK's fight against the pandemic. Earlier this year, the Janssen vaccine was shown to be 67% effective overall in preventing COVID-19 infection and 85% effective in preventing severe disease or hospitalisation.

Health and Social Care Secretary Matt Hancock said:

I am incredibly pleased that over three quarters of UK adults have had their first dose. This is an incredible step forward in the largest and most successful vaccination programme in our history.

Although we've come so far in less than 6 months since the world's first authorised jab was given in the UK, our vital work is not done. We must redouble our efforts on the second dose to ensure as many people as possible have maximum protection.

We've brought forward appointments from 12 to 8 weeks for a second dose, and all over 30s are now eligible for the jab. I encourage everyone to come forward when the offer comes and play a part in getting us back to normality.

Vaccines Minister Nadhim Zahawi said:

Three quarters of adults have been vaccinated with a first dose of the vaccine, a remarkable milestone.

I want to pay tribute to everyone involved who has helped deliver the vaccine into arms at record speed – the NHS and care staff, volunteers, pharmacists, civil servants and more – this was truly a momentous national effort.

The second dose is crucial to get maximum protection so please come forward for your second jab. It could save your life and protect your loved ones.

The government met its target of offering a vaccine to the most vulnerable by 15 April and remains on track to offer a first dose to all adults by the end of July, as well as vaccinating all adults over 50 with both doses by 21 June. NHS England has extended the offer of a vaccine to everyone over the age of 30, and people are encouraged to come forward and get their jab when called.

To ensure people have the strongest possible protection against COVID-19, appointments for second doses have been brought forward from 12 to 8 weeks for the remaining people in the top 9 priority groups who have yet to receive both doses.

The move follows updated advice from the independent experts at the Joint Committee on Vaccination and Immunisation (JCVI), which has considered the latest available evidence and has recommended reducing the dosing interval to counter the threat of new variants of concern. The government and its scientific experts are monitoring the evolving situation and rates of variants closely, and will not hesitate to take additional action as necessary.

A recent study by Public Health England (PHE) shows that 2 doses of the COVID-19 vaccines are highly effective against the B.1.617.2 variant first identified in India. Vaccine effectiveness against symptomatic disease from the B.1.617.2 variant is similar after 2 doses compared to the B.1.1.7 (Kent) variant dominant in the UK, and we expect to see even higher levels of effectiveness against hospitalisation and death.

Secretary of State for Scotland Alister Jack said:

This is further great news and shows just how hugely successful the UK government vaccination programme is.

We have procured and paid for millions of doses for people in all parts of the UK. With 4 vaccines now approved, and the rollout going well, we can all feel hopeful for the future.

The fight against COVID isn't over but, working as a team – from our amazing health workers, to the military, to everyone getting their jab when it's offered – the UK can beat this cruel pandemic.

Secretary of State for Wales Simon Hart said:

To have reached the milestone of over three quarters of UK adults having had their first dose of a vaccine is a remarkable achievement.



We have come impressively far in the last 6 months and my thanks go to all the dedicated and tireless individuals that have contributed their vital support to the national vaccine delivery effort.

While we celebrate today, there is still work yet to be done as we increase our efforts to ensure that lives are protected. I encourage you all to come forward when called and help us continue on our journey back to normality.

Secretary of State for Northern Ireland Brandon Lewis said:

This is fantastic news! Thanks to all the healthcare workers, armed forces, civil servants and volunteers who have helped us reach this milestone – a tremendous effort by all.

We have come so far but it is vitally important to attend your second vaccine appointment and receive your second dose – it will give you and those around you the best possible protection.

Vaccinated people are far less likely to get COVID-19 with symptoms. Vaccinated people are even more unlikely to get serious COVID-19, to be admitted to hospital, or to die from it and there is growing evidence that vaccinated people are less likely to pass the virus to others.

Data from PHE's real-world study shows the vaccines are already having a significant impact in the UK, reducing hospitalisations and deaths, saving more than 13,200 lives and preventing at least 39,700 hospitalisations in England.

PHE analysis also shows that individuals who receive a single dose of the Oxford/AstraZeneca vaccine have approximately 80% lower risk of death against the B.1.1.7 coronavirus variant originating in Kent and a second dose of the vaccine can provide 85 to 90% protection against symptomatic disease. Protection against death from the Pfizer-BioNTech vaccine rises from approximately 80% after one dose to 97% after 2 doses against the Kent variant.

Data published by YouGov shows the UK continues to top the list of nations where people are willing to have a COVID-19 vaccine or have already been vaccinated. ONS data published on 6 May found that more than 9 in 10 (93%) adults reported positive sentiment towards the vaccine.

Approved vaccines are available from thousands of NHS vaccine centres, GP practices and pharmacies. Around 98% of people live within 10 miles of a vaccination centre in England and vaccinations are taking place at sites including mosques, community centres and football stadiums.

To date, the government has invested over £300 million into manufacturing a successful vaccine to enable a rapid roll out.

The UK government is committed to supporting equitable access to vaccines worldwide. The UK is one of the largest donors to the COVAX facility, the global mechanism to help developing countries access a coronavirus vaccine, and has committed £548 million in UK aid to help distribute 1.3 billion doses of coronavirus vaccines to 92 developing countries this year.