



**2021**  
Year in Review





## A message from our CEO

### Dear friend,

This year has been one of both great and incremental change towards a kinder science - and all of it has been made possible by your support.

Scientists at our Animal Replacement Centre of Excellence (ARC) 2.0 at the University of Exeter were able to make a major discovery in our understanding of diabetes, using human cells. The work at ARC 2.0 has been groundbreaking in finding the gene responsible for changing insulin-producing beta cells in response to ageing - which could lead to new diabetes treatments.

We continued supporting the career pathway of exceptional next generation scientists, including Dr Paul Holloway, who developed a new methodology that can mimic human stroke by using various types of human cells grown in 3D on small 'chips'.

The evidence-based results from the research projects we have continued to fund have, in turn, helped us to engage with decision makers, calling on them to change policy around the use of animals in laboratories. Thanks to overwhelming public support and in collaboration with Cruelty Free International and OneKind, we delivered a petition to the Government signed by over 100,000 people, which led to a parliamentary debate on phasing out animal research.

We are coming out of the pandemic with more people than ever supporting our important work, in part thanks to our Furry Five animation campaign which enabled us to speak to a wider audience of supporters. Through animation, we are telling the stories of the animals who suffer in medical research. This unique series is inspiring empathy and a desire to act and, like you, support us.

And this is already having an impact on our ability to make change happen. We've seen sizable increases in the number of supporters and social media followers as well as donations in the past year, despite the pandemic.



**With your support  
we are coming ever closer to  
a world where human diseases are  
cured faster without animal suffering.**

With this momentum, we were able to introduce our inaugural World Animal Free Research Day in May 2021 – an important annual event to take stock of the achievements, and challenges ahead, in our journey to end medical research on animals once and for all, replacing them with more modern techniques that provide a better chance of generating progress.

We can now build on the breakthroughs we have made these past 12 months. It is with your support that we are coming ever closer to a world where human diseases are cured faster without animal suffering.

**Carla Owen**  
CEO, Animal Free Research UK



# Why do we need change?

Outdated animal research is failing both humans and animals. Greater than 92%<sup>1</sup> of drugs that show promise in animal tests and proceed into human trials fail to get to clinic, mostly for reasons of poor efficacy and safety that animal testing failed to predict. Even so, around three million animals, including mice, rats, dogs, cats, monkeys and horses continue to suffer in Britain's laboratories every year.

Use of animals in medical research is unethical, costly and unjustifiable. Thankfully, pioneering technologies are already replacing animal testing and research.

That's why Animal Free Research UK is funding scientists at the forefront of the scientific revolution. Together we're replacing outdated, cruel animal testing with cutting-edge, human relevant technologies. And we're calling on policy makers to mirror the changes taking place - by modernising medical research.

**By accelerating change, together we can ensure the development of medicines is entirely animal free.**

1 Bio, Pharma Intelligence, QLS Advisors. 2020. Clinical Development Success Rates and Contributing Factors ([pharmaintelligence.informa.com/~media/informa-shop-window/pharma/2021/files/reports/2021-clinical-development-success-rates-2011-2020-v17.pdf](https://pharmaintelligence.informa.com/~media/informa-shop-window/pharma/2021/files/reports/2021-clinical-development-success-rates-2011-2020-v17.pdf))

## We're focusing on four key areas



Influencing decision makers to change policy to enable human relevant research



Funding and enabling the career pathway of exceptional scientists who only use human relevant research methods



Collaborating with universities, high-impact journals and industry to enable animal free research



Funding transformational research, development and technology that has the potential to replace animals



## What is government policy in the UK right now?

At present the UK Government maintains that the use of animals in research and testing is necessary, with 2.88 million new animal experiments carried out in 2020<sup>2</sup>. While the Government supports the replacement, reduction, and refinement of animal research (known as the 3Rs), it hasn't yet acknowledged the need for a large-scale transition to human relevant, animal free techniques, unlike countries like the Netherlands.

## Why hasn't government policy changed already?

There are systemic barriers to change: some researchers and policy makers continue to believe that animal experiments are the best way to study human disease. This belief is emboldened by the rules governing scientific publishing and funding.

Some research funders, reviewers and publishers continue to insist that research using human specific new approach methodologies be 'validated', or compared with, results from animal tests. They do this instead of accepting the human data on its own merits - even though this is often much more relevant to humans and cannot be validated in another species.



L to R: Carla Owen CEO, Martyn Day MP - Primary Sponsor of our EDM 674 & Dr Adrian Biddle Animal Free Research UK-funded scientist

Securing funding for academic medical research is also a major hurdle. It takes up to a year for researchers to secure financing, with only approximately a 1 in 10 chance of success.

Securing funding for human relevant research has further challenges because researchers are competing against animal research proposals, which are more established.

This is all compounded by a lack of awareness among policy and lawmakers about the advancement and greater success of animal free new approach methodologies.

<sup>2</sup> Gov.UK, 2020, Annual Statistics of Scientific Procedures on Living Animals, Great Britain (gov.uk/government/statistics/statistics-of-scientific-procedures-on-living-animals-great-britain-2020/annual-statistics-of-scientific-procedures-on-living-animals-great-britain-2020)



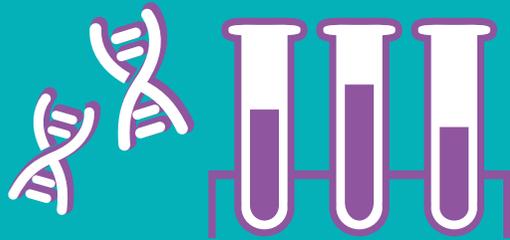
## What are we doing to change this?

We're working to influence the Government and to make policy makers aware that the use of animals in research is unethical and unnecessary. There are better ways to conduct medical research, which are more relevant to humans.

That's why we're calling on the Government to prioritise funding for animal free research and to provide supportive infrastructure, education and training. And it's why we're working to make human relevant research not only possible but the gold standard.



By funding cutting-edge animal free research, we are demonstrating how medical research at its best is carried out, providing a shining example of best practice.



Research that is 'human relevant' uses advanced biological knowledge of humans to study human diseases and develop drugs that are effective in humans.



L-R: **Laura Bramwell**, PhD student and **Prof Lorna Harries** of the Animal Free Research UK Animal Replacement Centre of Excellence (ARC 2.0) at University of Exeter





## How we are influencing policy with your help

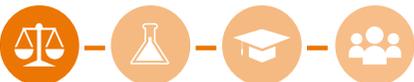
We are urging the UK Government to show global leadership and seize the scientific and economic opportunities of animal free research.

In the last year, with our partners in the Alliance for Human Relevant Science, Animal Free Research UK championed the establishment and coordination of an All-Party Parliamentary Group on Human Relevant Science. This is ensuring a strong voice in UK Parliament.

With your support, 67 MPs signed Early Day Motion 674, tabled in November 2021. This came after our Modernising Medical Research report recommendation to establish a ministerial role within Government, focused on replacing animals with human relevant techniques, which could accelerate the transition to animal free, new approach methodologies.

- We published an open letter in The Guardian newspaper signed by leading scientists, calling on the UK Government to modernise medical research for the benefit of public health
- 21 Parliamentary Questions have been tabled following our engagement with MPs
- 22 MPs have engaged with our work, including by meeting with us and attending our events

All of these actions urge the Government to show global leadership and seize the scientific and economic opportunities the new approach methodologies biotech sector provides.



# 67 MPs



SIGNED EARLY DAY  
MOTION 674



# 5,219

PEOPLE WROTE TO THEIR  
MP TO SHOW SUPPORT

OVER

# 101,000

PEOPLE SIGNED THE



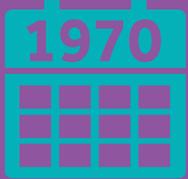
# #TARGETZERO

E-PETITION



LEADING TO A DEBATE  
IN PARLIAMENT

SINCE



WE HAVE GIVEN OVER

£10 MILLION IN GRANTS



TO PIONEERING PROJECTS



£1 MILLION



Funding pioneering research



20p in every £1 was spent on new research projects last year.

In 2021, we continued to fund the development of pioneering medical research that places ethics at the heart of the science of human disease.

20p in every £1 was spent on new research projects last year, with the money going towards a range of cutting-edge, animal free techniques which provided results that are directly applicable to human patients. This includes the use of human cells and tissues, organ-on-a-chip and stem cell technology.

In 2021, we funded 38 projects, ranging from pilot studies through to longer-term strategic projects at our Animal Replacement Centres of Excellence (ARC 1.0 and 2.0).

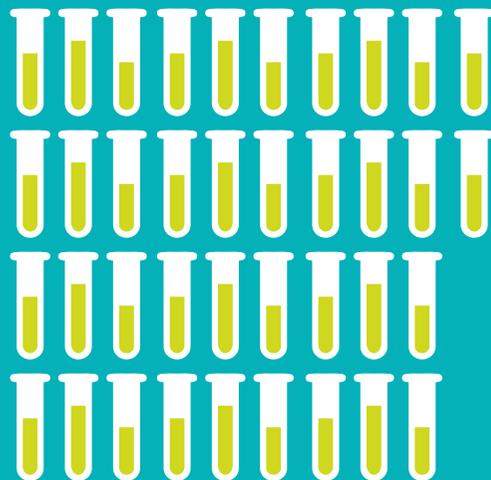
As a result of our funding, our scientists have been able to attract a further £800,000 of additional funding, and had their research published in 7 peer-reviewed journals.

Since 1970, we have given over £10 million in grants to pioneering projects.



IN 2021 WE FUNDED

38 PROJECTS





# How we are fighting diabetes

## The human problem

More than 4.9 million people<sup>3</sup> in the UK are living with diabetes, and if nothing changes, it's predicted that 5.5 million people in the UK will have diabetes by 2030.

Diabetes is a leading cause of death in the UK, with 700 people dying prematurely from the disease every single week.

## The animal fallout

Tragically, countless animals are experimented on every year in the UK in an attempt to find treatments or even a cure for diabetes.

Many mice and rats are forced to suffer with the symptoms and painful complications of diabetes - excessive hunger and thirst, fatigue, and damage to their hearts, kidneys, eyes and nerves.

<sup>3</sup> [diabetes.org.uk/professionals/position-statements-reports/statistics](https://diabetes.org.uk/professionals/position-statements-reports/statistics)

<sup>4</sup> [animalfreeresearchuk.org/exeter-university-researchers-make-breakthrough-in-loss-of-insulin-producing-cells-in-diabetics/](https://animalfreeresearchuk.org/exeter-university-researchers-make-breakthrough-in-loss-of-insulin-producing-cells-in-diabetics/)

## ARC 2.0 diabetes breakthrough: £175,000 invested over three years

Backed by your support and generosity, the team at our Animal Replacement Centre of Excellence at the University of Exeter - ARC 2.0 - were able to make a major discovery in diabetes treatment and prevention<sup>4</sup>.



## A revelation only possible with animal free research

Both type 1 and type 2 diabetes occur in part because of a loss of beta cells, meaning that the body does not produce enough insulin to regulate blood sugar.

A proportion of these insulin-producing beta cells can become delta cells, which is a process that is unique to humans and is altogether different in mice. Thanks to their ethical, human relevant research methods, the ARC 2.0 team were able to detect the gene responsible for this.

Dr Nicola Jeffery, who carried out the research using entirely human cells and reagents, said, "Finding the gene responsible for transforming beta cells into delta

cells is really exciting. Diabetes is a major global health challenge, and we urgently need to find new treatments and prevention strategies."

"If we can intervene early enough, we may be able to protect surviving beta cells and find new routes to helping people continue to produce enough insulin to manage diabetes."

## What impact has it had?

Using human cells instead of animals ensures that findings are more likely to translate into new treatments, although the method is still in its infancy.

At the moment, most of the work investigating the effect of diabetes on cell systems is done using rats and mice. The work at ARC 2.0 has been revolutionary in producing a series of animal free research models to investigate the genes that drive diabetes.

We estimate that if animal experiments were used during this study, 4,000 mice would have suffered. This means that if animal free approaches were used across all diabetes research, millions of animals could be spared.

If animal experiments were used during this study

**4,000  
MICE**

would have suffered



Your ongoing support is vital to make more compassionate, animal free research the gold standard. Thank you for being a part of the journey.



Special thanks to the Robert Luff Foundation for their significant support of this project.



## Enabling the career pathway of exceptional scientists

The next generation of scientists are the driving force needed for animal free research to become the gold standard in medical research. That's why investment in young researchers is essential.

**With our backing, they can lay the foundations for human models of human disease to become the norm.**

Thanks to your generous support, last year we funded 32 early career scientists, building the community of animal free researchers.

Last year   
we funded

# 32

 **early career**  
 **scientists**

### INCLUDING...



**8 PhD students**



**4 Postdoctoral researchers**



**9 Pilot Study Grants**



**11 Summer Students**



Through our Pilot Studies programmes, we are supporting researchers to obtain proof of concept of their pioneering research, enabling them to access larger grants from mainstream funders.

# Paul's pilot study success

Financial support from Animal Free Research UK has enabled Dr Paul Holloway at Oxford University to land a £150,000 research grant, in partnership with Cambridge University and an Oxford-based biotech company.

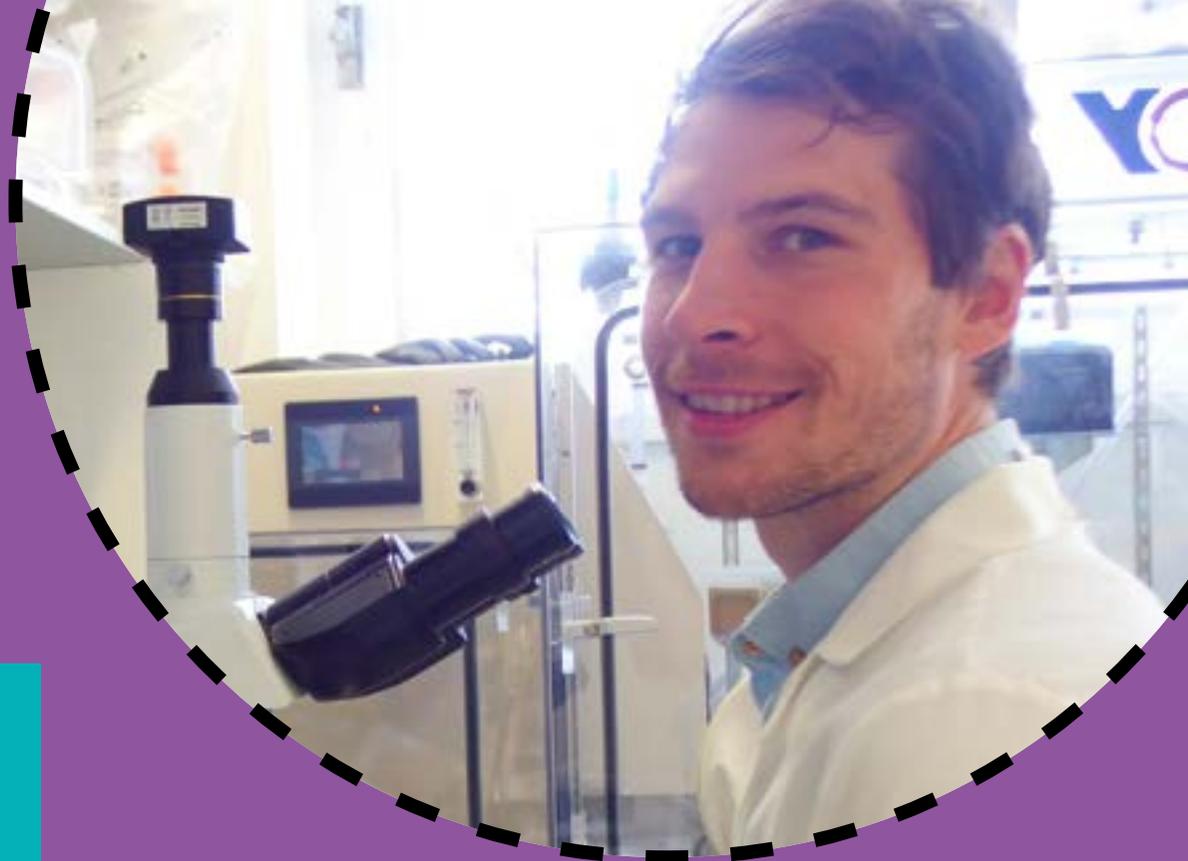
The company uses their organ-on-a-chip system to test novel therapeutic approaches to treat stroke disorders. These comprise small chips on which human cells are grown in 3D, mirroring the structure and function of complex human organs - in this case the brain - outside of a living organism.

**Organ-on-a-chip technology enables scientists to build human-specific models of disease, without using animals.**

## The human problem

Stroke is a leading cause of death and disability in the UK, with more than 100,000 strokes occurring every year, leading to 38,000 deaths<sup>5</sup>. Despite all the time and money ploughed into stroke research, over 1,000 prospective drugs tested on animals have failed to deliver results in humans.

<sup>5</sup> Nice.org.uk, 2019, NICE Impact Stroke, [www.nice.org.uk/media/default/about/what-we-do/into-practice/measuring-uptake/nice-impact-stroke.pdf](http://www.nice.org.uk/media/default/about/what-we-do/into-practice/measuring-uptake/nice-impact-stroke.pdf)



## The animal free solution

In stroke there is a death of brain cells, and a breakdown of the protective blood-brain barrier.

Dr Holloway's work has helped develop a new, animal free, stroke model. Using organ-on-a-chip technology, he was able to replicate the structure of the human blood-brain barrier by growing blood vessels and brain cells together in 3D.

These blood vessels can be blocked with miniature clots to mimic stroke, enabling new possibilities to test stroke drugs in human cells without animal research.





## Growing public support and awareness

Growing public awareness of our work is critical to getting even more people united for a kinder science. Greater acknowledgement of the animal research occurring in laboratories every single day in the UK could be the catalyst for more people to take action.

In 2021, 19p in every £1 was spent on growing our community of supporters. Across the year, we grew by 21%, seeing increases in social media followers and supporter engagement.

Our community of social media supporters has grown to nearly 41,000 people across Twitter, Facebook, Instagram and LinkedIn. And we've seen a 35% increase in Instagram followers throughout 2021.

Our growth in engagement reflects the results of a YouGov survey carried out on our behalf in 2021, which found that 68% of Britons support a policy ending animal experiments in medical research in the UK and replacing them with non-animal alternatives.



**Our community of social media supporters has grown to nearly 41,000 people across Twitter, Facebook, Instagram and LinkedIn**

**68%**  
**OF BRITONS**  
support  
an end to animal experiments  
in medical research



## Amplifying awareness



**27<sup>th</sup> May**

### World Animal Free Research Day

In May 2021, we launched our inaugural World Animal Free Research Day - celebrated on 27 May, the anniversary of our founding in 1970



**18,907**

### New supporters for our Take the Pledge campaign

18,907 new supporters signed up to our Take the Pledge campaign, standing with us for a kinder science



# 103,000

## Views on our Brighter Future video

We launched our Brighter Future video which was viewed nearly 103,000 times



# Meet our 'Furry Five'

In 2021, we also launched our 'Furry Five' supporter engagement campaign, introducing five animated animal characters to portray the story of animals used in experiments.

We knew that animation could help us to better communicate the story of the animals as it makes a difficult topic easier to digest. We've seen growing numbers of people spanning across generations become more receptive to our engaging format. In particular, it's proven positive at raising awareness amongst younger people.



**Establishing empathy through animation has given us a new way to raise awareness**

# Creating empathy through animation

Beyond how many people engaged with our animation, our success has come from being able to create characters with depth, telling their stories in the context of the real world.

Through animation, we have established a true sense of empathy with the animals, and have revealed that what we as humans have in common with animals in laboratories far outweighs what divides us.





# Patron marches on Downing Street



Earlier this year, our patron, actress Carol Royle joined Animal Free Research UK and our partners Cruelty Free International and OneKind to hand Number 10 our #TargetZero petition, calling for a phase out of animals in medical research.

## What encouraged Carol to stand up for animals?

Carol recalled giving up eating meat in the early 1970s after watching a particularly harrowing report on the late-night news. She says,

*"Scenes of butter and meat mountains filled the screen. Western Europe was suffering a glut of staples because of EU intervention to stabilise food prices."*

*"Those scenes of animal abuse and waste spurred me to learn all I could." Carol knew that education would prove to be powerful armour, "so you could speak with confidence and knowledge."*

*"I learned how testing cosmetics and drugs on animals in laboratories is either inconclusive or downright dangerous for humans as well as the animals."*

The singer Will Young also joined our campaign, tweeting to his thousands of supporters to sign the petition.

## Carol speaks out alongside 101,424 others

With her research, Carol dedicated much of her time to writing letters to companies, magazines and newspapers about the exploitation of animals.

Then, half a century since Carol started to stand up for animals, she found herself handing over the #TargetZero petition, which calls on the Government to take concrete action to phase out animal experiments once and for all, signed by 101,424 people.



Write to your local MPs today  
urge them to enable Britain to lead the way towards a kinder science for

**PEOPLE & ANIMALS**



# Thank you

Your ongoing commitment is helping us to accelerate change.



"My huge thanks to everyone who has kindly donated time, money and energy to support this wonderful cause, and to every scientist who has innovated new technologies and discovered lifesaving treatments for human disease without harming animals.

Thank you for your vision of a more compassionate world where human diseases are cured faster without animal suffering. It's a future that, together, I know we can achieve in our lifetime."

**Our Patron, Dame Joanna Lumley**



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[animalfreeresearchuk.org](http://animalfreeresearchuk.org)

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