



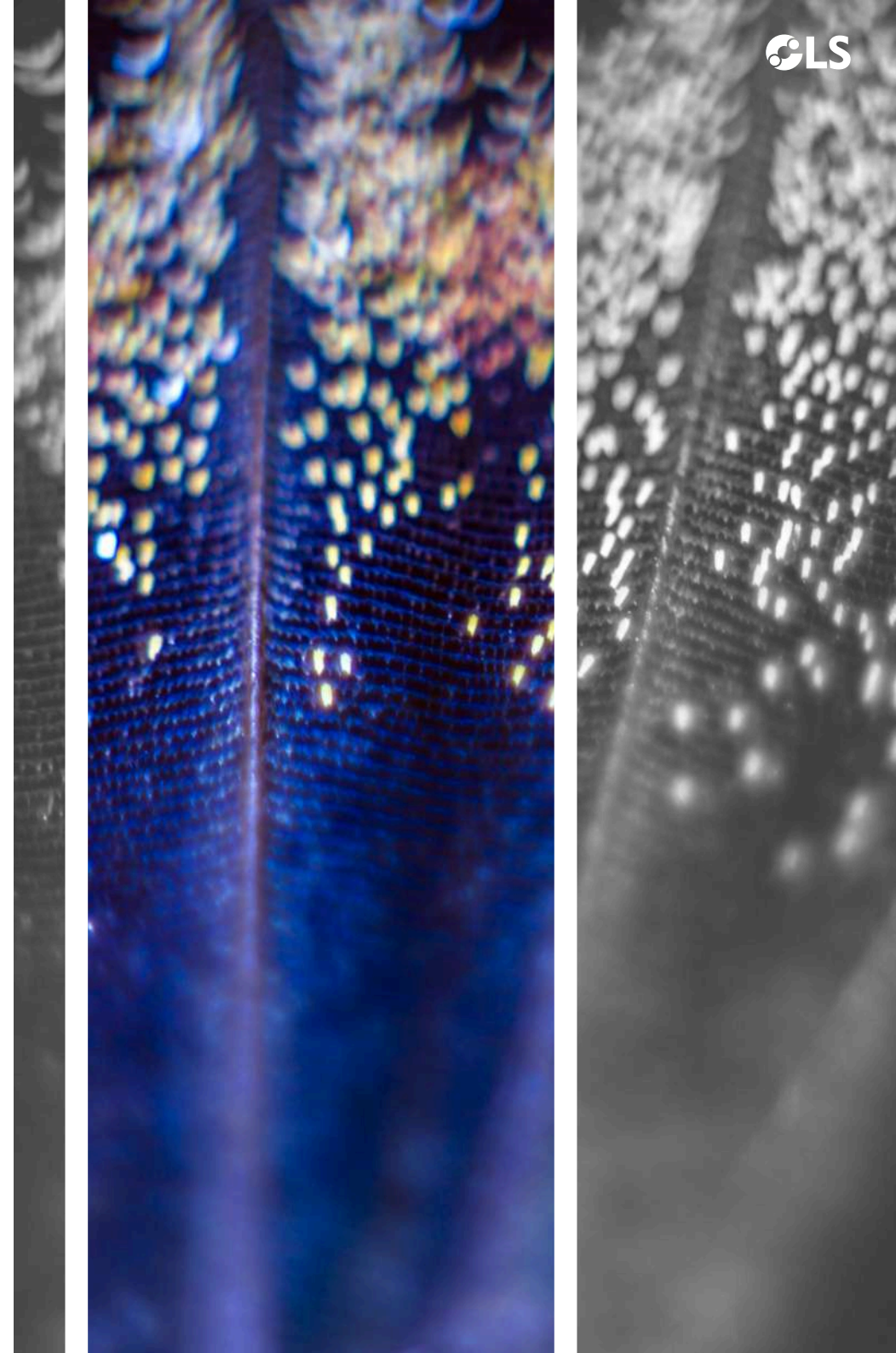
Insight: Latest Research and Development in Neuroscience clinical trials

#clsinsights



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Executive Summary



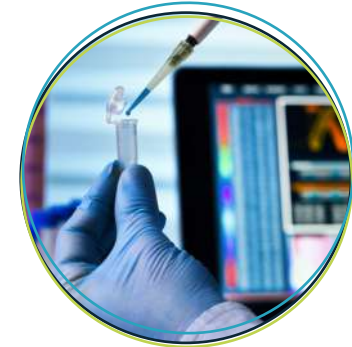
Following more than a decade of decline in investment and focus by the pharma industry, we are witnessing a resurgence in in this complex therapeutic area.

The development of new science and technology, the global pandemic putting a spotlight on the area, with funding investments for neuroscience by pharma businesses now only second behind cancer research investments.



Long Covid is increasing the number of clinical trials exploring whether treatment is meeting needs, and the economic implications incurred.

Globally, more than 280 separate studies into Long COVID examining the various approaches to treatment and understanding of the condition; projects vary between the biological causes of the condition; recovery and rehabilitation solutions; and guidelines on treatment and cost of the disease.



Despite the high levels of Dementia related deaths, funding for the condition remains much lower than other diseases.

Prior to 2020 and the Covid-19 pandemic, Dementia was the UK's biggest killer. In recent years there have been a number of impressive breakthroughs in clinical trials though, along with 41 phase III Alzheimer's trials, which could see new treatments available in the near future.



Introduction

Neuroscience focused clinical trials have been in steady decline in both investment and volume over the past decade, however are we looking a resurgence following the development of new science and technology, coupled with the global pandemic putting a spotlight on this hugely complex therapeutic area. In this article, we look at the latest research and development in Neuroscience clinical trials.

Over the last decade, neurological clinical trials have seen a decline in investment and focus by the pharmaceutical sector. This has been speculated to be a direct result of limited success when compared to more efficacious therapeutic areas, such as oncology and cardiovascular sciences. However, small biotech's have predicted big pharma investments returning if recent trials prove successful.

Despite the withdrawal of funding from big pharma, neurosciences do receive a reasonable amount of funding. In 2018 alone, the indication received \$1.5 billion¹ in investment from venture capitalists, therefore putting funding investments second place after cancer research investments.

¹Goldman, D. P., Perez, E. A., and del Rio, C., *Lack of diversity in clinical trials costs billions of dollars. Incentives can spur innovation*, (August, 2022), URL: <https://www.statnews.com/2022/08/03/lack-of-diversity-in-clinical-trials-costs-billions-of-dollars-incentives-can-spur-innovation/>

COVID-19 Studies

As we emerge from the COVID-19 pandemic, we are seeing further increases in long COVID cases with neurological implications. Globally, there are approaching 280 separate studies² taking place on various approaches to treatment and understanding of long COVID.

To date, more than £50 million of government funding has been invested in long COVID research projects. The bulk of this (£39.2 million) has been awarded to 19 projects commissioned for long COVID research jointly sponsored by the NIHR, along with UKRI.³

These studies examine the underlying mechanisms of long COVID, investigate symptoms such as 'brain fog' and breathlessness, and test possible treatments. They explore whether NHS services, such as long COVID clinics, meet people's needs, and look at what people can do to optimise their own recovery.

Three projects are investigating who is susceptible to Long COVID and the biological causes of the condition. Another three studies are looking at diagnosis, whilst four are evaluating treatments, and three more are considering recovery and rehabilitation. One study is looking at the impact of COVID-19 vaccination on preventing Long COVID, and the final two studies are researching how health services can treat the condition and the health and economic costs of the disease.

² NIH: US National Library of Medicine, URL: <https://clinicaltrials.gov/ct2/results?cond=long+covid&term=&cntry=&state=&city=&dist=>

³ NIHR – National Institute for Health and Care Research, *Researching long Covid: addressing a new global health challenge*, (May, 2022), URL: <https://evidence.nihr.ac.uk/themedreview/researching-long-covid-addressing-a-new-global-health-challenge/>



Currently, there are few novel treatments for Dementia-related diseases like Alzheimer's, Parkinson's, and depression, each of which affects millions of patients globally.

Dementia research

Prior to 2020 and COVID-19, Dementia was the UK's biggest killer.⁴ Despite the high death rate, research funding into Dementia-related illnesses remains much lower than other diseases. This has been due to complexities in understanding how Dementia-related illnesses work and where clinical failures have been much more likely. Recent successes in new cancer-related trials saw several pharma companies re-prioritising funding over the last few years.

Currently, there are few novel treatments for Dementia-related diseases like Alzheimer's, Parkinson's, and depression, each of which affects millions of patients globally. For many patients worldwide, the best health practitioners can offer is medication to manage symptoms and slow degradation.

Nonetheless, Dementia research has had some impressive breakthroughs over the last few years, such as the discovery of LATE⁵ which could explain why some previous Alzheimer's trials have not had much success. There are currently 41 phase III Alzheimer's trials⁶ currently underway and many more drugs working their way through the pipeline which could see new treatments available within the not-to-distant future.

⁴ Alzheimer's Society, *Biggest Killer in the UK in now Covid-19, but deaths from dementia remain high*, (April, 2021), URL: <https://www.alzheimers.org.uk/blog/research-UK-biggest-killer-high-dementia-deaths>

⁵ McAleese, K., Published in Alzheimer's Society, *A new type of dementia: It's never too LATE*, (May, 2019), URL: <https://www.alzheimers.org.uk/blog/late-new-type-dementia>

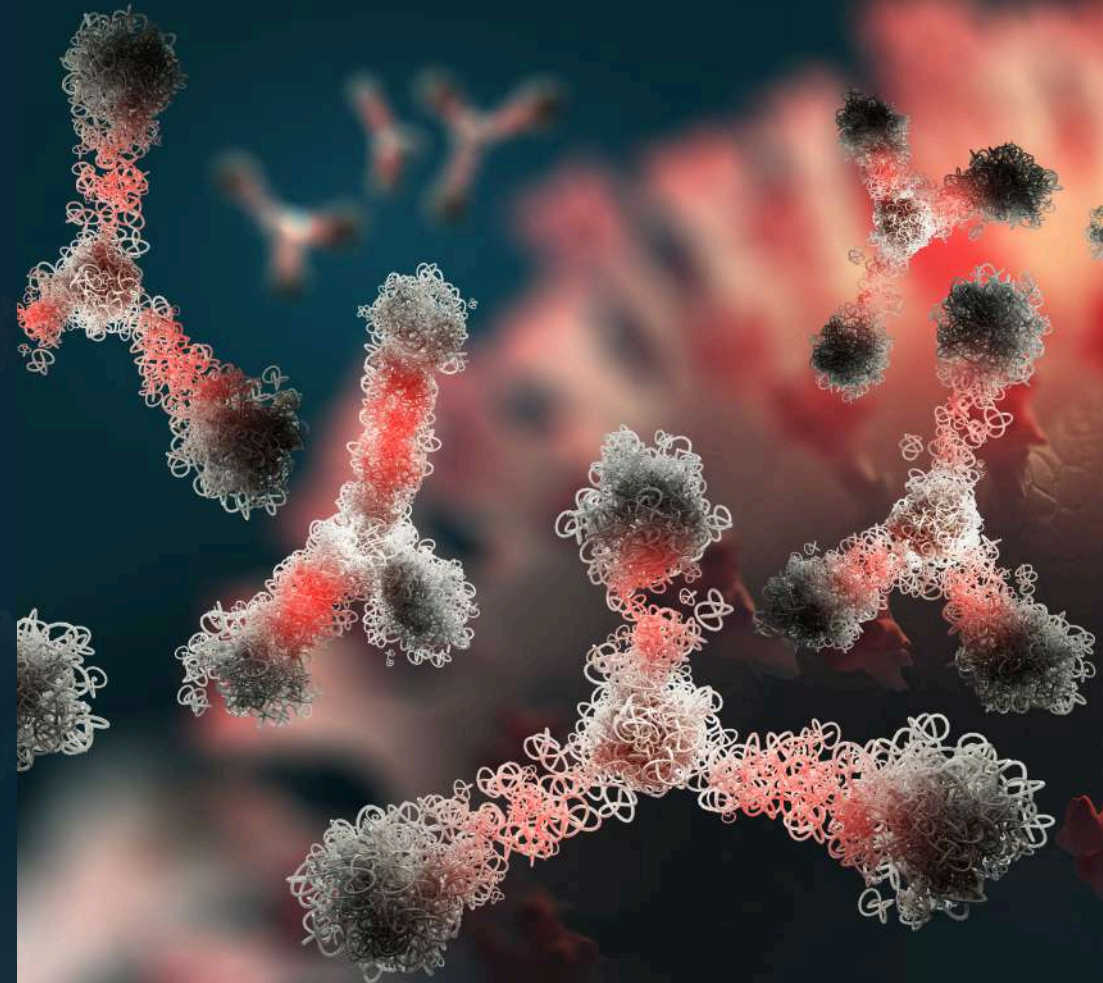
⁶ Alzheimer's Research UK, *UK health system must get ready for new Alzheimer's treatments*, (June, 2022), URL: <https://www.alzheimersresearchuk.org/blog/uk-health-system-must-get-ready-for-new-alzheimers-treatments/>

Conclusion

The future of neuroscience trials is much less certain in comparison to other trials. However, new breakthroughs could lead to funding increases in the future. It will be interesting to observe the results of current ongoing trials, once they have concluded, to see how smaller biotech organisations react.

Following the emergence of long COVID and the recent threat of future pandemics, we suspect more research will occur in immunology and the association between secondary and tertiary neurological events such as seizures and strokes. Moreover, we are in a time where mass vaccination and public health applications such as 'Track and Trace' allows data on viruses, vaccines, and symptoms more readily available for scientists to generate literature reviews and pilot studies to supplement future research and clinical trials.

The complex and the non-regenerative property of the central nervous system also offers an exciting challenge for emerging research and clinical trials, so we anticipate seeing a breakthrough in gene and cell therapies utilised in the near future.



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