

Developments in drug discoveries make the news

There has been much in the news lately of potential new dementia treatments coming to market.



In July of this year, it was announced that the drug “**Lecanemab**” had been licenced for use in North America by the regulatory authority: the Food and Drug Administration (FDA). This was heralded in the media, as a breakthrough as it is the first drug to target the **cause** of Alzheimer’s Disease rather than focussing solely on the symptoms. Similarly, there is great interest in the development of another new drug: “**Donanemab**” which is showing promising results in large clinical trials.

Although cautiously welcomed by the dementia researcher community because they slow down the disease process, which is clearly important, this does not mean that these drugs stop or reverse dementia. There will also be major difficulties finding the necessary brain scanners and other resources to bring these drugs into regular clinical practice. Whilst these drugs are not currently available for use in the UK, they do illustrate the power of **translational research**, enabling innovations to be translated more quickly and efficiently from the test tube to the bedside.

Brains for Dementia Research (BDR) works collaboratively with both academic researchers and with the pharmaceutical and bio-industries. We are able to offer a rare and first class resource of assessment data and genetic information, as well as human tissue in the form of blood samples, brain tissue and stem cells. This puts BDR at the forefront of the challenge to develop novel treatments and our willingness and ability to collaborate with researchers from around the world magnifies BDR’s contribution to this global effort. To-date, over 56,000 samples of BDR brain tissue have been dispatched to researchers from 24 countries. Of these, only 2,605 samples were sent to commercial companies which represents less than 5% of the total, but we know that if we are to tackle dementia and develop future treatment options, then collaborations are a must.

The importance of collaboration in defeating dementia

This culture of partnership between academics and industry was reflected in 2022 when the UK Government launched the **Dame Barbara Windsor Dementia Mission**.

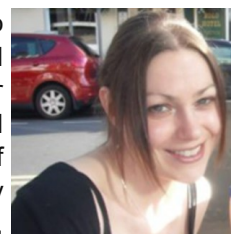
The purpose of the Mission is to develop new research tools and to increase both the number and speed of, clinical trials into dementia. It is perhaps fitting and a reflection of the current research climate, that the leaders chosen to co-chair this Mission are Nadeem Sarwar and Hilary Evans (pictured below).



Nadeem (shown on the left), is a senior lead at research-based pharmaceutical company, Eisai, and Hilary is the Chief Executive Officer of the dementia charity, Alzheimer’s Research UK.

The Dementia Mission brings industry, academia, and the NHS together to speed up dementia research, using the successful approach of the Covid Vaccine Taskforce, with government backing for dementia research to reach £160 million by 2024.

In BDR, we also aim to work collaboratively and recently, one of our genetic researchers and a long-term supporter, of BDR, Professor Keeley Brookes (pictured right), organised a networking event. The aim of this was to bring together dementia researchers who had previously used BDR data or tissue.



The event was well-received and following the launch, over 60 researchers have registered their interest to come together to create a “BDR Community”, to share ideas and findings. Although there is still no cure for dementia, the rate of progress is starting to gather pace and through your support with initiatives such as BDR, we hope that there will be many more developments in the future.

What's happening in your local BDR?

The BDR team in Manchester focus on Frontotemporal Dementia

In our last newsletter we looked at Dementia with Lewy Bodies, an area of specialism at the Newcastle BDR Centre. In Manchester, the team at the Brain Bank have a particular interest in frontotemporal dementia. But what do we know about this dementia sub-type and how is BDR contributing to our understanding of the condition?

Frontotemporal dementia (FTD) is an uncommon type of dementia. It causes problems with behaviour and language and tends to start at a **younger age than most of the other types of dementia**. Most cases are diagnosed in people **aged 45-65**, although it can also affect younger or older people. Signs of the disease can include personality and behaviour changes as well as problems with mental abilities such as poor planning, judgement and organisation. Problems with language and memory are also present, although unlike the more common forms of dementia such as Alzheimer's disease, difficulties with memory tend to occur later on in the disease progression. There may also be physical problems, such as slowness of movements and stiffness, loss of bladder or bowel control (usually not until later on) and muscle weakness or difficulty swallowing. Some people have frontotemporal dementia overlapping with other neurological (nerve and brain) disorders such as;

- **motor neurone disease** – causing increased weakness, usually with muscle wasting
- **progressive supranuclear palsy** – causing problems with balance, movement, eye movements, and swallowing
- **corticobasal degeneration** – causing problems controlling limbs, loss of balance and co-ordination, slowness and reduced mobility

What are the causes frontotemporal dementia and associated diseases?

Frontotemporal dementia is caused by clumps of abnormal protein forming inside brain cells. These are thought to damage the cells and stop them working properly. The proteins mainly build up in the frontal and temporal lobes of the brain which are at the front and sides. These are important for controlling language, behaviour, and the ability to plan and organise. It's not fully understood why this happens, but there's often a genetic link. Around 1 in 8 people who get frontotemporal dementia will have relatives who were also affected by the condition. The pathology of frontotemporal dementia is complex with two main abnormal proteins, **TDP-43** and **tau**, causing the majority of cases.

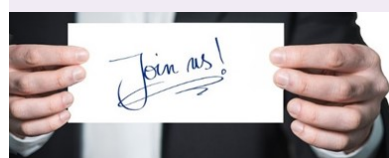
There is currently no cure for frontotemporal dementia or any treatment that will slow it down.



The University
of Manchester

Recently, tissue from Manchester Brain Bank was used in a landmark study that was published in the prestigious scientific journal, **Nature** <https://www.nature.com/articles/s41586-021-03911-7>

When misfolded, **tau** proteins cause brain disorders, we call these diseases **tauopathies**. In this study, researchers carefully examined the structure of **tau** in various **tauopathies**, including progressive supranuclear palsy, which belongs to the category of FTD disorders that primarily affect movement. The researchers found that the structure of **tau** was different in each of the various **tauopathies** but remained the same in individuals with the same disease. Knowing that **tau** folds differently in different diseases means that future research can concentrate on developing more specific and sensitive **tau** biomarkers. Therefore, future patients with **tauopathies** might be able to be tested early to find out exactly what type of **tau** disease they have which will open the door to earlier treatments and interventions.



If you want to learn more about frontotemporal dementia and the work carried out at the Manchester Brain Bank, please join us on **Wednesday, 4th October**, at our next online Engagement Event. Details of the event and how to join will be emailed to BDR participants and study partners nearer the event date. If you have not attended any of the previous events but would like to do so, you can register your interest by

going to the BDR website: [Online Engagement Events - Brains for Dementia Research \(alzheimersresearchuk.org\)](https://www.brainsfordementia.org.uk/online-engagement-events)



For BDR supporters living in the Newcastle area, there will be a **Alzheimer's Research UK Public Meeting**.



This will take place on **Wednesday 27th September from 1:30 p.m. (doors open at 1:00)** at the **Boiler House, Newcastle University, Newcastle-upon-Tyne, NE1 7RU**

The event is free but please register to confirm your place by clicking on the link below

<https://forms.office.com/e/9ib4Qh11Nx>

or you can email: sally.warburton@ncl.ac.uk or Tel: 0191 208 1342