

# Community news

# Pears

In association with



Building

Issue 2 July 2017



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Q&A with Chris Burghes

**Welcome to the second edition of our newsletter, which will keep you up to date with progress on the Pears Building.**

**The Pears Building** will be the home for the UCL Institute of Immunity and Transplantation (IIT) and function as a world-class medical research centre. It will bring together patients, doctors and scientists, enabling researchers to better understand the treatments that might benefit patients.

More than 200 scientists and doctors will be based in the Pears Building to study how the immune system can cause diseases such as cancer, type 1 diabetes and chronic infection. A major goal is the development of new biological therapies that take advantage of the patients' own immune system to fight disease. Please turn over for more information about research at the IIT.

This project is a collaboration between the Royal Free London NHS Foundation Trust (RFL), the Royal Free Charity and University College London (UCL) and many local residents and organisations have supported us. Among these have been The Pears Foundation, which donated £5 million towards this project.

Work is due to start on the build before the end of the year.

# Car parking at the Pears building

Do you have any feedback on this newsletter?

Please contact the communications team at [rf.communications@nhs.net](mailto:rf.communications@nhs.net), we would love to hear from you.

With work due to start on the Pears Building, subject to planning requirements being met, changes will be taking place to the Royal Free Hospital's car parks and there will be a temporary reduction of parking places available for both patients and staff.

Building will take place on what is currently the multi-storey car park, accessed from the slip road off Rowland Hill and Pond Street, so our aim is to close it by the end of the summer to prepare for the build.

We recognise this will mean more pressure on our other car parks and for that reason we are reducing the amount of dedicated staff parking in the South car park and will transfer 75 staff places to patient parking.

There will also be changes to the Lawn Road car park with the small amount of general patient parking stopped and transferred solely to staff parking. In total there will be an overall temporary loss of 36 patient parking spaces and 65 staff parking places while work takes place. The new building, when complete, will house a car park.

Jeremy Sharp, director of facilities at the Royal Free Hospital, said: "We are committed to making the space available work effectively for patients and staff and also to carefully monitor traffic flow.

"Ideally we would like patients and staff to think again about whether they have to park at the hospital which is very well served by public transport."

If you have any questions or comments on the construction process, please contact Willmott Dixon at [Pearsbuilding.community@willmott Dixon.co.uk](mailto:Pearsbuilding.community@willmott Dixon.co.uk)

## The Institute in focus

### Research at the Royal Free Hospital could represent a new hope for multiple sclerosis (MS) patients.

MS is an auto-immune disease in which the patient's immune system attacks the brain. It's a life-long condition and can leave patients with problems with their vision, arm and leg movements and their balance.

But scientists working at the IIT are developing a way of genetically modifying a patient's immune cells in order to stop such attacks on the brain.

In an immune system which is functioning normally, immune cells called T regulatory cells, or Tregs, work by suppressing immune attacks on a person's own body – leaving it free to attack only foreign objects like bacteria.

However, in patients with MS, the Tregs in the brain do not suppress immune attacks like they should do and the immune system tries to attack brain tissue.

At the IIT, Professor Hans Stauss and Dr Jenny McGovern have developed a way of modifying an MS patient's Treg cells so that they start doing their job properly.

The immune cells are removed from a patient and an inactive virus is used to deliver new genes to the cells. These genes enable the cell to produce a protein receptor which recognises brain tissue. The cells are returned to the patients, via an injection straight to their blood stream, and when the cells come across brain tissue, the protein receptor triggers them into action and they can stop the immune attacks on the brain.

Dr McGovern said: "When the Tregs aren't working properly it means the whole immune system is unbalanced, which allows damage to brain tissue to go unchecked. Research has shown that once the Tregs start functioning properly, this calms the whole immune system down – it resets the immune system so it starts to function normally."



Dr Jenny McGovern

Professor Stauss added: "If developed successfully, this one-off treatment would be a huge breakthrough for patients with MS as current treatments need to be given repeatedly and are often not very effective."

"This treatment would be a single dose treatment that would last for the patient's lifetime, and because these are the patient's own cells, we don't expect there to be any harmful side effects."

The research team hope to begin clinical trials for this treatment within the next five years

## Discovering more about corneal stem cells

Acid attack victims whose eyes have been damaged could benefit from research being carried out at the IIT.

Dr Alex Shortt, a consultant ophthalmic surgeon, and his research team are aiming to discover more about corneal stem cells, which can be damaged by acids and other chemicals, by chemotherapy, or by inflammatory or genetic conditions.

Corneal stem cells, located in the limbus at the outer edge of the cornea, produce the transparent skin on the surface of the eye. This highly specialised surface allows us to see clearly, as well as forming a protective barrier against allergens, dirt, and bacteria in our environment. If corneal stem cells are damaged, the surface of the eye breaks down and cannot heal itself. When this happens, conjunctival cells, which make up the whites of the eye, grow across the cornea, causing a painful inflamed eye and loss of vision.

Dr Shortt said: "Corneal stem cell deficiency is a devastating and life changing condition. Stem cell therapy offers new hope for these patients, and has been shown to be effective in clinical trials."

The transplant works by taking a sample of corneal stem cells and growing them in the laboratory to form a sheet, which is then attached to the eye during surgery. If only one eye is damaged, stem cells can be transplanted from the patient's own healthy eye to repair the injury. If both eyes are damaged, patients could potentially receive a transplant from the cornea of a deceased donor.

Harley Buck, a member of the research team, said: "The success of these transplants depends on where we get the stem cells from. When stem cells are taken from the healthy eye 68% of transplants are successful, however when they are from a deceased donor only 25% are successful long term."



Harley Buck and Dr Alex Shortt

"There are several theories about why these transplants fail. It could be caused by inflammation, maybe because there aren't enough stem cells in the sheets, or perhaps due to the level of damage to the delicate structures within the limbus. Our research will investigate these different theories and try to improve the outcomes for patients."



# Q&A

UCL

with Chris Burghes,  
chief executive of the  
Royal Free Charity

## Why is the Royal Free Charity involved in this project?

The trustees of the Royal Free Charity were keen to fundraise and build a new facility which will advance medical research into immunity and transplantation for which UCL and the Royal Free London are acknowledged as world leaders.

The charity has agreed to fundraise, fund and build the Pears Building which is being designed by the renowned Sir Michael Hopkins and Partners.

## What do you think will make the new building so special?

The Pears Building is a modern take on the old Hampstead Home Hospital and Nursing Institute which was founded in 1882 and in scope and size it matches it as closely as it possibly can. The trustees wanted a building which was architecturally significant which is why they appointed a leading architect to design a facility in keeping with the unique architecture of Hampstead. The building will create a wonderful inclusive space for residents, patients and staff. I think when built it will amaze anyone coming up Haverstock Hill at how modern architecture can be so well integrated into the local character of the area.

## How will the building project be managed?

As local residents themselves, the trustees understand the importance of delivering the building with the minimum of disruption. It's not just about minimising disruption for local residents, clearly we have to be mindful of the hospital with its patients, and the fact that there is an active busy A&E department. In addition we will be building in the proximity of two local schools. However, when the trustees reviewed the possible locations for the Pears Building it was clear that from a medical point of view, building next to existing research

labs and with access to operating theatres next door, this was the right place to be.

## What's the significance of this building?

There are currently 8,000 people in the UK waiting for a liver transplant and sadly a third will not receive one. Of those lucky enough to have a transplant, they will spend the rest of their lives on drugs to suppress their immune system to prevent organ rejection. On average the new liver will only last 12 years before they have to start the whole process again. To have a facility that looks into the reliance on drugs as well as how we use our own DNA to improve organ transplantation means this is a facility that stretches beyond the Royal Free Hospital into a national and international arena.

## Explain how the partnership will work.

The Royal Free Charity is leading on the project and will own the building. The Pears Building will be unique in that we have brought together the NHS and a university and a charity to design and build a new world class facility for immunity and transplantation. It will be the most important research centre of its type outside North America and one of five leading global research centres into research into immunity and transplantation. This will hopefully allow patients at the Royal Free London to receive new cutting edge treatments before anyone else.

## What do you say to critics of the build?

The Royal Free Charity trustees are fully committed to this project and unwavering in their support for this development. They see the real benefit it will give both to Royal Free London patients, who will benefit from the medical advances being made, and to the local landscape. Behind the scenes we are working incredibly hard with the proposed contractors to ensure that disruption will be kept to a minimum for the two year build.