### East Lancashire **Prostate Cancer** Support Group Newsletter





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# Immune discovery 'may treat all cancer'

By James Gallagher Health and science correspondent BBC News 20 January 2020

The new technique could kill a wide range of cancer cells, including breast and prostate

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A newly-discovered part of our immune system could be harnessed to treat all cancers, say scientists.

The Cardiff University team discovered a method of killing prostate, breast, lung and other cancers in lab tests.

The findings, published in Nature Immunology, have not been tested in patients, but the researchers say they have "enormous potential".

Experts said that although the work was still at an early stage, it was very exciting.

#### What have they found?

Our immune system is our body's natural defence against infection, but it also attacks cancerous cells.

The scientists were looking for "unconventional" and previously undiscovered ways the immune system naturally attacks tumours.

What they found was a T-cell inside people's blood. This is

an immune cell that can scan the body to assess whether there is a threat that needs to be eliminated.

The difference is this one could attack a wide range of cancers.

"There's a chance here to treat every patient," researcher Prof Andrew Sewell told the BBC

#### He added:

"Previously nobody believed this could be possible.

"It raises the prospect of a 'one-sizefits-all' cancer

Next Meeting 5th March 2020



treatment, a single type of T-cell that could be capable of destroying many different types of cancers across the population."

#### How does it work?

T-cells have "receptors" on their surface that allow them to "see" at a chemical level.

The Cardiff team discovered a T-cell and its receptor that could find and kill a wide range of cancerous cells in the lab including lung, skin, blood, colon, breast, bone, prostate, ovarian, kidney and cervical cancer cells.

Crucially, it left normal tissues untouched.

#### Exactly how it does this is still being explored.

This particular T-cell receptor interacts with a molecule called MR1, which is on the surface of every cell in the human body.

It is thought MR1 is flagging the distorted metabolism going on inside a cancerous cell to the immune system.

"We are the first to describe a T-cell that finds MR1 in cancer cells - that hasn't been done before, this is the first of its kind," research fellow Garry Dolton told the BBC.

Cancer treatment trial: Chemotherapy 'could become more effective'

'Cancer treatment broke my heart, but I've survived'

New cancer treatment to tackle drug resistance

#### Why is this significant?

T-cell cancer therapies already exist and the development of cancer immunotherapy has been one of the most exciting advances in the field.

The most famous example is CAR-T - a living drug made by genetically engineering a patient's T-cells to seek out and destroy cancer.

CAR-T can have dramatic results that transform some patients from being terminally ill to being in complete remission.

However, the approach is highly specific and works in only a limited number of cancers where there is a clear target to train the T-cells to spot.

And it has struggled to have any success in "solid cancers" - those that form tumours rather than blood cancers such as leukaemia.

The researchers say their T-cell receptor could lead to a "universal" cancer treatment.

#### So how would it work in practice?

The idea is that a blood sample would be taken from a cancer patient.

Their T-cells would be extracted and then genetically modified so they were reprogrammed to make the cancer-finding receptor.

The upgraded cells would be grown in vast quantities in the laboratory and then put back into the patient. It is the same process used to make CAR-T therapies.

However, the research has been tested only in animals and on cells in the laboratory, and more safety checks would be needed before human trials could start.

#### What do the experts say?

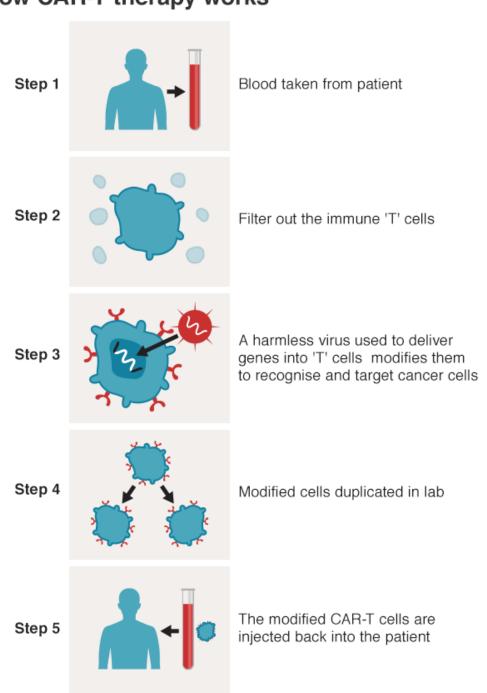
Lucia Mori and Gennaro De Libero, from University of Basel in Switzerland, said the research had "great potential" but was at too early a stage to say it would work in all cancers.

"We are very excited about the immunological functions of this new T-cell population and the potential use of their TCRs in tumour cell therapy," they said.

Daniel Davis, a professor of immunology at the University of Manchester, said: "At the moment, this is very basic research and not close to actual medicines for patients.

"There is no question that it's a very exciting discovery, both for advancing our basic knowledge about the immune system and for the p ossibility of future new medicines."

#### **How CAR-T therapy works**



Source: BBC research

BBC

# Prostate overtakes breast as 'most common cancer'

By Michelle Roberts Health editor, BBC News online 27 January 2020

Prostate cancer is now the most commonly diagnosed cancer in England, overtaking breast cancer for the first time, latest figures show.

In 2018 there were nearly 50,000 registered cases - around 8,000 more than in 2017.

Public Health England says it is because more men are getting tested.

And that is thanks to celebrities, like Stephen Fry and Bill Turnbull, raising awareness by speaking out about their own experiences.



#### 'Fry and Turnbull effect'

In 2018, there were 316,680 cancers of any kind diagnosed, the equivalent of 868 cases a day.

Prostate was the most common type - 49,029 cases - followed by breast - 47,476 cases.

Lung and bowel cancers were the next most commonly diagnosed.

Former BBC Breakfast presenter Bill Turnbull went public with his prostate cancer diagnosis in March 2018, encouraging others to get tested, saying: "Maybe if I'd got it earlier and stopped it at the prostate, I'd be in a much better state."

He said his cancer had spread to his bones, including the pelvis and ribs.

TV comedian and presenter <u>Stephen Fry revealed in February 2018</u> that he was recovering after having prostate cancer surgery, saying it was "thankfully caught in the nick of time".

<u>According to the head of the NHS</u>, the coverage of Fry and Turnbull's treatments led to an increase in men getting checked.

Cancer tsar Prof Peter Johnson said: "As people live longer, we're likely to see prostate cancer diagnosed more often, and with well-known figures like Rod Stewart, Stephen Fry and Bill Turnbull all talking openly about their diagnosis, more people will be aware of the risk."

He said more people coming forward for checks and care meant the disease increasingly is detected at an early stage, when treatment is most successful and survival chances are highest.

Lucy Elliss-Brookes, Head of Cancer Analysis at Public Health England, said: "Although we are seeing a continued rise in cancer diagnoses, it's encouraging that we are also seeing increases in survival, as well as an overall decrease in emergency diagnoses of cancer."

Lynda Thomas, Chief Executive of Macmillan Cancer Support, said it was good news that more people are seeing their doctor to check for cancer.

But she said the increasing numbers came at a time when the NHS and social care services

were under pressure, with long waiting times for cancer diagnosis and treatment.

What is prostate cancer?

It is the most common cancer in men in the UK - an ageing population means more men are developing and dying from the disease

It involves the prostate - a small gland in the pelvis in men

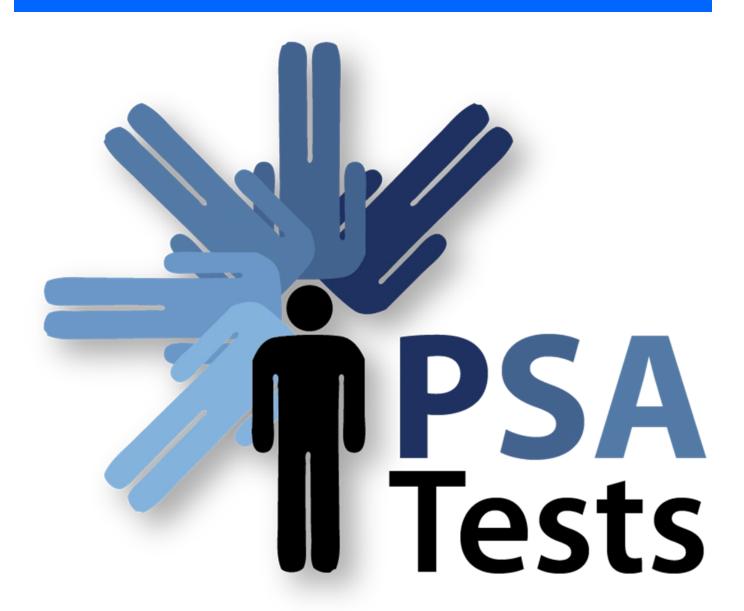
Cancers can develop slowly over years and many men have no symptoms

Noticeable symptoms include needing to urinate more often and weak flow

There is no single test for prostate cancer - a blood test, biopsies and physical examinations are all used

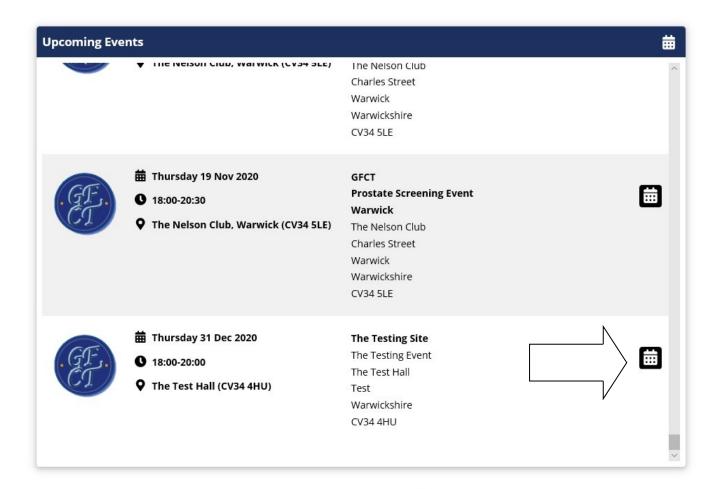
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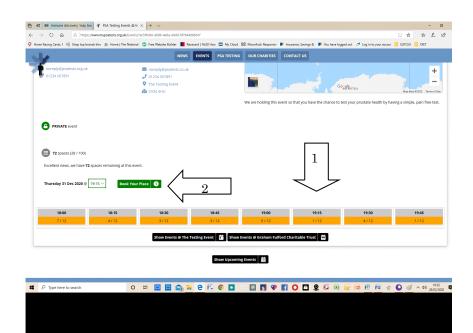
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From Left to Right Hazel Goulding (Treasurer) Leon D Wright (IT Admin) Stuart Marshall (Secretary) Steve Laird (Vice Chairman) Dave Riley (Chairman)

We are a group of local people who know about prostate cancer. We are a friendly organisation dedicated to offering support to men who have had or who are experiencing the effects of this potentially life threatening disease.

The East Lanc's Prostate Cancer Support Group offers a place for free exchange of information and help for local men and their supporters (family and friends) who may be affected by this increasingly common form of male cancer.

At each meeting we strive to be a happy, supportive and upbeat group of people; encouraging open discussion on what can be a very difficult and perhaps for some an embarrassing subject. We have lively, informative, interactive, sharing and above all supportive meetings.









