

Scientists harness light therapy to target and kill cancer cells in world-first

Scientists have successfully developed a revolutionary cancer treatment that lights up and wipes out microscopic cancer cells, in a breakthrough that could enable surgeons to more effectively target and destroy the disease in patients.

A European team of engineers, physicists, neurosurgeons, biologists and immunologists from the UK, Poland and Sweden joined forces to design the new form of photoimmunotherapy.

Experts believe it is destined to become the world's fifth major cancer treatment after surgery, chemotherapy, radiotherapy and immunotherapy.

The light-activated therapy forces cancer cells to glow in the dark, helping surgeons remove more of the tumours compared with existing techniques – and then kills off remaining cells within minutes once the surgery is complete. In a world-first trial in mice with glioblastoma, one of the most common and aggressive types of brain cancer, scans revealed the novel treatment lit up even the tiniest cancer cells to help surgeons remove them – and then wiped out those left over.

Trials of the new form of photoimmunotherapy, led by the Institute of Cancer Research, London, also showed the treatment triggered an immune response that could prime the immune system to target cancer cells in future, suggesting it could prevent glioblastoma coming back after surgery.

Researchers are now also studying the new treatment for the childhood cancer neuroblastoma.

The therapy combines a special fluorescent dye with a cancer-targeting compound. In the trial in mice, the combination was shown to dramatically improve the visibility of cancer cells during surgery and, when later activated by near-infrared light, to trigger an anti-tumour effect.

[Andrew Gregory, The Guardian](#)

NICE recommends potentially life-changing treatment for people with short bowel syndrome

Teduglutide (also known as Revestive and made by Takeda) is available for people who are in a stable condition following surgery to remove an abnormal bowel.

In adults, this surgery may be needed for a range of conditions, including Crohn's disease. In premature babies and children, it is often because of surgery for necrotising enterocolitis or other conditions. Some children can be born with a short bowel.

Teduglutide helps to improve the absorption of nutrients and fluid from the remaining intestine. The company estimates there are around 70 people eligible for the treatment.

Short bowel syndrome is a chronic and potentially life-threatening condition in which the body is unable to absorb enough nutrients from food. The condition occurs when people do not have enough small intestine, which is the part of the body where most nutrients are absorbed during digestion.

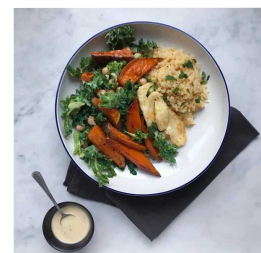
Short bowel syndrome is currently treated by giving people nutrients and fluids intravenously through a drip, also known as parenteral support, alongside best supportive care. Best supportive care can include treatments which control bowel movements, fluid restriction and diet changes.

Clinical trial evidence shows that teduglutide reduces the number of days a week people with short bowel syndrome need parenteral support compared with placebo.

[NICE](#)

Healthy Recipe of the Month - Kale, sweet potato & tahini bowl

Recipe
1 large sweet potato, cut into wedges
100g bulgur wheat
250ml cold water
½ vegetable stock pot, I use Knorr
2 large handfuls of kale, chopped
½ lemon
½ can chickpeas, rinsed and drained
1 tsp extra virgin olive oil
125g halloumi, thickly sliced (optional)



Blog and Photo credit:
Corrie Heale

To see the method for this recipe, and for more recipes from Corrie, sign into www.heales.com and click on Healthy Eating Blog.

www.heales.com

New injectable immunotherapy treatment for rare form of triple negative breast cancer recommended by NICE

Pembrolizumab is used with chemotherapy in adults with triple negative breast cancer whose tumours express PD-L1 with a combined positive score (CPS - the number of PD-L1 positive cells in relation to tumour cells) greater than or equal to 10 who have not had chemotherapy for metastatic disease and where surgery to remove the tumour is not possible.

Clinical trial evidence shows that, compared with paclitaxel, pembrolizumab combination increases how long people have before their cancer gets worse and how long they live.

NICE already recommends atezolizumab in combination with chemotherapy for untreated PD-L1-positive, locally advanced or metastatic, triple-negative breast cancer. The population covered by NICE's appraisal of pembrolizumab in combination with chemotherapy covers some, but not all, of those who are eligible to have atezolizumab in combination with chemotherapy. This is because for atezolizumab, PD-L1 expression is measured using a slightly different method called immune cell staining (IC). Atezolizumab combination is recommended by NICE for people with IC equal to or greater than 1%. This means that some people who can't have atezolizumab combination could

be eligible for pembrolizumab combination.

Following consultation on the previous draft guidance the company proposed that the pembrolizumab combination should be restricted to people whose tumours express PD-L1 with a CPS greater than or equal to 10 and IC <1%. This means that atezolizumab combination is no longer a direct comparator, thereby removing a key barrier to its approval by NICE and making pembrolizumab combination an alternative treatment for people who cannot have atezolizumab combination.

NICE's independent appraisal committee also agreed that the pembrolizumab combination meets the higher cost-effectiveness threshold for life-extending treatments for people with a short life expectancy.

NICE

Gel that repairs heart attack damage could improve health of millions

British researchers have developed a biodegradable gel to repair damage caused by a heart attack in a breakthrough that could improve the health of millions of survivors worldwide.

There are more than 100,000 hospital admissions every year due to heart attacks in the UK alone – one every five minutes. Medical advances mean more people than ever before survive, with 1.4 million Britons alive today after experiencing a heart attack. But hearts have a very limited ability to regenerate,

meaning survivors are left at risk of heart failure and other health problems.

Now after years of efforts searching for solutions to help the heart repair itself, researchers at the University of Manchester have created a gel that can be injected directly into the beating heart – effectively working as a scaffold to help injected cells grow new tissue.

Until now, when cells have been injected into the heart to reduce the risk of heart failure, only 1% have stayed in place and survived. But the gel can hold them in place as they graft on to the heart.

“While it's still early days, the potential this new technology has in helping to repair failing hearts after a heart attack is huge,” said Katharine King, who led the research backed by the British Heart Foundation (BHF). “We're confident that this gel will be an effective option for future cell-based therapies to help the damaged heart to regenerate.

To prove the technology could work, researchers showed the gel can support growth of normal heart muscle tissue. When they added human cells reprogrammed to become heart muscle cells into the gel, they were able to grow in a dish for three weeks and the cells started to spontaneously beat.

Echocardiograms (ultrasounds of the heart) and electrocardiograms (ECGs, which measure the electrical activity of the heart) on mice confirmed the safety of the gel.

Andrew Gregory, *The Guardian*

New biodegradable gel could 'repair damage caused by heart attack'

A new biodegradable gel has been developed to repair the damage caused by a heart attack.

Experts at the University of Manchester, backed by the British Heart Foundation (BHF), created the substance, which can be injected directly into the beating heart. The gel works as a scaffold for injected cells to grow new tissue.

In the past, when cells have been injected into the heart to reduce the risk of heart failure, only 1% have stayed in place and survived.

The new gel is made of amino acids called peptides which are the building blocks of proteins.

It behaves like a liquid when it is under stress as the peptides disassemble – which is an ideal state to inject it – and then the peptides work to reassemble, making it a solid. This holds the cells in place as they graft onto the heart.

For the results to be successful, a good blood supply is vital for the injected cells to be able to develop into a new tissue.

To prove that the technology could work, researchers showed that the gel can support growth of normal heart muscle tissue.

When they added human cells that had been reprogrammed to become heart muscle cells into the gel, they were able to grow them in a dish for three weeks and the cells started to spontaneously beat. They also tested the gel on

healthy mice.

They injected a fluorescent tag with the gel into their hearts, and the results revealed that the gel stayed on the hearts for two weeks.

Echocardiograms (ultrasounds of the heart) and electrocardiograms (ECGs, which measure the electrical activity of the heart) on the mice confirmed the safety of the gel.

To gain more knowledge, researchers plan to test the gel after mice have a heart attack to see if they develop new muscle tissue.

The study has been presented at the British Cardiovascular Society Conference in Manchester.

Abi Stokes, Independent

Bath's RUH trials new ovarian cancer treatment

Doctors at Bath's Royal United Hospital have introduced new equipment for the targeted removal of ovarian cancer.

The PlasmaJet Ultra uses ionised argon gas to destroy cells during surgery without damaging nearby healthy tissue.

It is hoped the new kit will reduce the amount of time cancer patients will spend being treated in hospital.

"We're now able to vaporise tumour from tissues more precisely," said Jonathan Frost, consultant gynaecological oncologist.

"It is an invaluable tool in advanced ovarian cancer, where the tumour is typically found in multiple nodules on the surface of organs and tissues such as the bowel.

"We know that this is going to make such a difference to our patients and their quality of life and we are delighted to be able to offer this advancement in cancer treatment to our patients at the RUH," he said.

Some women undergoing surgery for ovarian cancer need to have parts of their bowel removed in order to fully eliminate the disease.

This can mean further follow-up surgeries, but this tool will reduce the need for stomas in some patients entirely.

BBC News

July Workout - Full body circuit

Exercises

Squat and lunge complex
Renegade row
Walkout with press up
Squat to press
V-sits

10 repetitions of each exercise with as little rest as possible, try and complete 4 rounds!

To see Carys performing the workout, and for details on how to do the exercises, log on to heales.com and click on Healthy Lifestyle blog.



Blog and Photo credit:
Carys Swanton

'Long Covid' risk lower with Omicron, study finds

Last winter's Omicron variant was less likely to cause lingering symptoms, known as "long Covid", a UK investigation, in *The Lancet*, suggests.

The King's College London team looked at data from nearly 100,000 people who logged their Covid symptoms on an app.

Just over 4% of those infected during the Omicron wave had logged long Covid symptoms, compared with 10% of those infected in the preceding, Delta, wave.

But as far more were infected during the Omicron wave, the total was higher.

In fact, the much bigger number of new infections during the Omicron wave "entirely trumped" the variant's potential lower risk of long Covid, Kevin McConway, emeritus professor of applied statistics, at The Open University, said.

"Anyway, you don't really have any choice about which virus variant you might be infected with," he said.

"What's more, nothing in these findings tells us what might happen with a different new variant, in terms of long Covid risk."

The researchers tried to take into account other variables, such as how long ago someone had been vaccinated against Covid, but it is impossible to be certain the difference between variants caused the difference in long Covid numbers.

Lead researcher Dr Claire Steves said:

"The Omicron variant appears substantially less likely to cause long Covid than previous variants - but still, one out of every 23 people who catches Covid-19 goes on to have symptoms for more than four weeks.

"Given the numbers of people affected, it's important that we continue to support them at work, at home and within the NHS."

Officials estimate long Covid has affected at least two million people in the UK.

Michelle Roberts, BBC News

Breakthrough vaccine could help cure pancreatic cancer

A new vaccine developed using the same technology as the BioNTech-Pfizer Covid jab has raised hopes of a cure for pancreatic cancer.

In early trial results of the jab - which uses mRNA theory and is designed to prevent tumours from returning after surgery - half of the patients given a vaccine remained cancer free 18 months later.

The inoculation, developed by scientists working with pharmaceutical

firm BioNTech and US company Genentech, has raised hopes of finally finding a cure for the deadliest common cancer which claims the lives of 90 per cent of patients within two years of diagnosis.

The results of the groundbreaking trial, led by Dr Vinod Balachandran at the Memorial Sloan Kettering Cancer Centre in New York, were presented at the American Society of Clinical Oncology conference in Chicago.

They showed personalised vaccines could train the immune system to kill cells associated with pancreatic cancer.

A similar trial is also currently underway for bowel cancer – and Moderna, another Covid vaccine manufacturer, is also developing mRNA treatments for cancer and autoimmune conditions.

The early-stage pancreatic cancer trial involved 16 patients, who were given eight doses of a vaccine intravenously after surgery to remove a tumour.

The jabs were custom-made for each person using mRNA genetic code found in their tumours to teach cells to make a protein that will trigger an immune response.

This enables the body to detect any cancer cells as a threat and T cells, a type of white blood cell, then destroy them.

The vaccine triggered a T-Cell response in half the patients, who all remained cancer-free throughout the study.

Chiara Giordano, Independent

Get in touch!

If you have an exercise or recipe you'd like to share with us, news stories you'd like us to cover, or want any more information on news stories we've covered, please contact your contract manager or email carys.swanton@heales.com.

Health Promotion and Education

Heales Medical can help advise and manage proactive health promotion days that will encourage employees to adopt healthier lifestyles.

Our health promotion days specialise in the prevention of ill health and the promotion of health & well-being within your organisation.

Our services are delivered by high calibre, well qualified staff with a broad experience base and all results are assessed against National Clinical Guidelines.

During each assessment, the health professional will ask lifestyle questions about the employee's general health and give health advice.

After each assessment we will be able to provide results, advice and an information pack.

If you have any queries or are interested in having an event, please contact a Heales Occupational Health Advisor or Contract Manager for further information.



- ✓ Advice of physical activity
- ✓ Advice on healthy eating
- ✓ Advice on weight management
- ✓ Advice on stress management
- ✓ Advice on smoking, alcohol & drugs
- ✓ Understanding blood pressure
- ✓ Understanding blood cholesterol

Health Promotion Calendar

Click on the event to go to their website.

JULY

Ethnic Minority Cancer Awareness Month
[01/07-31/07/2022](#)

Disability Awareness Day
[17/07/2022](#)

Talk to Us
[24/07/2022](#)

World Hepatitis Day
[28/07/2021](#)

AUGUST

Cycle to work day
[04/08/2022](#)

SEPTEMBER

Vascular Disease Awareness Month
[01/09/22-30/09/22](#)

Urology Awareness Month
[01/09/22-30/09/22](#)

World Alzheimer's Month
[01/09/22-30/09/22](#)

Know your numbers! Week
[05/09/22-11/09/22](#)

World Suicide Prevention Day
[10/09/2022](#)

World Sepsis Day
[13/09/2022](#)

National Eye Health Week
[19/09/22-25/09/22](#)

National Fitness Day
[21/09/2022](#)

Macmillan Coffee Morning
[30/09/2022](#)

Health and Wellbeing Portal

For more resources see our Health and Wellbeing Portal!

Our portal has a wide range of information, tips and advice to help you support your health and wellbeing, including:

- Health Promotion Blog
- COVID-19 advice
- Health & healthy eating tips
- Health Newsletter archive
- Healthy lifestyle & exercise blog
- Vegetarian blog
- Accessible apps
- Specific information and tip pages for injury, illness and disability in daily life and in the workplace
- Occupational Health information

Pages and information will be updated and added to continually, if you have any suggestions, let us know at carys.swanton@heales.com.