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Heales Medical

HEALTH AND WELLBEING NEWSLETTER

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Top Health News

Atlas of cells transforms understanding of human body

An ambitious plan to map all 37 trillion cells in the human body is transforming understanding of how our bodies work, scientists report.

The received wisdom said we were built from around 200 types of cell – such as heart muscle or nerve cells.

Instead the Human Cell Atlas project has revealed there are thousands of cell types, with some appearing to be culprits in diseases such as inflammatory bowel disease and cystic fibrosis.

In a flurry of announcements, the formation of the human skeleton and the early immune system have also been mapped out in detail.

The novel insight is akin to moving from the maps of the 15th Century era of Joan of Arc and Richard III to what the phone in your pocket can load.

The old maps of the body had the equivalent of major roads and significant geography but also areas cartographers labelled unknown or "terra incognita".

"[Now] it looks more like a Google map, you have a high resolution view and then on top of that you have the Street View that explains what's going on, and then on top of that you can see the dynamic changes during the day when less cars are flowing or more cars are flowing," said Dr Aviv Regev, one of the founders who now works at now at Genentech.

She added: "This is essential for us to understand and treat disease, cells are the basic unit of life, if things go wrong, they go wrong with our cells."

Performing a feat of "human cartography" requires cutting-edge biology and computer science.

The project so far has looked at more than 100 million cells – deeply analysing each individual one - from 10,000 people around the world.

James Gallagher, BBC News

What is benralizumab? Breakthrough asthma drug hailed a 'game-changer'

A new treatment for asthma attacks is being described as "game-changing" by the London scientists who created it.

The drug, which is called benralizumab, is the first new treatment for asthma attacks and chronic obstructive pulmonary disease (COPD) in 50 years. A trial has shown that using the drug can cut the need for further treatment by 30 per cent.

But what is benralizumab and when might it be available?

What is benralizumab?

Benralizumab is what's known as a monoclonal antibody, which replicates properties of a normal antibody produced by the immune system. The antibody targets a specific group of white blood cells (called eosinophils) to reduce lung inflammation.

How does it work?

The drug is administered by injection and is currently used in low doses as a regular treatment for severe asthma. It works by counteracting flare-ups of eosinophilic exacerbations, a respiratory condition that causes wheezing, breathlessness, coughing and a tight chest. Around half of asthma attacks and a third of COPD attacks are eosinophilic exacerbations, according to the scientists, so the drug could prove incredible useful for people living with these conditions.

What did the trial show?

In a trial of 158 patients, King's College London found that administering a single higher dose of benralizumab can be effective if it's injected when someone is having a flare-up. Treatments for asthma and COPD have not changed in 50 years, despite the conditions causing 3.8 million deaths a year worldwide.

Patients at Oxford University Hospitals NHS Foundation Trust and London's Guy's and St Thomas's NHS Foundation Trust were split into three groups – one received a dummy injection and the standard care of prednisolone steroids, one the benralizumab injection and placebo tablets, and the last group had the steroids and benralizumab injection.

According to the study, after 28 days, symptoms of coughing, wheezing and breathlessness were better in those taking the injection. After 90 days, there were four times fewer people in the benralizumb group who failed treatment, compared to patients just taking steroids.

Jordan Page, The Standard

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OCCUPATIONAL HEALTH NEWSLETTER

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How doctors could soon use AI to detect brain tumors

Artificial intelligence models are getting better at detecting brain tumors in images from MRIs.

More than 150 types of brain tumors have been identified to date; and while not all of them are brain cancer, they can still be dangerous because of their locations. Benign brain tumors located in vital areas of the brain can be life-threatening. On rare occasions, a benign tumor can become malignant, according to John Hopkins Medicine.

Nearly 19,000 people were projected to die from brain and other nervous system cancers this year. About the same amount were estimated to die from brain and spinal cord tumors last year, according to the American Cancer Society.

Now, scientists have trained convolutional neural networks – also known as machine learning algorithms, a type of AI – to identify which MRI images showed healthy brains and which had been affected by cancer. In addition, the models could determine the area affected by cancer and what type of cancer it looked like.

They found that the AI networks scored highly at detecting normal brain images and distinguishing the difference between cancerous and healthy brains. The first could detect brain cancer with an average accuracy rate of nearly 86 percent. The second had a rate of more than 83 percent.

Researchers used public domain MRI imaging data to train the models. Their findings were published Tuesday in a new paper in the journal Biology Methods and Protocols.

Julia Musto, Independent

Recipe of the Month - Penne al'arrabiata

Recipe

- 2 garlic cloves
- ¼ tsp salt flakes
- 1 tbs Pomora extra virgin olive oil
- ¼ tsp of chilli flakes
- 1 can of plum tomatoes
- 1 tbs tomato purée
- 1 ball vegetarian buffalo mozzarella or burrata
- 150g penne pasta
- Fresh basil to serve

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.

New NHS Therapy Transforms Lives of Adults with Rare Genetic Condition

Hundreds of patients with a rare genetic condition that causes rickets and severe bone and dental problems can now receive a "life-changing" new therapy on the NHS in England.

Targeted drug burosumab has been shown to help transform the lives of adults with an inherited condition that leads to low levels of the mineral phosphate in the blood, which is essential for the normal formation of bones, teeth and how other parts of the body work.

The condition, known as XLH (X-linked Hypophosphatemia), can lead to rickets, an increased risk of fractures due to bone softening, muscle weakness, dental problems including abscesses and loss of teeth, and disability that can affect a person's work life.

Until now, the only available treatment for adults was phosphate supplements or activated vitamin D, which are less clinically effective and can cause side effects including severe stomach problems and kidney stones.

Instead of trying to replace the phosphate being lost by the kidney, burosumab works by supressing the hormone that causes low levels of phosphate, stabilising levels in the blood, something that was not achievable with previously available treatments.

The drug has been available for children with XLH since 2018 and will now be available for eligible adults on the NHS – initially through more than 20 specialist centres across the country.

Patients will be taught to give burosumab in their own homes, reducing unnecessary visits to hospitals.

Byline

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NHS trials 'sponge on a string' test for risk signs of oesophageal cancer

The NHS is to offer a 10-minute "sponge on a string" test to 120,000 patients with heartburn in a trial to see if it should be used to screen millions of people for one of the world's deadliest cancers.

Patients swallow a soluble pill attached to a thread which, when washed down with a glass of water, releases a sponge the size of a 50p coin to collect cells from the oesophagus as it is retrieved.

It is then pulled out using the attached thread, allowing the cells it has gathered to be analysed to see if someone has Barrett's oesophagus, which raises the risk of developing oesophageal cancer.

Oesophageal cancer – cancer of the food pipe – is on the rise and is closely associated with risk factors such as poor diet, smoking, alcohol consumption and having a hiatus hernia.

Trials have already shown that the test can reliably identify people with Barrett's oesophagus. Now doctors and scientists have launched a new trial, starting in England and then being extended across the UK, aimed at showing that using it in a targeted screening programme can help prevent oesophageal cancer and reduce deaths from this disease.

The "sponge on a string" test has generated a lot of interest because it takes far less time than an endoscopy, is far less invasive, quicker to access, and is £300 cheaper each time for the NHS to carry out.

It is hoped that using the test to screen for the disease could save lives and reduce the need for the "labour-intensive" endoscopy – a camera down the throat – which is the "gold standard" to diagnose and treat this type of cancer.

Andrew Gregory, The Guardian

Workout of the month - HIIT Workout

Exercises
1. Jump squats
2. Bicycle kicks
3. Walkouts
4. Lunge pops
5. Plank steps

Perform each of these exercises at maximum effort for 20-30 seconds, followed by a 30-40 seconds rest.

Blog and Photo credit: Carys Swanton

To see Carys performing the workout, and for details on how to do the exercises, log on to the Heales Medical Health and Wellbeing portal and check out the workout on our homepage.

Physical fitness can lower risk of dementia, research finds

Being physically fit can lower the risk of dementia and delay someone developing it by almost 18 months by boosting brain health, research has found.

Regular exercise is so useful for maintaining cognitive function that it can even help people who are genetically more predisposed to dementia to reduce their risk by up to 35%.

The findings add to the evidence that staying fit during the course of one's life is a key way of lowering the likelihood of developing the disease.

The study, published in the British Journal of Sports Medicine, found that people with the highest cardiorespiratory fitness (CRF) also had higher cognitive function and a lower risk of dementia.

The researchers analysed the health of 61,214 people who were aged between 39 and 70 when they enrolled in the UK Biobank study between 2009 and 2010, none of whom had dementia at the time. They were followed up for up to 12 years to see how their health progressed.

On joining they undertook a six-minute exercise test sitting on a stationary bike, to assess their fitness. They also had their cognitive function measured by neuropsychological tests and their genetic likelihood of dementia estimated using a polygenic test to assess the risk of Alzheimer's disease.

"Our study shows that higher CRF is associated with better cognitive function and decreased dementia risk", the researchers write in their paper.

"Moreover, high CRF may buffer the impact of genetic risk of all dementia by 35%."

Denis Campbell, The Guardian

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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 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.

Health Promotion Calendar

Click on the event to go to their website.

DECEMBER

World Aids Day
01/12/24

Anger Awareness Week
01/12/24-7/12/24

International Day of People with Disabilities
03/12/24

JANUARY

Dry January
01/01/2025-31/01/2025

Cervical Cancer Prevention Week
20/01/25-26/01/25