Patients' patience

Australian cancer patients are waiting up to five years for life-saving medicine under a government scheme, Xinhua reported.

Australian seagulls carry antibiotic-resistant superbugs

GETTY IMAGES

Seagulls all over Australia are carrying superbugs resistant to antibiotics, scientists said.

They found more than 20 percent of silver gulls nationwide carrying bacteria such as E. coli, which can cause urinary tract and blood infections and sepsis, according to BBC.

The research has raised fears that the antibiotic-resistant bacteria — similar to superbugs which have hit hospitals — could infect humans and other animals.

Scientists have described it as a 'wake-up call'.

The birds are believed to have contracted the bugs from scavenging in rubbish and sewage.

The scientists who conducted the research on behalf of Murdoch University in Perth have said it is 'eye-opening', the Guardian reported.

"I think that it is a wake-up call for all government and various agencies, like water treatment and big councils that manage waste, to properly work collaboratively to tackle this issue," said Sam Abraham, a lecturer in veterinary and medical infectious diseases. Humans could contract the bacteria if they touched the seagull faeces, but the risk is considered low if they wash their hands afterwards.

The study showed some bugs found in the faeces were resistant to common antibiotic medications such as cephalosporin and fluoroquinolone.

One sample showed resistance to carbapenem, which is a last-resort drug used for severe and high-risk infections.

Best diet for reducing harmful belly fat

Visceral fat is deemed harmful because it's stored in the abdominal cavity next to many vital organs, including the liver, pancreas and intestines.

Having high levels of visceral fat can increase the risk of serious long-term and life-threatening health conditions, such as heart attack and heart disease, express.co.uk wrote.

A diet high in saturated fat can lead to visceral fat build-up, so it's important to look at what you're eating to help reduce it. A range of different diets have been found to aid weight loss, but which one is considered best for losing visceral fat?

When it comes to what foods to eat, research from the American Journal of Clinical Nutrition found a calorie-controlled diet including whole grain significantly reduce abdominal fat.

The reason being they found refined grains tend to leave you feeling less full and may interferer with blood sugar levels.

This can help with appetite control and therefore lead to weight loss.

The British Dietetic Association (BDA) lists the best sources of whole grains.

Here are four:

- Oatmeal
- Rye bread
- Brown rice

thebloatedbellywhisperer.com

One study compared popular weight loss methods — a high dairy diet, abdominal exercise and a reduced calorie diet.

Of the three, the reduced calorie diet was found to be best.

Participants revealed a 12 percent reduction in visceral fat and a five percent decrease in overall body fat.

Portion sizes were measured using fingers and hands, and snacking wasn't allowed.

- Quinoa

Another important part of your diet to get rid of visceral fat should be fiber.

A study carried out by Wake Forest Baptist Medical Center found eating 10g of soluble fiber a day led to a 3.7 percent reduction in visceral fat over the course of five years.

Soluble fiber forms a gel-like consistency when it reaches the stomach, helping you feel full and blocking the absorption of cholesterol.

The BDA lists the best fiber rich food choices, which also contain soluble fiber.

These include:

- Starchy foods - sweet potato
- Beans and pulses - baked beans
- Vegetables - peas
- Fruits - banana
- Seeds - linseeds
- Nuts - almonds

Saturated fat is considered a 'bad' fat, especially when eaten in large amounts, and can be found in butter, cheese and red meat.

But not all fats are bad, and some have even been found to help aid visceral fat loss.

A study carried out by the American Diabetes Association found a higher intake of monounsaturated fats led to lower central fat distribution.

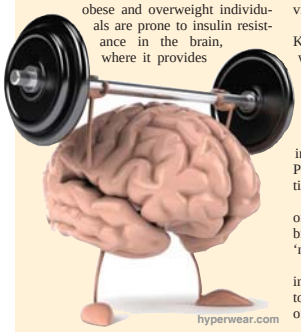
Monounsaturated fat is a type of unsaturated fat which are generally found in plant foods. Another is polyunsaturated.

Alongside eating a healthy, calorie-controlled diet, regular exercise is also key to losing visceral fat.

Exercise improves brain function in overweight, obese individuals

New findings out of the University of Tübingen showed that, on top of its benefits for metabolism, mood, and general health, exercise also improves brain function.

In recent studies, researchers learned that obese and overweight individuals are prone to insulin resistance in the brain, where it provides information about current nutritional status, as well as the rest of the body. So researchers wanted to know whether exercise can improve insulin sensitivity in the brain and improve cognition in overweight individuals, medicalxpress.com wrote.



hyperwear.com

In the current study, led by Stephanie Kullmann, 22 sedentary adults with overweight or obesity (an average BMI of 31) underwent two brain scans before and after an eight-week exercise intervention, including cycling and walking.

Brain function was measured before and after using an insulin nasal spray to investigate insulin sensitivity of the brain. Participants were also assessed for cognition, mood, and peripheral metabolism.

Even though the exercise intervention only resulted in a marginal weight loss, brain functions important for metabolism 'normalized' only after eight-weeks.

Exercise increased regional blood flow in areas of the brain important for motor control and reward processes, both of which depend on the neurotransmitter dopamine.

Dopamine is an important neurotransmitter for learning new motor skills and in reward-related learning and this research showed that exercise significantly improves dopamine-related brain function.

One area in particular, the striatum, had enhanced sensitivity to insulin after the eight-weeks of exercise such that the brain response of a person with obesity after exercise training resembled the response of a person with normal-weight. Interestingly, the greater the improvement in brain function, the more belly fat a person lost during the course of the exercise intervention. Behaviorally, participants reported an improvement in mood and task switching, which is an indicator for improved executive function.

"The bottom line is that exercise improves brain function", said Kullmann. "And increasing insulin sensitivity in dopamine-related brain regions through exercise may help decrease the risk of a person to develop type 2 diabetes, along with the benefits for mood and cognition".

Scientists design protein blockers to fight obesity, heart disease

Almost four in 10 adult Americans are obese, according to the US Centers for Disease Control and Prevention. What's more alarming is that in the past two decades alone, in states such as Texas, the share of obesity among residents has tripled. If left unchecked, obesity can even lead to more serious problems including high blood pressure and deadly strokes.

To help mitigate rising obesity rates, The University of Texas at San Antonio (UTSA) has received funding to use a novel approach that inhibits the activity of a human protein that is thought to contribute to bad cholesterol, medicalxpress.com wrote.

Assistant Professor Francis Yoshimoto from the UTSA Department of Chemistry will design and test a protein blocker against the enzyme cytochrome P450 8B1 (P450 8B1). In previous research conducted by drug manufacturers, mice lacking the gene that expresses this protein have a lower risk of developing diabetes, heart disease, and stroke. They also resist weight gain.

"The scientific community has a hole in the knowledge," said Yoshimoto. "We still have much more to learn about the functions of P450 proteins."

Cytochrome P450 enzymes (P450s or CYPs) are found in all living things, including plants. Humans have 57 P450 enzymes. The activity of the P450 8B1 enzyme is associated with obesity.

In the past, Yoshimoto and his collaborators discovered how the P450 class of enzymes metabolize cholesterol, serve as catalysts to produce oxysterols (a class of hormones) and assist the human liver in processing drugs. However, when these enzymes become overactive, they can impair a cell's metabolic processes. One particular P450 can even produce estrogen, which helps certain types of cancer grow.

Yoshimoto was inspired by previous studies at Merck. In those studies, transgenic mice lacking the gene encoding for P450 8B1 were used, and despite eating a high fat diet, they still maintained a lean weight.

The UTSA researcher then looked at the current cancer drug abiraterone, a derivative of progesterone that is used to shrink prostate cancer, and had an eureka moment.

Yoshimoto intends to use the same mechanism as abiraterone's to shut down P450 8B1. He believes the introduction of a pyridine in the substrate backbone will inhibit the iron active site in P450 8B1.

He has a patent pending on his innovative approach.

"No one has worked on P450 8B1 in this way," said Yoshimoto. "The beauty of the design is that it uses the same approach as a successful prostate cancer inhibitor."

Yoshimoto's medicinal chemistry research is made possible by the Max and Minnie Tomerlin Voelcker Fund, which is contributing $450,000 to support the work. The Voelcker Fund supports promising medical research that has the potential to have a significant impact on patient care.

"The end goal is to make a drug that fights obesity," said Yoshimoto.

This project is an example of UTSA's commitment to solving society's most pressing global health challenges.

EU invests €35m in AI-based cancer research

SHUTTERSTOCK

The European Commission launched a €35-million ($39.2-million) call for proposals on Tuesday to support the development of artificial intelligence-based image recognition systems and other tools and analytical methods for diagnosing the most common forms of cancer. The aim is to advance prevention, prediction and treatment, according to a commission press release.

The call comes under the Horizon 2020 program, through which the commission invests a total of €177 million in enabling the digital transformation of health and care and in trusted digital solutions and cybersecurity in health and care, Xinhua reported.

Mariya Garbiel, commissioner for the digital economy and society, said that "together with the member states, we must put in place a framework that balances individual concerns and health system constraints, while unleashing innovation in health care for the benefit of all Europeans."

On July 10, Gabriel will convene the second high-level roundtable that brings together representatives of the European Commission and the pharmaceutical, biotechnology and medical technology industries, as well as civil society representatives.

She plans to discuss the roadmap set out in the commission's "Communication on enabling the digital transformation of health and care in the Digital Single Market" adopted in April 2018, as well as other key issues, such as the next steps on the recently adopted recommendation on the interoperability of electronic health records, artificial intelligence and high-performance computing.

She will also highlight the importance of taking forward the exchange of health data across borders and addressing the relevant privacy and data protection aspects.