



Adherence to a “Mediterranean lifestyle” prevents metabolic syndrome

A study published in the Journal of Internal Medicine found that following a Mediterranean lifestyle, which includes adopting a Mediterranean diet along with healthy lifestyle practices like sufficient rest, regular physical activity, and social interaction, is associated with a lower risk of cardiovascular disease in individuals without a history of cardiovascular problems.

In a recent report, researchers analysed data from 851 patients in the CORDIOPREV study (Coronary Diet Intervention with Olive Oil and Cardiovascular Prevention) and divided them into groups based on their adherence to the Mediterranean lifestyle over 5 years. The patients were assessed for metabolic syndrome, which includes several metabolic features such as abdominal obesity, high blood pressure, and abnormal cholesterol and blood sugar levels.

After 5 years, the study found that those who had the highest adherence to the Mediterranean lifestyle were less likely to develop new cases of metabolic syndrome and more likely to reverse pre-existing metabolic syndrome compared to those with the lowest adherence. Following the Mediterranean diet alone was associated with a lower risk of metabolic syndrome. However, the non-dietary components of the Mediterranean lifestyle did not show the same association.

The results suggest that a Mediterranean diet, along with managing risk factors associated with metabolic syndrome, can contribute to the prevention of adverse cardiovascular events. These risk factors can be easily monitored in clinical practice.



Neglected 80-year-old antibiotic is effective against multi-drug resistant bacteria

STAR HEALTH REPORT

A recent study published in the journal PLOS Biology suggests that an old antibiotic could be a valuable weapon against drug-resistant bacterial infections. The research, conducted by James Kirby and his team from Harvard Medical School, explores the potential of an antibiotic called nourseothricin, which was discovered in the 1940s but was abandoned due to kidney toxicity.

Nourseothricin is derived from a soil fungus and contains multiple forms of a complex molecule known as streptothricin. Gram-negative bacteria, which have a tough outer protective layer, are particularly difficult to treat with common antibiotics. Previous studies on nourseothricin were limited due to incomplete purification of the streptothricins. However, recent research has revealed that one of its forms, streptothricin-F, is significantly less toxic to kidneys while still showing high activity against drug-resistant bacteria.

In their study, the researchers investigated the antibacterial action, renal toxicity, and mechanism of action of highly purified forms of two streptothricins, D and F. They found that the D form was more potent against drug-resistant bacteria, but also

caused renal toxicity at a lower dose. Both forms displayed a strong preference for Gram-negative bacteria.

Using cryo-electron microscopy, the researchers discovered that streptothricin-F, one of the forms of nourseothricin, binds extensively to a specific part of the bacterial ribosome. This binding mechanism leads to translation errors in the bacteria, which is known to be caused by these types of antibiotics. What is interesting is that the binding interaction of streptothricin-F is different from other known translation inhibitors, suggesting it could be useful when those other agents are not effective.

Based on the unique and promising activity of streptothricin-F, lead researcher James Kirby stated that the streptothricin scaffold should be further investigated in pre-clinical studies as a potential treatment for multidrug-resistant Gram-negative pathogens. He also mentioned that streptothricin, isolated in 1942, was the first antibiotic to demonstrate potent activity against gram-negative bacteria. The research team found that not only is streptothricin highly potent, but it also effectively targets contemporary multidrug-resistant pathogens and operates through a unique mechanism of inhibiting protein synthesis.

Understanding DEEP VEIN THROMBOSIS

STAR HEALTH DESK

Deep vein thrombosis (DVT) is a condition characterised by the formation of a blood clot deep within a vein, typically in the leg. It affects a significant number of people globally, and it can be life-threatening. The concern with DVT is that fragments of the blood clot can break off and travel through the bloodstream. If one of these fragments becomes lodged in the lungs, it can obstruct blood flow, potentially leading to organ damage or even death.

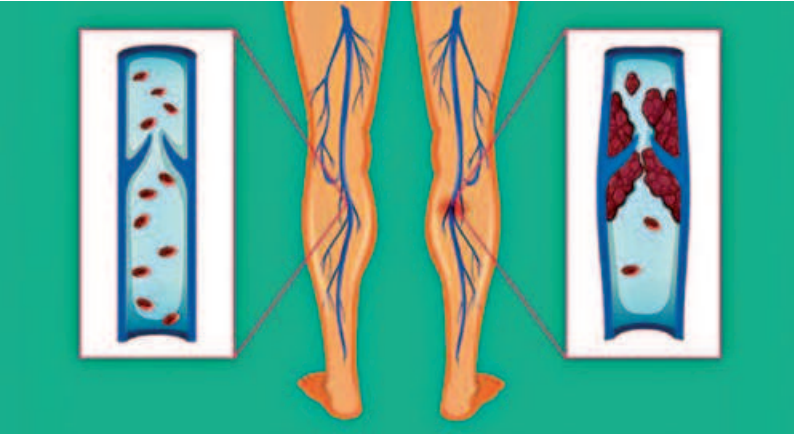
Symptoms: One common symptom of DVT is the swelling of the leg below the knee. Additionally, the affected area may exhibit redness, tenderness, or pain. However, it's important to note that these symptoms may not always be present. Approximately half of individuals with DVT do not experience any warning signs.

Causes: DVT can be caused by various factors that lead to damage to the inner lining of a vein. These factors include surgery, injury, or immune system responses. Conditions that cause thick or slow-flowing blood increase the likelihood of clot formation, particularly in veins that have already been damaged. Additionally, individuals with specific genetic disorders or higher levels of oestrogen are at an increased risk of developing blood clots.

Certain individuals are more likely to develop DVT. These include:

- Individuals with a history of cancer
- Those who have undergone surgery
- People on prolonged bed rest
- Older individuals
- Smokers
- Individuals who are overweight or obese
- Those who engage in prolonged periods of sitting, such as during long airplane flights

Pregnancy: During pregnancy and



the 4 to 6 weeks following childbirth, women are at an increased risk of developing DVT. This is attributed to higher levels of oestrogen during this period, which can potentially increase the likelihood of blood clot formation. The pressure exerted by the expanding uterus can also contribute to reduced blood flow in the veins. Moreover, certain blood disorders further elevate the risk of DVT in pregnant women.

Hormone therapy: Hormone therapy, including the use of birth control pills and certain treatments for postmenopausal symptoms, can elevate the levels of oestrogen in a woman's bloodstream. This increase in oestrogen can potentially raise the risk of developing DVT.

Trapped in your seat: While traveling to new and distant destinations can be an exciting experience, sitting in a confined seat for an extended period during long-distance travel, such as a trip lasting over 4 hours, can be uncomfortable. Research indicates that prolonged travel doubles the risk of developing DVT, regardless of whether it is by air, bus, train, or car. When you remain seated in a cramped position without much movement, it can lead to slowed blood flow.

Diagnosis: To diagnose DVT,

doctors will conduct a thorough examination, including assessing for signs and symptoms. They will also inquire about your medical history, medications you are currently taking, any relevant medical conditions in your close relatives, as well as factors that could increase your risk of developing DVT. The most common method used to confirm the presence of DVT is an ultrasound, which utilizes sound waves to visualise blood flow and identify blood clots. In some cases, additional tests such as a d-dimer blood test may be necessary.

Compression stockings are specialised socks that apply gentle pressure on your legs, promoting blood circulation. They help prevent the formation of blood clots, reduce swelling, and alleviate pain in areas where a clot has formed. While you can purchase compression stockings over the counter, stockings with higher pressure require a prescription from your doctor. It is recommended to wear them consistently, even when at home.

In addition, elevating your legs by keeping your feet raised off the floor whenever possible can be beneficial. This position facilitates the upward flow of blood from your veins towards your heart, reducing swelling and discomfort in the leg affected by DVT.

HAVE A NICE DAY A kind road to happiness (2)

DR RUBAIUL MURSHED

The sharing and ventilating of personal feelings play a major role in the relief of stress and depression. It has been seen that people who have one or more close friendships appear to be happier.

Kindness and friendliness are both a skill and a value. One of the greatest paradoxes in modern life is that while, on average, existence has become more consumer-oriented over time, sacrificing attitude with happiness has fallen. But at the end of the day, most world scholars found that people should focus on others first and themselves second.

Acts of kindness can only make the world a happier place for everyone as the standard pillars of kindness sound and mean universally. They can boost feelings of confidence, being in control, happiness, and optimism. Being kind boosts serotonin and dopamine, which are neurotransmitters in the brain that give us feelings of satisfaction with happiness and well-being and cause the pleasure or reward centers in our brain to light up. Endorphins - our body's natural painkillers, also can be released. There was a research study done in Japan that showed that happy people were kinder than people who were not happy.

There is a strong connection between our own happiness and being kinder to others; Kindness is one of the most important qualities a person can have. It could be the only road towards personal to global peace and happiness.

The thing that counts most in the pursuit of happiness is choosing the right factor named kindness. That is why it is said that 'kindness is the essential ingredient for the recipe for happiness'.

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Repeat MRI scans for pituitary microadenomas may be unnecessary: study suggests

STAR HEALTH REPORT

Autopsy and imaging studies have shown that around 10% of adults may have pituitary microadenomas, which are small growths in the pituitary gland. These growths are often found incidentally during an MRI scan and are usually less than 10mm in size. Researchers at the Mass General Brigham healthcare system studied 177 patients who had pituitary microadenomas and at least one follow-up MRI scan. Patients with high levels of prolactin hormone were excluded from the study.

At the start of the study, the average size of the microadenomas was 4mm. During a follow-up



period of about 5 years, the size of the microadenomas stayed the same in 44% of patients, increased in 28%, decreased in 19%, and increased but later decreased in 9%. Larger microadenomas tended to decrease in size with time, while smaller ones tended to increase in size.

However, the average increase in size for the smaller microadenomas was very small, only 0.1 mm per year. Only three microadenomas grew to be larger than 10mm during the study period. Based on the findings, it appears that frequent follow-up MRIs for patients with incidentally discovered pituitary microadenomas may not be necessary.

The researchers suggest a somewhat arbitrary schedule of repeating MRIs at 1, 4, and 9 years, assuming the initial lesion has not increased in size. However, it is important to note that if patients develop symptoms such as changes in peripheral vision, it is advisable to seek prompt evaluation regardless of the scheduled follow-up.






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