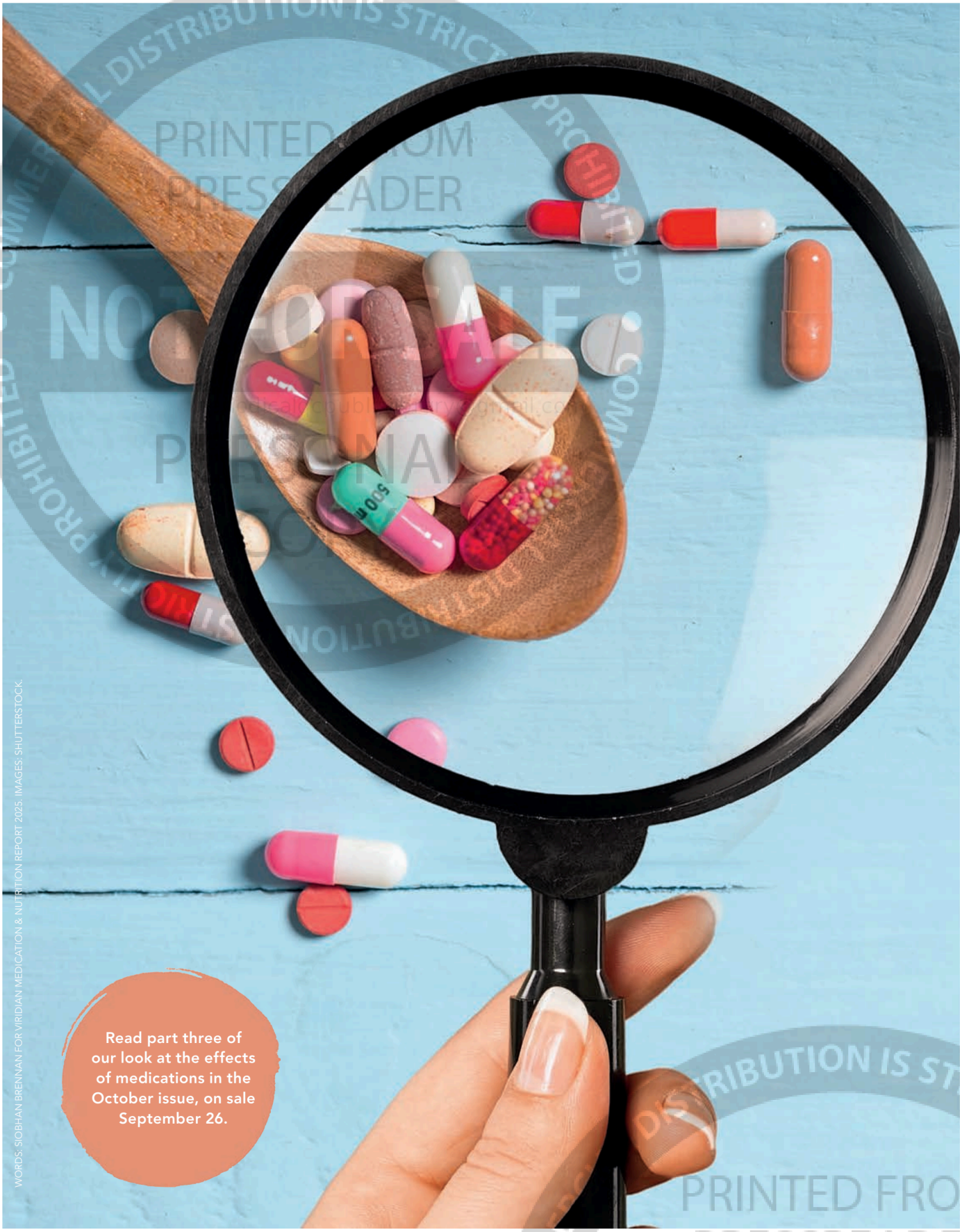
- Medical awareness



WORDS: SIOBHAN BRENNAN FOR VIRIDIAN MEDICATION & NUTRITION REPORT 2025. IMAGES: SHUTTERSTOCK.

Read part three of our look at the effects of medications in the October issue, on sale September 26.

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SPECIAL REPORT

Spotlight on medications

In part two of her report on the effects of prescription medications, Dr Siobhan Brennan looks at some common conditions that can be exacerbated by certain pharmaceutical drugs and ways to offset the effects.

TYPE 2 DIABETES

This condition often leads to other conditions, such as kidney disease, nerve damage and hardening of arteries, linked to cardiovascular disease. The number of people affected is growing, with an estimated 3.8 million people aged 16+ in England having type 2 diabetes (diagnosed and undiagnosed). Type 2 diabetes prevalence is higher in men than in women, 9.6 per cent versus 7.6 per cent, and a diet high in sugar, refined fats and calories increases the risk of developing it, while obesity is another risk factor. By 2035, diabetes prevalence is expected to increase to 4.9 million or 9.7 per cent of the population.

The medications used to manage symptoms of type 2 diabetes can have a particular impact on reducing vitamin B12 and folate levels. Metformin is the most commonly prescribed treatment for it and is one of the top 10 medications used in England, France and the United States.

A European review, with input from the MHRA, found vitamin B12 deficiency to be a common side-effect in patients treated with metformin, especially in those receiving a higher dose or undergoing longer treatment duration.

A study with patients on high-dose metformin found that adding B vitamins and folate supplements to the treatment protocol was associated with beneficial effects on HDL cholesterol and renal function in diabetic patients.

Another study found that supplementation of folic acid led to increased folate levels in the blood, which in turn improved antioxidant activity and reduced homocysteine. This is a positive outcome as homocysteine is a marker for other long term health conditions.

One of the most impactful actions for type 2 diabetes is to make lifestyle changes. These can help lower your blood-glucose (sugar) levels and possibly avoid having to take medicine. Lifestyle changes can sometimes manage diabetes sufficiently to lower your blood glucose to a normal level and initiate remission to stop diabetes.

Recommended lifestyle changes include:

- Eating a wholefood diet including fruit, vegetables and wholegrain foods.
- Removing ultra processed foods, especially those high in refined sugar.
- Spending at least 2.5 hours a week doing an activity that leaves you out of breath.
- Trying to lose weight if you are overweight.
- Stopping smoking – having diabetes increases the harmful effects of smoking.
- Limiting your alcohol intake to as little as possible.

SIGNS OF B12 AND FOLATE DEFICIENCY

- Numbness, pins and needles.
- Muscle weakness, feeling weak or tired.
- Headaches.
- Problems with memory, anxiety, depression and confusion.
- Problems with balance and coordination.
- Incontinence.
- Indigestion, loss of appetite.
- A sore or red tongue, sometimes with mouth ulcers.
- Problems with vision.
- Shortness of breath.
- Diarrhoea.
- Palpitations.

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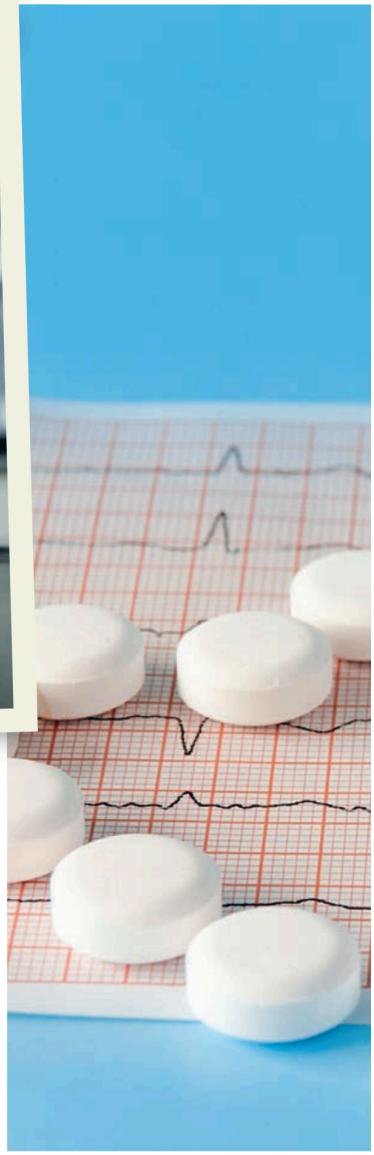

HEART DISEASE

In the UK, 7.6 million people are living with heart and circulatory diseases and around 80 per cent of people with heart and circulatory diseases have at least one other health condition. Coronary heart disease (CHD) is the most common type of heart and circulatory disease. It occurs when atheroma, a fatty material, builds up in the walls of the coronary arteries causing them to become narrowed. A diet high in processed and hydrogenated fats has been linked to heart disease, and many people are prescribed statins as well as other medications to try and prevent it.

STATINS

These are medication used to reduce cholesterol levels and are prescribed after a health check and a Q-risk score is performed using blood pressure, age and cholesterol results. In addition to other risk factors, if your risk of developing heart disease is more than 10 per cent, it is often suggested to commence a statin to reduce future risk, especially if you also have kidney disease.

Statins are known to deplete co-enzyme Q10 (Co-Q10), which plays a particularly crucial role in heart health and is needed in the body, in particular in the muscles, for energy production. It also acts as a powerful antioxidant. Studies show that supplementation of Co-Q10 alongside statins can also relieve the side effects of muscle weakness, tiredness and cramps.

Statins are also known to reduce the absorption of fat-soluble vitamins such as vitamin A, D, E and K. They do this by binding to transport proteins that normally carry fat-soluble vitamins in the bloodstream. Research shows vitamin E supplementation can reduce elevated liver enzymes associated with statin use, however, it's important to be aware that statin efficacy can be negatively impacted by vitamin E.

GPs will check blood cholesterol levels so you may be offered a higher dose if not achieving the targets when the root issue could be due to interactions with vitamin E. Vitamin D supplementation for those who are deficient can alleviate the muscle aches that are a common side effect of statins.

BETA-BLOCKERS

Beta-blockers lower heart rate and blood pressure. Similarly to statins, beta blockers can deplete co-enzyme Q10 in the body. Additionally, they can impact potassium levels. Muscle function relies on potassium so insufficient levels can lead to muscle weakness, as well as impacting the heart rhythm and smooth muscle of the digestive tract resulting in constipation.

Conversely too much potassium can lead to kidney damage so it is important to get advice from a health practitioner, such as a pharmacist, to ensure you know the risks.

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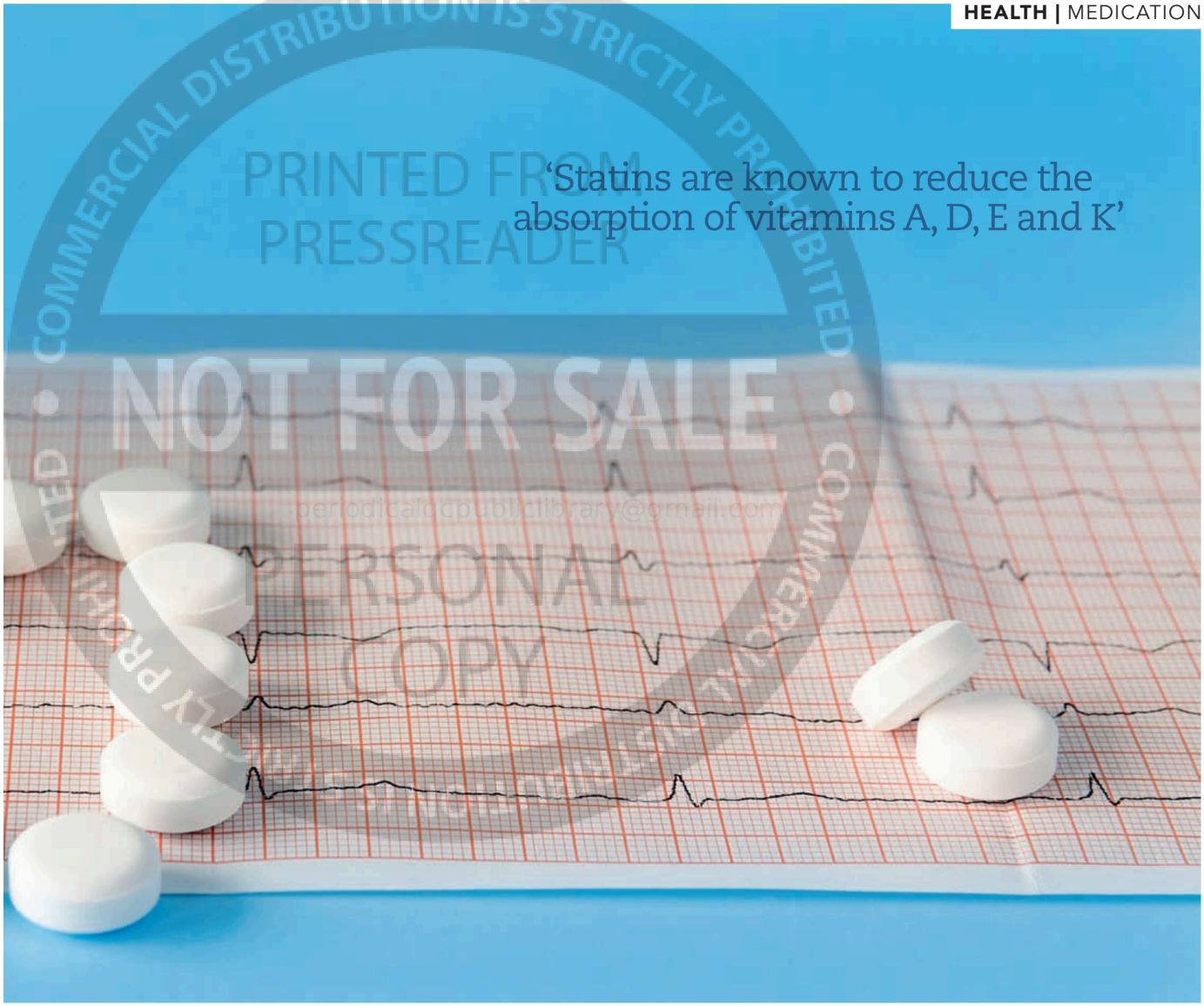

‘Statins are known to reduce the absorption of vitamins A, D, E and K’



ACE INHIBITORS

These are medications that widen blood vessels, reducing the heart’s workload. ACE inhibitors can increase the rate zinc is removed from the body, leading to depletion. Zinc is an essential mineral, needed throughout the body, including for heart health. Studies suggest zinc deficiency may be a factor in the development of heart failure. ACE inhibitors can also have an impact on taste sensitivity of salt, leading to higher consumption.

One study found people taking ACE inhibitors had a 13 per cent per calorie higher sodium intake. Research shows a diet rich in wholefoods, vegetables and fruit with limited saturated fat and sugar can support better outcomes for people taking ACE inhibitors, with blood pressure being significantly reduced.

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DEPRESSION

Depression, low mood and anxiety are often viewed as isolated issues but evidence shows these can lead to or from other conditions. An estimated one in six adults experience a "common mental disorder" such as depression or anxiety every week.

People who have a chronic disease are at a higher risk of developing depression and people who have depression are at higher risk of developing certain chronic diseases, including heart disease, diabetes, stroke, pain, osteoporosis, and Alzheimer's disease.

Research suggests that people who have a chronic disease and depression tend to have more severe symptoms of both illnesses.

A common approach to managing depression is to use medication such as anti-depressants. These are often prescribed to people experiencing low mood, but they may impact nutrition, a challenge if levels in the body are already low.

Nutrient depletion may not be initially obvious, with new symptoms or side effects appearing months or years after starting a medication. This is because it takes time for nutrients to be depleted from your body and so you may not immediately make the connection between the original medication and your new symptoms.

It is also worth noting antidepressants can be recommended for other reasons. For example, selective serotonin reuptake inhibitors (SSRIs) are a class of antidepressants that are used commonly for treating menopause symptoms such as hot flushes and headaches.





Several nutrients have been related to the prevention and treatment of depressive disorders. One study, for example, found that magnesium supplementation over just seven days resulted in rapid improvement for major depression (where the symptoms severely disrupt and adversely affect the person's life). [See box, top right, for more nutrient supplementation.]

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'ACE inhibitors can increase the depletion of zinc'

Key nutrients implicated in improving depressive symptoms:

OMEGA-3 FATTY ACIDS (EPA AND DHA): Increased omega-3 fatty acid intake can prevent the onset of depressive symptoms.

B VITAMINS INCLUDING FOLATE: Low dietary and/or serum levels of vitamins B1, B6, folic acid/folate, and B12 have been associated with a higher prevalence of depressive symptoms. Intake of adequate amounts of B vitamins may have a positive impact on mental health and reduce the risk of depressive symptoms.

VITAMIN D: Depressed patients have significantly lower serum vitamin D levels. It has been shown that approximately 80 per cent of depressed patients do not take adequate daily doses of vitamin D.

MINERALS: Depleted levels of magnesium, potassium, zinc, selenium and manganese have been associated with a greater likelihood of depression. Both excess and deficiency of copper and iron may affect the risk of depression.

VITAMIN A: People with depression are often noted to have lower dietary intakes of vitamin A/beta carotene. Rather than consuming vitamin A directly, beta carotene is a recommended supplement to allow the body to convert what it needs to vitamin A, avoiding excessive levels building up.

VITAMIN C (ascorbic acid): Vitamin C deficiency is associated with stress-related diseases. Studies show that ascorbic acid supplementation produces antidepressant effect and improves mood.

Overall, scientific evidence confirms that a diet to support mental health should consist mainly of vegetables, fruits, wholegrains, legumes, nuts, fish and low-fat dairy products, while limiting ultra processed foods. This will provide nutrients that can benefit mental health by enabling brain processes, reducing oxidative stress and alleviating inflammation.



Dr Siobhan Brennan qualified from the National University of Ireland as a doctor and has been a GP for almost 20 years. Her speciality interests are the menopause and mental health but also nutrition and lifestyle medicine. She is a keen ultrarunner and is often seen with her children in the mountains. Dr Brennan is an ambassador for vitamin company Viridian (viridian-nutrition.com).

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