

How to KEEP YOUR BRAIN SHARP

An unmissable series to reduce your dementia risk



by Dr Sanjay Gupta

Tips and techniques from a fascinating new book by a top neurosurgeon prove...

Four page pullout

WHEN I began working as a neurosurgeon more than 25 years ago, the idea of improving your brain seemed a rather misguided one.

After all, I was trained to remove tumours, clip aneurysms and relieve pressure from collections of blood and fluid inside people's heads.

Despite all the advances in technology, even today, it is still not possible for a neurosurgeon to lift the lid on a human brain and adjust the 100 billion or so neurons to make the organ more intelligent and less vulnerable to decline.

While a heart surgeon might be able to snip away life-threatening plaques in the heart, I can't dive in and tease away the brain tangles often associated with Alzheimer's disease. There is still no operation or medication to cure dementia or reverse the ravages of ageing on your brain.

But I have worked in frontline brain surgery both in large city hospitals and in war zones, and have travelled the world in search of the secret to living longer, healthier and happier — and am now more convinced than ever that the brain can be changed constructively.

The science now shows we can optimise our brain in a variety of ways to improve its functionality, stimulate the growth of new brain cells and help stave off age-related brain illnesses. The great news is the human brain can be enhanced and fine-tuned, and I will show you how.

All this week the Daily Mail is exclusively serialising my new book, *Keep Sharp*, and every day I will be bringing you scientifically proven ways to flex and strengthen your thinking power to help you build the mental resilience needed to keep mentally agile and focused into older age.

You might be surprised to read that my methods aren't about improving intelligence. You won't

Yes, you can re-energise your mind



BRAIN BOOSTER
ALZHEIMER'S disease begins in the brain decades before the first symptoms of memory loss — but that leaves ample time for people at risk to make brain-healthier choices

find exercises to help you remember items on your shopping list, to boost your performance in exams or execute tasks adeptly (though all of those

goals will be more achievable with a better brain). Instead, I will show you how to propagate new brain cells and make existing ones work more efficiently.

My mission is to help you learn to build a brain that connects patterns others might miss and help you to better navigate life. This, ultimately, should help protect you from dementia.

It is not surprising that many of

us consider dementia to be the bogeyman of old age. We fear losing our minds more than any other form of illness — even more than death.

I, too, worried deeply about cognitive decline when I had to watch my grandfather progress through the stages of Alzheimer's disease.

At first, he seemed to be contributing to conversations in

nonsensical ways. Because he was a fun-loving, quick-to-laugh sort of guy, we thought perhaps he was making jokes we weren't quite in on yet. What finally gave him away was the vacant stare that would turn to puzzlement, and then panic, as he realised he could not recall how to carry out the most basic tasks and plans.

I will never forget that look — at least, I hope to never forget it.

Globally, the number of people living with Alzheimer's disease will swell to 152 million by 2050, which reflects a 200 per cent increase in cases since 2018. While science is trying to push back, there hasn't been a single new treatment for the disease since 2002, despite more than 400 clinical trials.

So, it is reassuring to know that in this series, I will show you how to take the best possible steps to protect yourself against this terrible disease. My advice is

WHEN FORGETTING IS A GOOD IDEA

IN 2019 scientists discovered a group of brain cells which have the sole job of helping the brain to forget.

These 'forgetting neurons' are most active at night during sleep when the brain is reorganising itself and preparing to take on new information the next day. This ability to 'conscious forget' is a clever survival mechanism to prevent us from being overwhelmed. If you recalled

everything that came into your brain, it would seize up and your ability to think creatively and imagine would diminish. Yes, you might be able to recite long lists and cite elegiac love poems, but you'd struggle to grasp abstract concepts and even to recognise faces.

This discovery about the merits of forgetting shows just how important it is to get a good night's sleep.

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KEEP YOUR BRAIN SHARP

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designed to help you achieve your greatest potential, and that includes helping you to prevent cognitive decline.

We know now that diseases like Alzheimer's start 20 to 30 years before any symptoms develop, so this series gives you an opportunity to intervene and delay or even prevent Alzheimer's altogether.

But fear of dementia should not be your sole motivation for following my advice. Instead, it should be the knowledge that you can build a better brain at any age. I will show you how you can make yours as sharp as it can be, so you can live life to its fullest.

I will show you just how important activity and exercise are for your brain - the significant dementia-defying role played by socialising and I will outline the protective powers of a brain-healthy diet.

I'll help you discover great ways to ease the impact of stress, and increase the capacity of your brain so you can become sharper and more focused than you have ever been - whatever your age.

Some of the strategies I will teach you will help assemble brain scaffolding: creating a support structure for your brain which

DO PILLS MAKE YOU FORGETFUL?

WE RARELY think about a drug's side-effects. But some common prescription drugs are known to trigger symptoms which can mimic dementia.

The older we get, the more likely we are to take antidepressants, antibiotics, statins, opioids, benzodiazepines (for anxiety and sleep), blood pressure pills and steroids.

As we age, our body metabolises medicines less efficiently, allowing drug levels to build and cause memory glitches.

And anticholinergics are being scrutinised by dementia experts. The drugs block the neurotransmitter acetylcholine, which stimulates muscle contractions, making them useful for treating Parkinson's, gastro-intestinal illness, incontinence, epilepsy and allergy.

Acetylcholine has a role in learning and memory and there are fears it could raise your dementia risk. A 2019 study found that over-65s on anticholinergics long-term had a 54 per cent higher dementia risk than those taking them short-term.

If you are taking one, talk to your doctor about the risks.

builds space, so you can safely perform a few renovations and reinforce your brain's foundation.

Other strategies will help provide the raw materials you need to perform ongoing maintenance. Yet more aim to build what's called 'cognitive reserve', or what scientists call 'brain resiliency'. With more cognitive reserve, you can lower your risk of developing dementia.

Some of these behavioural changes are not merely effective, they are pretty much surgical in terms of the rapid improvements they can bring about.

The truth is, most of us have not done nearly enough to improve ourselves. But follow my guidance and you will develop a brain highly resilient in the face of the crushing life experiences we are now facing in the pandemic that might be disabling to others.



OVER RECENT years I have dedicated my time to distilling the best evidence-based brain research available in the world of neuroscience and human performance, and using these findings to guide my patients.

I have used this wealth of information to compile a quiz which will help you assess your risk factors for brain decline.

My quiz highlights all the potential risk factors for which there is good evidence and also the risks that researchers have been exploring and believe will be proven important in the future.

The patterns of your answers will start to show you the important role your behaviour plays in your brain health now and in the future. It will also highlight areas you might want to change.

Knowing and understanding your daily habits and their impact on your brain health will arm you with the information and insight you need to guide your efforts to rebuild and maintain a better brain.

Answer yes or no to the questions:

1 DO you suffer from any brain-related ailment now, or have you been diagnosed with mild cognitive impairment?

2 DO you avoid strenuous exercise?

3 DO you sit down for most of the day?

4 ARE you overweight or even obese?

5 ARE you a woman?

6 HAVE you been diagnosed with cardiovascular disease?

7 DO YOU have high blood pressure, insulin resistance, diabetes or high cholesterol?

8 HAVE you ever been diagnosed with Lyme disease, herpes or syphilis? Do you have chronic gum disease?

9 DO YOU take anti-depressants, anti-anxiety drugs, blood pressure drugs, statins, proton pump inhibitors or antihistamines?

10 HAVE you ever experienced a traumatic brain injury, suffered head trauma from an accident, played an impact sport (rugby, football, boxing) or ever been diagnosed with concussion?

11 DO you smoke or have a history of smoking?

12 DO you have a history of depression?

13 DO you have little social engagement with others?

14 DID your formal education stop at 16 or earlier?

SEDDENTARY LIFESTYLES DO DAMAGE



15 IS your diet high in processed, sugary, fatty foods and low in wholegrains, fish, nuts, olive oil, and fresh fruits and vegetables?

16 DO you live with chronic, unrelenting stress that leaves you struggling to cope?

17 DO you have a history of alcohol abuse?

18 DO you suffer from insomnia or sleep apnoea (heavy snoring which blocks your air supply), or do you sleep badly on a regular basis?

19 DO you suffer from hearing loss?

20 DOES your day lack cognitive challenges in the form of learning something new or playing games that require a lot of thinking?

21 DOES your job lack complex work with people in the form of persuasion, mentoring, instruction or supervision?



Can you GUESS who is at most risk of dementia?



WOMEN HAVE A HIGHER RISK

ONE of the first questions people ask themselves

when they can't recall a neighbour's name is: 'Is this normal, or the first stages of cognitive decline?'

Memory problems tend to increase as we get older. But it is OK to wake up and momentarily forget what day of the week it is, and there's nothing wrong about realising you can't remember your old P.E. teacher's name.

Our memory's speed and accuracy begin to slip as early as our 20s. Sometimes this can be rectified by sharpening memory skills.

Here are five normal memory lapses you *don't* need to worry about!

WHERE ARE MY KEYS?

NO idea where you've put your keys? Or why you've walked into the kitchen?

Momentary memory blanks like this are really common, and are usually caused by lack of attention.

If you're distracted by a thought or a conversation when you put your car keys down, you will struggle to find them again later.

If you paid attention to everything, your brain would be overwhelmed, so it tries to help by automatically filtering out anything it deems irrelevant. But sometimes the system can be overzealous.

There's a big difference between forgetting the directions to somewhere you haven't visited in a while (perfectly normal) and emerging from the local supermarket only to realise you can't find your way home (talk to your GP).

TRY THIS: If your mind is distracted when you perform an action, there will be no real observation, awareness or memory creation.

You have to pay attention to encode a memory. So, when you set your keys down on a table, make sure you are aware of what you are doing - actively observe your keys and where you've put them. The important thing here is the word 'active'. There is a difference between what your eye 'sees' and the mind 'observes'.

IT'S ON THE TIP OF MY TONGUE

IT CAN be immensely frustrating when you know the word you're searching

for, or the name of the person standing in front of you. It is right on the tip of your tongue but you just can't grasp hold of it.

This very common memory lapse is called 'blocking' and usually results from similar memories jamming to create a disruption in the brain.

Memories are made up of many elements (the smell, the time, the mood...) all stored in different parts of the brain.

As we age and our memory banks fill up, we must work harder to retrieve a memory by searching multiple areas of the brain. Don't worry - this is just your memory retrieval button getting jammed for a while.

TRY THIS: Searching your memory for words with the same first letter (start with 'a', then 'b' and so on) and then the first syllable can help.

INCOMPLETE RETRIEVAL

WE MIGHT recall quite a few details about an event but, as the years pass, it is normal to get some bits wrong. This happens when there is a glitch in the hippocampus (the brain's memory centre).

Normally your hippocampus integrates perceptions or impressions as they happen, evaluating whether they are worth remembering.

If you find some memories differ from the truth, it is likely your hippocampus has incorrectly recorded them.

Alcohol might put a glitch in matters, for instance. If

you've drunk too much, the process in which events are encoded into long-term memory is less likely to work well. That is why, days later, you might have trouble recalling a story that was vivid when the memory was in short-term storage.

TRY THIS: To learn information so you can recall it, you must transfer it from short-term to long-term memory. Repeating the information under your breath is a good way to make the switch.

MEMORIES FADE OUR brains continually clean out older memories to make room for new ones - it prevents overwhelm.

Each time you recall a memory, you clear a path for its retrieval. However, memories that are not recalled often can fade if the route to retrieval is not continually reinforced.

This basic use-it-or-lose-it characteristic of memory is called transience, and it's normal at all ages.

TRY THIS: If there is a special memory you don't want to lose, try to recall it regularly - dig deep and pull out the smells, sights, sounds and associated emotions.

STRUGGLING FOR RETRIEVAL

IT IS common to forget the name of someone you were introduced to seconds ago or the title of a film you saw last week.

Ageing weakens the connections between neurons in the brain. The barrage of new information we receive will delete other items from your short-term memory unless that information is repeated again and again.

TRY THIS: Avoid this glitch by paying special attention to someone's name when you are introduced, and trying to associate it with something particular or familiar. So if the man is tall, say 'Rob Long Legs' in your head.

BOOK CREDIT IN HERE

EXTRACTED gly, it wreaks havoc with spell check.

The paragraphs [675 words] have been made deliberately different lengths in order to avoid repetition. However, it's extremely boring if you should actually bother to read it [700 words]. This is a

in this quiz are modifiable, so don't panic.

RISK FACTORS YOU CAN'T CHANGE

SCIENTISTS are now clear about certain factors which might make cognitive decline more likely.

Age is a factor (incidence of Alzheimer's or vascular dementia increases exponentially after 65, nearly doubling every five years so that by 85 a third of people have dementia), and being a woman puts you at higher risk.

Heredity plays a part; and you are statistically more likely to succumb to dementia if you are caring for someone else who has the disease (partly because many carers are women, some set aside their own needs and experience high levels of stress).

There's lots of research underway into the impact of head injuries and the possible link with early dementia, too. It is interesting to note that some infections can lead to chronic inflammation that can have neurological effects such as Lyme disease

(caused by a tick bite), the herpes simplex virus, zika (spread by mosquitoes), syphilis, rabies and even chronic gum disease. The theory is serious forms of neurodegenerative decline can stem from the body's reaction to these infections, though research is ongoing.

But not everyone who has had a brain infection develops Alzheimer's, and not everyone who gets dementia can attribute the condition solely to an infection.

RISK FACTORS YOU CAN CHANGE

YOU might not be able to reverse a Lyme disease diagnosis, but you can take really good care of your dental health to avoid gum disease.

You can stop smoking, cut back on alcohol consumption, seek help for depression and talk to your GP about the medications you might be taking (see box far left).

Even mild hearing loss can cause brain changes that can double your risk of dementia, but getting fitted with a hearing aid can help protect your brain.

Chronic sleep deprivation can lead to a staggering amount of memory loss. But taking steps to improve your sleep quality is one of the easiest and

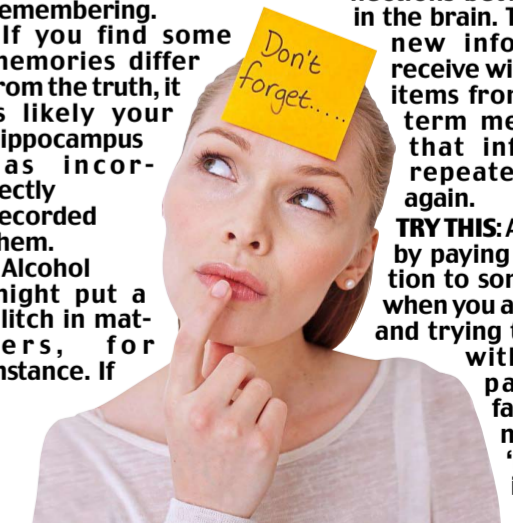
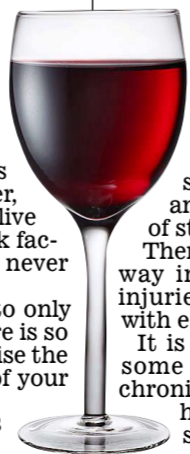
most effective ways to improve all brain functions.

Studies show that too much sitting, like smoking, increases the risk of ill-health and thins regions of the brain that are critical for memory formation. The brain prefers a body in motion, and it doesn't take much activity to reap enormous benefits.

It has long been known that metabolic disorders such as obesity, high blood pressure, Type 2 diabetes and high cholesterol put you at greater risk of dementia. In fact, there is such a strong correlation between diabetes (particularly uncontrolled diabetes) and the risk of Alzheimer's disease that Alzheimer's is commonly referred to as 'type 3 diabetes'. But it is good to know that lifestyle changes can have a significant impact on both.

Leaving school at 16 might also put you in a higher risk category because multiple studies show people with more years of formal education or greater literacy have a lower risk of the disease.

But, as I will show in tomorrow's Daily Mail, you can make up for any educational deficit immediately and start bolstering your protection right away.



KEEP YOUR BRAIN SHARP

LIFE throws tough experiences at us all: bereavement, divorce, redundancy and serious illness are the kind of challenging events that create huge stress.

This manifests in our bodies and our minds. Stress makes us feel miserable and unwell: it stops us from sleeping soundly and affects concentration; our confidence gets knocked and we lose the motivation required to perform even simple daily tasks; and relationships with family and friends often become strained.

Think now about those symptoms of stress. I wonder, how many of them do you recognise in yourself right now?

At least one, I would imagine. And that's not to say you're currently going through one of the big life events I've just mentioned.

The pandemic has put us all under extraordinary pressure — and that's even if you've been fortunate enough to be spared any direct trauma, such as a bereavement or losing your job, as the virus has spread.

Stress feeds off fear, something we've lived with for almost a year now. I have woken many times in the middle of the night, fretting over the health and safety of those I love. I find myself feeling desperately upset by the suffering of others, and deeply concerned about the impact lockdown might have on the economy.

Family, friends and clients alike are telling me that they have had to learn to live life against a backdrop peppered with similar worries.

Living like this, with so much background stress to contend with, is bound to take its toll on our mental health. As my therapist friends will readily tell you, rarely is it one big traumatic event alone that precedes a mental breakdown.

It's far more likely to be a series of smaller events, happening simultaneously or in close succession, that will wreak the most havoc. And that is something we're collectively experiencing as one pandemic-related crisis seems to follow another.

Sadly, I can't take away any of that. But what I can do is share with you a method that will help you to turn off the fear and panic, allowing your body and mind to recover from it on a regular basis.

That is key when it comes to pro-actively protecting your mental health through long-lasting periods of stress. By making this a regular part of life now, when this crisis ends you will find it continues to be useful whenever stressful situations arise.

Now, and into the future, this is a relaxation technique you will be able to employ quickly, easily and as often as you need.

NATURAL CYCLES OF ACTIVITY AND REST

ONE of the simplest ways to build quality recovery time from stress into your daily life is to take advantage of a naturally occurring phenomena known as

Daydream for 5 minutes to de-stress



Paul McKenna's MIND TRICKS TO BEAT STRESS

the 'ultradian rest phase'. Research has shown that the mind and body have their own pattern of rest or alertness, with one predominant cycle that occurs approximately every 90 minutes. This is when the body stops externally oriented behaviour and takes about 15 minutes to relax and replenish its energy.

These are those moments in the day when you find your mind starting to wander and a sweet, soft feeling of relaxation begins to fill you. It is as though your body is ready to drift off into a wonderful, refreshing sleep.

Unfortunately, many people instantly override this message from their body by chocking down a double espresso and trying even harder to concentrate on

what they're doing. After a while, they establish a pattern of overriding their body's natural rhythm and the natural feeling of relaxation comes less and less often.

Now, I'm going to show you how to take advantage of it when it does occur. From now on, here's what I want you to do:

At least twice a day, when you find yourself daydreaming and a feeling of comfort starting in your body, go with it and allow yourself to relax deeply for no less than five and no more than 20 minutes.

As you begin to drift into your daydream, use the time to follow the exercise below. It is very simple but, like anything else, the more you practise the better you get.

It simply involves thinking about a particular area of your body and then telling yourself to relax in a soothing tone of voice.

Take the time to go through each part of your body slowly, giving yourself time to really feel

the tension releasing from that part of you as you go.

Please read through this exercise first before you do it. And do not attempt to do this while driving or operating machinery. Only do it when you can safely relax completely.

SYSTEMATIC RELAXATION

USE your most comfortable, tired, drowsy voice, as if telling a bedtime story. Simply say each of the following to yourself as you follow your own instructions:

- Now I relax my eyes
- Now I relax my jaw
- Now I relax my tongue
- Now I relax my shoulders
- Now I relax my arms
- Now I relax my hands
- Now I relax my chest
- Now I relax my stomach
- Now I relax my thighs
- Now I relax my calves

- Now I relax my feet
- Now I relax my mind.

PAUSE for a little while to notice the feelings and then, if you wish, repeat it. Stay with this feeling as long as you wish. You will be able to return to full waking consciousness, refreshed and alert, as soon as you are ready.

The more you practise this technique, the more effective it becomes. It may sound like a little thing, hardly worth doing, but taking a couple of five-minute breaks every day to allow your mind some recovery time could be the most valuable thing that you ever learn to do.

Why? Because I firmly believe that when it comes to life's emotional woes — sleeplessness, crises of confidence, relationship troubles, anxiety and depression — all roads lead back to stress and the terrible toll it takes on our mental health.

Tomorrow we will look again at confidence, and I will share with you another simple five-minute daily programme I firmly believe has the power to change your life for the better.

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■ FOR information on Paul's books, including *Control Stress, I Can Make You Happy, Instant Confidence and I Can Make You Sleep*, visit: paulmckennabooks.co.uk

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MOOD BOOSTER

To quickly relax, close your eyes and imagine you are on a beach. The nervous system can't differentiate between a real and an imagined event, so will switch off stress.

**TOMORROW: XXXXX
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How to KEEP YOUR BRAIN SHARP

An unmissable series to reduce your dementia risk



by Dr Sanjay Gupta

NEUROSURGEON

THE human brain is a highly sensitive receiver which takes in millions of stimuli every day, but its ability to process this constant barrage of information varies from person to person.

You might be the sort who finds yourself easily crushed by world events and struggling under the privations of yet another lockdown, or you might feel emboldened and undaunted, able to stay positive and make the best of whatever situation you find yourself in.

The key factor separating those two camps is not genetics or personality, but something entirely different: resilience.

You might believe you are born with a huge wealth of resilience, or with little, and you could be forgiven for thinking any you may have is being diminished and weakened by the unrelenting onslaught of the pandemic we are all going through.

But I can tell you resilience *can* be built and nurtured.

As a neuroscientist and health journalist I have spent the past 25 years working on the medical frontline, analysing the latest brain research and travelling the globe in search of ways to boost the capacity of our brains and protect ourselves against dementia.

One of the most fabulous discoveries of recent years is the fact that your individual store of resilience is bundled up in what we brain specialists call 'cognitive reserve'. The more cognitive reserve you have, the more resilient you will be.

A resilient brain can withstand frequent trauma, it can think differently, it can stave off brain-related illnesses, including depression, and retain cognitive memory for peak performance.

Research shows that possessing a resilient brain is what separates strategic, visionary thinkers from more average ones, but resilience is not completely dependent on IQ or education — it is available to all of us.

All this week the Daily Mail is exclusively serialising my new book, *Keep Sharp*, which is packed with scientifically backed ways to minimise your risk of dementia and keep your brain keen.

Today, my focus is on building

It's never too late to BOOST your BRAIN POWER

Brilliant four-page pullout



Picture: GETTY

resilience. In the quest to protect your brain from dementia and keep it working at its absolute optimum, this is arguably the most important factor of all.

Boost your brain's back-up system

COGNITIVE reserve is your brain's ability to improvise and navigate around problems or

obstacles. Just as your car has an efficient breaking and acceleration system to allow you to swerve quickly to negotiate unfamiliar turns, so your brain can change how it finds alternative routes, so helping it to cope with challenges that could be harmful otherwise.

It is like a mental safety buffer, a big, flexible, fast-thinking

back-up system that protects the brain.

We know that whatever your age, cognitive reserve helps you function better for longer in the face of unexpected life events such as chronic stress, surgery, or an unexpected onslaught of environmental toxins.

However, scientists have only recently discovered an important

role played by cognitive reserve in protecting us against the ravages of old age.

It originated in the late 1980s when scientists in California started to study a group of older care-home residents.

They got to know the residents during their twilight years and conducted autopsies on them after their deaths.

What startled them was frequently finding the sort of brain changes you'd expect to see in advanced Alzheimer's disease in high-functioning individuals who had shown no signs of dementia when alive.

The scientists concluded that these highly intelligent individuals had somehow developed enough brain 'cache' to offset the damage to the rest of their brain caused by dementia. This would have allowed them to continue to function as normal with no sign of cognitive impairment at all. This prompted the research-

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THINK ELECTRIC!

■ **WHEN** one brain cell sends signals to another, the synapse between them strengthens. The more often a particular signal is sent between them, the connection grows stronger. Each time you experience something new, your brain rewires to accommodate it.

■ **AS YOU** learn new things more connections are made. The brain perpetually organises and reorganises itself in response to your experiences — your education, the challenges you face, and the memories that you make.

■ **THE** segments of brain cells which receive electric impulses from other cells are called dendrites. Novel experiences and learning cause new dendrites to form, whereas repeated behaviour and learning cause existing dendrites to become more entrenched. Both are important.

■ **THE** creation of new dendrites is called plasticity. It is this which helps the brain rewire itself if damaged. It is also the core ingredient for resilience, vital for building a better brain.

KEEP YOUR BRAIN SHARP

FROM PREVIOUS PAGE

ers to come up with the theory that cognitive reserve can be built up so successfully that it can take over the functioning of damaged portions of the brain which might be afflicted by age and disease.

The cognitive reserve then goes on to perform everyday functions to enable the people affected to apparently live free from dementia.

Since this revolutionary finding, research has consistently shown that people with greater cognitive reserve are better able to stave off the degenerative brain changes associated with dementia or other brain disorders, such as Parkinson's disease, multiple sclerosis, or stroke.

You can generate new brain cells

OLD-SCHOOL thinking dictated that the brain was pretty much fixed and hardwired after childhood. But we now know that to be untrue.

In 2018, researchers from Columbia University in the U.S. showed for the first time that healthy older adults can generate just as many new brain

THE BRAIN IS MORE POWERFUL THAN YOU KNOW

IT is quite shocking to learn we only use around 10 per cent of our brain's capacity, but that doesn't mean the other 90 per cent is wasted.

That would be ridiculous from an evolutionary standpoint. Brains are so demanding of energy to build, develop and maintain, that it just wouldn't make sense to design something so exquisite then barely use it.

I like to think of the brain as a town. The important structures such as the homes and shops which represent 10 or 20 per cent are in near constant use.

The rest of the town is made up of the roads which connect all these shops and homes.

Without the roads, information could not get where it needs to go. So while the roads are not in constant use, they are absolutely necessary.

cells as younger people. They found that although older adults tend to have fewer, and less robust, blood vessels in the brain they don't necessarily lose their ability to grow new brain cells.

The key word, though, is healthy. If you want to build your brain, you need to stay healthy overall.

Your brain's networks are like a series of roads, and the more networks you have, the more options you have available to shift direction if one route becomes impassable. Those networks make up the cognitive reserve, and they develop over time through education, learning and curiosity.

The cognitive reserve you have right now will be the result of the positive life experiences you might have had, and its size and complexity will reflect how much you have challenged your brain over the years through education, work and other activities.

Studies show the single identifiable factor which appears to statistically protect people with higher IQ, education, occupational achievements, and those who regularly participate in hobbies or sport unrelated to their job, from Alzheimer's, is very likely to be their cognitive reserve.

But the best bit? You can expand and grow your cognitive reserve at any age.

ALTHOUGH there's no doubt that brain-training videos, puzzles and crosswords can improve some aspects of memory, research has found that their benefits do not necessarily extend to brain functions such as reasoning and problem solving, which are also key to brain health.

You need to stay as involved as you can in life through mixing socially with other people and enjoying stimulating activities.

These force the brain to continually acquire knowledge and work with it in ways that ultimately build new networks and strengthen existing ones in the brain.

Just as using many different muscles during exercise improves your overall health, using your brain in a number of challenging ways improves your brain health overall.

If people who have suffered a devastating stroke can learn to speak again — and those born with partial brains, or who lose significant brain tissue to disease, or surgery

can propel their brains' rewiring to work as a whole — think of the possibilities for those of us who just hope to preserve our mental faculties as we age.

Exercise your brain in the right way and you will be able to tap into the 'plastic' power of the brain and boost its ability to rewire itself and strengthen its networks.

Here are some great ways to bolster your mental resilience and *build* brain matter through active learning and finding a strong sense of purpose in life.

MASTER A NEW SKILL

RESEARCH shows that knowledge — whatever you decide to learn — pays off.

So, I urge you to pick a new skill, whether it is playing the piano, cracking computer coding, salsa dancing or writing a novel. It doesn't matter what the topic is, as long as it gets

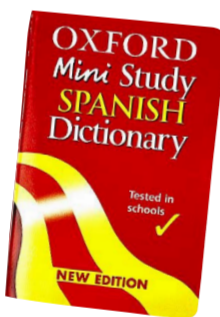
you out of your familiar mental rut and on a path to more knowledge and aptitudes. Just grasp

any opportunity to learn about a topic that has interested you recently or that you wish you had explored when you were younger.



TAKE UP A NEW LANGUAGE

SPEAKING two or more languages (even if you learned the second decades after the first) can slow age-related cognitive decline, and being bilingual can protect your brain if Alzheimer's does strike, studies reveal. It is thought that the complexity of a second language acts as part of your cognitive reserve, shielding you against symptoms of decline.



JOIN AN ONLINE CLASS

A TRADITIONAL class-based learning programme is a more effective way to build up cognitive reserve than any brain-training programme.

That's because classes (whether in an actual classroom or online) usually involve a level of complexity that offers long term benefits.

Complexity is critical — you can't just sign up and be passive. To build cognitive reserve you must use your mind in a way that takes you slightly out of your mental comfort zone.

Live class-based

learning requires using cognitive skills, such as visual comprehension, short- and long-term memory, attention to detail and often numeracy — all of which is enhanced by the fact that you usually have an element of social interaction with fellow classmates.

Whether at a bricks and mortar college or in a virtual classroom you get the chance to communicate with others regularly through lively conversation, and this adds an extra beneficial dimension to the brain-boosting process.



Why it's time to put on those

DANCING SHOES

and other surprising activities that really do work out the brain

LEARN A SONG — AND SING IT!

SINGING is a great way to build cognitive reserve.

That's because if you want to sing a song, you must first retrieve the words and be able to say them. This complex process typically involves the left side of the brain.

However, when you try to actually sing those words you use completely different parts of the brain — those which handle pitch and tone.

All of this information must move to and from the righthand and lefthand sides of the

brain to sync up and integrate the data.

Adding a rhythm or a beat means you have to start charging up the back of the brain (the cerebellum) too.

Music is a great enterprise to undertake — the mere act of learning a new skill, such as playing the violin, is proved to be a great way to effectively 'rewire' parts of the brain that are responsible for fine motor control.

The brain really is a wonderful thing! I feel so privileged to

have watched an MRI scanner image of the brain of someone singing a song — it is like watching a light show on a clear night sky.

This complexity is apparent when you see people with even advanced dementia who can still sing songs from their childhood without a problem.

It shows how collectively, disparate places in your brain can still coordinate and work together, even when different parts of the memory system begin to fail.

VOLUNTEER AND HELP OTHERS

FIND out ways you can volunteer regularly for a good cause in your community. Studies show that those who do so are far less likely to be blighted by anxiety, depression, loneliness and social isolation — plus they benefit from having a great sense of purpose.

One large 2018 survey found that over-50s who volunteer at least once a year have higher mental well-being scores than those who don't.

For even better cognitive reserve, take up a leadership role in a group or organisation you already belong to — even if it is just online for now.

FIND A SENSE OF PURPOSE

HAVING purpose is all about seeing your life as being deeply meaningful, setting goals to aim for and having a clear sense of direction.

With many of us in lockdown it is easy to find yourself floundering a little or just living a kind of half-existence.

But I encourage you to spend time working out what your sense of purpose could be. This is a profoundly powerful skill well worth acquiring because having a sense of purpose is a great way to keep your brain plastic and preserve that cognitive reserve.

In the past 20 years, dozens of studies have shown that older people with a sense of purpose in life are less likely to develop a slew of ailments — from mild cognitive impairment and Alzheimer's disease, to disabilities, heart attacks, and strokes. And they are more likely to live longer than people without this strong undercurrent.

In fact, feeling you have a strong purpose right now might reduce your risk of suffering dementia in the future by up to 20 per cent.

The brain-boosting benefits might be partly explained by the fact that purpose often fires the motivation to remain physically active and take better care of yourself. And this in turn helps you manage stress and makes you less prone to dangerous inflammation. Purpose often engenders a love for life and all the experiences it offers.

It also puts a damper on depression, which can be common as we get older, and is a huge risk factor for memory decline, stroke, and dementia.

ENCOURAGE DEEP FOCUS

YOU know that feeling when you are totally immersed in an activity without distraction or any sense of agitation? That deep focus, which sees you absolutely absorbed and enjoying a feeling of intense energy?

That's 'flow', and it is very, very good for your cognitive reserve.

Finding flow does not mean you are stressed — you can feel blissfully relaxed while being challenged or under pressure at the same time.

You need a clear sense of purpose to truly be in the flow and it is a great state to occupy. Think about the last time you were in the flow. What were you doing? How long has it been since that time? Who were you with?

I encourage you to list those experiences. They may inspire you to find new routes to flow today.

Picture: GETTY

BRAIN MYTHS DEBUNKED

AS WE AGE, WE'RE DOOMED TO FORGET

THERE is a kernel of truth to this myth because some cognitive skills do decline as you age, especially if you don't employ strategies to pay closer attention and help you remember.

But although you might have been quicker at picking up a new language or memorising a list of random words when you were younger, as an older adult you are more likely to have a superior vocabulary and to be a good judge of character.

You'll score higher on tests of social communication and diplomacy, such as how to settle an argument or deal with a conflict.

The other good news about an ageing brain is that we tend to improve over time at controlling our own emotions, weathering stress, and finding meaning in our lives.

OLDER PEOPLE CAN'T LEARN NEW THINGS

LEARNING can take place at any age, especially when you get involved with cognitively stimulating activities such as meeting new people or trying new hobbies.

Because our memory is dynamic and it is possible to grow new neurons, we can continue to change our brain's information, capacity, and ability

to learn. Although mastering new skills, such as a second or third language, might take an older person slightly longer, this doesn't mean you cannot achieve the feat.

Never say 'never'. Even people diagnosed with cognitive decline can continue to learn new things.

CROSSWORDS KEEP YOUR BRAIN YOUNG

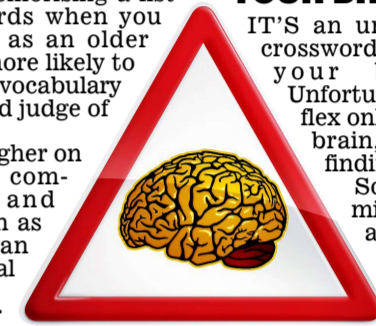
IT'S an urban legend that crossword puzzles can keep your brain young. Unfortunately, the puzzles flex only a portion of your brain, mostly its word-finding ability.

So, while practising might help you excel at that skill, it won't necessarily keep your brain sharp in any general, overall sense.

That said, there is value in doing word and number puzzles, including games such as Sudoku.

In 2019, a follow-up study by the University of Exeter Medical School and King's College London confirmed earlier results that showed the more often participants did puzzles, the better they perform on tasks assessing attention, reasoning, and memory.

What's known is that keeping an active mind can help to reduce the decline in thinking skills, and for some people, doing crossword puzzles is a way to do that. For others, however, this may not be true.



...BUT COMPUTER GAMES MAY HELP

ANY product that says it can reduce or reverse cognitive decline should be viewed with caution, in my opinion.

Video-based brain games have come under fire for being over-hyped, for example. However, I admit that some 'speeding training' games are may show promise.

These are short, simple games where you hit a button when you see a red car on a fast-moving screen, for instance — and the way you focus while rapidly processing visual information seems to be surprisingly effective at slowing dementia.

One impressive 2016 study found that 11-14 hours of speed training over six weeks was enough to cut the risk of developing dementia by 29 per cent.

As the player answers correctly, the game becomes more difficult with more distractions making the targets more difficult to identify, and the speed is increased.

An interesting study in 2013 found a game called NeuroRa-

cer, which was designed to help boost multi-tasking networks in the brain, really could work.

After older people played NeuroRacer three times a week for a month, they improved their ability to multitask beyond the level of even 20 year olds who played one single time.

Better still, those cognitive improvements lasted for six months with no more practice.

The reason this appeals to me is that certain cognitive abilities not specifically targeted by the game (specifically working memory and sustained attention) also showed enduring improvement. These skills are important for everyday tasks, such as handling the post and dealing with bills, planning and cooking meals.

Video games will never be a panacea, and unscrupulous companies will continue to sell video games on the back of false brain-boosting claims, but I am optimistic this could be a useful way to build cognitive reserve in future.



KEEP YOUR BRAIN SHARP

A FEW years ago, I wrote a book about confidence and how to achieve it. 'Oh great,' a pal scoffed when I told him about it. 'You're writing a training manual for annoying people.'

The actual word he used to describe the sort of people he thought my book was aimed at was rather stronger. But you get his point, and so did I.

It's easy to think that those who are constantly in your face, banging on about how great they are and interested in talking only about themselves are supremely confident beings.

In fact, they're not particularly confident at all — they're simply trying very hard at appearing to be so, which is what makes them so annoying to be around.

Truly confident people come across as being much more relaxed about life. They possess a quiet self-belief that makes it somehow effortless to be in their company.

They are the opposite of the annoying type my friend described. So, how do they achieve this state of ease with themselves, various life situations and with those around them?

THE golden rule when it comes to confidence is: 'What you practise, you become'. And with that in mind, there are four key things you need to practise in order to become that naturally confident person so many of us aspire to be: talk to yourself in a confident way.

Make big, bold positive pictures of your positive self in your mind. Use your body as if you were already confident. Take at least one risk every single day.

The more you practise doing these four things, the more naturally confident you will become. Soon, you

will find yourself automatically responding to new situations with confidence instead of fear, with self-belief instead of self-doubt.

And it's easy enough to do. In fact, you can start today by becoming familiar with the following exercise. This is important because it forms part of a simple daily confidence programme that boasts truly transformative powers.

CONFIDENCE WORKOUT

I HAVE developed this quick daily confidence workout to assist you in easily developing the confidence habit.

All you need is a bit of paper to write on, a mirror and five of the 1,440 minutes we are given to play with each and every day.

Minute One: Your successful you movie

TAKE a minute to run through the Successful You movie as described in the box above, thinking about any success you have experienced in the past or looking forward to an experience in the future.

Remember to juice up your

Feeling low? Imagine you're a FILM STAR ...and my other techniques for boosting confidence



Paul McKenna's MIND TRICKS TO BEAT STRESS

memories by using bright colours and big, bold, moving images!

Minute Two: The Mirror

1. Stand in front of a mirror and close your eyes.

2. Now, think about someone who loves you and imagine viewing yourself through their eyes.

3. When you are ready, open your eyes and look into the mirror. Allow yourself to really see

yourself through the eyes of someone who truly loves you.

Minute Three: Compliment Yourself

STILL looking in the mirror, use your confident internal voice to compliment yourself over and over again for a full minute.

If you find this difficult, then it is even more important for you to persevere with it.

Remember, you are changing your energy so that you will attract more of what you want

into your life — what you practise is what you become.

Minute Four: Push The Confidence Switch

1. Remember a time when you felt really, really confident.

Fully return to that time now — see what you saw, hear what you heard and feel how good you felt.

If you can't remember a time when you did feel this good, imagine your life if you had all the power, strength and

self-belief that you could ever need!

2. As you keep going through this memory, make the colours brighter and richer, the sounds louder, and the feelings stronger.

3. As you feel the good feelings, squeeze your thumb and middle finger of either hand together.

4. Still holding your thumb and finger together, think about a situation coming up in the next 24 hours during which you want to feel more confident. Imagine things going perfectly. See what you'll see, hear what you'll hear and feel how good it feels!

Minute Five: Confidence in Action

1. Take a minute to write down any inspired actions that came up as you tried the workout.

2. Choose at least one of them that feels like a little bit of a risk to try in the next 24 hours.

Each time you complete this five-minute daily confidence workout, your self-belief and sense of inner comfort will increase. Unlike working out at a gym, there is no recovery time needed between workouts. The more you do each exercise, the faster your confidence will grow.

IMAGINE A MOVIE ABOUT A SUCCESSFUL YOU

THIS exercise should form part of your daily confidence workout. Read through all the steps before you do it for the first time...

■ Imagine you are watching a movie about a future, more successful you. Notice every detail of how that future you appears — the expression on your face, the way you hold your body, the light in your eyes.

■ When you're ready, I'd like you to float out of your seat and into that successful you. See through their eyes, hear through their ears and feel the feelings of your successful self.

Make the colours brighter, the sounds louder and the feelings stronger.

■ Notice where that feeling of success is strongest in your body and give it a colour. Now move that colour up to the top of your head and down to the tip of your toes, doubling the brightness and doubling it again.

■ Float back into your present-moment self, being sure to keep as much of the feeling of natural confidence and success as feels truly wonderful.

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 ■ FOR information on
 Paul's books, including
 Control Stress, I Can
 Make You Happy, Instant
 Confidence and I Can
 Make You Sleep, visit:
 paulmckennabooks.co.uk

Picture: GETTY

TOMORROW: THE RIGHT FOODS TO FIRE UP YOUR BRAIN

How to KEEP YOUR BRAIN SHARP

An unmissable series to reduce your dementia risk



by Dr Sanjay Gupta

NEUROSURGEON

PREVENTING the onset of Alzheimer's and mitigating its symptoms after diagnosis is a cherished aim in the 21st century.

After hearing from researchers all over the world, I believe such an achievement is within our grasp, and it starts with how we fuel our bodies.

The food we choose to eat could very well bring the greatest benefits to brain health now and in the future.

After all, we eat every day and the way our body responds to what we put in our mouths ultimately influences our entire physiology — brain included.

As a neurosurgeon I have dedicated my career to investigating the science behind brain optimisation and the ways in which we can all stimulate the growth of new brain cells and protect ourselves against age-related mental decline.

All this week my new book, *Keep Sharp*, is being serialised in the Daily Mail, and today my focus is very specifically on food.

It is great to know there is strong evidence that fuelling your body well can go a long way towards protecting your brain.

In fact, I like to think of good nutrition as the assembly of 'brain scaffolding' which provides the effective support structure you need to enable you to carry out the 'renovations' I have been recommending — and also reinforce the foundations of good brain health.

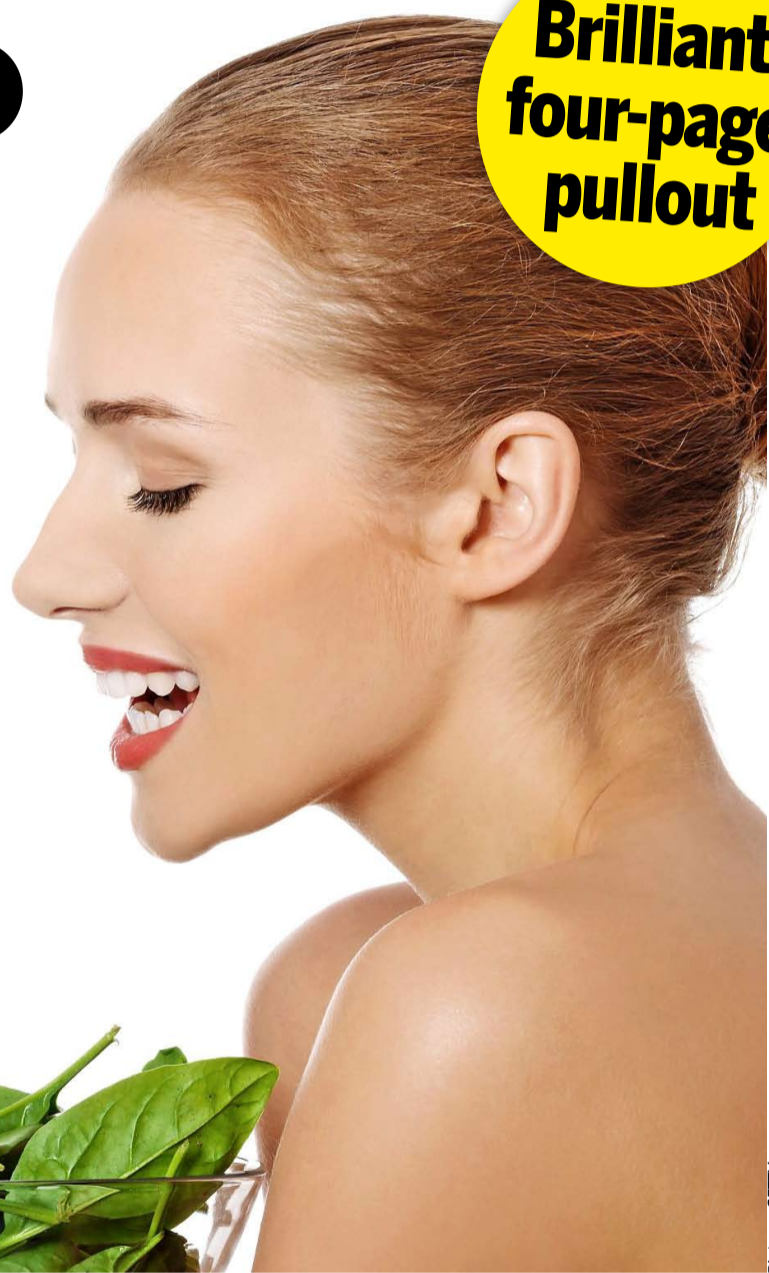
Although I am convinced no single food or nutrient holds the key to good brain health, it is very clear that a combination of healthy foods will help shield the brain against assault, and it is never too early to switch to a brain-healthy diet.

We do know that high blood pressure, obesity, diabetes, and high cholesterol, especially in midlife, substantially increase the chances of developing dementia later.

The food you eat in your youth

Foods to FIRE up your brain

Brilliant four-page pullout



Picture: GETTY

BRAIN BOOSTER

WHAT is good for the heart is good for the brain — a heart-healthy diet that is packed with wholesome food is also a brain-healthy diet

can begin to lay the groundwork for protecting your brain in your later years. That is why prevention should begin early, but to make it count, you need to have a proper strategy. This has to be a plan that you can easily incorporate into your

daily life. And improving your general diet is the best possible place to start.

HOW TO FEED YOUR MIND

I SET out to find the best possible diet for my brain and spent countless hours with experts all over the country and

synthesised a great deal of information.

It should come as no surprise that the typical Western diet which is high in salt, sugar, excess calories, and saturated fats, is not brain-friendly. As the research concludes, a plant-based diet that is rich in a variety of fresh whole fruits and vegetables, particularly berries and green

leafy vegetables, is associated with better brain health.

This is backed up by studies which show that people who stick to a Mediterranean-style diet enjoy greater brain volume as they age compared to those who don't eat that way.

Research consistently concludes that this plant-based diet rich in a variety of fresh whole fruits and vegetables, particularly berries and green leafy vegetables, is associated with better brain health.

I'm fascinated by the MIND diet for healthy brain ageing, which was based on years of research into nutrition, ageing, and Alzheimer's disease.

It was created for a large study by merging the Mediterranean diet and very similar DASH (Dietary Approaches to Stop Hypertension) and modifying the two to incorporate science-supported dietary changes that

REAL FOOD NOT PILLS

WE'D all love to think we can maintain our cognitive powers by popping a few pills. These anti-dementia supplements are backed by clever advertising and are often sold by major retailers, making them appear totally legitimate. But they are not backed by science.

No known dietary supplement improves memory or prevents cognitive decline or dementia, no matter what the manufacturers



promise. These supplements are often promoted by testimonials that appeal to people who are worried about brain health.

Don't be fooled. Spend the money on something that will actually help your brain: a good pair of walking shoes or a new pillow for a good night's sleep.

TURN TO NEXT PAGE

KEEP YOUR BRAIN SHARP

FROM PREVIOUS PAGE

improve brain health. The protocols are simple: it's a thumbs-up for vegetables (especially green leafy ones), nuts, berries, beans, whole grains, fish, poultry, olive oil, and, for those interested, wine; and a thumbs-down on red meat, butter and margarine, cheese, pastries and other sweets, and fried or fast food.

The long-term studies showed that ten years on this diet can measurably prevent cognitive decline and reduce the risk of Alzheimer's disease.

In fact, the closer you stick to the rules, the better your chance of avoiding dementia.

The researchers found that people who followed the diet to the letter had the slowest rate of decline and those who followed it less rigidly had a faster rate of cognitive decline.

The difference between the highest third and lowest third in cognitive decline was equivalent to about seven and a half years of ageing.

FERMENTED FOOD IS YOUR SECRET WEAPON

CHANGING your diet in an effort to optimise your brain will take some time, I realise — and, of course, it should.

Over the past few years I have focused on creating a style of eating that I can easily maintain even when I'm on the road. Most of us have a general idea of what's good for us, and what we like and don't like. Fermented foods like pickles are a secret weapon for me but maybe not for you. I occasionally snack on them to boost my productivity.

We are all different, and part of the solution is figuring out what really fuels you in the best way without digestive problems or food allergies. However, if you focus more on what you should eat instead of what you shouldn't eat, you will end up refuelling with good calories and naturally avoid the bad ones.



EAT SEVEN COLOURS A DAY

AIM for a wide variety of colours on your plate over the course of the day (real food — not jelly beans!). Because colour indicates a different nutritional profile, choosing a good mix will ensure you get all the macro and micro-nutrients you need.

When you 'eat a rainbow' of vegetables, you'll get a diverse array of nutrients, many of which are brain-friendly antioxidants.

Try to add new vegetables to your diet, and experiment with new ways of cooking and preparing them.



ALTHOUGH I'm not in favour of strict dietary protocols that are unrealistic and challenge your willpower, I do have ten golden rules which I swear by as a brain surgeon with years of experience researching the importance of brain health. These are as follows.

Before you do anything else, stop the external attack on your brain, by reducing your intake of sugar and diet drinks, fast food meals, processed meats, highly salty foods and sweets. This is not a gentle suggestion; it is a mandate. Stop buying foods that a gardener or farmer (or your great-grandmother) wouldn't grow or recognise.

Fibre has long been shown to help prevent depression, hypertension and dementia through a variety of biological pathways, so build as much fibre as possible into your meals by feasting on fruit and vegetables, beans and legumes, whole grains and seeds, including wild and brown rice.

Fibre is key to brain health because it changes the overall chemistry of a meal. When you lack fibre, the carbohydrates you eat get absorbed more quickly, raising blood sugar and insulin levels and potentially increasing inflammation in the body.

Next, make sure you build your meals around vegetables, berries, fish and seafood, healthy fats, nuts and seeds; and include beans and legumes, fruit, low-fat dairy products, poultry and wholegrains. Aim to make your plate 70 per cent carbs (unrefined and unprocessed), 15 per cent fat, and 15 per cent protein.

Limit your consumption of fried food, pastries, processed foods, red meat, high-fat dairy products and salt.

Replace crisps and processed cheese dip with nuts or carrots and hummus — this lowers trans fats and saturated fats which are incredibly unhelpful to your brain.

It's also important not to stress too much about eating. Worrying about eating correctly could raise your anxiety and increase cortisol levels, which would be more dangerous than the benefits of the 'right diet' for brain health!

Food should be a source of nutrition, and also a source of enjoyment. I refuse to feel guilty when I eat outside my own recommendations occasionally — guilt is bad for the brain.

Eating well means eating real food, not popping pills or supplements. We might love the idea of a pill or powder packed with all the micronutrients we need, but that bottle with broccoli on the label doesn't really have broccoli in a pill.

The evidence shows that micronutrients offer the greatest benefit when consumed as part of a balanced diet because all those other components in healthy food allow the micronutrients to be well absorbed and do their job properly.

Getting your B vitamins from eggs and your omega-3 fatty acids from fish trumps taking vitamins

DM Ben sdfghdfghdfgh
dfgh dfghdfghk

What a BRAIN SURGEON eats and why you should change to the S.H.A.R.P. diet, too



Picture: GETTY

FASTING WILL MAKE YOU CLEVERER

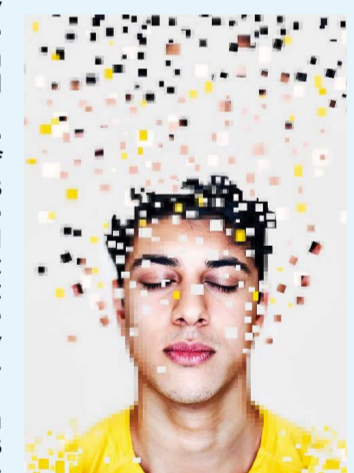
INTERMITTENT fasting can slow the progression of certain age-related diseases and boost memory and mood, studies show. It has been found to improve insulin sensitivity, a good thing in the name of metabolism and, ultimately, brain health. Limiting your caloric intake at least two days a week, it has been found, can help improve neural connections, while protecting brain cells against the accumulation of the dangerous amyloid plaques which signify Alzheimer's. The belief is that fasting challenges the brain, forcing it to activate adaptive stress responses that help it cope with disease. From an evolutionary perspective, this makes sense. One thing we know is that when fasting is done correctly it can increase the production of a protein called brain-derived neurotrophic factor (BDNF), which helps protect and strengthen neural connections while also spurring on the new growth of brain cells. Exercise and cognitive tasks trigger higher levels of BDNF too.

THERE'S MORE TO MEMORY THAN YOU MIGHT THINK

WE MIGHT fear losing our memory, but science has found that it is bound up with the whole thinking process. This means we have much memory function to lose, however, we have a lot to gain if we take steps to boost our brain health. Neuroscientists used to describe memory as a filing cabinet which stores individual memory files, or a warehouse where we keep our knowledge when not using it. But today we know that memory is far more complex and dynamic — our memories are constantly changing as we take in fresh information and interpret it.

Our memory must decide what information is worth keeping and where it fits in relation to knowledge we have already stored. What we keep in our memories helps us to process unfamiliar situations. When you read an article in a magazine, newspaper, or online you digest the new information by using that which you've already got tucked away in your memory. The fresh data might evoke certain ingrained beliefs, values and ideas that are unique to you — and your brain will try to interpret the information, make sense of it, fit it into your worldview, and then decide whether you will retain it (while altering previously stored information) or allow it become forgotten.

So, as you read the article, your memory is changing by both adding new information and finding the right place to put it. And while this is happening, you're giving yourself a different way to link the fresh information with older, slightly modified information. This is complicated, but it is important to know that memory is fundamentally a learning process — the result of constantly interpreting and analysing incoming information.



MOOD BOOSTER

IF YOU are feeling thirsty, you have already waited too long to drink. Ensure that you stay properly hydrated throughout the day by keeping a water bottle at your side

and supplements alone. When you want to splurge on a good steak, look for grass-fed beef. It will have less total fat, more heart — and brain — healthy omega-3 fatty acids, more conjugated linoleic acid (another type of healthy fat) and more antioxidant vitamins, such as vitamin E.

Skip the juices, smoothies, and frappuccinos, and choose a tall glass of water, black coffee or tea instead. Digestion begins in the mouth, but with juices or smoothies (even super-healthy ones) the nutrients pass through the stomach and the first part of the



Sis for slash sugar

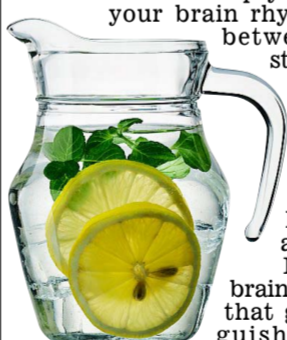
NUMEROUS studies have found that people with high blood sugar have a faster rate of cognitive decline. I'm not asking

you to nix sugar entirely; we all love a little sweetness in our lives. But cutting back on volume and being choosier about our sugar sources is the shift to make. When you need to add a touch of sweetness, try a pinch of natural stevia, a drizzle of honey or a tablespoon of real maple syrup. Avoid artificial sugars because the human body can't properly digest these (which is why they have no calories). But they must still pass through the gastrointestinal tract and affect gut bacteria in ways that lead to metabolic dysfunction. Reducing refined flours and sugars — real and artificial — is a good idea. This means eliminating or severely limiting crisps, biscuits, pastries, muffins, pies and tarts, sweets and breakfast

cereals. Watch out for products labelled 'diet', 'lite' or 'sugar-free' because that usually means they are sweetened artificially.

H is for hydrate smartly

AS WE age, our ability to perceive thirst diminishes. Even moderate amounts of dehydration can sap your energy and your brain rhythm. The link between hydration status and cognitive ability and mood is well recognised. Dehydration often leads to cognitive problems in older adults. Because our brains are not really that good at distinguishing between



thirst and hunger, we can often mistake hunger for thirst so one of my mantras is 'drink instead of eat'.

R is for reduce portions

PORTION control is a potent skill and a great preventive strategy in any health-related goal. We westerners love our gigantic plates and heaps of food. Occasional indulgence won't kill you (or your brain), but most days it is a good idea to watch your caloric intake. The easiest ways to gain control of your portions and calories are to prepare meals yourself at home, measure accurately and don't go back for seconds.

A is for add more omega-3 fatty acids

OMEGA-3 fatty acids are the brain-nourishing gems you get from seafood, nuts, and seeds. In my view it is always better to source this nutrient from food rather than from supplements. Fatty fish is a wonderful source of omega-3 fatty acids (especially salmon, mackerel and sardines), and grass-fed beef, lamb and venison contain this healthy fat.

Studies show people who eat fish or seafood every week report better brain health than those who avoid it. Plant sources of omega-3 fatty acids include flaxseed, plant-derived oils (olive, rapeseed, flaxseed, soybean), nuts and seeds (chia, pumpkin and sunflower seeds).



YES, YOU CAN HAVE A TIPPLE!

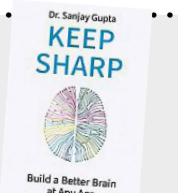
ALCOHOL can form part of a healthy diet. In fact, there is substantial evidence that moderate alcohol consumption can protect the heart while having cognitive benefits. However, if you don't drink alcohol, it would be very unwise to start drinking just to protect your brain health. And drinkers be warned:

there are both short-term and long-term risks associated with excessive alcohol consumption. These include learning and memory problems. And as we age, our ability to metabolise alcohol decreases. So, if you do drink, don't overdo it. Men should stick at or below two drinks a day, women just one. This differential is partly

because women tend to be physically smaller, and alcohol puts them at a greater risk of breast cancer as well. If you are going to drink, red wine is best because it contains micronutrients called polyphenols that may have a beneficial antioxidant effect, which lowers blood pressure.



KEEP Sharp: Build A Better Brain At Any Age, by Dr Sanjay Gupta, is published by Headline, £14.99.



KEEP YOUR BRAIN SHARP



HAVE you ever attached happiness to future circumstances or a distant goal? I think most of us have.

Goals are, of course, great motivators that help you to measure your success. But the problem with pinning your happiness too firmly on them, is you can end up holding back good feelings.

Imagine setting yourself a goal: 'In ten years' time, I want to own a house by the seaside.'

You paint a nice, clear picture of what you want and become highly motivated to achieve it. Doubtless, you will be very happy when you hit that goal.

But are you really going to wait ten long years before you finally allow yourself to be happy; to hold back on feeling joy until you decree the good times truly have arrived?

In recent years, instead of being goal-motivated I have moved over to a more directionally-based approach to happiness. This means being happy is no longer, for me, a fixed target I must reach — it is much more about the direction my life is taking.

As long as the course I'm on feels, overall, positive and fruitful — a journey that twists and turns, my heart and mind open to the various opportunities and life experiences for which you can't plan ahead — then I'm doing all right. More than all right. I'm happy.

On Saturday I explained the importance of living by your values; of identifying the core elements of life that truly matter to you.

Remember, we're not talking about the things that give you pleasure, such as material belongings or fine food. Your values are the people, the experiences, the places and the sensations that make you feel good.

During the pandemic, separated from loved ones and our freedoms and pastimes curtailed, it has been hard to live by our values. That is why taking a directional approach to happiness feels especially important.

Having goals, making plans, have felt like exercises in disappointment. You book a holiday, it gets cancelled; you look forward to attending a friend's wedding, they have to postpone; you crave the company of a loved one, but for now it's not allowed.

No wonder many are thinking: 'When all this is over, I'll be happy again.' But again, that just makes happiness a goal.

TRY thinking for a moment not about where you want to get to the coming months — focus instead on how you want to feel while you are on that journey.

For me, I'd like to travel towards the end of the pandemic in good health. I'd want to talk to friends and loved ones every day, to spend quality time with my wife and enjoy some invigorating walks with my dog.

Looking after myself will help me stay healthy. Technology means I can see and hear the

Healing power of PERFECT POSTURE



Picture: GETTY



Paul McKenna's MIND TRICKS TO BEAT STRESS

voices of those I love, even if I can't physically share their company. I can cherish the time I spend with my wife and our beloved pet.

Being flexible when it comes to living your values — accepting that if you can tick some of those boxes each day one way or another, you're at least going in the right direction — helps you feel happier in the here and now.

However much the pandemic

manages to mess with the outcomes of the things we plan and look forward to, the one thing it can't take away from us is the direction in which we keep travelling.

The mind and body are linked. Tense your body and your thoughts become tense; relax your thoughts and your body relaxes.

From yoga and the ancient martial arts to modern disci-

plines such as Pilates, humans have used movement and posture to create a state of calm, balance and well-being. All these techniques use the link between body and mind to change your psychological state.

One of the most powerful yet simple techniques to improve mood, requiring no training at all, is to simply change your posture.

Typically, when we are

unhappy, we slouch a bit, letting our heads hang down a little while our shoulders come forward. This posture is universally associated with low spirits.

In fact, if you felt absolutely fine but spent half an hour slouching forward your good mood would start to disappear.

Don't try it in order to find out — please just take my word for it!

What you want to aim for is an upright, relaxed balance posture, so that your body and how you hold it can help you feel better.

HOW TO STRIKE A HAPPY POSE

THIS is such a simple exercise, yet it's so powerful, able to move your body from a sad or depressed posture in order to open your mind to feelings of happiness.

Think about this and do it consciously for a few moments over and over again every day so that you build the habit of naturally sitting or standing in a comfortable, relaxed, upright position.

Even a very small shift towards a more relaxed and upright posture can allow a noticeable increase in happiness to build up over a period of days and weeks.

■ **THE** easiest way to get into this posture, whether you are sitting or standing, is to

imagine there is a silver thread coming down from the sky that is gently pulling you up from the very top of your head. Imagine letting that thread hold your head upright,

■ **NOW** let your shoulders drop down and back, feel your back being lifted up by your neck and feel the gentle, upright, long, s-shaped curve of your back supporting you, and your head floating on your shoulders.

■ **FINALLY**, let your shoulders drop a bit more. Imagine that silver thread is holding your head up and let your body just hang off it. With each breath, let yourself relax a bit more keeping that upright stance and stay like that for at least one minute.

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 ■ **FOR** information on Paul's books, including *Control Stress, I Can Make You Happy, Instant Confidence and I Can Make You Sleep*, visit: paulmckennabooks.co.uk

TOMORROW: MEDITATION TIPS TO GIVE YOUR MIND A REBOOT

How to KEEP YOUR BRAIN SHARP

An unmissable series to reduce your dementia risk



by Dr Sanjay Gupta

Low mood, depression, forgetfulness and even dementia can be linked to tiredness so ...

Brilliant four-page pullout

Could YOUR brain be sleep-deprived?

MOST of us operate at 50 per cent of our mental capacity. It's like having a high-performance Ferrari and just using it to nip to the shops once in a while.

Having spent the past 25 years practising as a neurosurgeon, there is not much I don't know about the workings of the brain, and I am convinced the exquisitely designed organ can crank out a lot more power.

If you don't hit the open road occasionally and open the throttle, it could be all too easy to forget what your brain is really capable of achieving.

All this week, the Daily Mail has been serialising my new book, *Keep Sharp*, which sets out a blueprint for optimising mental capacity and protecting yourself against dementia.

Today, my focus is on sleep and relaxation because I believe it is possible to harness both to help switch the brain into hyperdrive status, and I'm going to show you how.

Studies show chronic inadequate sleep puts people at a higher risk of dementia, depression and mood disorders, learning and memory problems, heart disease, high blood pressure, weight gain and obesity, diabetes, fall-related injuries, and cancer.

In fact, just one night of sleep deprivation can spike levels of inflammation which is enough to encourage the accumulation of beta-amyloid, the brain protein that has been associated with Alzheimer's disease.

An alarming 2013 study found that older adults whose sleep is fragmented are more prone to develop Alzheimer's, and worryingly, memory problems

BRAIN BOOSTER
NEVER give up work—it gives you meaning and purpose, and life is empty without it. In fact, delay retirement as long as possible. And when you do retire, don't give up on life. Find activities that are joyful and stimulating

can occur years before a person is even diagnosed.

I have to confess I sorely underestimated the value of sleep for far too long and wish I could gain back all those hours — possibly years — that I lost.

Now I put sleep close to the top of my list in terms of priorities.

Contrary to popular belief, sleep is not a state of neural idleness. Billions of molecular tasks go on during sleep at the cellular level to ensure that you can live another day.

It is a critical phase during which the body replenishes itself in a variety of ways that ultimately affect every system, from the brain to the heart, the immune system, and all the inner workings of our metabolism.

Good sleep tidies up our memory hub (the hippocampus) and effectively scrubs the brain of metabolic refuse. It performs a double-duty: both decluttering and taking the rubbish out.

And research now indicates that failure to remove this brain trash may be linked to a higher risk of developing dementia.

Among the more recent and captivating findings about sleep has been discovering the 'washing' effects on the brain.

Your body clears waste and fluid from tissues through the lymphatic system which carries toxic waste and cellular debris out of the body, filtering lymph fluid through the lymph nodes.

We used to think the brain didn't have a lymphatic system and instead relied on waste slowly diffusing from brain tissue into the cerebrospinal fluid. But now scientists have identified a self-cleaning function the brain uses to get rid of waste called the glymphatic system and it goes into overdrive at night while we sleep.

We are quite clear that the quality of your sleep ultimately rules everything about you — how big your appetite is, how fast your metabolism runs, how strong your immune system is, how insightful you can be, how well you cope with stress, how adept you are at learning, and how well you can consolidate experiences in your brain and remember things.

Sleep is essential for

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Sleep is essential for

TURN TO NEXT PAGE

CAN'T SLEEP? TRY WEARING BED SOCKS!

WEARING bed socks to keep your feet warm can help you get off to sleep more easily. Doing stretching or relaxation exercises in the hour before bedtime can also help you to nod off. However, avoid difficult conversations and keep everything peaceful — no arguing or discussing contentious topics.



Picture: RUI SANTON / ALAMY

KEEP YOUR BRAIN SHARP

FROM PREVIOUS PAGE

consolidating our memories and filing them away for later recall.

Research is showing that brief bursts of brain activity during deep sleep, called sleep spindles, effectively move recent memories, including what we learned that day, from the short-term space of the hippocampus to a kind of hard drive.

So, sleep cleans up the hippocampus so that it can take in new information which it then processes. Without sleep, this memory organisation cannot happen.

But more than just affecting memory, a sleep deficit prevents you from processing information in general. So not only do you lack the ability to remember, you cannot even interpret

AS WELL as good sleep, we need rest and relaxation if we want to live long and stay sharp.

Our mental well-being in general depends on this, and greater mental well-being is associated with a reduced risk of dementia.

I recommend setting aside 15 minutes each day for yourself and to use it for a de-stressing activity.

I'm a big fan of mindfulness and meditation. Both are powerfully effective at lowering levels of the stress hormone cortisol and studies consistently show they significantly reduce anxiety, depression, and pain.

In fact, scans have revealed that parts of the brain become thicker in people who frequently meditate, and that 'thick-brained' people tend to be smarter and have stronger memories.

This could be because meditation appears to bolster the areas which deal with attention and sensory processing as well as planning complicated cognitive actions.

Mindfulness and meditation can be highly relaxing and when you are in a deeply relaxed state, your heartbeat calms, breathing slows, and blood pressure lowers — and that's very good for your brain too.

Don't be put off by the idea of cross-legged yogis. Meditation can be as simple as sitting quietly for a few minutes and focusing on taking deep, calming breaths.

It is always time well spent. And there are some great smartphone apps and websites with guided meditation sessions to get you started.

THE so-called relaxation response that's achieved by meditation can also be brought about through yoga, tai chi, breathing exercises, progressive muscle relaxation, guided imagery, and repetitive prayer.

One of the reasons deep breathing, for instance, is so effective at reducing stress is that it triggers a parasympathetic nerve response. This

builds protection against the action of the sympathetic nerve response which is hyper-sensitive to stress and anxiety.

Normally, when you are stressed, the sympathetic nervous system triggers surges of the stress hormones cortisol and adrenaline.

But the parasympathetic nervous system can instead trigger a relaxation response. Deep breathing is one of the quickest ways to get there.

Whatever you choose to do during this daily relaxation time, please avoid anything too distracting such as scrolling through social media or shopping online. You might think that's a form of relaxation but let me tell you, your brain disagrees.

TAKE A DEEP BREATH
IF the idea of meditation sounds odd to you, be reassured that deep breathing can be done anywhere, any time.

But I do recommend that you focus on rest too because it is important to build rest and relaxation into our waking lives if we want to stay sharp and focused.

Sleep might be the rejuvenating activity that the body demands, but there is a difference between sleep and rest, and our precious brain needs both.

Our mental well-being depends on this, and we know greater mental well-being is associated with reduced dementia risk.

Household clutter and too much multi-tasking could be taking an unexpected toll...

Give your brain time to RELAX



BRAIN BOOSTER

YOUR brain shrinks with age and its blood vessels harden. Yet, amazingly, this does not mean cognitive decline is inevitable. You can strengthen your brain by exercise and other activities, or allow it to become battered and defeated — it's up to you

Illustration: ANDY WARD

BRAIN AGEING STARTS YOUNG

YOUR brain, like the rest of your body, changes as you grow older. It begins to age in our mid-20s and its structure can deteriorate from as early as age 30.

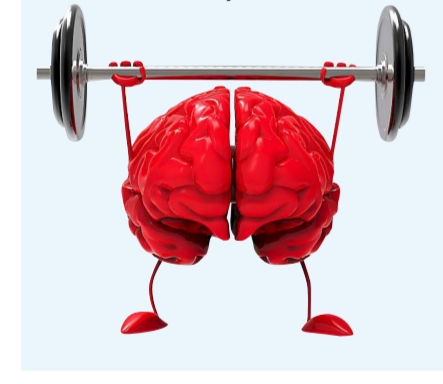
After 40, the hippocampus (the part of the brain responsible for learning and memory) shrinks by about 0.5 per cent every year.

This shrinkage varies from individual to individual and the level of severity depends to a great degree on lifestyle choices, environmental factors, genetic predisposition, and medical conditions.

That's why it is so important to do whatever it takes to care for your brain — and you're never too young to start.

No one is immune from the brain-ageing process.

We all experience a breakdown of the assembly process of memory and that breakdown can begin in a subtle way when we are young, intensifying in our 50s and beyond.



information to bring it into the brain and think about it.

Sufficient sleep keeps you sharp, creative, attentive, and able to process information quickly, and poor sleep can make you more likely to focus on negative information when making decisions.

It seems clear that getting enough sleep now can improve your chances of fending off dementia in the future.

Once you learn how important sleep is in your life, my hope is that you will begin to prioritise it.

But I do recommend that you focus on rest too because it is important to build rest and relaxation into our waking lives if we want to stay sharp and focused.

Sleep might be the rejuvenating activity that the body demands, but there is a difference between sleep and rest, and our precious brain needs both.

Our mental well-being depends on this, and we know greater mental well-being is associated with reduced dementia risk.

to feel for as long as you can, nailing your diaphragm and abdomen rise as your stomach moves outwards.

■ TAKE in a little more air when you think you've reached the top of your lungs.

■ SLOWLY exhale to a count of 20, pushing every breath of 20 from your lungs, continue for at least five rounds of deep breaths.

DECLUTTER YOUR LIFE

MESS creates stress, as disorganisation equates with distraction, so there is much to be gained from having a good clear-out and taking steps to

manage your living and working spaces. Why not get busy this weekend cleaning out cupboards, attics and garages:

■ GIVE old clothes and books to that no longer bring you pleasure to friends or charities.

■ TOSS out old magazines and catalogues.

■ THROW away or shred, bills, leaflets and letters that you don't need.

■ MAKE a habit of immediately throwing away anything that you do not need or cannot be used.

■ TAKE a break from multi-tasking. Despite our attempts

to carry out several activities at the same time, the brain doesn't enjoy having to execute two things that simultaneously demand conscious effort, thinking, comprehension, or skill.

Your brain will always handle tasks sequentially and switches attention between tasks so rapidly that you are given the illusion that you are multi-tasking.

But no matter how good you think you are at doing this, the process slows down your thinking, meaning that everything takes longer to accomplish.

It is like putting your brain in stop-and-go traffic, where it has

to work hard without really getting anywhere.

Studies show that the older we get, the more effort is needed for the brain to maintain focus, and it takes longer to get back to an original task after an interruption.

At some point, the number of things you can do effectively at one time diminishes.

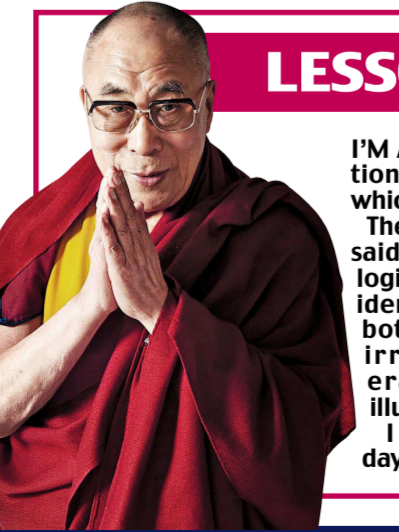
That's why you might find yourself struggling to type an email and watch TV at the same time, or find that you want to turn off the radio to read

the newspaper properly. My recommendation? Instead of training yourself to juggle numerous tasks, stop multi-tasking where you can. Doing this can sometimes be very good for your brain.

Concentrating on one task at a time and avoiding all distractions is a great way to improve your attention and is also the best way to get more achieved with minimal effort.

It is like taking your turbo-powered brain out on an empty, flat road and letting it speed ahead.

This can be a surprisingly joyous experience — it is what I get whenever I am in the operating theatre, which is one of the few places where distractions are absolutely not allowed.



LESSON IN MINDFULNESS FROM THE DALAI LAMA

I'M A BIG fan of a form of meditation called analytical meditation which the Dalai Lama taught me.

The Tibetan spiritual leader, left, said that through it we can use logic and reason to more clearly identify anything that might be bothering us, separate it from irrelevant considerations, erase doubt, and brightly illuminate answers.

I practice this technique every day. Here's what to do:

1. Sit comfortably with eyes closed, breathing calmly and think about a problem you might be trying to solve or a topic that has been bothering you

2. Separate the problem from everything else by using your imagination to place it in a large, clear bubble. Imagine it directly in front of you floating weightlessly — this is hard but gets easier with practice

3. In your mind, rotate that bubble, spin it about, or flip it upside

down — this gets me into a quintessential flow state, in which 20-30 minutes can easily pass without me even realising

4. As the bubble floats, visualise it disentangling itself from other attachments (such as any emotional connection you might have with the problem) and soon you will begin to see the concern or difficulty as an isolated issue and solutions will come more easily to your mind.

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■ **KEEP Sharp: Build a Better Brain at Any Age, by Dr Sanjay Gupta, is published by Headline, £14.99.**

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DAILY EXERCISE FOR YOUR BODY — AND FOR YOUR BRAIN CELLS

WHEN people ask me what is the single most important thing they can do to enhance their brain's abilities and resilience, I answer with one word: exercise.

While it may seem hard to believe, exercise is the only activity scientifically proven to trigger biological effects that can help the brain.

Inactivity, though, has been calculated to be the most significant risk factor in cognitive decline and the development of dementia.

Broadly speaking, exercise improves digestion, metabolism, body tone and strength, and bone density. Most of us think about it as a weight-loss tool, which it is.

But it's much more than that. It can turn on your 'smart genes', support emotional stability, and stave off depression and dementia.

We now know that regular movement measurably reduces stress and anxiety while improving sleep and mood — all of which can also positively affect brain structure and function. These combined effects build critically important brain resilience in the long term — and help pave the way for us to be creative and insightful and to solve problems in the short term.

We also know that people who lead a physically active life have a lower risk of cognitive decline. Research is now emerging that shows greater fitness is correlated with maintaining better processing skills in ageing brains.

The biology of how exercise benefits brain health goes far beyond the reasoning that it boosts the flow of oxygenated blood to the head.

It seems physical activity uses circulating blood sugar effectively and reduces inflammation. At the same time it stimulates the release of growth factors — substances that promote both the proliferation and the function of cells.

In the brain, these growth factors support the health of new neurons, the optimum use of blood vessels and the survival of all neurons.

Even if you've never really exercised much in the past, you can start today and see quick and sig-

nificant effects on your brain's health (and the rest of your body).

People often tell me they 'don't have time' to exercise, but you MUST make the time. When schedules get busy, exercise is often the first thing to be cancelled, but that has to change.

Physical exercise may offer the greatest return on investment in yourself. It is an antidote to many things that play into your risk of brain decline.

If the simple act of moving more can cut the risk of getting dementia and put the brakes on existing disease, then there's no excuse.

MY PRESCRIPTION FOR EXERCISE

■ **AEROBIC** cardiovascular work (swimming, cycling, jogging, group exercise classes) for at least 30 minutes, five days a week.

■ **STRENGTH** training (free weights, resistance bands, gym machines, mat Pilates, lunges, squats), and routines that promote flexibility and balance (stretching, yoga) twice a week.

■ **STAY** physically active throughout the day (taking the stairs instead of the lift; avoiding prolonged sitting; going for walks during breaks; engaging in pastimes such as dancing, walking, and gardening).

For me, exercise is a daily non-negotiable activity like brushing my teeth. I try to break a sweat every day, aiming for about an hour of exercise in addition to as much natural movement as possible throughout the day.

I enjoy swimming, cycling, and running, and I throw in dedicated strength training a few times a week as well.

Exercise is sacred time on my schedule.

Wherever I am in the world, I have my running shoes, swimsuit, and goggles. I also take resistance bands with me on my travels to make sure I get in some strength

training and I always pump out 100 press-ups every day too.

JUST WALK TO STAY SHARP
COMPARED to people who shun exercise entirely, regular walkers are 39 per cent less likely to die prematurely. So if you can get yourself out each day for an hour's moderately-paced stroll, you will be putting yourself in the best possible place for a long, sharp life.

GET OFF THE SOFA AND KEEP MOVING
WHEN you are immobile, your circulation slows down and your body uses less of your blood sugar, which means that more sugar is circulating.

Being motionless also negatively influences blood fats, high-density lipoprotein (the good cholesterol), resting blood pressure, and the satiety hormone leptin (which tells you when to stop eating).

Sitting puts muscles into a sort of dormant state where their electrical activity is diminished, leading to atrophy and breakdown.

Moreover, the production of lipoprotein lipase, the enzyme that breaks down fat molecules in the blood, is shut down, leading to more fat circulating as well.

As your metabolic rate plummets, you stop burning as many calories.

ENJOY THE GREAT OUTDOORS

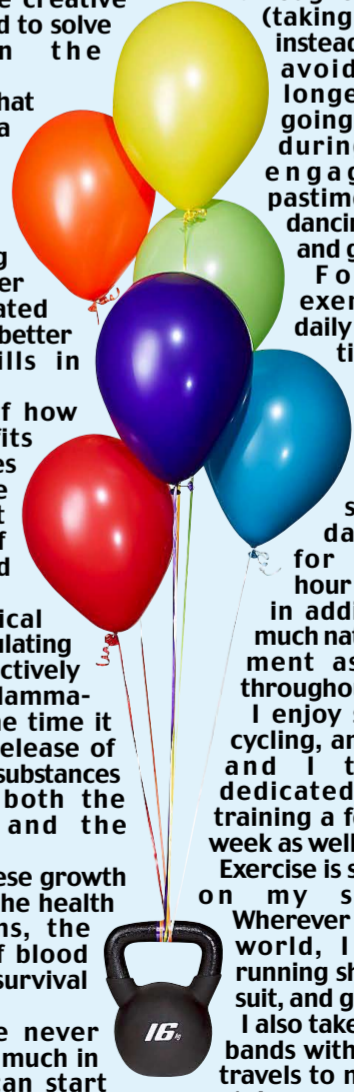
FOREST bathing (or walking among trees) has become popular lately as a way to lower heart rate and blood pressure and reduce stress hormone production.

And there is some science to back up its beneficial effects. When you are breathing in the 'aroma of the forest', it seems you will be absorbing substances known as phytoncides, which protect trees from insects and other stressors.

We now know these phytoncides also work to protect us by increasing our natural killer immune cells and decreasing levels of the stress hormone, cortisol.

If you live miles from the woods, you can glean the same benefits by digging in the soil of your own garden or visiting a local park.

■ **ADAPTED** by LOUISE ATKINSON from *Keep Sharp* by Dr Sanjay Gupta.



KEEP YOUR BRAIN SHARP

Think your way to deeper slumber



Paul McKenna's MIND TRICKS TO BEAT STRESS

JUST as it is helpful to get your physical environment right to help you sleep — a dark and quiet room at a comfortable temperature — your mind's psychological environment needs to be right too.

Everything you perceive causes your body to react. Think about when you were last engrossed in a film; how, during a realistic scene depicting a dangerous situation, your body tensed up.

When we sense danger, adrenalin is released into the bloodstream, blood is pumped to the major muscles, the heartbeat quickens, the digestive system and immune systems are suppressed, and our muscles tense.

It's why you find yourself gasping or gripping your seat when watching an action movie or horror film.

Of course, films like that are entertaining, but the release of all those stress hormones can be too much stimulation in the hour before bedtime.

If you want to establish a really solid pattern of deep sleep, you need to make sure you don't wind yourself up when it's time to wind down.

It is not just action movies that keep you alert. All television programmes are designed to catch your attention and to keep it, by making you excited.

People having a nice, happy time do not make for gripping dramas; news bulletins are full of crashes, floods, explosions, financial problems and lucky escapes.

SOME people have no trouble at all watching disaster reports, thrillers, dramas and horror movies before sleeping very well. But if you are having difficulty getting off to sleep, don't let the TV become just something else that keeps you awake.

Try switching it off at least one hour before you go to bed. This will give your mind a chance to process all of the adrenalin released after any exciting imagery that you've been exposed to.

It sounds so easy, but you'll be amazed by how effective this change to your routine can be.

For some people the only action required to restore a good sleep cycle is also ridiculously simple: make sure your bed is comfortable.

If you are at home now, go and take a look at your pillows, bedcovers and mattress. Now

ask yourself: if you checked into a luxury hotel for a weekend, would you be happy to sleep in the bed that you see now?

Most people can only afford a night in a luxury hotel on very special occasions — but you sleep in your own bed almost every night.

It is much better value to spend the money on this bed than blow it on one extravagant night, even if you do have to save up for a while.

Just buying a mattress-topper can transform a mattress that has seen better days.

There's an old saying that still holds true. 'Never skimp on

your bed or shoes, because if you are not in one, you are in the other.'

PRACTISING BEING DROWSY

THIS is a great exercise that will help you feel drowsy after climbing into bed.

Read through the details carefully before you do it — and don't try unless you are ready to go to sleep.

1. Remember a time when you felt very tired, and remember how your body felt.

2. Now, keeping that feeling, imagine you are surrounded by some friends who are just as tired as you.

3. When you look around, notice that one of them yawns. Then watch as another one yawns.

4. As more people begin to do so, notice how you feel, and notice that some people are also having difficulty keeping their eyes open.

5. Then join in with the yawning.

6. Notice whether your eyes want to close, and even if your eyes are already closed, imagine them closing again, imagine them flickering then closing again, over and over again.

7. Yawn once more and notice where you feel the yawn — in your throat or jaw — and let your mind drift, and every time you find yourself drifting back again, just look around at the circle of tired, yawning people in your mind's eye.

8. As you yawn more, notice a warm, comfortable feeling spreading all around you, and let yourself drift again.

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■ *FOR information on Paul's books, including Control Stress, I Can Make You Happy, Instant Confidence and I Can Make You Sleep, visit: paulmckennabooks.co.uk*
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HOW TO STOP NIGHT-TIME WAKENING

SOME people get to sleep easily but wake up during the night, their minds racing, and find it difficult to get back to sleep.

This can be caused by your unconscious mind processing a worry or perhaps an idea or dilemma and then wanting to share its conclusions with your conscious mind. Until you've worked this through, you will struggle to go back to sleep.

The following exercise gives your unconscious mind an opportunity to communicate with you through symbolism. As you become aware of the symbols, tension is released.

You don't need to understand them, just let them be processed by both parts of your mind — you can use this exercise when you first get into bed, but it is particularly useful when you have awoken in the middle of the night.

READ this exercise through carefully before doing it.

1. Imagine you are sitting in the middle of an auditorium. In front of you the curtains of the theatre are closed.

2. Invite your unconscious to use the stage to show you whatever it wants.

3. Watch the curtains of the theatre draw back and see what appears. Sometimes an image or some action will arrive straight away, sometimes the stage will be completely dark at the beginning.

4. If it starts off completely dark, just keep watching and let the imagery develop as slowly as it wishes. Let your unconscious mind release any tension by communicating with you by sending a symbol. It may be a chicken, a missile, an orange. It doesn't matter. Just acknowledge the symbol and let the lights fade.

5. Keep watching. Let another image arise. There is no need to understand or interpret what you see. Equally, if you do get some meaning from it, that is fine too. Just let your unconscious show you as much as it wishes.

6. If you feel that your mind is especially active you can now combine this with image-streaming — that means describing what you are seeing with your internal voice in a gentle monotone. Or you can simply carry on watching, a silent observer, as you drift into sleep.

Picture: GETTY

TOMORROW: A 12-WEEK PLAN TO BOOST BRAIN POWER FOR GOOD

How to KEEP YOUR BRAIN SHARP

An unmissable series to reduce your dementia risk



by Dr Sanjay Gupta

Chief of neurosurgery at Grady Memorial Hospital in Atlanta, Georgia and associate professor of neurosurgery at the Emory University School of Medicine

As I have been traveling the world researching my new book, I realized something extraordinary. Nearly everyone understands the vital importance of brain health, but few people have any idea how to make their brains healthier or that achieving such a goal is even possible.

Most people seem to believe this mysterious organ encased in bone is a black box of sorts, untouchable and incapable of being improved.

Not true! The brain can be continuously and consistently enriched throughout your life no matter your age or access to resources.

Our everyday experiences, including what we eat, how much we exercise, with whom we socialize, what challenges we face, how well we sleep, and what we do to reduce stress and learn, factor much more into our brain health and overall wellness than we can imagine.

Prevention is the most powerful antidote to illness, and this is especially true of degenerative maladies like those in the brain and nervous system. We know risk of dementia rises exponentially after the age of 65 and by 85 a third of people will have the disease. But the studies show the rot starts to set in silently much earlier. If you are diagnosed at 65 there's every chance your brain started to degenerate in your 30s. Symptoms which appear in your 80s will have been brewing since your 50s.

Few of us think about dementia when we're entering our prime, but perhaps we should, because knowing that damage could be starting in your brain provides a remarkable opportunity to jump in and do something about it.

Because once your brain is running cleanly and smoothly, everything else follows. You will make better decisions, have improved resilience and a more optimistic attitude, and the physical part of your body will improve too.

There are studies to show your

Why a dog (or cat) is your

BRAIN'S best friend

Brilliant four-page pullout



pain tolerance will increase, your need for medications will decrease, and your ability to heal will be accelerated.

When you put your brain first, everything else health-wise will fall into place. Your heart might tick, but it's your brain that ultimately makes it tick and determines your quality of your life. Without a healthy brain, you cannot make healthy decisions. And

with a healthy brain comes not only a healthy body, weight and heart but also a stronger sense of confidence, a more solid financial future thanks to smart decisions, better relationships, more love and happiness in your life.

YOUR BRAIN NEEDS FRIENDS

SOME of the most influential

and modifiable factors related to cognitive decline are linked to lifestyle: physical inactivity, unhealthy diet, smoking, social isolation, poor sleep, lack of mentally stimulating activities, and misuse of alcohol.

In the days when I was able to travel the world, I was struck by the fact that the liveliest and most joyful people I met, the people who seemed to be having

a great time despite their advanced age, were always the ones who maintain high-quality friendships, have loving families, and an expansive, dynamic social network.

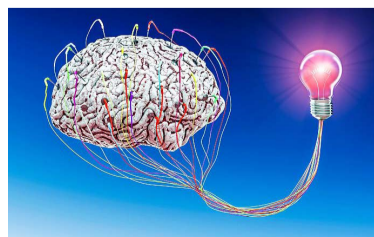
It is a well-known fact that social connections are really good for us, and that loneliness kills. People who are more socially connected to family, friends and community are happier, they're physically healthier, and they live longer than people who are less well connected.

There's plenty of science to back up the fact we need social connection to thrive, especially when it comes to brain health. Enjoying close ties to friends and family, as well as participating in meaningful social activities helps keep your mind sharp and your memories strong.

Caring for a cat, dog, or bird can be a catalyst to social interaction. Dogs are particularly

TURN TO NEXT PAGE

SHOPPING LIST CHALLENGE



MOST of us can hold only about seven items of information in short-term memory at any given time, such as a list of seven grocery items or a seven-digit phone number. You may be able to increase this capacity a little through various memory tricks or

strategies. For example, a ten-digit telephone number such as 6224751288 may be too long to remember all at once. But broken up into orderly blocks, as in a hyphenated telephone number, 622-475-1288, you'll find it easier to remember and recall.

KEEP YOUR BRAIN SHARP

FROM PREVIOUS PAGE

good social icebreakers by serving as a conversation trigger between strangers or casual acquaintances.

Taking care of pets also gives a sense of purpose and structure that have their own benefits for your brain health. Studies show contact with a pet can reduce depression, anxiety, and social isolation, lower blood pressure, reduced risk of heart attacks, and increased physical activity.

It is difficult to say precisely why maintaining social connections play such a powerful role in keeping the brain young. One reason could be that it provides a buffer against the harmful effects of stress on the body and the brain.

Certainly, people with fewer social connections are more likely to report problems such as disrupted sleep patterns, weakened immune systems, elevated inflammation, and higher levels of stress hormones.

Research by Rush University Memory and Aging Project has shown that people with larger social networks are better protected against the cognitive declines related to Alzheimer's disease than those with a smaller group of friends.

SILVER SURFERS UNITE

THE great news for all those stuck at home during lockdown is that social media really can present new opportunities for older adults to engage socially because email, instant messaging software, social networking sites, online communities, and blogs have been shown to be effective ways to maintain our relationships with family and friends and expand our social world.

Studies of 'silver surfer' online communities show that community members report numerous benefits, including intellectual stimulation, playful experiences, and emotional support. It might not be the same as a hug from your grandchildren, but it is good to know that virtual connections can compensate for lost relationships and offer relief and distraction from stressful circumstances.

The Internet affords us many opportunities to learn and connect with others. There's even evidence that digital engagement can match the positive effects on cognitive abilities in later life that face-to-face interaction engenders.

An Australian study of 5,000 older men found that those using computers have a lower risk of receiving a dementia diagnosis by up to eight and a half years, and an experimental study conducted in the United States revealed that older adults performed about 25 per cent better on memory tasks after learning to use Facebook.

In addition, thanks to the anonymity, invisibility, and opportunity for reading and responding to communication as schedules permit, digital engagement enables people to more easily communicate with others and get across their feelings, opinions, and skills.

Experts believe this has the effect of instilling more confidence and a sense of control — all of which are good for your health.

ALL this week I have been teaching you strategies that will keep your mind sharp. To help you put these into daily practice, I have come up with a plan for you to follow which will boost your brain power for good. It is important to remember that the brain is exceptionally plastic. It can rewire and reshape itself through your experiences and habits, and a lot of this remoulding can be achieved in 12 weeks. It's like building any other muscle in the body. Change is a challenge, and changing long-established habits takes effort. But you can do this. Take the plunge and experience the initial effects. Within a couple of weeks, I

predict you'll have fewer anxious thoughts, better sleep, and improved energy. You'll feel clearer-minded, less moody, and more resilient to your daily stressors. Over time, you are likely to experience weight loss and vast improvements in many areas of your biochemistry — from what's going on in your brain to how your metabolism and immune system are functioning. It may take you a little longer to fully establish and maintain these healthy behaviours for life, but following this for three months will get you started. It's your launch pad. You needn't do anything to prepare; you can start today.

BRAIN BOOSTER

Take a walk with a friend or neighbour (as long as lockdown restrictions in your area permit it) and have a conversation about something that is bothering you. The combination of the exercise, in-person interaction, and talking through your anxieties is a wonder drug for the

My 12-week plan to boost your brain power

WEEK ONE AND TWO

TIME to get moving! If you've been totally sedentary, start with a five to ten minute burst of exercise split into intervals of 30 seconds of maximum effort (walking fast for instance) and 90 seconds of recovery (slower walking) and work up to 20 minutes at least three times per week.

Mix up your exercise and try something different to surprise your body and use new muscles. If you're a jogger, try cycling or an online class. Aim to increase your workouts to a minimum of 30 minutes a day, at least five days a week.

If you have a day with no

time to devote to formal exercise, think about ways to move more. Conduct a Zoom while walking outside or do a set of yoga poses in front of the news. Aim to limit the minutes you spend sitting down. The more you move during the day, the more your body and brain benefit.

If you've got the green light from your doctor to try intermittent fasting once or twice a week, why not kick things off by stopping eating between 6pm and 8am the next morning? That's a 14-hour fast, much of which you'll spend sleeping.

WEEK THREE AND FOUR

ADD more to your routine by choosing at least TWO of the following options each day:

- GO for a 20-minute power walk after lunch most days of the week.
- MAKE contact with a neighbour and suggest a walk together.
- MAKE at least two of your meals each week include salmon or trout.
- DOWNLOAD a meditation app if you haven't done so already, and start to use it daily.
- TRY to eliminate soft drinks from your life and switch to water (still or carbonated). In the morning, coffee and tea are fine.



WEEK FIVE AND SIX

CHOOSE at least THREE of the following options to add to your routine:

- IF you haven't tried to keep a gratitude journal yet, start now. Each morning, spend five minutes making a list of at least five people or situations you are grateful for.

If weather permits, do this outside in the fresh air and morning sunlight. It is okay to repeat items from the previous day's list, but aim to think of anything that happened the day before that could be added.

Your jottings could be as small as being grateful that

you felt pretty good and reached your goals for the day.

- ADD 15 more minutes to your exercise routine.
- TRY a yoga or Pilates class or go on a walk with a friend.
- AVOID all processed foods FOR HOW LONG.

■ ADD a relaxing activity to your bedtime routine such as taking a warm bath or engaging in some mindfulness meditation during which you simply sit in a comfortable, quiet place and take notice of your thoughts and feelings. That's it! No judging, no problem solving, no list making — just a few quiet moments of stillness and focusing on your breath.



WEEK SEVEN AND EIGHT

OPTIONS for socialising and getting out and about are more limited at the moment so you need to be creative

last 12 months. Ask about your current medication and speak candidly about your risk factors for cognitive decline.

- LOOK for opportunities to volunteer in your community. Find the time. It will be worth it.
- BUY fresh foods whenever you can and eat a rainbow of colours.
- SCHEDULE a check-up with your GP if you haven't had one in the



- WRITE a handwritten letter to a younger loved one in the family, describing something you've learned in your life that you can pass down as an important lesson.
- READ a book in a genre or subject area that interests you but that you're not familiar with.

Week 11

DURING this week, think about how you'd want your family members to deal with a diagnosis of dementia, including Alzheimer's disease.

This is a sensitive subject and not something any of us wants to consider. But it's important to have these conversations in advance so we're prepared. A disease like Alzheimer's is an emotional, financial, and physical journey. Talk to your children. Write down your wishes and be as explicit as possible about the what-ifs.

If your sleep is still troubling you, ask your doctor about carrying out a sleep

study and be sure any medications you take are not interfering. If chronic stress or depression are an issue, seek a qualified psychiatrist or therapist, or both.

Take a good look at your home conditions. Your environment plays an influential role in your ability to form and sustain healthy habits. We can save our brain from disease by focusing on prevention and the elements we can control to foster superior brain health. Take a look around you and where you spend the most time. Is it conducive to living a healthy



WEEK NINE AND TEN

ASK yourself the following questions and adjust your lifestyle accordingly based on your answers:

- AM I getting at least 30 minutes of exercise at least five days a week and including strength or resistance training at least two days a week?
- AM I learning something

new that challenges my mind and demands developing different skills?

- AM I getting more restful sleep on a regular basis and managing stress better?
- AM I following the S.H.A.R.P. dietary protocol?
- AM I connecting with friends and family members regularly?



GH GHG HGHG HG HGHHG

LOOK AFTER YOUR TEETH

FLOSSING — and brushing — your teeth twice daily removes food debris and bacteria build-up that can lead to gum disease. If gum disease is allowed to flourish, the barrier between the tooth and gum will erode and bacteria can enter the bloodstream. This can trigger inflammation which is bad for brain health. The bacteria can also increase plaque build-up in the arteries.

BASELINE TESTING

IT'S A good idea to check with your doctor before starting this program, especially if you have any health issues such as diabetes or you are on medication. It might also be useful to get some baseline testing done with your doctor to see where you can reduce your risk from a metabolic standpoint because blood pressure, cholesterol levels, blood sugar, and inflammation all factor into risk for cognitive decline. This plan can help you can fight those numbers and bring them into a healthy range and I encourage you to re-check your numbers after you've gone through the program. My guess is you'll see improvements.

FEMALE MENTAL DECLINE

IT IS particularly important for you to take heed of my advice and to start setting brain-healthy changes in motion if you are female. Although scientists aren't clear exactly why, Alzheimer's strikes a disproportionate number of women compared to men.

One theory is that physiology plays a part, with women who don't have children being at greater risk than those who do. Research now indicates that pregnancy could be a protective factor. Pregnancy entails many biological events, from hormonal changes to immune function shifts, that could ultimately lead to protection against developing dementia later in life. We don't have the answers yet, although hormone therapy continues to be discussed as a potential treatment tool.

One possibly contributing factor to the gender anomaly is that women tend to have better verbal abilities than men, which means they could be more adept at hiding early symptoms of dementia. Studies show women score better on standard tests used to diagnose the early stages of dementia, even when brain scans suggest they are at the same stage of the disease as men. Problems could occur because these women are not diagnosed early enough.

Such a gender-based difference may be the reason that women seem to decline more rapidly after being diagnosed — they are further along the disease's trajectory than the earlier test indicated.

■ Adapted by LOUISE ATKINSON from *Keep Sharp* by Dr Sanjay Gupta.

■ **KEEP Sharp: Build a Better Brain at Any Age**, by Dr Sanjay Gupta, is published by Headline, £14.99.



WEEK 12

CONGRATULATIONS. You have made it to the final week. Make a list of all the things you've done differently and ask yourself what worked? What didn't work? Where can I improve? Then use this week to plan ahead.

- TAKE a brisk walk with a friend and discuss anything that might be bothering you.
- CREATE non-negotiables that you will commit to regularly, such as engaging in physical exercise every day, being in bed at the same time every night, and eating according to the S.H.A.R.P. plan.
- CONSIDER apps that help you track how many steps you take a day and how well you sleep.
- FIND goals that can be huge motivators and write them down. Perhaps you want to walk or run your town's 10K, or you'd like to plan an eco-tour trip with your family. People who decide to focus on their health often do so for specific reasons, such as: 'I want to be more productive and have more energy', 'I want to live longer without illness', and 'I don't want to die in the way my mother did'. Always remember: progress is better than perfection.



KEEP YOUR BRAIN SHARP

relationships under strain in

Lockdown WHEN people spend time in close proximity, feelings get mixed. The great thing is a man can't tell if you're angry or if you're working with someone on a creative project, because the emotions involved are positive.

During lockdown though, anxiety levels have become understandably high. And with our movement restricted, it's become difficult to get much space from partners, children, or any relatives who might have joined your bubble.

And so, it's those anxious feelings that become amplified.

I'll bet there have been more arguments over who did or didn't put this or that in the dishwasher the wrong way up over the last year than in living memory.

Petty grievances over whose turn it is to clean the bathroom; deep irritation at fractious children; feeling upset by some innocuous comment from your partner — the mild annoyances you'd normally brush off can all feel too much right now.

This is all to be expected. It's just our worries about this situation coming out sideways. And, thankfully, it is possible to turn things around.

Take, as an example, this scenario. A husband and wife fall out, quite spectacularly, after she suggests when the pandemic ends they go on holiday.

He replies: 'Well, I don't want to go abroad.' To which she says: 'Why do you always have to be so negative?' His next retort is: 'Why do you have to be so difficult?'

Various other insults then get thrown, past misdemeanours are brought up, and they end up not speaking for days.

So, what went wrong? First the wife made a suggestion, which her husband immediately modified so she felt rejected. Then they went to and fro' with unhelpful 'why are you so' questions before dragging up the past.

See how they ended up trapped in a self-reinforcing loop; an argumentative merry-go-round that became ever harder to jump off. I expect you can think of your own



Paul McKenna's MIND TRICKS TO BEAT STRESS

examples where something similar has happened within one of your relationships during lockdown.

It's important now, more than ever, that we try to break those argumentative loops as early as possible.

A great way to do that is to ask a question which has, at its heart, the desire to know what fear or unmet need the other person is

expressing, albeit in a roundabout way, by their words or actions.

For example, I try hard to remember whenever I get into an argument with my wife, to ask as early as possible: 'What is it that I am doing or not doing that you want me to change?'

Or I'll wonder, in my head or aloud, is there some worry or fear our conversation might have

brought to the surface, for me or for her, when feelings of upset or frustration suddenly surface as if from nowhere.

Let's return to that warring couple. Let's say his mother is elderly and frail. Exploring the idea that fear could be playing a part in his initial response might reveal that the pandemic has brought home his mother's mortality.

Seeing people trapped abroad last year could make him worry that, should his mum be taken ill, he might not get back to her in time if he travels overseas before this health crisis is over.

Talking through such fears, exploring alternatives to a foreign trip, could mean that what started as an argument ended up

FRIENDSHIP AUDIT

THE PANDEMIC has meant that we no longer have to avoid those who drag us down, and has highlighted the friends who lift us up. You can put that insight to work with a friendship audit. For each of your friends, ask yourself these questions:

- Does this person increase or decrease my energy?
- After I have seen them, do I feel better or worse?
- Do both of us feel enriched by our friendship?

Afterwards, try these helpful techniques.

STAY AWAY

IF SOMEONE often brings you down, stay away from them. If at all possible, cut them out entirely.

I'LL GET BACK TO YOU

FRIENDSHIP difficulties often arise because one person drags the other into doing something they don't want to do. Practice saying: 'I can't decide right now, I'll get back to you.', 'Where does that leave you?' and 'What's the best solution here for everyone?'

SHIELD OF WHITE LIGHT

IMAGINE a protective shield of white light around you. This creates an emotional boundary, while telling others that you feel safe.

an opportunity to explore some difficult feelings, problem solve together, and become closer.

You can apply the same principles to situations with fractious children. Next time tensions rise, try asking a question that will allow the person you're with to express how they are feeling. And if the first one that springs to mind starts 'why are you so', try and think of another one instead.

- FOR information on Paul's books, including Control Stress, I Can Make You Happy, Instant Confidence and I Can Make You Sleep, visit: paulmckennabooks.co.uk

STARTS ON SATURDAY

JOE WICKS XXXXA

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FREE pullouts with xxxxxxxx xxxxxxxx xx

xxxx xx xxxxxx PLUS xxxxxxxxxxxx

