



BY GLYNIS HORNING

A SILENT EPIDEMIC

The immune systems we rely on to protect our bodies from infection are reportedly going rogue and turning on our healthy cells at an unprecedented rate.

Why? And what can we do about it?

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any of us know little of autoimmune disease beyond the ALS Ice Bucket Challenge that went viral four years ago, enticing our kids to soak themselves on social media for fun, and ostensibly a cause. At most, we've read occasionally of celebs with exotic-sounding ailments: Venus Williams, we're told, has Sjögren's syndrome. Serena Gomez and Toni Braxton, lupus. Gigi Hadid and Zoe Saldana, Hashimoto's disease. Missy Elliott, Grave's disease. And Kim Kardashian, the less obscure psoriasis, which we link

vaguely with scaly skin – impossible to associate with that sleek booty!

The painful reality of autoimmune disease was really only brought home to us when local rugby legend Joost van der Westhuizen shrank before our eyes from ALS (aka motor neuron disease or Lou Gehrig's disease), and died in 2017. Still today, little is publicised about autoimmune disease compared to the likes of cardiovascular disease or cancer, and accurate local statistics seem impossible to come by.

Studies abroad, however, suggest an alarming though strangely silent explosion. When the term

'autoimmune disease' was coined in 1970 it was considered a rare genetically linked condition. But by 2009, award-winning US science writer Donna Jackson Nakazawa published *The Autoimmune Epidemic*.

In the foreword, respected Johns Hopkins Medicine neuroscientist Dr Douglas Kerr says: 'In some cases, autoimmune diseases are three times more common now than several decades ago. These changes are not due to increased recognition of these disorders or altered diagnostic criteria. Rather, more people are getting autoimmune disorders than ever before.'

And in December last year, the man hailed as the modern day 'father of immunology', Harvard Medical School immunologist, pathologist and molecular microbiologist Dr Noel Rose, told *Today*: 'It's getting worse, it's going up. The problem is because the concept of autoimmune disease is quite new; the autoimmune diseases (and there are more than 80) are treated by different physicians and in different departments, and they're not thought of generally as a single entity the way cancer is thought of, or infectious diseases.'

The US National Institutes of Health (NIH) report that up to 23.5 million Americans now suffer from an autoimmune disease – outstripping those with cancer (15.5 million, according to the American Cancer Society).

And the American Autoimmune Related Diseases Association (AARDA) puts the number at closer to 50 million, 'because the NIH only includes 24 diseases, where good epidemiology studies were available. Count ALL of us!'

So what exactly is autoimmune disease, and why the alarming increase? Essentially, our immune system is our body's defence system, designed to attack and destroy whatever foreign cells, viruses, bacteria and fungi we encounter. But with autoimmune disease, the process goes awry, and our immune system mistakes our own healthy cells and tissues for invaders, turning on them.

Although all autoimmune diseases have a genetic component, researchers such as Daniela Cihakova at Johns Hopkins University note that studies on twins show genes alone can't explain why some individuals develop them. They also say genes can't account for the rapid advancement of these diseases in such a short period, and they've been searching for causes elsewhere.

Dr Kerr, one of those researchers, believes he has an answer. 'Our immune system has evolved increasingly sophisticated countermeasures and recognition systems to combat the increasing diversity of infectious agents with which we come in contact. But this comes at a cost: an increased chance of the system breaking down. We have evolved right to the edge of the immune system's capacity.'

Over the past 40 years, he says, something has been 'pushing that system over the edge'. And according to him

and a number of scientists and medical professionals, it may be linked with the growing number of environmental toxins we're exposed to, interfering with the way the immune system communicates with the rest of the body – though they stress that more research is needed, and point to lack of funding compared to diseases like cancer.

In a 2003 study that tested blood and urine samples for 210 substances such as industrial compounds, pollutants, pesticides and heavy metals, volunteers were found to have detectable levels of 91 of them, notes Dr Kerr. Just two years later, a study found 287 industrial chemicals in the foetal cord blood of newborns, transmitted by

their mothers' exposure before or during pregnancy. 'What of our children and *their* children?' he asks chillingly.

“We have evolved right to the edge of the immune system's capacity.”

But many are convinced we can fight back. In South Africa, Patrick Bouic, co-founder and chief scientific officer of Synexa Life Sciences, and Extraordinary Professor of Immunology at Stellenbosch University, says: 'There's a genetic component to autoimmune diseases – but you may carry the genes, and if your environment is controlled by a healthy lifestyle, you won't develop the disease.'

The gut and its 100 trillion microbes (the gut ‘microbiome’) is a vital part of our immune system, say he and functional health practitioners such as Dr Grant Fourie of Oakmed Medical Centre in Bellville. When harmful microorganisms in it take over from beneficial ones, they cause a microbial imbalance – and one result can be a condition known as leaky gut, where the tightly knit cells of the gut walls weaken. ‘Microscopic molecules and proteins found in our foods pass through a compromised primary gut barrier and cause an immune system response similar to what we’d see if a pathogen had just entered the system,’ explains Dr Fourie. Furthermore, with the imbalance between beneficial microbes and the harmful ones, certain immune cells in our gut are not activated, says Prof Bouic. ‘These cells play a crucial role in controlling the possibly self-destructing immune cells, leading to an attack on one’s own healthy tissues and cells.’

Some scientists argue that while our gut biome is being weakened by diets of processed and chemically laden foods, more babies begin life with unbalanced gut flora. Those born vaginally glean their first gut flora from the birth canal, but the increasing numbers born by Caesarian section may be missing out. According to a review in *Clinics in Perinatology*, ‘Concurrent with the trend of increasing Caesarian births, there has been an epidemic of both autoimmune diseases such as Type-1 diabetes, Crohn’s disease and multiple

sclerosis, and allergic diseases.’ Dr Fourie agrees: ‘And I’d add that a decrease in time spent on the breast can also have an influence.’

Other established threats to a healthy gut biome (and immune system) are antibiotics, chronic medication, and over-the-counter medications such as painkillers and anti-inflammatories. Exposure to the growing number of chemicals in our environment, from cigarette smoke to pesticides and household cleaners, could mutate the structure of our cells, triggering our immune system to attack them as ‘foreign’ invaders, says Prof Bouic.

The stresses of our constantly wired lives can leave our bodies in a prolonged stage of fight or flight, awash with the hormones adrenalin and cortisol, which may harm our immune system and weaken the control mechanism, he adds. This is often exacerbated today by lack of sleep. In a major study reported in *Journal of the American Medical Association* last year, people with stress-related disorders were found to be more likely to develop multiple autoimmune diseases.

Each of the 80-plus autoimmune diseases has its own disparate signs and symptoms, which can be difficult to detect. According to AARDA, it takes on average five doctors and nearly five years to get a diagnosis of autoimmune disease. Today many can be diagnosed with specific lab tests, but the doctor needs to know which tests to order.

DO YOU THINK YOU MAY HAVE AN AUTOIMMUNE DISEASE?

The key is to find a reputable, qualified professional you can trust: there’s a wealth of misinformation

online, often linked to selling books, food products, supplements or regimens that lack studies to validate their claims.

‘The doctor has to have a high index of suspicion to look for an autoimmune condition,’ says Dr Fourie. ‘Because of the relatively rapid rate at which common problems are being linked to underlying autoimmune responses, we find few doctors are able to stay up to date with the info.’

‘This is what Functional Medicine is all about. I believe we’re uniquely positioned to identify and manage autoimmune conditions as we’re trained to be suspicious and to look for tiny hints in the person’s symptoms that they are having an immune system-modulated response. It can start as simply as bloating after certain foods! Conventional doctors are also not suspicious enough about environmental toxins found abundantly in our modern world.’

Treatment depends on the variety of autoimmune disease, from immune-suppressants to steroids and even surgery.

The best course of action is to reduce your risk of autoimmune disease. You can’t change your genetic susceptibility, but you can take steps to avoid environmental triggers that may cause it to develop.

That, says Dr Kerr, requires ‘personal responsibility, political action and corporate accountability’. If we do these things, ‘autoimmunity will be a cluster of rare diseases that we treat with effective medicines,’ he says. ‘If we don’t, autoimmune diseases will increasingly devastate families, including babies, and will increasingly tax our healthcare system. If we don’t act now, it will be too late.’

HOW TO REDUCE YOUR RISK

We can all make a start with personal responsibility, at least:

DON’T SMOKE

Tobacco and secondhand smoke contain over 1 400 dangerous chemicals, notes Savera Kalideen, executive director of the National Council Against Smoking. ‘When you inhale these chemicals, they affect your entire body.’

CONTROL YOUR WEIGHT

Fat tissue is immunologically active and pro-inflammatory, and studies in *Frontiers in Immunology* suggest obesity is linked to certain autoimmune diseases. Get regular moderate exercise and watch your diet. Dr Fourie says: ‘Obesity is essentially a disturbance of the person’s metabolism, often driven by underlying system stress and inflammation – this quickly connects to immune disturbance. It’s not impossible that obesity itself is an autoimmune condition!’

FOLLOW A BALANCED DIET BASED ON WHOLE FOODS

Avoid processed foods with additives and preservatives, sugars, artificial sweeteners, excess salt and fat emulsifiers. According to an Israeli study (in *Autoimmunity Reviews*), emulsifiers may disrupt the mucous layer that protects the gut, ‘essential to the immunity balance that works to prevent autoimmune diseases’.

electing to fight



my story

DA shadow deputy minister for police Dianne Kohler Barnard has an autoimmune disease.

Whether she’s haranguing ANC MPs in Parliament, working the campaign trail ahead of elections, catching trains to chat with commuters or addressing rallies, it’s hard to believe DA shadow deputy minister for police Dianne Kohler Barnard has an autoimmune disease.

Dianne married at 25, and at 28 was running a news agency in London. Although eager to start a family, she struggled through a series of miscarriages. When she finally carried a baby to seven months, she began hallucinating. Other episodes followed: ‘It was like living with three radios playing constantly in my head’.

Tests eventually revealed she had lupus. ‘In retrospect, I could pinpoint early signs – rashes, bruising easily, migraines.’ She attributes the final trigger to her body reacting to pregnancy: ‘My immune system began attacking my liver and brain!’

Doctors told her shaken husband she might die, and he flew her back to South Africa in a wheelchair to be with her family. ‘I was confused, paranoid, a wreck.’ Her son, Peter, was delivered by emergency Caesarian, but her health continued to decline – she battled to bond with her baby and had panic attacks.

Four years later she was told her white blood cell count was so low she needed chemotherapy. ‘When they filled me in on its side-effects, something in me flipped. I said, “No thanks,” and forced myself to go back to gym and began running. I also changed my diet – no cheese, chocolate, coffee or red wine. In just a month my white cell count had improved, and I began appreciating my beautiful son – today a strapping advocate.’

Dianne will be on steroids and other medications for life, and has been hospitalised occasionally. ‘But I can’t and won’t live life like an invalid. There’s too much to be achieved!’

LIMIT YOUR ALCOHOL

Excess may lead to immune deficiency, notes an NIH report; and complications of alcoholism such as liver disease and liver failure ‘may have a component of autoimmunity’.

ELIMINATE GLUTEN

Some doctors, including Dr Fourie, suggest eliminating gluten, but others contend the jury is still out on this unless you have a specific gluten intolerance or allergy, or Coeliac disease. It seems sensible to limit consumption of large fish which can accumulate mercury – shown in a University of Michigan study to be linked with a higher rate of autoantibodies, a potential precursor of autoimmune disease.

TAKE STEPS TO DESTRESS

Schedule time out to unwind, and aim for at least six hours of sleep a night, ‘preferably seven to nine’, says Dr Fourie. ‘Create your space so that you can recharge your adrenals and allow them to balance out after a long, hard day of stressors,’ says Prof Bouic.

GO EASY ON THE MEDS

Take medications (including antibiotics, anti-inflammatories, antacids, steroids and hormones) only when necessary and exactly as prescribed, as they can affect your gut biome and compromise immunity.

ENSURE THAT YOUR GUT MICROBIOME IS ALWAYS IN A GOOD STATE

‘Take probiotics to train those important controlling immune cells that prevent the development of autoimmune disease,’ says Bouic.



learning to listen to my body

*Kim Petersen, 44,
production manager at 24.com*

When Kim Petersen started feeling exhausted all the time, she (like many working moms) was quick to brush it off as a normal part of juggling home and work pressures. ‘At the time, my husband was away

on business, we were busy renovating our home and it was just me and my six-year-old son.’ Driving home from work, she felt tired, her wrists hurt, and her eyes were sensitive to light, but Kim assumed it was from staring at a computer screen all day. Her symptoms worsened: her joints ached, she developed rashes and even sensitivity to touch. ‘It was like chilblains in my fingers. When my fingertips touched anything, it was almost like a shock, it was so painful.’

After a complete blood test, her doctor told her that her antibodies were too high, and it was most likely lupus. ‘She sent me to a rheumatologist who then diagnosed me with SLE (systemic lupus erythematosus).’ Seven years later, Kim still suffers from the occasional flare-up, but she and her specialist are satisfied with her condition’s management.

‘I need to be aware of stress because it’s a major trigger for me,’ she says. ‘So, when I feel the symptoms coming on again, I’ll sit out family functions if I feel that it’s too much, for example. There are days when I’m so tired that I can’t get out of bed and then I phone in sick or I work from home.’ Alongside avoiding triggers, exercising regularly and taking her medication, she finds monthly body alignment sessions helpful. ‘It’s not so much for the lupus itself – it’s more about getting my body where it needs to be.’

Her most important lessons have been learning to tune into her body and knowing her limitations. ‘Where normally I would have shrugged it off, I now listen to my body so that I can make adjustments.’ ❀

PHOTOGRAPHS: LIZA VAN DEVENTER, GALLO IMAGES/GETTY IMAGES

AUTOIMMUNE DISEASES TO NOTE

RHEUMATOID ARTHRITIS:

Attacks: Joints, causing pain, inflammation, swelling.
Treatment: Oral or injectable medications.

LUPUS:

Attacks: Tissues throughout the body (joints, lungs, blood cells, nerves, kidneys), causing achy joints, fever, fluid retention, fatigue, and ‘butterfly’ and other rashes.
Treatment: Daily doses of steroids to reduce inflammation.

INFLAMMATORY BOWEL DISEASE (ULCERATIVE COLITIS, CROHN’S DISEASE):

Attacks: Intestinal lining, causing diarrhea, rectal bleeding, abdominal pain, weight loss.
Treatment: Oral or injectable immune-suppressants.

COELIAC DISEASE:

Attacks: Intestinal lining, causing anaemia, rashes, mouth ulcers, headaches, fatigue,

tingling in extremities, joint pain.
Treatment: A strict gluten-free diet for life, and possibly supplements.

MULTIPLE SCLEROSIS (MS):

Attacks: Nerve cells, causing pain, weakness, poor coordination, muscle spasms, blindness.
Treatment: Meds to suppress the immune system.

TYPE 1 DIABETES:

Attacks: Pancreatic cells that produce insulin, causing thirst, frequent urination, tiredness, weakness, blurred vision, weight loss.
Treatment: Daily insulin injections.

GRAVE’S DISEASE

Attacks: The thyroid gland, stimulating it to produce excess thyroid hormone, causing bulging eyes, brittle hair, weight loss, irritability, rapid heart rate, weakness.
Treatment: Medication to suppress the thyroid or surgery to remove it.

HASHIMOTO’S

Attacks: The thyroid gland, destroying cells that produce thyroid hormone so they produce too little, causing fatigue, constipation, weight gain, dry skin, sensitivity to cold, depression.
Treatment: Oral synthetic thyroid hormone pills.

SJÖGREN’S SYNDROME:

Attacks: Mucous membranes and moisture-secreting glands of the eyes and mouth, causing dry eyes and mouth and possibly vaginal dryness, joint pain and stiffness, rashes, a dry cough and fatigue.
Treatment: Prescription eye drops and medications to increase saliva production.

PSORIASIS:

Attacks: The skin, stimulating skin cells to reproduce quickly, producing scaly plaques.
Treatment: Topical corticosteroids, synthetic forms of vitamin D, moisturisers.

SPOT IT

Each autoimmune disease has its own symptoms, but if you notice a few of the following, get checked out:

- Pain in joints or muscles, weakness, tremors
- Numbness or tingling of hands or feet

- Pain in the abdomen, blood or mucus in stools, diarrhoea
- Unexplained weight loss, insomnia, rapid heartbeat
- Rashes (especially in a butterfly shape across the face), hives, sun sensitivity
- Intolerance of heat or cold

- Problems focusing and concentrating
- Loss of hair, white patches on your skin or in your mouth, mouth ulcers
- Dryness of skin, mouth, eyes
- Multiple miscarriages or passing clots