

# Looking out for number one



Understanding the early signs of diabetes is vital in containing the condition

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Despite it being one of the most common medical conditions in the world, millions and millions of dollars are spent around the world every year on raising awareness about its symptoms and its causes. The problem is not necessarily a matter of awareness, rather it is the nature of the disease itself – diabetes has a habit of creeping up on people before they’re even aware that they could be at risk.

But one of the earliest signals that the condition is developing is delivered by our body itself – namely the central nervous system. “Diabetes might not even have been diagnosed when patients start to feel pain in their legs,” explains Dr Jutta Marquardt, a consultant neurologist at Dubai Healthcare City’s German Neuroscience Center. “Of course, they will not readily connect this pain with any internal disease such as diabetes, but will seek orthopaedic or other help which might lead to a long and painful medical history.”

Indeed, despite it being a painful sensation, it is relatively unknown among the general public that this could be a sign of diabetes. “A neurologist would immediately know what is wrong because in about 50% of all patients, diabetes mellitus causes several clinical neuropathic (meaning affection of the nerves) syndromes which are the reason for this pain,” explains Marquardt. “Neurologists are trained to look out for certain typical pain patterns and are alarmed by them.”

In fact, diabetic polyneuropathy typically progresses insidiously over a period of five to 10 years and can often occur even long before the diagnosis of diabetes is confirmed. But, as the name would suggest, there are several different forms of diabetic polyneuropathy, each with a different pattern of pain distribution. “For instance there is the symmetric type of polyneuropathy,” explains Marquardt, which is “characterized typically

by sensory loss, weakness and painful burning of toes and feet.”

Normally, the first symptoms of symmetric polyneuropathy appear in the sole of one foot or even involving half a toe, then gradually spreading circumferentially up both legs to the knees, then into thighs and finally the hands. “The latter pattern is also termed as “stocking-glove” distribution,” explains Marquardt. “Neuropathy always is length-dependent, because the longest axons are the most vulnerable, and patients describe tingling, prickling, burning, numbness and a band like pressure.”

Although this is difficult to diagnose yourself, it is true that sufferers will start to notice a difference in how their body reacts to trauma. “Due to sensory deficits, small cuts and wounds will not be noticed by the patients at first thus causing seemingly inexplicable infections,” says Marquardt. “Later, weakness of the muscles will develop, particularly expressed by the fact that patients cannot stand on their heels. With progressing sensory disturbances spreading up also into the tips of the fingers, patients will have difficulties holding objects.”

The most common symptom, though, is a “painful burning in the feet which gets worse with high temperatures”, says Marquardt. One way to tell if it is a serious problem is

to apply light stimuli to the affected area – if you experience extreme pain when touching the numb area then you need to seek help.

“Also an imbalance of the gait, getting worse in the dark, is a common symptom of patients with diabetes,” explains Marquardt.

Although the onset of diabetes can occur at a juvenile age, neuropathies tend to be more common in adult-onset diabetes.

“It may be first noticed as late as in their thirties to fifties,” says Marquardt. There is a known correlation between the occurrence of neuropathy, the duration and the severity of diabetes, body weight, body size and long-standing hyperglycaemia which must be investigated individually with each patient, she adds.

There are a number of other diabetes-related neuropathies, as well as symmetric polyneuropathy. For instance, there is asymmetric neuropathy, which normally manifests itself in focal weakness or sensory loss of single nerves, mainly in one upper arm, one thigh or the cranial nerves.

“Asymmetric focal and multifocal types of neuropathy are less common, but quite dramatic,” explains Marquardt. “They are usually acute in the onset with strong muscle weakness and pain in a thigh or upper arm, but this form rarely occurs before the age of 45. The affection of the cranial nerves causes ▶

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weakness of the eye muscles accompanied by double images or facial numbness and nerve paralysis.”

Many patients with diabetes also develop dysfunctions of the autonomic nervous system: constipation, diarrhoea (particularly during the night), abnormal sweating, hypertension, Tachy- and Bradycardia, dysfunction of the bladder and sexual impotence in males. Symptoms are also uncertain gait, imbalance, maybe syncopes and blurred vision from lack of papillary regulation.

However, it is vital that if you are suffering from any of the above that you consult medical advice as soon as possible. “The distinction between the different kinds of neuropathy is crucial as far as the different approaches to diagnosis and management are concerned, but also regarding the prognosis,” explains Marquadt.

Many people can be put off by the idea of visiting a neurologist, but Marquadt explains there is nothing to fear from the examination. “The most essential part of the evaluation of diagnosis and therapy are – apart from an intensive neurological examination – the electro diagnostic studies of the nerves,” she explains. “The examination comprises Electromyography (EMG) and nerve conduction velocity (NCV). The EMG involves recording electrical potentials by an electrode placed into the muscle, both at rest and during voluntary contractions. The NCV is carried



out by stimulating the motor and/or sensory nerves electrically. From the data recorded, informative characteristics of the recorded forms of waves can be determined, thus leading to a clear picture and appropriate treatment.”

It might sound complicated, and perhaps intimidating, but it could make a huge difference to your quality of life, explains Marquadt. “In the long-term, by way of diabetes and complications control, trial patients who controlled their diabetes meticulously showed significantly less neuropathy,” she says. “When symptoms of

neuropathy occur in patients suffering from diabetes or early signs of polyneuropathic pain patterns as described above, occur, an early neurological examination is of the essence.”

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