

PARKINSON'S STARTS IN THE GUT

The latest scientific findings suggest that Parkinson's disease is triggered in the gut. Two of the main principles of Modern Mayr Medicine, a healthy gut and physical exercise, also play a critical role in other neurological disorders. In a conversation with Professor Gerhard Luef from Innsbruck University Hospital, and Parkhotel Igls' Medical Director Dr Peter Gartner, we discuss the potential causes and treatments of Parkinson's, dementia and polyneuropathies.

Gerhard Luef: Parkinson's disease is a disorder that affects the motor system and is caused by certain structures in the brain not functioning properly. There is either a lack of dopamine, or the receptors that release this neurotransmitter are damaged. The main symptoms of this disease are tremors, bradykinesia and rigidity. The term **tremor** is used to describe resting tremor, **bradykinesia** refers to limited, e.g. slowed movement, and **rigidity** to muscle stiffness. Patients may develop all or just one symptom of the disease.

Are there any particular symptoms that mark the early stages of the disease?

Gerhard Luef: No, it may just begin with cramp in the toes. Often though, we see resting tremors, which are different to essential tremors; the hands shake even when resting quietly on the table. And there is something else that is specific to Parkinson's: the disease starts on one side of the body, i.e. one side shakes more strongly than the other. The visible symptoms of bradykinesia also include a reduced blink rate; this too initially affects one side, a decline in fine motor skills (for example, it becomes difficult to button shirts and blouses) or excess saliva as a result of difficulties in swallowing. When we see a patient for the first time, we enquire about any changes in handwriting (it can become smaller) or if it has become more difficult to turn over in bed.

Peter Gartner: Constipation can also be one of the first symptoms.

Gerhard Luef: As a neurologist, I find that particularly fascinating because the latest scientific findings indicate that Parkinson's, like several other illnesses, starts in the gut. With appropriate medication, we can offset the dopamine deficiency in the brain and alleviate the symptoms. However, the disease is incurable and its cause remains a mystery to this day. We have now been able to identify a

potential cause in the protein alpha-synuclein, which undergoes pathological changes in the neuroplexus of the gut before being transmitted to the brain via the autonomic nervous system. Scientists worldwide are working hard to find ways of diagnosing Parkinson's in its earliest stages, in order to be able to treat it more effectively.

Peter Gartner: I find it fascinating that the nervous system transmits protein molecules as well as electrical impulses.

INTESTINAL REHABILITATION IS KEY

Do we know why these changes occur in the gut?

Gerhard Luef: This is currently a topic of scientific debate. The million-dollar question is, how can we identify, and then eliminate, the cause of this disease? What we do know about Parkinson's patients' premorbid personality is that obsessive-compulsive people are more predisposed to this disease, and an impaired sense of smell (which can be tested) is an early warning sign.

The only thing we can definitely say about the cause at the moment is that Parkinson's starts in the gut. One approach to therapeutic intervention is therefore to rehabilitate the gut.

Peter Gartner: My experience with a young patient with Parkinson's who has attended the Parkhotel Igls several times for the Mayr programme confirms this; his symptoms improved with the very first course of treatment. Of course, the cornerstone of success is to stick to the correct diet and undertake appropriate physical activity. Looking forward, we would like to offer a package that caters specifically for people with Parkinson's; one that, with intestinal rehabilitation as a starting point, offers a range of complementary treatments such as physiotherapy and Feldenkrais® techniques. The latter helps people relearn how to move and so increases mobility.

DIABETES AND ITS COMPLICATIONS

Polyneuropathy is another neurological condition that the doctors at the Parkhotel Igls are seeing more frequently.

Gerhard Luef: With peripheral neuropathy and polyneuropathy, there are pathological changes to the nerves, which leads to numbness in the feet. It starts with a burning sensation, or tingling in the feet, which worsens if left untreated. This is then followed by pain: the 'burning feet' of diabetics. As the nerves become more damaged, patients feel as though they are walking on cotton wool; they no longer feel the ground beneath their feet.

Does that have anything to do with restless legs syndrome?

Gerhard Luef: A neurologist can quickly determine with a reflex test whether it is a case of polyneuropathy or restless legs syndrome. If sensitivity and reflex functions are impaired, then it is a clear indication of the former. However, it is important to identify the underlying

disease as polyneuropathy also occurs as a result of poorly controlled diabetes, immunological factors, or alcohol consumption. Likewise, inflammatory diseases and tumours can cause polyneuropathy.

Peter Gartner: This means it could also be the result of an autoimmune disorder. How is it diagnosed?

Gerhard Luef: With a lumbar puncture. In contrast to diabetes, treatment is with immunoglobulin. It is therefore important to determine the underlying disease; to tackle the symptoms alone wouldn't be enough.

Peter Gartner: We are also seeing increasing numbers of patients with polyneuropathy who don't realise that they are diabetic. We can help diabetics achieve a successful outcome of their treatment by employing the Modern Mayr Medicine therapy techniques: a good diet in conjunction with intestinal rehabilitation and exercise. Of course, these lifestyle changes also need to be applied to day-to-day living. The Modern Mayr Medicine approach does not exclude any foods; instead the focus is on the glycaemic index of what we eat. For example, it does make a difference if pasta is cooked al dente or overcooked. (Note: for more information on the treatment of diabetes see page 12 of ParkZeit).

Gerhard Luef: The peripheral nerves are also damaged when people regularly drink alcohol. In line with the dose-response relationship model, we are not talking about a daily glass of wine; it is the daily bottle of red wine drunk during our evening meal that leads to nerve damage and consequently to polyneuropathy. If lifestyle changes are not made, it can lead to long-term damage and potentially muscle wasting as well.

Peter Gartner: Intestinal rehabilitation based on the principles of Modern Mayr Medicine reduces the hydrostatic pressure in the connective tissues throughout the body, particularly in the stomach, and flushes out intracellular fluids. As each nerve is surrounded by a layer of connective tissue, pressure on the nerves is relieved and the symptoms improve considerably as a result.

Is there a correlation between Modern Mayr Medicine and dementia prevention?

Gerhard Luef: To answer this, we need to differentiate between Alzheimer's and other forms of dementia. Alzheimer's is the most well-known form of dementia but its prevalence is low. It is a degenerative disorder that tends to start in middle-age. It is caused by an accumulation of protein deposits in the brain and progresses relatively quickly. Then there is vascular dementia, which is caused by reduced blood flow and consequent damage to the brain. We know that people who exercise regularly and eat healthily are less likely to develop this form of dementia. This means that the risk of dementia is indeed minimised by taking appropriate preventative measures.

FORGETFULNESS DOES NOT MEAN DEMENTIA

How is dementia diagnosed?

Gerhard Luef: Forgetfulness on its own is no cause for concern. Depending on the type of day I'm having, I too can be forgetful. We also know that depression makes us more forgetful. Before embarking on in-depth neuropsychological tests, a simple mental ability test provides insights into whether or not someone has dementia.

Peter Gartner: We offer imaging techniques that allow us to draw conclusions on the likelihood of developing dementia. Is it true that the earlier the diagnosis, the easier it is to take countermeasures?

Gerhard Luef: Alzheimer's is diagnosed by establishing the presence of proteins in the brain. By that stage, the disease is so far progressed that the prognosis is poor. Other forms of dementia can definitely be prevented. When relatively young people develop dementia, we recommend a course of drugs. However, I wouldn't recommend this for an 80 year-old patient because the medication also has side effects.

What preventive measures can we take?

Gerhard Luef: We now know that diet, exercise, and any type of cognitive training play an important role in prevention. It is always a good idea to take preventive measures to reduce the risk of developing dementia.

Peter Gartner: This is what we advise our guests to do and, with Modern Mayr Medicine, we can play our part. Our excellent working relationship with the Innsbruck University Hospital also enables us to offer first-rate diagnostic services and treatments for people with neurological complaints. 🍌