



# Parkinson's Disease Information Sheet 1.2

## Parkinson's Symptoms

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Parkinson's disease (Pd) is a progressive neurological condition which is characterized by both motor (movement) and non-motor symptoms. It is important to remember that presentation of symptoms is unique to each person with Parkinson's (PWP).

Provisional medical diagnosis is based on 4 cardinal symptoms;

- Tremor
- Bradykinesia
- Muscle rigidity
- Postural instability

### **Tremor**

It should be noted that although this is the most commonly identified symptom it is not present in all cases (30% of PWP will not experience tremor) and tremor is present in other conditions.

Tremor is related to the imbalance of dopamine and acetylcholine and in particular to the action of acetylcholine hence tremor may not be the most responsive symptom to dopamine therapy.

The classic Pd tremor is described as a "resting" tremor i.e. it is apparent when the limb is at rest. The Parkinson's tremor is regular and rhythmic and occurs at the rate of 4-6 times per second.

Initially tremor may affect a unilateral limb however with progression of the disease tremor may become bilateral. A classic tremor presentation in Pd involves the thumb and first finger and is known as "a pill rolling tremor".

While resting tremor is typical of Pd in some cases "action" tremor is present (initiated by active movements). This can be challenging in routine daily activities e.g. eating, drinking and writing.

Tremor may be exacerbated by stress and this is possibly due to the influence of adrenaline causing a further neurotransmitter imbalance.

### **Bradykinesia**

Bradykinesia literally means "slow movement". The general effect is that it takes longer and requires more effort to complete daily tasks. Slowness and difficulty in initiating and executing automatic repetitive movements is commonly experienced. These actions include writing, fastening buttons, turning over in bed and walking. These difficulties are exacerbated when dual tasking is involved i.e. walking and talking.

Bradykinesia is also apparent in decreased eye blink and may lead to changes in swallowing and speech.

### **Muscle Rigidity**

Muscle rigidity refers to the resistance felt in muscles when they are passively moved. This can be described as "lead pipe" rigidity when the resistance is consistent. "Cogwheel" rigidity is the term used when the resistance to passive movements has a regular jerking characteristic. Muscle rigidity as with all Pd symptoms first presents as unilateral however with progression becomes bilateral. Muscle rigidity accounts for the neck and shoulder pain sometimes experienced early in the disease process.

### **Postural Instability**

Postural changes are evident as forward flexed or stooped posture. The ability to maintain posture and balance may be affected in Pd. This symptom may appear later and is often the cause of falls because the ability to correct one's balance is compromised. This may lead to unsteadiness when walking, turning or standing.

## Other Symptoms

There are many other symptoms which add to the complete presentation and are considered in the diagnostic process. These can be as challenging as the four major symptoms.

**Akinesia** is a term used to describe absence or impairment of movement. This may result in freezing of gait which is the sudden onset inability to move while walking. This often happens in confined spaces e.g. doorways or on turning.

**Anosmia** refers to a decrease/loss of sense of smell which often precedes a diagnosis of Pd.

**Anxiety** is a common phenomenon in Pd and can aggravate motor symptoms.

**Constipation**, a common symptom, is due to the reduced motility of the bowels and may be aggravated by a reduction in physical activity and the introduction of Parkinson's medications.

**Depression** is commonly associated with Pd. This may be attributed to the initial diagnosis of Pd (reactive depression) or may be related to a chemical imbalance within the brain (endogenous depression). The latter may develop several years following diagnosis.

**Fatigue**, which is not relieved by resting, is a commonly described early symptom that may be associated with a variety of causes. Disturbed sleep pattern caused by changes in bed mobility, restless legs, urinary frequency and/or leg cramping will result in daytime fatigue.

**Festination of speech** describes the changes to fluency. This can be described as a stuttering like speech pattern.

**Gait changes** are associated with walking and posture. Stride length and height

become smaller leading to the typical "shuffling" gait. Flexed posture is due to a shifting forward of the centre of gravity combined with muscle rigidity.

**Impotence** is frequently reported.

**Loss of motivation** is frequently described by family and friends as a gradual early symptom.

**Masked facial expression** is due to increased muscle rigidity and impairment of automatic facial responses. This is compounded by a decreased eye blink rate and may be misinterpreted as boredom or depression.

**Micrographia** refers to changes in handwriting, primarily cursive. This becomes smaller in height and the written words may be unclear by the end of the sentence.

**Microphonia** describes decreased volume of speech. Often PWP may not be aware of the gradual reduction in volume.

**Postural hypotension** refers to a lowering of blood pressure especially on standing or rising from the lying position. This can result in unsteadiness, dizziness and falls.

**Sialorrhea** describes excessive saliva and is often related to a decreased frequency in swallowing and poor mouth closure.

**Sweating** may be excessive or diminished. Some people find they become more sensitive to changes in temperature.

The symptoms listed above reflect some of the changes associated with Pd. Not everyone affected by Pd will experience all of these symptoms.

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