

# Perceiving Parkinson's

## Troublesome Motor Symptoms (Day 38)

Even though there is **so much more** to Parkinson's than its motor symptoms, the condition is currently diagnosed based on the presence of motor symptoms, so let's go over them in more detail.

Normally, humans have an expressive facial appearance with plenty of smiling, frowning, grimacing, and so on, but in Parkinson's these activities are dampened resulting in an **expressionless face**. This may be compounded by the fact that a person with Parkinson's often has less than ten eye blinks per minute, which is about half the normal blink rate, making it look like they are always "staring." People with Parkinson's are often unaware of their expressionless face.

People with Parkinson's may also have **soft, indistinct, hurried speech** due to slow, low amplitude movements of the lips and jaw as well as inefficient chest wall movements. This culminates in speech that is low in volume, poorly articulated, and faster, which can sometimes make it difficult for other people to interpret what is being said.



Muhammed Ali had an expressionless face.

**Tremor** in Parkinson's is a rhythmic involuntary movement that occurs **at rest**, while the affected body part is relaxed and supported by a surface; it vanishes with active movement. This "resting tremor" affects 80% of people with Parkinson's. Typically, tremor affects **one arm** and it looks like the person is "pill-rolling" as they put the thumb and index finger together and perform repetitive circular motions. However, tremor can also occur in the legs, the jaw, the lips, or the tongue.

**Bradykinesia** is often defined as "slowness," but it's actually more than that; true bradykinesia refers to a **gradual loss of speed and amplitude** when a body part performs any rapid alternating motion. The distinction is critical! There are many situations where a person may move slowly - for example,

many people move slowly when they get out of bed in the morning - but these movements do not involve an ongoing reduction in speed and amplitude. Bradykinesia is the reason a neurologist may ask a person with Parkinson's to perform odd hand or finger movements, such as opening and closing the hand or tapping the fingers together; the neurologist is not only seeing whether the hand or finger movements are slow, but more importantly whether there is a gradual loss of speed and amplitude with rapid alternating motion. Bradykinesia can also be assessed by asking a person to write out several sentences and checking for **micrographia**, which is when the handwriting gets slower and smaller the longer the person writes. Somewhat surprisingly, micrographia is the primary complaint of some people with Parkinson's.

**Rigidity** refers to an increase in muscle tone that a person with Parkinson's may subjectively describe as a feeling of "stiffness," but it can also be objectively assessed by the neurologist when an arm or leg is passively moved. The combination of tremor and rigidity can be felt as **cogwheel rigidity** at the wrist, which is a jerky resistance when the wrist is passively moved.

**Postural instability** may result from any of the following changes:

(1) When **standing**, a person with Parkinson's may adopt an abnormally stooped posture resulting in an extreme flexion of the spine called **camptocormia**.

(2) When **initiating walking**, a person with Parkinson's may also **hesitate**, which is a brief pause before they get going.

(3) During **walking**, a person with Parkinson's may demonstrate a **reduction or loss of arm swing on one side** as well as **small shuffling steps**, in which turning around is slow and performed with multiple small steps and the feet tend to "slide" along the floor rather than execute a normal heel-strike. They may also suddenly **freeze** in the middle of their walking, especially in crowds and narrow places such as doorways. Furthermore, they may display **festination**, in which an extremely fast succession of steps occurs and the person may not be able to stop walking until they meet an obstacle.

Postural instability makes a person with Parkinson's prone to **falls** in the later stages of the condition (falls should not occur in the early years of Parkinson's - if they do, that suggests a Parkinson's mimic). Falls can produce serious injuries and should never be trivialized or neglected in Parkinson's.

Clearly, there a lot of motor symptoms that may occur in Parkinson's. Thankfully, most or all of them can be **improved** with oral medications, so we'll turn to those next.

Matt (Neurologist, Waikato Hospital).

## References

- (1) Sveinbjornsdottir. 2016. The clinical symptoms of Parkinson's disease. *Journal of Neurochemistry* 139(Suppl. 1), 318-324.
- (2) Tjaden. 2008. Speech and Swallowing in Parkinson's Disease. *Topics in Geriatrics Rehabilitation* 24(2), 115-126.
- (3) Massano and Bhatia. 2012. Clinical Approach to Parkinson's Disease: Features, Diagnosis, and Principles of Management. *Cold Spring Harbor Perspectives in Medicine* 2;a008870.