

## Lewy Body Dementia

Lewy Body Dementia (LBD) is a degenerative disorder of the brain that affects thinking abilities. After Alzheimer's disease (AD), it is one of the most common forms of dementia. Unlike AD, memory loss does not necessarily occur in the early stages of LBD.

Early symptoms of LBD include problems with attention and with executive functioning. Attention problems may include difficulty focusing and concentrating, or sustaining a train of thought. Problems with executive function may include difficulty planning or organizing day-to-day activities as well as difficulties with multi-tasking, solving problems or making decisions. Eventually, people with LBD may develop visuospatial problems that are not due to vision loss in the eyes but rather how the brain makes sense of what is seen. For instance, people may make errors reaching for objects, identifying objects or finding their way around. Anxiety and depression, are also common and, in some people, may be the first signs of LBD.

Other features of Lewy Body Dementia are:

- **Fluctuations in thinking.** Early in the disease, a person may be confused at times and be able to think clearly at other times. These fluctuations can last hours or days.
- **Hallucinations.** These are most often detailed visual hallucinations such as seeing animals or people that are not there.
- **Symptoms of Parkinson's disease (PD),** e.g. stiffness and slowness of movement.

### What is a "Lewy body"?

Lewy bodies are named after Dr. Friederich Heinrich Lewy who first described these abnormal structures in autopsied brains of individuals with Parkinson's disease (PD). Lewy bodies are abnormal accumulation of brain proteins within brain cells and are a marker of brain cell death. In PD, these structures are found in the brainstem (at the base of the brain) and other brain areas involved in the control of movement. In LBD, Lewy bodies are also found in the outer layer of the brain called the cortex, which is responsible for mental function. These "cortical Lewy bodies" are the essential pathological feature of Lewy Body Dementia.

### What causes Lewy Body Dementia?

We do not know the cause of LBD. Genetic factors may play a role in some cases but there is no clear pattern of inheritance. There is evidence that suggests that LBD is caused by the same mechanisms that cause PD. Unfortunately, we still do not know the cause of most cases of PD nor do we know why some people develop PD and others LBD.

## How is Lewy Body Dementia diagnosed?

The only way to be certain about the diagnosis is to examine the brain after death. In life the diagnosis of LBD is made based on a person's symptoms. There are no tests, such as a blood test or brain scan, that can provide a certain diagnosis of LBD. A doctor will often order some blood tests or a brain scan to exclude other illnesses that may cause similar symptoms. The following symptoms are used to make a clinical diagnosis:

- **Dementia** – must develop during the course of the disease – specifically, the person may have difficulties with *attention, executive functioning* and *visuospatial skills*. Importantly, a diagnosis of dementia can only be reached if these thinking difficulties are severe enough to interfere with day-to-day activities (e.g., cooking, finances, managing medications, etc.)
- Two of the following must be present:
  - *Fluctuations in thinking*
  - *Visual hallucinations*
  - *Parkinson-like symptoms*
- Features that further support the diagnosis are:
  - *Difficulty with balance* – may lead to repeated falls
  - *Blood pressure fluctuations* – may result in fainting, or light-headedness on standing
  - *Adverse reactions to anti-psychotic medications* – such as severe stiffness, slowness or abnormal, sustained postures

## How is Lewy Body Dementia different from AD?

Although dementia is present in both AD and LBD, the features of dementia differ between the two. It's more common to have visual hallucinations, fluctuations in thinking skills, and difficulties with visuospatial skills and attention in LBD than AD. In contrast, people with AD have more difficulties finding their words. Problems with memory are present in both LBD and AD, but they are different. In AD, people have difficulty learning and retaining information over time, whereas in LBD, they can learn and retain information, but they have difficulty retrieving the information from memory.

## How is Lewy Body Dementia different from Parkinson's disease?

The symptoms in LBD and PD overlap considerably. Some people with PD develop dementia and some people with LBD have Parkinson-like symptoms. One of the main differences is the timing of symptoms: in PD, dementia occurs usually years after the beginning of motor problems, while in LBD, dementia and motor symptoms begin around the same time.

## Is there a Cure for Lewy Body Dementia?

Currently there is no cure for LBD at this time. There are, however, some medications that can help improve quality of life by managing some symptoms of the disease. Individuals with Parkinson-like symptoms may be helped by some of the drugs used to treat PD. Cognitive enhancing medications normally prescribed for AD are also helpful in LBD. Managing other symptoms like depression, anxiety and blood pressure fluctuations is also important. Although research is limited, healthy living, including mental and physical exercise, may prove beneficial in terms of physical and cognitive symptoms.

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