Parkinson’s Disease

Parkinson’s Disease (PD) is a progressive disorder of the nervous system that often affects the coordination of movement.

PD affects 1 in 100 people over age 60. In the United States, 60,000 new cases will be diagnosed this year alone.

Today, it is estimated that 1 million people in the United States and more than 5 million people worldwide are living with Parkinson’s disease.

The exact cause of PD is unknown, but research points to a combination of genetic and environmental factors, with different Parkinson’s patients falling somewhere in between these two causes. Scientists believe that in the majority of cases, genetic and environmental factors interact to cause PD.

Parkinson’s and the Brain

PD predominately affects the dopamine-producing nerve cells of the brain, in a specific area called the substantia nigra.

Dopamine: a chemical messenger responsible for transmitting signals within the brain that allows for coordination of movement.

Loss of dopamine causes these nerve cells to fire without normal control, leading to the inability to direct or control movement.

Other changes noted include the presence of Lewy bodies, which are clumps of specific substances within brain cells that are microscopic markers of PD.

Although many substances are found within Lewy bodies, scientists believe an important one is the natural and widespread protein called alpha-synuclein. It’s found in all Lewy bodies as a clumped form that cannot be broken down.
There is no "one way" test to diagnose PD. Your doctor may perform blood work and imaging tests to rule out other disorders and causes.

Two out of these 4 symptoms must be present over a period of time for PD diagnosis.

1. Tremor
2. Bradykinesia or slowness of movement
3. Stiffness or rigidity of arms, legs, or trunk
4. Trouble with balance and possible falls

Making an accurate diagnosis is difficult but essential.
## Treatment for Parkinson’s Disease

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Medications</th>
<th>How it Works</th>
<th>Role in PD</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Levodopa**     | Carbidopa-Levodopa (Sinemet®, Sinemet CR®, Duopa®, Parcopa®) | Levodopa is a natural chemical that passes into the brain and is converted to dopamine. Carbidopa protects levodopa from premature conversion to dopamine outside of the brain, which allows for greater effectiveness and lessens side effects. | Most effective drug for PD symptoms         | ▪ Most common side effects are nausea and lightheadedness  
▪ After a year, with disease progression the benefit may become less stable, displaying a “wearing off” effect.  
▪ Should NOT be taken with a high protein meal as it can affect absorption of the drug. Take at least 1 hour before or 2 hours after a protein-rich meal.  
▪ May see involuntary movements after taking high doses; therefore, dosage adjustment may be necessary. |
|                  | Carbidopa-Levodopa / Entacapone (Stalevo®)       |                                                                              |                                             |                                                                                               |
| **Dopamine Agonists** | Pramipexole (Mirapex®, Mirapex ER®)               | Dopamine agonists don’t change into dopamine; instead, they mimic dopamine effects in the brain. | Can be used first-line in younger patients (under age 50)  
Can be used in combination with carbidopa/levodopa | Has a longer duration of action than levodopa, and can be helpful in reducing the intensity of levodopa’s “wearing off” reaction or enhance levodopa’s effects.  
Side effects similar to carbidopa-levodopa but also include hallucinations, sleepiness, and compulsive behaviors (uncontrolled eating, shopping, gambling, and sexual urges). |
|                  | Ropinirole (Requip®, Requip XL®)                  |                                                                              |                                             |                                                                                               |
|                  | Rotigotine transdermal system (Neupro®)          |                                                                              |                                             |                                                                                               |
|                  | Apomorphine (Apokyn®)                            |                                                                              |                                             |                                                                                               |
| **MAO-B Inhibitors** | Selegiline (Eldepryl®, Zelapar®)                 | Monoamine Oxidase Type-B (MAO-B) is an enzyme that naturally breaks down several chemicals in the brain, including dopamine. MAO-B inhibitors block the effects of MAO-B, allowing more dopamine to be used by the brain. | Can be used first-line for modest symptom control  
Can be used in combination with levodopa to reduce “off” time | Shown to delay need for levodopa when prescribed in PD’s earliest stages.  
At later PD stages, can boost the effects of levodopa.  
May aggravate hallucinations and involuntary movement when combined with levodopa.  
Insomnia is more common with selegiline; should be taken before 1pm.  
Many potential drug interactions with antidepressants, pain medications, and cough medications.  
Avoid certain foods, like aged cheeses and wines, due to raising blood pressure. |
|                  | Rasagiline (Azilect®)                            |                                                                              |                                             |                                                                                               |
| **COMT Inhibitors** | Entacapone (Comtan®)                            | COMT is an enzyme that inactivates levodopa before it is transported in the bloodstream to the brain. COMT inhibitors block this enzyme. | Used in combination with carbidopa/levodopa. | Extends the clinical benefit of levodopa, reducing “off” time and lengthening “on” time.  
May intensify levodopa side effects.  
Entacapone can cause orange urine. |
|                  |                                                  |                                                                              |                                             |                                                                                               |

### Sources:
State Wellness Center
101 S. Union Street
Montgomery, AL 36104

All active employees, covered spouses of active employees, non-Medicare retirees and covered non-Medicare spouses of retirees that use the State Employees’ Health Insurance Plan (Group 13000) as their primary insurance plan are eligible for a wellness premium discount. Each wellness plan year is November 1 through October 31.

SEIB and Local Government employees along with SEIB retirees are able to use the State Wellness Center Pharmacy. The pharmacy offers various over the counter products at discounted prices and a free medication delivery service. Delivery can be provided to the patients located in Montgomery. Please designate which site you would like your medication delivered to, and if it is to your residence someone must be available at the home to receive the delivery.

State Wellness Center Healthcare Clinic

The SEIB clinic has a quality healthcare TEAM that includes nurse practitioners, an ambulatory care pharmacist, a physician, and nurses who work closely together to take care of your health and wellness needs.

**Services Include:**

- Treat minor illnesses
- Provide health education & monitoring
- Check health progress between appointments
- Share information with your physician
- Monitor efficacy & safety of every medication
- Evaluate out of pocket medication expense
- Smoking cessation & weight loss services
- Diabetes education program
- Immunizations & injectable medications
- Develop a personalized medication plan
- Monitor control of chronic illnesses
- Medication check-ups
- Medication therapy management

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