Compensatory changes for dopamine loss in presymptomatic Parkinson disease

1. Increase in corticostriatal excitatory connections [52].
2. Selectively reduce the excitatory connections to the indirect pathway [53].
3. Increase in the synthesis and release of dopamine [54].
4. Reduce in synaptic dopamine active transporter [55].
5. Increase in postsynaptic D2 receptor levels [56,57].
6. Reduce the ability to release GABA in the striatopallidal indirect pathway [53].
7. Increase in the synaptic strength of GPe-STN connections [58].
8. Hyperactivity of subthalamic nucleus [59].