



Appendix 3

**This appendix was part of the submitted manuscript and has been peer reviewed.
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Appendix to: Titova N, Chaudhuri KR. Non-motor Parkinson disease: new concepts and personalised management. *Med J Aust* 2018; 208: 404-409. doi: 10.5694/mja17.00993.

Appendix 3: Animal models with parkinsonism and non-motor symptoms

6-OHDA lesioned rodents	Olfaction Sensory/pain threshold Sleep/wakefulness Circadian rhythms Cognitive function Altered cardiovascular function Bladder hyperactivity Altered motility of gastro-intestinal tract
α -Synuclein over expression (ASO=Thy1-aSYN) mice	Olfaction Autonomic Constipation Sleep (<i>Circadian rhythm dysfunction</i>) Cognition
MPTP-treated primates	Bladder hyperreflexia Constipation Drooling Altered cardiovascular function Sleep disturbance Cognitive disturbance
Mice model of intragastric rotenone administration	alpha-synuclein accumulation in dorsal vagal nucleus Potential for investigating autonomic symptoms such as constipation Sleep disturbances
Göttingen minipigs (Ellegaard Minipigs ApS)	Cognition Sleep disturbances
GBA deficiency mouse models	Memory problems Cognition problems
Transgenic mouse model overexpressing LRRK2 gene mutation	Gastrointestinal dysfunction Olfactory dysfunction
DJ-1 knock-out mice	Cognition disturbances
Parkin knock-out mice	Anxiety Cognition
VMAT2-deficient mice	Olfactory discrimination Delayed gastric emptying Sleep disturbances Anxiety-like behaviour Depression
Cycad-fed rats	Excessive daytime somnolence RBD

OHDA = hydroxydopamine; MPTP = 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine. RBD = rapid eye movement behaviour sleep disorder; VMAT = vesicular monoamine transporter; LRRK2 = leucine-rich repeat kinase 2; GBA = glucocerebrosidase.

Titova N, Schapira AHV, Chaudhuri KR et al. Nonmotor Symptoms in Experimental Models of Parkinson's Disease. *Int Rev Neurobiol*. 2017; 133: 63-89. doi: 10.1016/bs.irm.2017.05.018