Supplemental Materials:

Supplemental File S1: Search Terms Utilized

((fecal microbiota transplant) OR (fmt) AND (parkinsons))

Supplemental Table S1: average quality assessment scores for each study

Author/Year	Kuai 2021	Segal 2021	Xue 2020
1. Was the study question or objective clearly stated?	1	1	1
2. Was the study population clearly and fully described, including a case definition?	1	1	1
3. Were the cases consecutive?	1	1	1
4. Were the subjects comparable?	0	0	1
5. Was the intervention clearly described?	1	1	1
6. Were the outcome measures clearly defined, valid, reliable, and implemented consistently across all study participants?	1	0	1
7. Was the length of follow-up adequate?	0	0	0
8. Were the statistical methods well-described?	1	0	1
9. Were the results well-described?	1	1	1
Total quality (total number of Yes)	7	5	7
Quality (7-9 yes: Good; 4-6 yes: Fair; 1-3 yes: Poor)	good	fair	good

Supplemental **Table S2**: Excluded Studies

PubMed
Microbiota-Brain-Gut Axis and Neurodegenerative Diseases
The role of microbiota-gut-brain axis in neuropsychiatric and neurological disorders
Motor assessment in Parkinson`s disease

A Comprehensive Review on the Role of the Gut Microbiome in Human Neurological Disorders
The role of the microbiota-gut-brain axis in neuropsychiatric disorders
Fecal microbiota transplantation in disease therapy
Fecal Microbiota Transplantation in Neurological Disorders
Dysbiosis of gut microbiota and microbial metabolites in Parkinson's Disease
Fecal microbiota transplantation protects rotenone-induced Parkinson's disease mice via suppressing inflammation mediated by the lipopolysaccharide-TLR4 signaling pathway through the microbiota-gut-brain axis
Neuroprotective effects of fecal microbiota transplantation on MPTP-induced Parkinson's disease mice: Gut microbiota, glial reaction and TLR4/TNF-α signaling pathway
The role of gut dysbiosis in Parkinson's disease: mechanistic insights and therapeutic options
Gut microbiota: A player in aging and a target for anti-aging intervention
Gastrointestinal dysfunction in Parkinson's disease: molecular pathology and implications of gut microbiome, probiotics, and fecal microbiota transplantation
Influence of gut microbiota on neuropsychiatric disorders
Gut dysbiosis, defective autophagy and altered immune responses in neurodegenerative diseases: Tales of a vicious cycle
Fecal Microbiota Transplantation: A New Therapeutic Attempt from the Gut to the Brain
Gut Microbiota: A Novel Therapeutic Target for Parkinson's Disease
Neuroprotection of Fasting Mimicking Diet on MPTP-Induced Parkinson's Disease Mice via Gut Microbiota and Metabolites
Molecular Immune Mechanism of Intestinal Microbiota and Their Metabolites in the Occurrence and Development of Liver Cancer
Brain-gut-microbiota axis in Parkinson's disease: A historical review and future perspective
Dysbiosis is one of the risk factor for stroke and cognitive impairment and potential target for treatment
New Avenues for Parkinson's Disease Therapeutics: Disease-Modifying Strategies Based on the Gut Microbiota
Composition of intestinal flora affects the risk relationship between Alzheimer's disease/Parkinson's disease and cancer
Association of Parkinson's Disease With Microbes and Microbiological Therapy

Gut microbiome a promising target for management of respiratory diseases
Current and future applications of fecal microbiota transplantation for children
4-[18F]Fluoro- l- m-tyrosine
Parkinson's Disease: The Emerging Role of Gut Dysbiosis, Antibiotics, Probiotics, and Fecal Microbiota Transplantation
Fecal Microbiota Transplantation and Its Usage in Neuropsychiatric Disorders
Fecal Microbiota Transplantation: Current Applications, Effectiveness, and Future Perspectives
6-[18F]Fluoro-l-m-tyrosine.
The Interplay between Gut Microbiota and Parkinson's Disease: Implications on Diagnosis and Treatment
Gut Microbiota and Parkinson's Disease: Implications for Faecal Microbiota Transplantation Therapy
Gut Microbiota Regulation and Their Implication in the Development of Neurodegenerative Disease
Fecal Microbiota Transplantation: A Microbiome Modulation Technique for Alzheimer's Disease
Fecal microbiota transplantation broadening its application beyond intestinal disorders
*Role of Gastrointestinal Dysbiosis and Fecal Transplantation in Parkinson's Disease
Gut microbiota: Implications in Parkinson's disease
Genetic and environmental factors in Alzheimer's and Parkinson's diseases and promising therapeutic intervention via fecal microbiota transplantation
Designing fecal microbiota transplant trials that account for differences in donor stool efficacy
The contribution of the gut microbiome to neurodevelopment and neuropsychiatric disorders
The Role of The Gut Microbiome in Parkinson's Disease
*Microbial treatment: the potential application for Parkinson's disease
Modification of the gut microbiome to combat neurodegeneration
Fecal Microbiota Transplantation as a Tool for Therapeutic Modulation of Non-gastrointestinal Disorders
The Role of the Gut Microbiota in the Pathogenesis of Parkinson's Disease
Update to the Treatment of Parkinson's Disease Based on the Gut-Brain Axis Mechanism

Influence of Commensal Microbiota on the Enteric Nervous System and Its Role in Neurodegenerative Diseases
Do the Bugs in Your Gut Eat Your Memories? Relationship between Gut Microbiota and Alzheimer's Disease
[Advances in fecal microbiota transplantation for treatment of Parkinson's disease]
Curcumin-driven reprogramming of the gut microbiota and metabolome ameliorates motor deficits and neuroinflammation in a mouse model of Parkinson's disease
Gut brain axis: an insight into microbiota role in Parkinson's disease
Modulation of the Microbiome in Parkinson's Disease: Diet, Drug, Stool Transplant, and Beyond
A review of the preclinical and clinical studies on the role of the gut microbiome in aging and neurodegenerative diseases and its modulation
Fecal Microbiota Transplantation Exerts a Protective Role in MPTP-Induced Parkinson's Disease via the TLR4/PI3K/AKT/NF-κB Pathway Stimulated by α-Synuclein
Changes in the intestinal microbiota of patients with Parkinson's disease and their clinical significance
Faecal Transplantation, Pro- and Prebiotics in Parkinson's Disease; Hope or Hype?
A New Concept of Associations between Gut Microbiota, Immunity and Central Nervous System for the Innovative Treatment of Neurodegenerative Disorders
**Fecal microbiome transplantation attenuates manganese-induced neurotoxicity through regulation of the apelin signaling pathway by inhibition of autophagy in mouse brain
Recent advances in PET imaging for evaluation of Parkinson's disease
Exploring the Connection Between the Gut Microbiome and Parkinson's Disease Symptom Progression and Pathology: Implications for Supplementary Treatment Options
The Role of Fecal Microbiota Transplantation in the Treatment of Neurodegenerative Diseases: A Review
Upper Limb Outcome Measures Used in Stroke Rehabilitation Studies: A Systematic Literature Review
Gut microbiota relieves inflammation in the substantia nigra of chronic Parkinson's disease by protecting the function of dopamine neurons
The gut microbiome in human health and disease-Where are we and where are we going? A bibliometric analysis
PET tracers for imaging of the dopaminergic system
Episodic memory in progressive supranuclear palsy: a neuropsychological and neuroimaging study

Helicobacter hepaticus augmentation triggers Dopaminergic degeneration and motor disorders in mice with Parkinson's disease
An altered microbiome in a Parkinson's disease model Drosophila melanogaster has a negative effect on development
Age-Matching in Pediatric Fecal Matter Transplant
Production of 6-l-[18F]Fluoro-m-tyrosine in an Automated Synthesis Module for 11C-Labeling.
Self-perception and determinants of color vision in Parkinson's disease
Gut microbiota-mediated protection against influenza virus subtype H9N2 in chickens is associated with modulation of the innate responses
tACS Phase Locking of Frontal Midline Theta Oscillations Disrupts Working Memory Performance
Commensal gut microbiota can modulate adaptive immune responses in chickens vaccinated with whole inactivated avian influenza virus subtype H9N2
Gut Microbial Metabolites in Parkinson's Disease: Implications of Mitochondrial Dysfunction in the Pathogenesis and Treatment
Symptoms of depression in patients with mild cognitive impairment in Parkinson's disease
Subregional 6-[18F]fluoro-L-m-tyrosine uptake in the striatum in Parkinson's disease
Depressive Symptoms Are Associated With Color Vision but not Olfactory Function in Patients With Parkinson's Disease
Longitudinal study of striatal aromatic l-amino acid decarboxylase activity in patients with idiopathic rapid eye movement sleep behavior disorder
The gut microbiota attenuate neuroinflammation in manganese exposure by inhibiting cerebral NLRP3 inflammasome
The time course of metabolites in human plasma after 6-[(18)F]fluoro-l-m-tyrosine administration
Preclinical substantia nigra dysfunction in rapid eye movement sleep behaviour disorder
6-[18F]fluoro-L-m-tyrosine: metabolism, positron emission tomography kinetics, and 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine lesions in primates.
Photoreceptor layer thinning in idiopathic Parkinson's disease
Comparison of [18F]FDOPA, [18F]FMT and [18F]FECNT for imaging dopaminergic neurotransmission in mice.
Corrigendum: The Role of the Gut Microbiota in the Pathogenesis of Parkinson's Disease

Color vision in Parkinson's disease and essential tremor
Differences between diabetic and non-diabetic patients with community-acquired pneumonia in primary care in Spain
Progress of visual dysfunction in Parkinson's disease
Clinically relevant effects of convection-enhanced delivery of AAV2-GDNF on the dopaminergic nigrostriatal pathway in aged rhesus monkeys
Rapid improvement in Alzheimer's disease symptoms following fecal microbiota transplantation: a case report
A dual-tracer study of extrastriatal 6-[18F]fluoro-m-tyrosine and 6-[18F]-fluoro-L-dopa uptake in Parkinson's disease.
Comparative assessment of 6-[18 F]fluoro-L-m-tyrosine and 6-[18 F]fluoro-L-dopa to evaluate dopaminergic presynaptic integrity in a Parkinson's disease rat model.
Monitoring of a progressive functional dopaminergic deficit in the A53T-AAV synuclein rats by combining 6-[18F]fluoro-L-m-tyrosine imaging and motor performances analysis.
Freezing of Gait in Parkinson's Disease Is Associated with Reduced 6-[(18)F]Fluoro-l-m-tyrosine Uptake in the Locus Coeruleus.
Tremor is associated with PET measures of nigrostriatal dopamine function in MPTP-lesioned monkeys
Motor impairment influences Farnsworth-Munsell 100 Hue test error scores in Parkinson's disease patients
Safety and tolerability of putaminal AADC gene therapy for Parkinson disease
Functional effects of AAV2-GDNF on the dopaminergic nigrostriatal pathway in parkinsonian rhesus monkeys
A Practical One-Pot Synthesis of Positron Emission Tomography (PET) Tracers via Nickel-Mediated Radiofluorination
Noninvasive assessment of aromatic L-amino acid decarboxylase activity in aging rhesus monkey brain in vivo
Comparison of two methods for the analysis of [18F]6-fluoro-L-m-tyrosine PET data
A phase I study of aromatic L-amino acid decarboxylase gene therapy for Parkinson's disease
A dose-ranging study of AAV-hAADC therapy in Parkinsonian monkeys
Colour vision abnormalities do not correlate with dopaminergic nigrostriatal degeneration in Parkinson's disease
Overlesioned hemiparkinsonian non human primate model: correlation between clinical, neurochemical and histochemical changes
PET imaging in rats to discern temporal onset differences between 6-hydroxydopamine and tau gene vector neurodegeneration models

Coenzyme Q10 supplementation provides mild symptomatic benefit in patients with Parkinson's disease
Results from a phase I safety trial of hAADC gene therapy for Parkinson disease
A novel MPTP primate model of Parkinson's disease: neurochemical and clinical changes
Distorted colour discrimination in Parkinson's disease is related to severity of the disease
Long-term clinical improvement in MPTP-lesioned primates after gene therapy with AAV-hAADC
Dopamine transporter loss and clinical changes in MPTP-lesioned primates
Positron emission tomography with 4-[18F]fluoro-L-m-tyrosine in MPTP-induced hemiparkinsonian monkeys
A probe for intracerebral aromatic amino-acid decarboxylase activity: distribution and kinetics of [18F]6-fluoro-L-m-tyrosine in the human brain
Cochrane
Fecal microbiota transplantation for the treatment of recurrent *Clostridium difficile (Clostridium difficile)*
Fecal transplantation for treatment of inflammatory bowel disease
Symbiotic, prebiotics and probiotics for solid organ transplant recipients