Sexual dysfunction in Parkinson's Disease

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Sexual dysfunction in PD

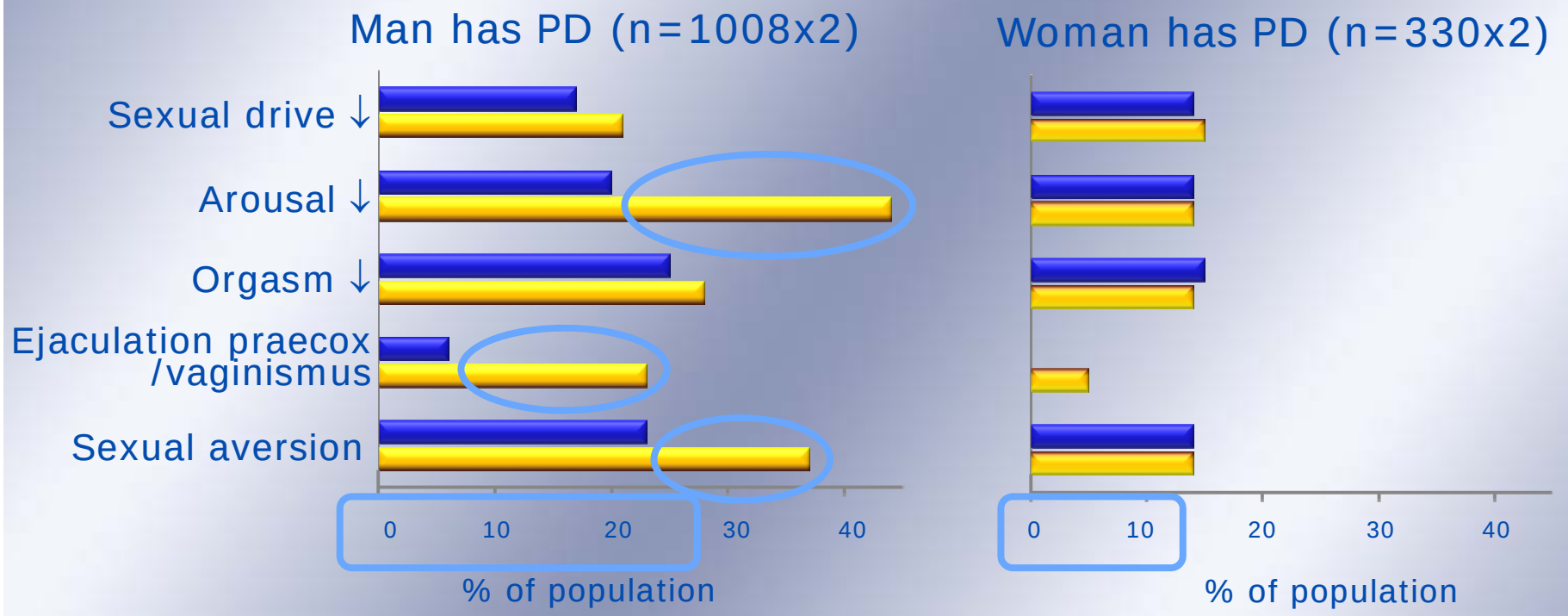
- Few systematic studies
- Results contradictory and incomplete

Studies on sexual function in PD

	Mean age	Sample size	
Koller *et al. Clin Neuropharmacol* 1990;**13**:461–3	67	36M, 14F	
Brown *et al. J Neurol Neurosurg Psychiatry* 1990;**53**:480–6	49	23M, 11F	
Wermuth *et al. Acta Neurol Scand* 1995;**92**:55–8	50	15M, 10F	
Basson *et al. Parkinsonism Relat Disord* 1996;**2**:177–85	~ 60	17M, 6F	
Welsh *et al. Mov Disord* 1997;**12**:923–7	67	27F	C
Jacobs *et al. J Neurol Neurosurg Psychiatry* 2000:**69**:550–2	45	70M, 51F	C
Sakakibara *et al. Auton Neurosci* 2001;**70**:414–5	?	46M,38F	C
Yu *et al. Am J Geriatr* 2004;**12**:221–6	71	17M	
Bronner *et al. J Sex Marital Therapy* 2004;**30**:95–105	64	43M, 32F	
Celikel *et al. Eur J Neurol* 2008;**15**:1168–72	~ 65	22M, 23F	C

C Controlled trials

Individuals experiencing a change in sexual function after PD onset (n=1338)



Patients

Partners

Adapted from Beier *et al*. *Fortschr Neurol Psychiatr* 2000;**68**:564–75 [German]

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Sexual dysfunction in PD – qualitative overview

- Common in both men and women with PD (30–85%)
- Relevant impact on QoL (of patients and partners)

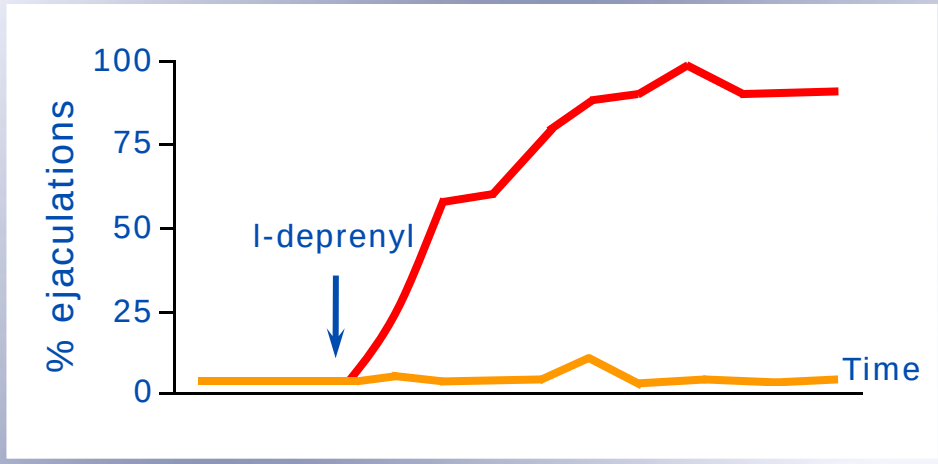
Men	Women	Both sexes
• ↓ Erection • ↓ Ejacul. control	• ↓ Vaginal sensitivity • Vaginismus • Urine loss • Anxiety, ↓ self-esteem	• ↓ Sexual drive • ↓ Arousal • ↓ Orgasms in frequency and quality • ↓ Satisfaction

Sexual dysfunction: mechanisms?

- Physical problems
- Neurobiological damage
- Psychological aspects
- Pharmacological effects

Dopamine: a ‘sexy’ transmitter

- Preclinical evidence
  - Inhibits prolactin release, thus increasing libido
  - Stimulates oxytocin neurons, involved in sexual drive, consummation and reward
  - Released in the medial preoptic area before and during copulation
  - Regulates the nucleus accumbens and is involved in the pleasurable component of reward



Effect of L-deprenyl on sexual activity in rats

Paredes RG *et al. Prog Neurobiol* 2004:**73**,179–226; Knoll J *et al. Mod Probl Pharmacopsychiatry* 1983;**19:**135–153

Dopamine: A ‘sexy’ transmitter

FROM THE DEPARTMENTS OF ANATOMY AND NEUROLOGY, UNIVERSITY OF TURKU, FINLAND

THE ACTIVATING EFFECT OF L-DOPA TREATMENT ON SEXUAL FUNCTIONS AND ITS EXPERIMENTAL BACKGROUND

M. Hyyppä, U. K. Rinne and *V. Sonninen*

1970

1978

Sexual Function and Affect in Parkinsonian Men Treated with L-Dopa

BY EDWARD BROWN, M.D., GREGORY M. BROWN, M.D., PH.D., OSCAR KOFMAN, M.D., AND BRUCE QUARRINGTON, PH.D.

…approximately 50% of patients reported an increased sexual interest that was not related to improvement in locomotor function …

European Journal of Neurology 2004, **11:** 483–488

Pergolide mesylate can improve sexual dysfunction in patients with Parkinson’s disease: the results of an open, prospective, 6-month follow-up

M. Pohanka[a], P. Kaňovský[b], M. Bareš[b], J. Pulkrábek[b] and I. Rektor[b]

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Autonomic disturbances

- PD is a multisystem disease (e.g. degeneration of amygdala, intermedio-lateral columns, sympathetic and parasympathetic ganglia)
- Sexual disturbances are very early symptoms of multiple system atrophy (MSA)
- Anatomical substrate unclear

PD: more than sexual impairment

- **Decreased mobility**: e.g. ability to self-stimulate, caress partner, or move hips during intercourse
- **Impaired sexual self-image**: awareness of altered physical appearance, inability to facially express emotions or to sexually satisfy partner, drooling, fear of incontinence
- **Depression**

Therapy?

Men

- **Sexual desire (often) preserved**
- **Erectile, orgasmic and ejaculatory difficulties**

Frustration →
potential use of unregulated substances

Therapy of erectile dysfunction

- Exclude other causes
  - Pelvic disease, testosterone deficiency
  - Vascular (establish whether spontaneous erections occur or perform prostaglandin E_1[PGE_1] test)
  - Depression
  - Drugs

Drugs inhibiting sexual function

- Alcohol, tobacco smoking, marijuana, opiates, barbiturates
- Anti-androgens, estrogens, luteinising hormone releasing hormone analogues
- Alpha- and beta-blockers, calcium channel blockers, angiotensin-converting enzyme-inhibitors, clonidine, reserpine, thiazide diuretics, spironolactone
- Antidepressants (selective serotonin reuptake inhibitors), benzodiazepines
- Anticholinergics
- Digoxin, lipid-lowering agents
- Cimetidine
- Indometacin
- Baclofen

Adapted from Hafez ESE,*et al. Syst Biol Reprod Med* 2005;**51**:15–31.

Therapy of erectile dysfunction

- Evaluate safety
  - Coronary artery disease
  - Symptomatic hypotension
  - History of priapism
  - Dementia

Therapy options for erectile dysfunction

- Options
  - Phosphodiesterase type 5 inhibitors, e.g. sildenafil 25–100 mg, vardenafil, tadalafil.

N.B.: hypotension, congestive heart failure, diuretic therapy, history of myocardial infarction/cardiovascular incident, renal/hepatic disease, gastroesophageal reflux, cytochrome P450 3A4 inhibitors

Potentiate nitric oxide-mediated vasodilatation

No effect in absence of sexual arousal

Therapy options for erectile dysfunction

- Options:
  - PGE1 (intracavernous [i.c.] or intrauretral)
    - No sexual arousal needed: very reliable, less satisfactory
    - 2–1000 μg (N.B.: burning)
  - Dopamine agonists (oral or parenteral)
  - Vacuum-constriction devices, prostheses
  - Alpha-blockers (yohimbine, phentolamine i.c.); papaverin i.c.
  - Testosterone replacement when needed
  - Ejaculatory delay: pseudoephedrine (?), penile ring, vibrator

Hypersexuality

- Most common with dopamine agonists
- Dose-dependent
- Possibly more common in young men
- Frequency up to 22%[1]
- Also observed after pallidotomy or subthalamic nucleus deep brain stimulation and (in relation to dopaminergic therapy) in MSA and restless leg syndrome
- Often part of a complex clinical picture (impulse control disorder, hedonistic homeostatic dysregulation, dopamine dysregulation syndrome)

[1]Kanovský *et al. J Neurol* 2002;**249**:112–4

Hypersexuality

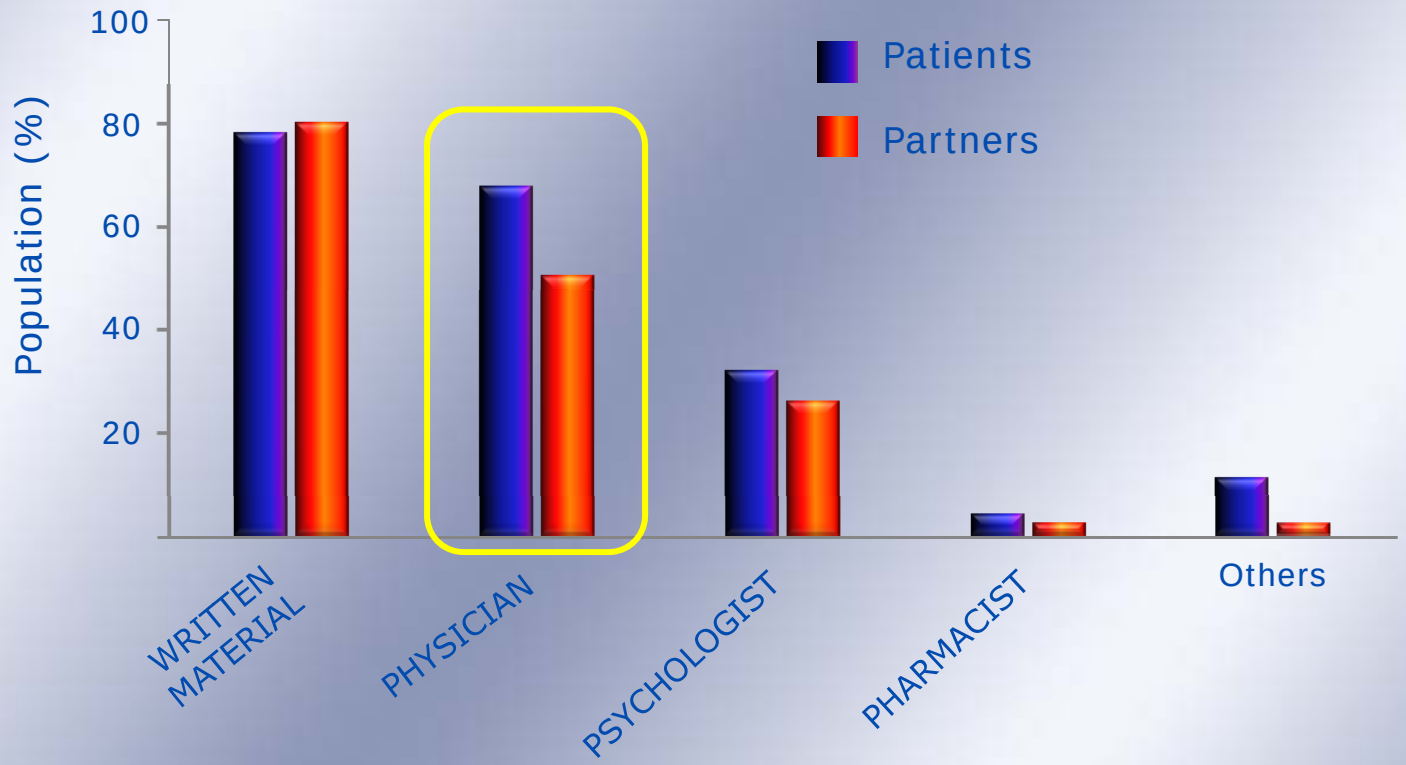
- Excessive libido
- Obsessive masturbation
- Excessive buying/viewing/collecting of pornographic material, voyeurism
- Excessive use of sex phone line or prostitution services
- Inappropriate sexual behaviour

May lead to aberrant, criminal or immoral/antisocial actions

Hypersexuality: therapy?

- Reduce/discontinue dopamine agonists, monoamine oxidase inhibitors
- Levodopa monotherapy
- Dose reduction
- Clozapine, quetiapine
- Medroxyprogesterone (reduced testosterone production through luteinizing hormone inhibition)
- Spironolactone

Patients want more information about sexual problems particularly from their physician



Adapted from Beier *et al*. *Fortschr Neurol Psychiatr* 2000;**68**:564–75 [German]

Rating scales assess more than sexual function

- **SCOPA-Aut** *(SCales for Outcome in PArkinson's disease – AUTonomic 23 items)*[1]
  - No differences between PD and controls during validation study
- **PIMS** *(Parkinson's IMpact Scale, 10 items)*[2]
  - Partner's situation
- **NMSS** *(Non-Motor Symptoms Scale, 30 items, rates both severity and frequency)*[3]
  - Decreased (or increased) interest in sex
  - Sexual arousal problems

[1]Visser *et al*. *Mov Disord* 2004;**19**:1306–12; [2]Calne *et al. Parkinsonism Relat Disord* 1996;**2**:55–61;
[3]http://www.pdnmg.com/tools/nms-scale08.pdf

Summary: sexual dysfunction in PD

- Common (30–85%)
- Severe impact on quality of life
- Should be routinely addressed by health professionals
- Pharmacological treatment sometimes helpful
- Although less frequent, hypersexual behaviour may have destructive consequences and must be treated
- Communication is extremely important – physicians should actively promote it

Question 1. Routinely, what do PD patients and their partners complain of most often?

- A) Reduced sexual activity
- B) Hypersexuality
- C) Both, with similar frequency
- D) Sexual complaints are rare

Female partners of patients with PD are more likely to complain about reduced sexual activity than male partners of patients with PD or the patients themselves. Please try another option.

Correct - Click anywhere to continue

Incorrect - Click anywhere to continue

You must answer the question before continuing

Submit

Clear

Question 2. In your daily routine with PD patients, the issue of sexuality mostly emerges because:

- A) Patient's/partner's question
- B) Physicians actively ask
- C) Physicians use a structured interview

Currently, few physicians use questionnaires or scales despite patients and their carers wishing sexuality issues to be raised and discussed at clinical visits. Please try another option.

Correct - Click anywhere to continue

Incorrect - Click anywhere to continue

Try again

Submit

Clear

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