



Síntomas no motores y Enfermedad de Parkinson: El quindenio 2004 - 2019

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Co-Chair, Program on Rating Scales

International Parkinson and Movement Disorder Society



A la atención del Dr. Pablo Martínez Martín

Barcelona, 3 de octubre de 2019

Apreciado Dr. Martínez Martín,

Me complace mucho informarle que la Junta Directiva de la Sociedad Española de Neurología ha decidido otorgarle el Premio PARKINSON-2018 en la versión científica como reconocimiento a sus esfuerzos en el conocimiento y defensa de esta enfermedad, que nos gustaría aceptara.

La entrega de los Premios SEN-2018 se realizará el jueves día 21 de noviembre de 2019 a las 11.00 horas en el marco de la LXXI Reunión Anual de la Sociedad Española de Neurología, que tendrá lugar en el Sevilla Renacimiento, de Sevilla.

La Sociedad se sentiría muy honrada si pudiera acompañarnos en este acto para recibir la acreditación de dicho premio. En el caso que no pueda asistir, puede delegar su representación en quien considere oportuno.

También le informo que el Coordinador del Grupo de Estudio de Trastornos del Movimiento, el Dr. Pablo Mir, contactará con usted para ofrecerle la posibilidad de intervenir en la reunión del Grupo de Estudio de Trastornos del Movimiento que se realizará durante la LXXI Reunión Anual de la Sociedad Española de Neurología.

Esperando su respuesta, reciba un fuerte abrazo,

Dra. Teresa Moreno Ramos
Secretaria
Sociedad Española de Neurología



Reunión conjunta del GE de Trastornos del Movimiento + CE Ataxias y paraparesias espásticas degenerativas

Miércoles 20 de noviembre

8.30-8:50 Presentación Beca del GETM patrocinada por Zambón 2018-2019. Depósitos de beta amiloide en pacientes con enfermedad de Parkinson cognitivamente normales y quejas cognitivas. (Dra. Beatriz Fernández Rodríguez) Neuróloga, CINAC HM Puerta del Sur, Móstoles

8:50-9:10 Presentación Premio PARKINSON-2018 en su versión científica. Pablo Martínez Martín - Síntomas no motores y Enfermedad de Parkinson: El quinquenio 2004 - 2019

09.10-09.30 Presentación del Manual de Acreditación de Unidades de Trastornos del Movimiento. (Dr. Diego Santos García) Neurología, Complejo Hospitalario Universitario de A Coruña (CHUAC), A Coruña



DECLARACIÓN DE CONFLICTO DE INTERESES

Síntomas no motores y Enfermedad de Parkinson: El quindenio 2004 - 2019

Respecto a esta presentación existen las siguientes relaciones que podrían ser percibidas como **potenciales conflictos de intereses**:

- **Apoyo económico por parte de la International Parkinson and Movement Disorder Society para el desarrollo y validación de la MDS-NMS**
- **Pertenencia al Steering Committee del MDS-NMS Study Group**

La intervención que presento NO ha sido financiada, total o parcialmente, por ninguna empresa con intereses económicos en los productos, equipos o similares citados en la misma.

Aportaciones

- 1 – **Sistematización metodológica para la validación** de instrumentos de evaluación
- 2 – La inclusión de **medidas de calidad de vida relacionada con la salud** como una evaluación y resultado en Neurología y T. del movimiento
- 3 – **Enfoque metodológico para la interpretación de resultados**, sobre todo en los resultados comunicados por los pacientes (PRO)
- 4 – Participación en el **desarrollo y validación de instrumentos** como MDS-UPDRS, NMSS, NMSQuest, KPPS, SCOPA, KPPQ, PDSS-2, SEND-PD, CISI-PD, PDCS, MDS-NMS
- 5 – **Estudios epidemiológicos** sobre frecuencia de manifestaciones, diferencias por género, carga sintomática, gradación de gravedad, efecto sobre cuidadores, etc
- 6 – Contribución a **20 Task Forces de la Movement Disorder Society**, desde 2003
- 7 – **Co-Director del Program on Rating Scales de la MDS**, desde junio 2016
- 8 – **Más de 480 artículos**: 427 en PubMed; de ellos, 100 en los Official Journals of the MDS (84 MD, 16 MDCP) [Índice H en WOS: 57; Índice H Google Academics: 69]
- 9 – Contribución al **concepto actual de la E. de Parkinson** como una enfermedad compleja manifestada con trastornos motores y no-motores.

Los SNM de la E. de Parkinson: Un quindenio de progreso

- EP: enfermedad compleja con manifestaciones motoras y no motoras
- La EP se entiende mejor teniendo en cuenta los aspectos no motores
- Los SNM están presentes años antes de la típica "fase motora"
- Los SNM aumentan su carga con la progresión de la enfermedad
- Los SNM son centrales en las fases avanzadas de la enfermedad.
- El manejo apropiado de NMS es importante para disminuir
 - la morbilidad y mortalidad
 - la institucionalización
 - el deterioro de la CdeV de los pacientes
 - la carga de los cuidadores
 - los costes sociales

Review article

Non-motor symptoms of Parkinson's disease A review...from the past

Pedro J. Garcia-Ruiz ^{a,*}, K. Ray Chaudhuri ^b, Pablo Martinez-Martin ^{c,d}

Although Parkinson's disease (PD) has been classically defined as a motor disorder, a range of non-motor symptoms (NMS) including cognitive, mood, autonomic and sleep disturbances occur with the passage of time.

- Although it seems that the non-motor aspect of PD is a recent observation, **classic authors (James Parkinson, Charcot, Gowers, Oppenheim and Wilson) had described many NMS** including pain, fatigue, bladder dysfunction, cognitive decline and delusion.

In this review we have collated the classic literature of NMS in PD.

Principales fuentes de estrés en enfermedad de Parkinson

- Lentitud
- Trastornos de la marcha
- Congelaciones, Caídas
- Trastorno de destreza manual
- Problemas para las AVD
- Estreñimiento
- Babeo
- Disfagia
- Problemas de comunicación
- Fatiga
- Espasmos dolorosos
- Dificultades sexuales
- Trastornos del sueño
- Depresión
- Discinesias intensas
- Alucinaciones
- Delirios
- Vergüenza en público
- Aislamiento y soledad
- Abandono de las aficiones
- Incapacidad para conducir
- Pérdida del empleo
- Dificultades económicas

Aspectos motores, no motores, mentales, discapacidad, disfunción social y otros

Los SNM de la E. de Parkinson: Un quindenio de progreso

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 - la carga de los cuidadores
 - los costes sociales

➤ **La presencia de SNM era bien conocida de antiguo, pero faltaba un instrumento para la evaluación conjunta de los SNM más destacados**

**The Non-Motor Symptoms Scales. I.
The Scales for Outcomes in PD (SCOPA)**

Escalas para SNM del Proyecto SCOPA

SCOPA – Sleep

SCOPA – Cognition

SCOPA – Autonomic

SCOPA – Psychiatric complications

Estudio longitudinal de pacientes con enfermedad de Parkinson (ELEP): objetivos y metodología

REV NEUROL 2006; 42 (6): 360-365

P. Martínez-Martín, G. Linazasoro, J. Kulisevsky, M. Aguilar Barberá, J. de Pedro, E. Cubo, J. Forjaz, A. Bergareche J.C. Martínez Castrillo, L. Menéndez Guisasola, C. Salvador Aguiar, M. Blázquez, S. González González, A. Bayes Rusiñol, L. Vela Desojo, J. Balseiro, A. Ortega Moreno, S. García Muñozguren, B. Frades Payo, S. Arroyo Velasco, C. Durán Herrera, J. Duarte García, A. Mendoza Rodríguez, F. Rodríguez Sanz, L. Javier López del Val, J. Chacón Peña, J.M. Fernández García, J. Benito León, V. Campos Arillo, F. Vivancos Matellano, A. Rojo Sebastián, M. Álvarez Saúco, C. Leiva, P. Mir Rivera, M. Carballo, A. Palomino, J.A. Burguera Hernández, M.J. Catalán Alonso, R. Luquin.

*Este trabajo forma parte del proyecto **SCOPA Propark** (investigador principal: Dr. J.J. van Hilten. Leiden University Medical Center. Leiden, Países Bajos). Cuenta con la ayuda del Programa Intramural de Investigación del Instituto de Salud Carlos III (EPY1271/05).*

- Martínez-Martín P, Cubo E, Aguilar M, Bergareche A, Escalante S, Rojo A, Campdelacreu J, Frades B, Arroyo S, Grupo ELEP. Estudio piloto sobre una medida específica para los trastornos del sueño de la enfermedad de Parkinson: **SCOPA-Sueño**. Rev Neurol 2006; 43: 577-583.
- Martínez-Martín P, Visser M, Rodríguez-Blázquez C, Marinus J, Chaudhuri KR, van Hilten JJ; on behalf of the SCOPA-Propark and ELEP Groups. **SCOPA-sleep** and PDSS: Two scales for assessment of sleep disorder in Parkinson's disease. Mov Disord 2008; 23: 1681-1688
- Martínez-Martín P, Frades Payo B, Rodríguez-Blázquez C, Forjaz MJ, de Pedro Cuesta J, por el Grupo ELEP. Atributos psicométricos de la Scales for Outcomes in Parkinson's Disease-Cognition (**SCOPA-Cog**), versión en castellano. Rev Neurol 2008; 47: 337-343.
- Cubo E, Martínez-Martín P, González M, Frades B, Miembros del Grupo ELEP. Impacto de los **síntomas motores y no motores** en los costes directos de la enfermedad de Parkinson. Neurología 2009; 24: 15-23.
- Rodríguez-Blázquez C, Frades-Payo B, Forjaz MJ, de Pedro-Cuesta J, Martínez-Martín P; on behalf of the Longitudinal Parkinson's Disease Patient Study (ELEP) Group. Psychometric attributes of the **Hospital Anxiety and Depression Scale** in Parkinson's disease. Mov Disord 2009; 24: 519-525.
- Forjaz MJ, Rodríguez-Blázquez C, Martínez-Martín P; on behalf of the Longitudinal Parkinson's Disease Patient Study (ELEP) Group. Rasch analysis of the **hospital anxiety and depression scale** in Parkinson's disease. Mov Disord 2009; 24: 526-532.
- Forjaz MJ, Ayala A, Rodríguez-Blázquez C, Frades-Payo B, Martínez-Martín P, on behalf of the Spanish-American Longitudinal PD Patient Study Group. Assessing autonomic symptoms of Parkinson's disease with the **SCOPA-AUT**: A new perspective from Rasch analysis. Eur J Neurol 2010; 17: 273-279.
- Cubo E, Martínez-Martín P, Martín-González JA, Rodríguez-Blázquez C, Kulisevsky J, ELEP Group Members. Motor Laterality Asymmetry and **Nonmotor Symptoms** in Parkinson's Disease. Mov Disord 2010; 25: 70-75.
- Rodríguez-Blázquez C, Forjaz MJ, Frades-Payo B; de Pedro J, Martínez-Martín P, on behalf of the ELEP Group. Independent validation of the Scales for Outcomes in Parkinson's Disease-Autonomic (**SCOPA-AUT**). Eur J Neurol 2010; 17: 194-201.
- Kurtis MM, Rodríguez-Blázquez C, Martínez-Martín P, The ELEP Group. Relationship between **sleep disorders and other non-motor symptoms** in Parkinson's disease. Parkinsonism Relat Disord. 2013; 19: 1152-1155.

**The Non-Motor Symptoms Scales. II.
The MDS-UPDRS Part I**

Escala Unificada para la valoración de la enfermedad de Parkinson (UPDRS-3.0) [1987]

I. ESTADO MENTAL, COMPORTAMIENTO Y ESTADO DE ÁNIMO (En la semana previa) [obtener por historia]

1. ALTERACIÓN DEL INTELECTO:

- 0= Nula
- 1= Leve. Falta de memoria evidente, con recuerdo parcial de los acontecimientos, sin otras dificultades
- 2= Pérdida moderada de memoria con desorientación y dificultad moderada para la resolución de problemas complejos. Alteración funcional discreta, pero evidente, en el hogar, con necesidad de recordarle ocasionalmente las cosas
- 3= Pérdida grave de memoria con desorientación temporal y, con frecuencia, espacial. La capacidad para resolver problemas está muy alterada
- 4= Pérdida grave de memoria, conservando solamente la orientación personal. Incapacidad para elaborar juicios o resolver problemas. Requiere mucha ayuda para mantener el cuidado personal. No se puede quedar solo

2. TRASTORNOS DEL PENSAMIENTO (Por demencia o intoxicación por fármacos)

- 0= No hay
- 1= Ensueños vívidos
- 2= Alucinaciones “benignas”, conservando la capacidad de discernir
- 3= Alucinaciones o delirios de ocasionales a frecuentes. Sin capacidad de discernir. Pueden interferir con las actividades diarias
- 4= Alucinaciones o delirios persistentes o psicosis florida. Incapaz de cuidar de sí mismo

3. DEPRESIÓN

- 0= No hay
- 1= Períodos de tristeza o sentimientos de culpa mayores de lo normal, aunque nunca mantenidos durante días o semanas
- 2= Depresión mantenida (1 semana o más)
- 3= Depresión mantenida con síntomas vegetativos (insomnio, anorexia, pérdida de peso, pérdida de interés)
- 4= Depresión mantenida con síntomas vegetativos y pensamientos o intento de suicidio

4. MOTIVACIÓN-INICIATIVA

- 0= Normal
- 1= Menos pujante de lo habitual, más pasivo
- 2= Pérdida de iniciativa o interés en cuanto a actividades opcionales (no rutinarias)
- 3= Pérdida de iniciativa o interés en las actividades de cada día (rutinarias)
- 4= Aislado, apartado, pérdida total de la motivación

Unified Parkinson's Disease Rating Scale Characteristics and Structure

P. Martínez-Martín, A. Gil-Nagel, L. Morlán Gracia, J. Balseiro Gómez, J. Martínez-Sarriés,
†F. Bermejo, and ‡The Cooperative Multicentric Group

Summary: Our purpose was to verify some basic aspects of validation of the Unified Parkinson's Disease Rating Scale (UPDRS). One hundred and sixty-seven Parkinson's disease (PD) patients were included. Group A ($n = 40$) was simultaneously assessed by five raters who applied the UPDRS and other PD rating scales (PDRS). A set of timed tests, the Mini-Mental State Examination (MMSE), and the Hamilton Scale for Depression (HSD) were administered by an independent examiner. Group B ($n = 127$) was individually assessed through the UPDRS and the other PDRSs by one neurologist in four different hospitals. The UPDRS was administered in 16.95 ± 7.98 min. The internal consistency was high (Cronbach's $\alpha = 0.96$). Nevertheless, the items related to depression, motivation/initiative, and tremor were scarcely consistent. The Interrater reliability was satisfactory (all the items had $k > 0.40$). There was a high correlation of the UPDRS with the Hoehn and Yahr staging ($r_s = 0.71$; $p < 0.001$) and some timed tests (finger tapping; arising from chair), but also with the MMSE and HSD ($r_s = 0.53$; $r_s = 0.64$; $p < 0.001$). The convergent validity with the other PDRS (Intermediate Scale and Schwab and England Scale) was very high ($r_s = 0.76$ – 0.96 ; $p < 0.001$). The factor analysis identified six factors that explained 59.6% of the variance. The dimension "tremor" showed a remarkable independence. The UPDRS is a multidimensional, reliable, and valid scale, with some inconveniences derived from its internal consistency, discriminant validity, and pragmatic application. **Key Words:** Unified Parkinson's Disease Rating Scale—Validation—Internal Consistency—Interrater reliability—Factor analysis.

The Unified Parkinson's Disease Rating Scale (UPDRS): Status and Recommendations

Christopher G. Goetz, Werner Poewe, Olivier Rascol, Cristina Sampaio, Glenn T. Stebbins, Stanley Fahn, Anthony E. Lang, Pablo Martinez-Martin, Barbara Tilley, and Bob Van Hilten. MDS Secretariat staff: Caley Kleczka, Lisa Seidl

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Christopher G. Goetz, Werner Poewe, Olivier Rascol, Cristina Sampaio, Glenn T. Stebbins, Stanley Fahn, Anthony E. Lang, Pablo Martinez-Martin, Barbara Tilley,

Movement Disorder Society-Sponsored Revision of the Unified Parkinson's Disease Rating Scale (MDS-UPDRS): Process, Format, and Clinimetric Testing Plan

Mov Disord 2007; 22: 41-47

Christopher G. Goetz,^{1*} Stanley Fahn,² Pablo Martinez-Martin,³ Werner Poewe,⁴ Cristina Sampaio,⁵
Glenn T. Stebbins,¹ Matthew B. Stern,⁶ Barbara C. Tilley,⁷ Richard Dodel,⁸ Bruno Dubois,⁹
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Movement Disorder Society-Sponsored Revision of the Unified Parkinson's Disease Rating Scale (MDS-UPDRS): Scale Presentation and Clinimetric Testing Results

Mov Disord 2008; 23: 2129-2170

Christopher G. Goetz,^{1*} Barbara C. Tilley,² Stephanie R. Shaftman,² Glenn T. Stebbins,¹ Stanley Fahn,³
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for the Movement Disorder Society UPDRS Revision Task Force

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Olivier Rascol,¹⁹ Anette Schrag,²⁰ Jeanne A. Teresi,²¹ Jacobus J. van Hilten,²² and Nancy LaPelle,²³
for the Movement Disorder Society UPDRS Revision Task Force

Expanded and independent validation of the Movement Disorder Society–Unified Parkinson's Disease Rating Scale (MDS-UPDRS)

J Neurol (2013) 260:228–236

Pablo Martinez-Martin · Carmen Rodriguez-Blazquez · Mario Alvarez-Sanchez · Tomoko Arakaki ·
Alberto Bergareche-Yarza · Anabel Chade · Nelida Garretto · Oscar Gershanik · Monica M. Kurtis ·
Juan Carlos Martinez-Castrillo · Amelia Mendoza-Rodriguez · Henry P. Moore · Mayela Rodriguez-Violante ·
Carlos Singer · Barbara C. Tilley · Jing Huang · Glenn T. Stebbins · Christopher G. Goetz

MDS-UPDRS

1.A	Source of information	<input type="checkbox"/> Patient <input type="checkbox"/> Caregiver <input type="checkbox"/> Patient + Caregiver
Part I		
1.1	Cognitive impairment	
1.2	Hallucinations and psychosis	
1.3	Depressed mood	
1.4	Anxious mood	
1.5	Apathy	
1.6	Features of DDS	
1.6a	Who is filling out questionnaire	<input type="checkbox"/> Patient <input type="checkbox"/> Caregiver <input type="checkbox"/> Patient + Caregiver
1.7	Sleep problems	
1.8	Daytime sleepiness	
1.9	Pain and other sensations	
1.10	Urinary problems	
1.11	Constipation problems	
1.12	Light headedness on standing	
1.13	Fatigue	

**The Non-Motor Symptoms Scales. III.
The NMS Questionnaire and Scale**

Inaugural meeting

**MULTIDISCIPLINARY
PARKINSON'S DISEASE
NON-MOTOR SYMPTOMS (NMS) MEETING**

**Pennyhill Park Hotel
Bagshot, Surrey, UK**

6-8 February 2004

1.0 PARTICIPANTS

1.1 Meeting chair

- Professor K R Chaudhuri, UK

1.2 Group members

- Dr R Brown, UK
- Ms L Kelly, UK
- Professor W Koller, USA
- Dr D MacMahon, UK
- Dr G MacPhee, UK
- Professor P Martinez-Martin, Spain
- Professor G Odin, Germany
- Dr W Ondo, USA
- Dr D Rye, USA
- Professor A H V Schapira, UK
- Dr K Sethie, USA
- Ms F Stegie, UK
- Professor F Stocchi, Italy
- Ms S Thomas, UK
- Dr A Williams, UK

1.3 Apologies

- Professor B Barone, Italy
- Professor C Goetz, USA

1.4 Observers (Pfizer)

- Caroline Roberts, UK Team Leader Parkinson's Disease
- Ketan Patel, UK Product Manager Parkinson's Disease
- Anil Jina, UK Medical Advisor CNS
- Callum Cordwell, Global Senior Marketing Manager Mov Disor ds
- Marino Garcia, Global Team Leader Movement Disorders

3.0 PRESENTATIONS BY GROUP MEMBERS

3.1 Ms L Kelly

Patient perspective and why an NMS scale is required

3.1.1 Treatment of PD has traditionally focussed on relief of motor symptoms, but observational studies have demonstrated the frequency of NMS. Similarly in a recent pilot survey of PDS members in the UK:

- On average respondents reported five symptoms (range 2-14).
- This represented a typical day for most respondents.
- The top five spontaneously reported symptoms were: pain/pain and stiffness; tremor in the hands/feet; tiredness/fatigue; sleep problems; and slowness.
- Respondents mentioned 38 other symptoms, the majority of which were NMS.
- Sleep problems were a particular problem for carers.
- Respondents required prompting to report NMS.

3.1.2 Effective management of NMS is very important for the well-being of people with PD. Since many people with PD adopt a positive mental attitude, doctors and nurses should make specific enquiries about NMS. In this respect, family caregivers can often provide useful information.

4.0 RESULTS

4.1 Following discussion, the Group drafted:

- An NMS screening questionnaire (see Appendix I), to be completed by the patient or caregiver. This is non-quantitative, and its purpose is to alert doctors and nurses to the need for specialised assessment.
- A specific NMS scale for PD (see Appendix II), based on the requirements and steps for a scale construct. This is a practical, clinimetrically sound, quantitative scale with domain-weighted scoring that complies with standard scaling (0-3). It is intended for use primarily by specialists during epidemiological and clinical research and may be incorporated with UPDRS if required.

Special Feature

Can We Improve The Holistic Assessment of Parkinson's Disease?

The development of a non-motor symptom questionnaire and scale for Parkinson's disease

It is nearly 200 years since James Parkinson described the key motor symptoms of Parkinson's disease (PD) in his classic Essay on the Shaking Palsy. He also drew attention to the non-motor symptoms experienced by his patients which, in contrast to the motor features, still remain under-recognised and under-treated.

ACNR 2004; 4: 20-24



Doug MacMahon



William C. Koller



Pablo Martinez-Martin



K Ray Chaudhuri



Anthony Schapira



Kapil D Sethi



Richard Brown

The Non-motor Symptom Complex of Parkinson's Disease: A Comprehensive Assessment Is Essential

K. Ray Chaudhuri, MD, FRCP, L. Yates, BA MBBS, and
P. Martinez-Martin, MD, PhD*

Curr Neurol Neurosci Reports 2005; 5: 275-283

The Non-motor Symptom Complex of Parkinson's Disease: A Comprehensive Assessment Is Essential

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P. Martinez-Martin, MD, PhD*

Curr Neurol Neurosci Reports 2005; 5: 275-283

International Multicenter Pilot Study of the First Comprehensive Self-Completed Nonmotor Symptoms Questionnaire for Parkinson's Disease: The NMSQuest Study

Kallol Ray Chaudhuri,^{1*} Pablo Martinez-Martin,² Anthony H.V. Schapira,³ Fabrizio Stocchi,⁴ Kapil Sethi,⁵ Per Odin,⁶ Richard G. Brown,⁷ William Koller,^{8†} Paolo Barone,⁹ Graeme MacPhee,¹⁰ Linda Kelly,¹¹ Martin Rabey,¹² Doug MacMahon,¹³ Sue Thomas,¹⁴ William Ondo,¹⁵ David Rye,¹⁶ Alison Forbes,¹⁷ Susanne Tluk,¹⁷ Vandana Dhawan,^{17,18} Annette Bowron,¹⁹ Adrian J. Williams,²⁰ and Charles W. Olanow²¹

Mov Disord 2006; 21: 916-923

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K. Ray Chaudhuri, MD, FRCP, L. Yates, BA MBBS, and P. Martinez-Martin, MD, PhD*

Curr Neurol Neurosci Reports 2005; 5: 275-283

International Multicenter Pilot Study of the First Comprehensive Self-Completed Nonmotor Symptoms Questionnaire for Parkinson's Disease: The NMSQuest Study

Kallol Ray Chaudhuri,^{1*} Pablo Martinez-Martin,² Anthony H.V. Schapira,³ Fabrizio Stocchi,⁴ Kapil Sethi,⁵ Per Odin,⁶ Richard G. Brown,⁷ William Koller,^{8†} Paolo Barone,⁹ Graeme MacPhee,¹⁰ Linda Kelly,¹¹ Martin Rabey,¹² Doug MacMahon,¹³ Sue Thomas,¹⁴ William Ondo,¹⁵ David Rye,¹⁶ Alison Forbes,¹⁷ Susanne Tluk,¹⁷ Vandana Dhawan,^{17,18} Annette Bowron,¹⁹ Adrian J. Williams,²⁰ and Charles W. Olanow²¹

Mov Disord 2006; 21: 916-923

Prevalence of Nonmotor Symptoms in Parkinson's Disease in an International Setting; Study Using Nonmotor Symptoms Questionnaire in 545 Patients

Pablo Martinez-Martin, PhD, MD,¹ Anthony H.V. Schapira, FRCP, MD, DSc, FmedSci,² Fabrizio Stocchi, MD,³ Kapil Sethi, MD, FRCP,⁴ Per Odin, MD,⁵ Graeme MacPhee, FRCP,⁶ Richard G. Brown, PhD,⁷ Yogini Naidu, BSc, RGN,⁸ Lisa Clayton, BSc,⁹ Kazuo Abe, MD,¹⁰ Yoshio Tsuboi, MD,¹¹ Doug MacMahon, FRCP,¹² Paolo Barone, MD,¹³ Martin Rabey, MD,¹⁴ Ubaldo Bonuccelli, MD,¹⁵ Alison Forbes, RGN,¹⁶ Kieran Breen, MRCP,¹⁷ Susanne Tluk, RGN,⁸ C. Warren Olanow, MD,¹⁸ Sue Thomas, RGN,¹⁹ David Rye, MD,²⁰ Annette Hand, RGN, MSc,²¹ Adrian J. Williams, FRCP,²² William Ondo, MD,²³ and K. Ray Chaudhuri, MD, FRCP, DSc^{24*}

Mov Disord 2007; 22: 1623-1629

PD NMS QUESTIONNAIRE

Name:

Date:

Age:

Centre ID:

Male

Female

NON-MOVEMENT PROBLEMS IN PARKINSON'S

The movement symptoms of Parkinson's are well known. However, other problems can sometimes occur as part of the condition or its treatment. It is important that the doctor knows about these, particularly if they are troublesome for you.

A range of problems is listed below. Please tick the box 'Yes' if you have experienced it **during the past month**. The doctor or nurse may ask you some questions to help decide. If you have **not** experienced the problem in the past month tick the 'No' box. You should answer 'No' even if you have had the problem in the past but not in the past month.

Have you experienced any of the following in the last month?

- | | Yes | No | | Yes | No |
|---|--------------------------|--------------------------|---|--------------------------|--------------------------|
| 1. Dribbling of saliva during the daytime | <input type="checkbox"/> | <input type="checkbox"/> | 16. Feeling sad, 'low' or 'blue' | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Loss or change in your ability to taste or smell | <input type="checkbox"/> | <input type="checkbox"/> | 17. Feeling anxious, frightened or panicky | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Difficulty swallowing food or drink or problems with choking | <input type="checkbox"/> | <input type="checkbox"/> | 18. Feeling less interested in sex or more interested in sex | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Vomiting or feelings of sickness (nausea) | <input type="checkbox"/> | <input type="checkbox"/> | 19. Finding it difficult to have sex when you try | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Constipation (less than 3 bowel movements a week) or having to strain to pass a stool (faeces) | <input type="checkbox"/> | <input type="checkbox"/> | 20. Feeling light headed, dizzy or weak standing from sitting or lying | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Bowel (fecal) incontinence | <input type="checkbox"/> | <input type="checkbox"/> | 21. Falling | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Feeling that your bowel emptying is incomplete after having been to the toilet | <input type="checkbox"/> | <input type="checkbox"/> | 22. Finding it difficult to stay awake during activities such as working, driving or eating | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. A sense of urgency to pass urine makes you rush to the toilet | <input type="checkbox"/> | <input type="checkbox"/> | 23. Difficulty getting to sleep at night or staying asleep at night | <input type="checkbox"/> | <input type="checkbox"/> |

The Metric Properties of a Novel Non-Motor Symptoms Scale for Parkinson's Disease: Results from an International Pilot Study

Mov Disord 2007; 22: 1901-1911

Kallol Ray Chaudhuri,^{1,2,3*} Pablo Martinez-Martin,⁴ Richard G. Brown,⁵ Kapil Sethi,⁶ Fabrizio Stocchi,⁷ Per Odin,⁸ William Ondo,⁹ Kazuo Abe,¹⁰ Graeme MacPhee,¹¹ Doug MacMahon,¹² Paolo Barone,¹³ Martin Rabey,¹⁴ Alison Forbes,¹ Kieran Breen,¹⁵ Susanne Tluk,¹⁶ Yogini Naidu,¹⁶ Warren Olanow,¹⁷ Adrian J. Williams,¹⁸ Sue Thomas,¹⁹ David Rye,²⁰ Yoshio Tsuboi,²¹ Annette Hand,²² and Anthony H.V. Schapira^{23,24}

The Metric Properties of a Novel Non-Motor Symptoms Scale for Parkinson's Disease: Results from an International Pilot Study

Mov Disord 2007; 22: 1901-1911

Kallol Ray Chaudhuri,^{1,2,3*} Pablo Martinez-Martin,⁴ Richard G. Brown,⁵ Kapil Sethi,⁶ Fabrizio Stocchi,⁷ Per Odin,⁸ William Ondo,⁹ Kazuo Abe,¹⁰ Graeme MacPhee,¹¹ Doug MacMahon,¹² Paolo Barone,¹³ Martin Rabey,¹⁴ Alison Forbes,¹ Kieran Breen,¹⁵ Susanne Tluk,¹⁶ Yogini Naidu,¹⁶ Warren Olanow,¹⁷ Adrian J. Williams,¹⁸ Sue Thomas,¹⁹ David Rye,²⁰ Yoshio Tsuboi,²¹ Annette Hand,²² and Anthony H.V. Schapira^{23,24}

International study on the psychometric attributes of the Non-Motor Symptoms Scale in Parkinson disease

Neurology 2009;73: 1584–1591

Martinez-Martin P, Rodriguez-Blazquez C, Abe K, Bhattacharyya KB, Bloem BR, Carod-Artal FJ, Prakash R, Esselink RAJ, Falup-Pecurariu C, Gallardo M, Mir P, Naidu Y, Nicoletti A, Sethi K, Tsuboi Y, van Hilten JJ, Visser M, Zappia M, Chaudhuri KR

Non-Motor Symptom assessment scale for Parkinson's Disease

Patient ID No: _____ Initials: _____ Age: _____

Symptoms assessed over the last month. Each symptom scored with respect to:

Severity: 0 = None, 1 = Mild: symptoms present but causes little distress or disturbance to patient; 2 = Moderate: some distress or disturbance to patient; 3 = Severe: major source of distress or disturbance to patient.

Frequency: 1 = Rarely (<1/wk); 2 = Often (1/wk); 3 = Frequent (several times per week); 4 = Very Frequent (daily or all the time)

Domains will be weighed differentially. Yes/ No answers are not included in final frequency x severity calculation. (Bracketed text in questions within the scale is included as an explanatory aid).

Domain 1: Cardiovascular including falls

	<u>Severity</u>	<u>Frequency</u>	<u>Frequency x Severity</u>
1. Does the patient experience light-headedness, dizziness, weakness on standing from sitting or lying position?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the patient fall because of fainting or blacking out?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCORE:			

Domain 2: Sleep/fatigue

3. Does the patient doze off or fall asleep unintentionally during daytime activities? (For example, during conversation, during mealtimes, or while watching television or reading).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Does fatigue (tiredness) or lack of energy (not slowness) limit the patient's daytime activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the patient have difficulties falling or staying asleep?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Does the patient experience an urge to move the legs or restlessness in legs that improves with movement when he/she is sitting or lying down inactive?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCORE:			

Domain 3: Mood /Cognition

7. Has the patient lost interest in his/her surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Has the patient lost interest in doing things or lack motivation to start new activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Does the patient feel nervous, worried or frightened for no apparent reason?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Does the patient seem sad or depressed or has he/she reported such feelings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Does the patient have flat moods without the normal "highs" and "lows"?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Does the patient have difficulty in experiencing pleasure from their usual activities or report that they lack pleasure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCORE:			

**The NMSS -Designed to measure the NMS burden (frequency X severity)
Rater-based, 30 items, 9 domains**

	Number of Items	Max. possible score
NMSS Domains		
Cardiovascular	2	24
Sleep	4	48
Mood/Apathy	6	72
Perceptual	3	36
Attention	3	36
Gastrointestinal	3	36
Urinary	3	36
Sexual	2	24
Miscellany	4	48
NMSS-Total	30	360

PubMed non-motor symptoms questionnaire (AND) parkinson's disease Search

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[Non-Motor Symptoms Assessed by Non-Motor Symptoms Questionnaire and Non-Motor Symptoms Scale in Parkinson's Disease in Selected Asian Populations](#). Sauerbier A et al. *Neuroepidemiology.* (2017)
[Adaptation and psychometric properties of the Italian version of the Non-Motor Symptoms Questionnaire for Parkinson's disease](#). Cova I et al. *Neurol Sci.* (2017)

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Uso del NMS Quest y la NMSS en investigación, desde 2006

- No-declaración de SNM a doctores y otros profesionales
- Influencia de los SNM en la calidad de vida de los pacientes
- Epidemiología de los SNM (p. ej., prevalencia por edad y sexo)
- Gradación de intensidad de los SNM
- Gradación de gravedad de la EP considerando aspectos motores y no-motores
- Subtipos no-motores de la EP
- Subtipos de EP combinando aspectos motores y no-motores
- SNM en diversas etnias
- SNM en pacientes *drug-naïve*
- Fluctuaciones de SNM
- Costes de la EP, incluyendo aquellos causados por SNM
- Diferencias estacionales en los SNM de la EP
- Resultados de intervenciones terapéuticas sobre los SNM
- Influencia de los SNM sobre la carga del cuidador
- Inclusión en estudios de diversa índole (p. ej., investigación de biomarcadores)
- Aplicación en trastornos diferentes a EP (p. ej., PSP, ELA)
- Aplicación en estudios de validación de otros instrumentos (MDS-NMS, PDCS)

Non-motor symptoms (in the past 2 weeks)

Fatigue:	Score	
Absent	0	Symptom not present.
Mild	1	Fatigue interferes very rarely with physical functioning/carrying out duties/responsibilities.
Moderate	2	Fatigue interferes rarely with physical functioning/carrying out duties/responsibilities.
Severe	3	Fatigue interferes often with physical functioning/carrying out duties/responsibilities.
Very severe	4	Fatigue interferes always with physical functioning/carrying out duties/responsibilities.

Urinary:	Score	
Absent	0	Symptom not present.
Mild	1	Very rarely urgency and frequency day/night.
Moderate	2	Rarely urgency and frequency day/night.
Severe	3	Often urgency and frequency day/night, rarely loss of urine.
Very severe	4	Always urgency and frequency day/night, frequent loss of urine.

Cognitive impairment:	Score	
Absent	0	Symptom not present.
Mild	1	Occasional forgetfulness with partial recollection of events and no other difficulties.
Moderate	2	Moderate memory loss, with disorientation and moderate difficulty handling complex problems. Mild but definite impairment of function at home with need of occasional prompting.
Severe	3	Severe memory loss with disorientation for time and often to place. Severe impairment in handling problems.
Very severe	4	Severe memory loss with severe spatio-temporal disorientation. Unable to make judgments or solve problems. Requires much help with personal care. Cannot be left alone at all.

Depression/anxiety:	Score	
Absent	0	Symptoms not present.
Mild	1	Periods of sadness or anxiety greater than normal, never sustained for days or weeks.
Moderate	2	Sustained depression or anxiety (1 week or more).
Severe	3	Sustained depression with vegetative symptoms (insomnia, anorexia, weight loss, loss of interest) or sustained anxiety.
Very severe	4	Sustained depression with vegetative symptoms and suicidal thoughts or intent.

Symptomatic orthostatic hypotension:	Score	
Absent	0	Symptom not present.
Mild	1	Very rare dizziness/high headedness/feeling faint/generalised weakness.
Moderate	2	Rare dizziness/high headedness/feeling faint/generalised weakness.
Severe	3	Often dizziness/high headedness/feeling faint/generalised weakness and occasional loss of consciousness.
Very severe	4	Always dizziness/high headedness/feeling faint/generalised weakness and frequent loss of consciousness.

The Parkinson's Disease Composite Scale



1: Balestrino R, Hurtado-Gonzalez CA, Stocchi F, Radicati FG, Chaudhuri KR, Rodriguez-Blazquez C, Martinez-Martin P; PDCS European Study Group. Applications of the European Parkinson's Disease Association sponsored Parkinson's Disease Composite Scale (PDCS). NPJ Parkinsons Dis. 2019 Nov 27;5:26.

2: Martinez-Martin P, Radicati FG, Rodriguez Blazquez C, Wetmore J, Kovacs N, Ray Chaudhuri K, Stocchi F; PDCS European Study Group. Extensive validation study of the Parkinson's Disease Composite Scale. Eur J Neurol. 2019 Oct;26(10):1281-1288.

3: Pintér D, Martinez-Martin P, Janszky J, Kovács N. The Parkinson's Disease Composite Scale Is Adequately Responsive to Acute Levodopa Challenge. Parkinsons Dis. 2019 Sep 10;2019:1412984.

4: Stocchi F, Radicati FG, Chaudhuri KR, Johansson A, Padmakumar C, Falup-Pecurariu C, Martinez-Martin P. The Parkinson's Disease Composite Scale: results of the first validation study. Eur J Neurol. 2018 Mar;25(3):503-511.



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MDS LEAP Program

MDS Rating Scales

- MDS-UPDRS Non-English Translation Overview

- MDS-Recommended Rating Scales

- Rating Scale Permission Form

- MDS-UPDRS and UDysRS Training Programs

- MDS Rating Scales

Education Course Development

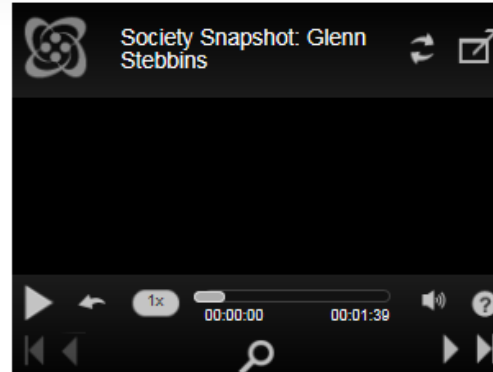
MDS-Recommended Rating Scales

View rating scales which have been recommended by the International Parkinson and Movement Disorder Society's Committee on Rating Scales in Movement Disorders.

Unified Huntington's Disease

MDS Rating Scales

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The following scales and questionnaires are owned and licensed by the International Parkinson and Movement Disorder Society. To request permission or obtain liscensing, please submit a [Rating Scale Permission Request Form](#). (The first title links to the full paper or questionnaire, and is followed by a link to the actual scale/score sheet).

Note: Scales are downloadable as

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- [Global Assessment Scale for Wilson's Disease](#) | [Scale](#)
- [Global Dystonia Scale](#) | [Scale](#)
- [Modified Bradykinesia Rating Scale](#) | [Scale](#)
- [Non-Motor Symptoms Scale \(NMSS\) + \(Includes NMSQ\)](#) | [Scale](#)
- [Quality of Life Essential Tremor Questionnaire](#) | [Score Sheet](#)
- [Rating Scale for Psychogenic Movement Disorders](#) | [Scale](#)
- [Rush Dyskinesia Rating Scale*](#) | [Scale](#)

Pilot Study of the International Parkinson and Movement Disorder Society-sponsored Non-motor Rating Scale (MDS-NMS)

Pablo Martinez-Martin, MD, PhD,^{1}  Anette Schrag, MD, PhD,²  Daniel Weintraub, MD,^{3,4} Alexandra Rizos, MSc,^{5,6} Carmen Rodriguez-Blazquez, PhD,¹ and Kallol Ray Chaudhuri, MD, PhD,^{5,6}  on behalf of the IPMDS Non Motor PD Study Group*

The NMSS has been widely used in clinical studies and trials; however, since its validation in 2007, our understanding of NMS has changed substantially. With the support of the International Parkinson and Movement Disorder Society (IPMDS), after a detailed peer review an initiative to develop an updated version of NMSS, the MDS-NMS was launched in 2015.



The pilot study, carried out in English in the United Kingdom and the United States, demonstrated that the preliminary version of the MDS-NMS was comprehensive, understandable, and appropriate.

TABLE 4 *Synthesis of the responses of neurologists and patients about the MDS-NMS*

	Neurologists (n = 52)			Patients (n = 15)		
		N	%		N	%
1. Do you find the scale relevant?	No	1	1.9	No	1	6.7
	Yes	51	98.1	Yes	13	86.6
	NR	0	0.0	NR	1	6.7
2. Does this scale help you to better understand your patient's / your current health state?	No	6	11.5	No	2	13.3
	Yes	46	88.5	Yes	13	86.7
	NR	0	0.0	NR	0	0.0
3. Do you think this scale is comprehensive?	No	5	9.6	No	2	13.3
	Yes	46	88.5	Yes	13	86.7
	NR	1	1.9	NR	0	0.0
4. Do you think this scale is too long?	No	40	76.9	No	13	86.7
	Yes	12	23.1	Yes	2	13.3
	NR	0	0.0	NR	0	0.0
5. Do you find the questions easy to understand?	No	3	5.8	No	1	6.7
	Yes	48	92.3	Yes	14	93.3
	NR	1	1.9	NR	0	0.0
6. Did you find any question(s) embarrassing?	No	49	94.2	No	14	93.3
	Yes	3	5.8	Yes	1	6.7
	NR	0	0.0	NR	0	0.0
7. Did you find any particular question(s) difficult to answer?	No	42	80.8	No	14	93.3
	Yes	10	19.2	Yes	1	6.7
	NR	0	0.0	NR	0	0.0

Abbreviations: MDS-NMS, Movement Disorder Society Non-Motor Symptoms scale; NR, No response.

The Movement Disorder Society Nonmotor Rating Scale: Initial Validation Study

K. Ray Chaudhuri, DSc, FRCP, MD,^{1*}  Anette Schrag, FRCP, PhD,²  Daniel Weintraub, MD,^{3,4}
Alexandra Rizos, MSc,¹ Carmen Rodriguez-Blazquez, PhD,⁵ Eugenia Mamikonyan, MS,³ and
Pablo Martinez-Martin, MD, PhD⁵

- 402 PD patients; age, 67.42 ± 9.96 y.; age at PD, 59.27 ± 10.67 y.
- Median H&Y stage 2 (interquartile range 2–3).
- Data quality was satisfactory, with 6.7% missing data in the Sexual domain.
- No floor or ceiling effects for the MDS-NMS and NMF total scores
- Domains had no ceiling effects, but some floor effects (13.5%–83.5%).
- Internal consistency: average Cronbach's alpha, 0.66 (MDS-NMS), and 0.84 (NMF).
- Interrater reliability was excellent (ICC >0.95).
- Test-retest reliability, ICC 0.84 for the MDS-NMS and 0.70 for NMF.
- Precision: satisfactory for the MDS-NMS (SEM: 25.30) and fair for NMF (SEM: 7.06).
- Correlations with the corresponding NMSS scores were high.
- There were no significant sex or age effects.
- The MDS-NMS score increased with increasing disease duration, severity, and PD medication dose (all, $P < 0.001$).

Convergent validity of the MDS-NMS with the NMSS

NMSS	MDS-NMS domains	Spearman R
1. Cardiovascular	G. Orthostatic hypotension	0.72
2. Sleep/fatigue	K. Sleep and wakefulness	0.73
3. Mood/apathy	A. Depression	0.73
3. Mood/apathy	B. Anxiety	0.64
3. Mood/apathy	C. Apathy	0.59
4. Halluc./perceptual	D. Psychosis	0.57
5. Attention/memory	F. Cognition	0.73
6. Gastrointestinal	J. Gastrointestinal	0.81
7. Urinary	H. Urinary	0.87
8. Sexual	I. Sexual	0.87
9. Miscellaneous	M. Other	0.39
9. Miscellaneous (Pain ^a)	L. Pain	0.72

Convergent validity of the MDS-NMS with MDS-UPDRS Part I

MDS-UPDRS	MDS-NMS domains	Spearman R
1.1 Cognitive	F. Cognition	0.50
1.2 Hallucination/psychosis	D. Psychosis	0.49
1.3 Depression	A. Depression	0.67
1.4 Anxiety	B. Anxiety	0.59
1.5 Apathy	C. Apathy	0.49
1.6 Dopamine dysregulation syndrome	E. IC and related disorders	0.31
1.7 Sleep problems	K. Sleep and wakefulness	0.54
1.8 Daytime sleepiness	K. Sleep and wakefulness	0.38
1.9 Pain	L. Pain	0.60
1.10 Urinary problems	H. Urinary	0.68
1.11 Constipation	J. Gastrointestinal	0.45
1.12 Lightheadedness	G. Orthostatic hypotension	0.61
1.13 Fatigue	M. Other	0.48
2.2 Saliva and drooling	J. Gastrointestinal	0.54
2.3 Swallowing	J. Gastrointestinal	0.44
2.9 Turning in bed	K. Sleep and wakefulness	0.31



International Parkinson and
Movement Disorder Society

MDS Non-Motor Rating Scale (MDS-NMS)

MDS / MDS Rating Scales / MDS Non-Motor Rating Scale (MDS-NMS)



The International Parkinson and Movement Disorder Society – Non-Motor Rating Scale

Acronym: MDS-NMS

Authors: K. Ray Chaudhuri, Anette Schrag, Daniel Weintraub, Alexandra Rizos, Carmen Rodriguez-Blazquez, Eugenia Mamikonyan and Pablo Martinez-Martin



International Parkinson and
Movement Disorder Society

MDS-NMS

International Parkinson and Movement Disorder Society –
Non-Motor Rating Scale

Authored by:
Kallol Ray Chaudhuri
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Anette Schrag
Daniel Weintraub
Alexandra Rizos
Carmen Rodriguez-Blazquez

