

Parkinson's Apps and Devices Rating Scale (also called MARS-PARK)

Introduction: There are numerous apps and devices being used to measure Parkinson's, however not all provide clear information on what they are measuring, and how that measurement relates to the specific and individual symptoms of Parkinson's.

Parkinson's is different for everyone and our hope is that you will be able to help us understand which apps and devices are the most user- friendly and importantly provide the most relevant information about aspects of your Parkinson's. To achieve this we have adapted the Mobile Application Rating Scale (MARS) developed by the Queensland University of Technology, with their consent so that we can provide invaluable feedback on the use of different technology in the Parkinson's arena.

This rating scale is divided into sections

- 1) About the app, what it measures and what you might like to measure

- 2) Assess the app/device for
 - A. Engagement
 - B. Functionality
 - C. Aesthetics
 - D. Information content
 - E. Subjective views regarding quality
 - F. Specificity to Parkinson's

There are a series of statements, please mark the most appropriate. Please average the results at the end of each section, excluding questions rated as "N/A" from the mean score calculation.

1. Tell us about the app and device you are planning to test.

1. App/device name:

2. Cost of App/device:

3. What platform does it operate on?

iPhone iPad Android other - please specify

4. Who made this app or device?

Unknown commercial government charity university other - please specify.....

5. What does the app or device **say** it generally measures? (Please tick all that apply)

- a. Tremor
- b. Balance
- c. Reaction time
- d. Voice
- e. Memory
- f. Medication
- g. Food
- h. Sleep
- i. Mood and behaviour
- j. Sociability
- k. Movement and exercise
- l. Other – please specify.....

5.1. Which symptom(s) **do you want to measure**? (Please tick all that apply)

- a. Tremor
- b. Balance
- c. Levels of mobility & movement
 - Bradykinesia (slowness of movement)
 - Reaction time
 - Walking
 - Shuffling
 - Stumbling
 - Leg dragging
 - Gait
 - Freezing
 - Stiffness and rigidity
- d. Loudness of voice
 - Speech
 - Being heard and understood
- e. Memory
 - Word retention
 - Forgetfulness
 - Speed of thinking
 - Organisation
- f. Medication related symptoms
 - Dyskinesia
 - Other – please specify
- g. Levels of pain in different areas
 - Dystonia (cramping spasms)
- h. Sleep patterns
 - Need to get up at night
 - Sleep disturbance
 - Insomnia
 - REM sleep
 - Overactive mind
 - Need to go to the toilet
 - Pain and/or dystonia at night
 - Turning in bed
- i. Mood & Behavioural symptoms
 - Depression
 - Anxiety
 - Sociability
- j. Fatigue
 - Energy levels
 - Stamina
 - Levels of tiredness/exhaustion
- k. Other- Please specify.....

6. Is there information on why this app/device has been developed? (Please circle)

- a. Yes
- b. No
- c. Not sure

6.1. If yes, why has the app/device been developed?

- a. Assessment
- b. Monitoring and tracking
- c. Goal setting
- d. Feedback
- e. Information and education
- f. Advice, tips, strategies, skills
- g. Relaxation
- h. Mindfulness
- i. Other – please specify.....

7. Technical aspects of the app/device (please select all that apply)

- j. Allows sharing (Facebook, Twitter etc.)
- k. Has its own community
- l. Allows password protection
- m. Requires a log-in
- n. Sends reminders
- o. Needs web access to function
- p. Uses Bluetooth

2. Moving on to assessing the app and /or device.

Section A: Engaging, fun, interesting, customisable, interactive (e.g. sends alerts, messages, reminders, feedback, enables sharing) and well-targeted to audience

Please mark the number that you feel fits the app or device most closely.

- 1) **Entertainment:** Is the app or device fun/entertaining to use? Does it use any strategies to increase engagement through entertainment (e.g. games)?
 1. Dull, not fun or entertaining at all
 2. Mostly boring
 3. OK, fun enough to entertain user for a brief time (less than 5 mins)
 4. Moderately fun and entertaining, would entertain user for some time (5-10 mins)
 5. Highly entertaining and fun, would stimulate repeat use

- 2) **Interest:** is the app or device interesting to use? Does it use any strategies to increase engagement by presenting its content in an interesting way?
 1. Not interesting at all
 2. Mostly uninteresting
 3. OK, neither interesting not uninteresting: would engage user for a brief time (less than 5 mins)
 4. Moderately interesting: would engage user for some time (5-10 mins)
 5. Very interesting: would engage user in repeated use

- 3) **Customisation:** Does it provide/retain all necessary settings/preferences (e.g. sound, content, notifications etc.)?
 1. Does not allow any customisation or requires setting to be input every time
 2. Allows insufficient customisation limiting functions
 3. Allows basic customisation to function adequately
 4. Allows numerous options for customisation
 5. Allows complete tailoring to the individual's characteristics/preferences, retains all settings

- 4) **Interactivity:** does it allow the user to input, provide feedback, contain prompts (reminders, sharing options, notifications, etc.)? Note: these functions need to be customisable and not overwhelming in order to be perfect.
 1. No interactive features and/or no response to user interaction
 2. Insufficient interactivity. Feedback or user input options, limiting functions
 3. Basic interactive features/feedback/user input options
 4. Offers a variety of interactive features/feedback/user input options
 5. Very high level of responsiveness through interactive features/feedback/user input options

- 5) **Target Group:** Is the app content (visual information, language, design) appropriate for the audience?
 1. Completely inappropriate/unclear/confusing
 2. Mostly inappropriate/unclear/confusing
 3. Acceptable but not targeted. May be inappropriate/unclear/confusing
 4. Well-targeted with negligible issues
 5. Perfectly targeted, no issues found

Engagement score:

Mean score:

Section B: Functionality- app or device functioning, easy to learn, navigation, flow logic, and design of the app or device

- 6) **Performance:** how accurate/fast are the app or device features (functions) and components (buttons/menus)?
 - 1. App or device is broken: no/insufficient/inaccurate response (e.g. crashes/bugs/broken features etc.)
 - 2. Some functions work, but lags or contains major technical problems
 - 3. App or device works overall. Some technical problems need fixing/slow at times
 - 4. Mostly functional with minor/negligible problems
 - 5. Perfect/timely response; no technical bugs found/contains a 'loading time left' indicator

- 7) **Ease of use:** how easy is it to learn how to use the app/device; how clear are the menu labels/icons and instructions?
 - 1. No/limited instructions; menu labels/icons are confusing; complicated
 - 2. Useable after a lot of time/effort
 - 3. Useable after some time/effort
 - 4. Easy to learn how to use the app or device (or has clear instructions)
 - 5. Able to use it immediately; intuitive and simple

- 8) **Navigation:** is moving between screens logical/accurate/appropriate/uninterrupted; are all necessary screen links present?
 - 1. Different sections within the app or device seem illogical, disconnected and random/confusing; navigation is difficult
 - 2. Useable after a lot of time and effort
 - 3. Useable after some time and effort
 - 4. Easy to use or missing a negligible link
 - 5. Perfectly logical, easy, clear and intuitive screen flow throughout or offers shortcuts

- 9) **Functionality Design:** are taps/swipes/pinches/scrolls consistent and intuitive across all components/screens?
 - 1. Inconsistent/confusing
 - 2. Often inconsistent/confusing
 - 3. OK with some inconsistencies/confusing elements
 - 4. Mostly consistent/intuitive with negligible problems
 - 5. Perfect consistent and intuitive

Functionality score:
Mean score:

Section C: Aesthetics – graphic design, overall visual appeal, colour scheme, and stylistic consistency

10) **Layout:** is arrangement and size of buttons/icons/menus/content on the screen appropriate or zoomable if needed?

1. Very bad design, cluttered, some options impossible to select/locate/see/read - display not optimised
2. Bad design, random, unclear, some options difficult to select/locate/see/read
3. Satisfactory few problems with selecting/locating/seeing/reading items or with minor screen-sized problems
4. Mostly clear, able to select/locate/see/read items
5. Professional, simple, clear, orderly, logically organised, device display optimised. Every design component has a purpose

11) **Graphics:** how high is the quality/resolution of graphics used for buttons/icons/menus/content?

1. Graphics appear amateur, very poor quality visual design – disproportionate, completely stylistically inconsistent
2. Low quality/low resolution graphics; low quality visual design - disproportionate, completely stylistically inconsistent
3. Moderate quality graphics and visual design (generally consistent in style)
4. High quality/resolution graphics and visual design – mostly proportionate stylistically consistent
5. Very high quality/resolution graphics and visual design – proportionate stylistically consistent throughout

12) **Visual appeal:** how good does it look?

1. No visual appeal, unpleasant to look at, poorly designed, clashing/mismatched colours
2. Little visual appeal – poorly designed, bad use of colour, visually boring
3. Some visual appeal – average, neither pleasant nor unpleasant
4. High level of visual appeal – seamless graphics – consistent and professionally designed
5. As above + very attractive, memorable, stands out, use of colour enhances app features/menus

Aesthetics score:

Mean score:

Section D: Information – contains high quality information (e.g. text, feedback, measures and references) from a credible source.

13) **Accuracy of app/device description:** does it do what it says?

1. Misleading: app/device does not contain the described aspects or functions or has no description
2. Inaccurate: app/device contains very few of the described aspects/functions
3. OK: app/device contains some of the described aspects or functions
4. Accurate: app/device contains most of the described aspects/functions
5. Highly accurate description of the app/device aspects/functions

14) **Goals:** does the app have specific measureable and achievable goals?

N/A: No goals in app or device

1. App or device has no chance of achieving its stated goals
2. Description lists some goals but there's little chance in achieving them
3. OK app or device has clear goals which may be achievable
4. App or device has clearly specified goals which are measureable and achievable
5. App or device has specific and measureable goals which are highly likely to be achieved

15) **Quality of information:** is the content of the app/device correct, well written and relevant to the goal/topic of the app?

0. No information in app or device
1. Irrelevant/inappropriate/incoherent/incorrect
2. Poor: barely relevant/appropriate/coherent/may be incorrect
3. Moderately relevant/appropriate/coherent and appears correct
4. Relevant/appropriate/coherent/correct
5. Highly relevant/appropriate/coherent and correct

16) **Quantity of information:** Is there the right amount of information, is it comprehensive but concise?

N/A: There is no information within the app or device

1. Minimal or overwhelming
2. Insufficient or possibly overwhelming
3. OK but not comprehensive or concise
4. Offers a broad range of information, has some gaps or unnecessary detail or has no links to more information and resources
5. Comprehensive and concise contains links to more information and resources

17) **Visual information:** is visual explanation of concepts – through charts/graphs/images/videos - clear, logical and correct?

N/A: There is no visual information

1. Completely unclear/confusing/wrong or necessary but missing
2. Mostly unclear/confusing/wrong
3. OK but often unclear/confusing/wrong
4. Mostly clear/logical/correct with negligible issues
5. Perfectly clear/logical/correct

18) **Evidence base:** has the app or device been trialled/tested and have the results been published in scientific literature?

N/A: Not sure

0. The app or device has not been tested
1. The evidence suggests the app does not work
2. App or device has been trialled (e.g. acceptability, usability, satisfaction ratings) and has partially positive outcomes in studies that are not randomised controlled trials or there is little or no contradictory evidence
3. App or device has been trialled (e.g. acceptability, usability, satisfaction ratings) and has positive outcomes in studies that are randomised controlled trials and there is no contradictory evidence
4. App or device has been trialled and outcome tested in 1-2 randomised clinical trials indicating positive results
5. App has been trialled and outcome tested in more than three high quality random control trials indicating positive results

19) **Parkinson's evidence base:** has the app or device been trialled/tested with **people with Parkinson's** (PwP) and have the results been published in scientific literature?

N/A: Not sure

0. The app has not been trialled
1. The evidence suggests the app does not work
2. App or device has been trialled with PwP (e.g. acceptability, usability, satisfaction ratings) and has partially positive outcomes in studies that are not randomised controlled trials or there is little or no contradictory evidence
3. App or device has been trialled with PwP (e.g. acceptability, usability, satisfaction ratings) and has positive outcomes in studies that are randomised controlled trials and there is no contradictory evidence
4. App or device has been trialled and outcome tested in 1-2 randomised clinical trials with PwP indicating positive results
5. App has been trialled and outcome tested in more than three high quality random control trials with PwP indicating positive results

20) **Parkinson's relevance:** Does this app or device give you relevant information and feedback about the symptoms you marked at the beginning of this rating exercise?

1. No
2. It measures aspects of the symptom but does not say which aspects
3. It measures aspects of the symptom and partially explains which aspects
4. It measures aspects of the symptom and explains which aspects
5. It measures aspects of the symptom with accuracy

Information score:

Mean score:

Section E: Subjective quality

21) Would you recommend this app or device to other **people with Parkinson's (PwP)** who might benefit?

1. **Not at all:** I would not recommend this app or device to anyone
2. There are very few PwP I would recommend this app to
3. **Maybe:** There are several PwP I would recommend it to
4. There are many PwP I would recommend it to
5. **Definitely:** I would recommend this app to everyone with Parkinson's

22) How many times do you think you would use this app or device in the next 12 months if it was relevant to you and the symptoms you wanted to track?

1. None
2. 1-2
3. 3-10
4. 10-50
5. More than 50

23) This app/device is good value for money

strongly disagree

1

2

3

4

strongly agree

5

24) What is your overall star rating for the app or device?

1. * One of the worst apps/devices I've used
2. **
3. *** Average
4. ****
5. ***** One of the best apps/devices I've used

F: Specificity to Parkinson's

Symptom monitoring: this app/device monitored the chosen symptom effectively

strongly disagree

1

2

3

4

strongly agree

5

Awareness: this app/device has increased my awareness of the importance of monitoring aspects of my Parkinson's

strongly disagree

1

2

3

4

strongly agree

5

Knowledge: this app/device is likely to increase my knowledge/understanding of Parkinson's

strongly disagree

1

2

3

4

strongly agree

5

Attitude: this app/device has changed/is likely to change my attitude towards/level of engagement with my Parkinson's

strongly disagree

1

2

3

4

strongly agree

5

Intention to change: This app/device could have an effect on my Parkinson's symptoms and my lifestyle

strongly disagree

1

2

3

4

strongly agree

5

Advice: use of this app/device is likely to increase my intention/motivation to ask questions of my healthcare team

strongly disagree

1

2

3

4

strongly agree

5

Coping: use of this app/device is likely to change the way I cope with my Parkinson's

strongly disagree

1

2

3

4

strongly agree

5

Quality of life: this app is likely to improve my quality of life with continual use

strongly disagree

1

2

3

4

strongly agree

5

Scoring:

A: Engagement mean score = _____

B: Functionality mean score = _____

C: Aesthetics mean score = _____

D: Information mean score = _____

App/Device quality average score
(A + B + C + D / 4) = _____

E: App/Device subjective quality mean score = _____

F: Parkinson's Specific mean score = _____

* Exclude questions rated as "N/A" from the mean score calculation