Smart Health TeleRehab: How it Works

Stage 1
Therapist Prescribes Exercise

- Therapist tailors programme according to patient’s needs. Customisable features include:
  - 40 Exercise selection - over 40 available
  - 2 Levels of difficulty
  - 3 Exercise angles
  - 4 Timing of ‘hold’ position
  - 5 Number of repetitions

Stage 2
Caregiver/Patient Set Up Exercise

- Easy to set up, easy to use
- Sensors have 99.98% accuracy
- Available in five languages, English, Mandarin, Bahasa Melayu, Tamil and Tagalog

1. Patient/caregiver switches on tablet, clicks on Smart Health TeleRehab application, and taps “Play” icon
2. Patient puts on sensors on the limb and neck, with caregiver’s help if necessary, and taps “tick” icon
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Stage 3 Patient Exercises

1. Patient clicks on green “play” button, gets into “ready position” and performs the exercises as shown in the video demonstration on the left screen.

2. Screen on the right is a video recording of the patient’s exercise for therapist review.

3. Once exercises are completed, exercise data and videos would be uploaded immediately upon wi-fi connection for therapist to review patient’s progress asynchronously.

Features for patients:

4. Video demonstrations

5. Aural words of encouragement

6. Countdown timer for ‘hold’ positions

7. Counter for number of repetitions completed

8. Star indicator to show accurate completion of exercise

9. Coloured bar indicates if patient has achieved desired exercise angle. The red line is the target for patient to achieve:
   - **Yellow** - desired exercise angle not yet achieved.
   - **Green** - target exercise angle reached
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Stage 4  Therapist Reviews

Therapist retrieves record of patient’s progress, which monitors patient compliance and performance.

The following features and level of detail enable therapists to perform quick reviews and easily zoom in to specific exercises to address any issues:

1. Indicators to highlight which exercises have not been reviewed.

Therapist tele-consult with patient/caregiver (only as required)

Exercise Chart
Graphs that reflect patient compliance and performance for quick reviews:

2. Date of exercise performed
3. If desired exercise angles were achieved
4. Front-back compensation
5. Easy double-tap function at coloured based enable retrieval of videos of specific exercise performed
6. Balance graph reflects:
   - Balance abilities (jagged waves indicate low balance ability)
   - Shakiness or swaying of patient (closeness of waves indicate rapid movement or swaying)
   - Direction of shakiness or swaying (left-right, front-back, or rotational)

Balance Chart
For evaluation of standing and seated balancing ability, the balance graph is used (e.g., for Parkinson’s disease and dementia patients).