## APPENDIX 1 - PHYSIOTHERAPY INTERVENTION PROTOCOL

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| **1 to 8 Therapy** | **9 to 16 Therapy** | **17 to 24 Therapy** | **25 to 32 Therapy** |
| **Objective: Balance training and sensory integration** | | | |
| **Foam exercises**   1. Open eyes (OE)/ Closed eyes (CE) Romberg position wide/narrow base 2. Romberg associated with upper and lower limbs exercises focusing on speed of movement, amplitude and postural transitions. 3. Romberg with exercises varying weight shifts with step on lateral associating upper and lower limbs movements | **Foam exercises**   1. Bilateral OE/CE Tandem position 2. Tandem associated with upper and lower limbs exercises focusing on speed of movement, amplitude, and postural transitions 3. Tandem associated with trunk exercises focusing on the speed of movement, amplitude and postural transitions 4. Tandem with exercises varying weight transference with step forward, side and backward associating upper and lower limbs movements | **Foam exercises**   1. Single-leg stance OE bilateral 2. Single-leg stance associated with upper and lower limbs exercises focusing on the speed of movement, amplitude and postural transitions 3. Single-leg stance associated with trunk exercises focusing on speed of movement, amplitude and postural transitions 4. Single-leg: slide a lower limb forward and back and then make a circular movement bilaterally | **Foam exercises**   1. Bilateral OE/CE Tandem position 2. Single-leg stance OE bilateral 3. Exercises varying weight transference with step forward, side and backward coordinating upper limbs movements 4. Tandem associated with trunk exercises focusing on the speed of movement, amplitude and postural transitions 5. Single-leg stance maintained associated with upper and lower limbs movements 6. Activities in pairs on single leg stance on the foam coordinating activities with a small ball on the hands |
| **Objective: Balance training, agility and motor coordination** | | | |
| **Exercises on a step bench**   1. Step on the step bench changing the movement sequences to stimulate coordination, stability limits and postural adjustments. | **Exercises on a step bench**   1. Step on the step bench changing the movement sequences to stimulate motor coordination (more complex), stimulate stability and postural adjustments. Sequence of exercises using single-leg stance and sequence of exercises associated with upper limbs movement | **Exercises on a step bench**   1. Step on the step bench changing the movement sequences to stimulate motor coordination (even more complex), stimulating stability limits and postural adjustments. Sequence of exercises using single-leg stance, maintenance of single-leg stance in the sequences and sequence of exercises associated with upper limbs movement (more complex) | Exercises on a step bench   1. Step on the step bench changing the movement sequences to stimulate motor coordination (even more complex), stimulating stability limits and postural adjustments. Sequence of exercises using single-leg stance, maintenance of single-leg stance in the sequences and sequence of exercises associated with upper limbs movement (more complex). Association of sequences of exercises from previous therapies |
| **Objective: Balance training, limits of stability, anticipatory and reactive adjustments** | | | |
| **TRAMPOLIM**   1. Exercise in Romberg position stimulating side-to-side weight shifts 2. Exercises in Romberg position stepping forward, side and backward bilaterally 3. Exercise in Romberg performing knee flexion and extension (squats) to change the center of body gravity. | **TRAMPOLIM**   1. Exercise in Tandem position stimulating anterior-posterior weight shifts 2. Exercise in Romberg and Tandem positions associating trunk flexion, extension, and rotation and associated upper limbs movement 3. Introduction of short jumps in Romberg. | **TRAMPOLIM**   1. Exercise in single-leg stance changing the position of the center of body gravity 2. Exercises in the single-leg stance associating upper limbs movement 3. Introduction of short jumps in Romberg and Tandem | **TRAMPOLIM**   1. Association of the exercises perfomed in previous therapies |
| **Objective: Balance training, stimulus to transitions of posture and functional independence** | | | |
| **BALL**   1. Facilitate transition of posture from sitting on heels to kneeling and from knelling to semi-kneeling, with and without trunk rotation holding a Bobath ball 2. In semi-kneeling position, facilitating trunk anterior displacement, pushing a Bobath ball forward | **BALL**  Same as before plus:   1. In semi-kneeling position, associating trunk rotation and upper limbs movement 2. In semi-kneeling position, facilitating transition from semi-kneeling to standing | **BALL**  Same as before plus:   1. Exercise with patient sitting on a ball with one-leg support elevating the other lower limb, keeping the position for 10 seconds | **BALL**   1. Association of the exercises perfomed in previous therapies |
| **Gait training using visual and auditory cues (circuit 1)** | **Gait training using visual and auditory cues (circuit 2 – increasing level of difficulty in comparison to 1)** | **Gait training using visual and auditory cues (circuit 3 – increasing level of difficulty in comparison to 1 and 2)** | **Gait training using visual and auditory cues (circuit 4 – increasing level of difficulty in comparison to 1, 2 and 3)** |