

## Case Study

The clinical evidence and content for this case study was collated, developed and written by The OT Service.

### Using the Person Environment Occupation Performance (PEOP) Model of Practice

PEOP developed by Law et al. is a top-down biopsychosocial model of practice pertaining to the 4 named elements (see image 1).

This case study intends to use PEOP to explore and reflect on an occupational therapy assessment, intervention and formulation of recommendations.



Image 1

### Summary of the Case to be applied

Vincent is a 79-year-old gentleman, widowed 5 years ago and has a diagnosis of Parkinson's Disease (PD). He has recently moved from his long-term home due to be closer to family.

During Vincent's working career as a dental surgeon, he travelled the world teaching and remains well respected in the field.

Now living in a two bed-detached bungalow Vincent is presenting with symptoms of PD, such as stooped posture, masked expression, and slow motor co-ordination. In addition, Vincent has presentations including shuffling gait and freezing while mobilising, particularly at thresholds where there are changes in colour or texture under foot.

His son and daughter in law are supporting with his care and transport needs.



## **Application of the PEOP Model**

### **Person – Intrinsic factors**

Vincent is stooped in stature, with a shuffling gait. He reports loss of strength and flexibility.

Vincent is taking water tablets as he has peripheral lower limb oedema, contributing to his need to access the bathroom an average of 4 times during the night.

Vincent navigates the property without the use of a walking aid, although when outside uses a walking stick for additional support. This is predominantly due to reduced balance, both dynamic and static, with the inability to fully extend at the knees and hips impacting posture, with some evidence of dominant right sided weakness.

He states that he could 'do more if things didn't take so long'.

Vincent is motivated and shows desire to participate in activities, describing his condition as frustrating, lacking the confidence to walk outside, or using public transport.

His sit to stand transfer is challenging, particularly of low furniture, and Vincent has developed his own technique to stand independently. Although independent, it comes with significant risk of falls, particularly from his sofa which is the preferred comfy seat.

### **Environment – extrinsic**

Vincent's son and daughter in law are supporting with cleaning and meal preparation; being new to the area Vincent is yet to establish social connections in the area.

Vincent is in receipt of pensions and has a retired person's bus pass. He is a homeowner.

The property is a two-bed detached bungalow on a corner plot. Once inside, the property is level, with only the garage, utility and gardens accessed by steps of varying depth, width and height.

Bedroom and living room furniture is soft and low.

Bathroom comprises of walk-in curved shower, with a floor fixed toilet fitted in one corner at 45 degrees, and a double sink.

The property has a well-appointed open plan dining room and kitchen. The dining space is carpeted and contains a dining table with four chairs that are a good height for Vincent to stand from, although they do not have arms which would make the sit to stand less challenging. There is a fridge in the kitchen but no freezer, which is stored in the utility room, accessible via the garage and a series of deep steps. Vincent has fallen on these steps recently.

There is a driveway with front and side gardens; access to the property at the front is up three curved block-paved steps to an outdoor porched area. The Front door has a lipped thresh. Enclosed gardens to the rear of the property can be accessed through a side gate, or



from patio doors located in the dining area or through the utility room at the rear of the garage. Both property access points have two deep steps between the door and ground level.

## **Occupation**

Previous occupations involve, rock climbing, walking, travelling. A successful career as a dental surgeon, working worldwide. Vincent is proud of his career achievements.

Vincent likes to get out, has always loved adventure, he expresses that he would like to be able to visit places of local interest on the bus.

Vincent showers 2-3 times per week, and daily washes, shaves and cleans teeth at the bathroom sink. He is self sufficient in providing himself with drinks, basic meals, and snacks.

Vincent has expressed desire to gardening, spends time watching the TV- usually documentaries or adventure shows.

## **Performance**

Vincent's performance is affected by his Parkinson's Disease, with an acute impact from the oedema. With the presenting symptoms, reduction in daily activity, reduced balance and ability, Vincent is at increased risk of falls, and appears to be in the fall – anxiety cycle.

Regularly taking 8 or more steps to turn 180 degrees and having a recent falls history Vincent has started to withdraw from engagement in meaningful activity. This is reinforced by his move to an area he is not familiar with but would be keen to explore.

No obvious cognitive impairments have been identified, demonstrating the ability to process and retain any information provided, giving providing appropriate responses.

## **Risks**

1. Further falls due to a combination of intrinsic and extrinsic factors
2. Social isolation
3. Occupational deprivation
4. Limited independence
5. Increased carer strain



## **Recommendations**

1. Access and egress: Various options provided to reduce risks at main and second access which promote ability to leave the house independently and safely, whilst providing access to the garden, driveway and beyond.
2. Mobility: Trial of the **Rollz Motion Rhythm** to increase confidence and consequently engagement of meaningful activities. Designed specifically to support the symptoms of Parkinson's Disease, particularly for gait freezing, with sensory feedback through a laser line, vibration and tones promoting continuous and placing of steps.
3. Rising armchair: It is important to understand the mechanisms of standing, and although Vincent could initiate the stand, he struggled with the transition from a 45-degree flexed position, to upright.

## **Outcomes**

### **Seating**

Vincent purchased a rising armchair following taking of measurements and liaison with a seating company. The chair enabled Vincent to stand independently and safely, giving him the confidence to use the Motion Rhythm and engage in daily activities.

### **Access**

Ramping was installed at the main access, and a step lift at the side access, to maximise access to community transport, social activities, driveway, and garden. This, alongside the other outcomes ensured that Vincent was able to engage in activities meaningful to him whilst futureproofing the home for any future need.

### **Trial of the Rollz Motion Rhythm**

As hoped, the three key elements of the Rollz Motion Rhythm had a dramatic impact on Vincent's mobility due to its unique features:

**Laser line:** The line projected onto the floor surface provided a visual prompt to support longer stride length and reduced feedback from the thresh.

**Sound:** The metronomic beep appeared to regulate step frequency, which created a rhythmical, uninterrupted stride pattern.

**Vibration:** The pace of the vibration, delivered through the handles, appeared to reinforce the rhythm created by sound, but delivered through an alternative sensory experience. Vincent also stated that he would prefer the vibration when in public, as only he would know it was happening.



As well as the impact on gait and balance, Vincent's posture immediately became more upright, further impacting on step length increased and became more fluent.

Vincent's son stated that he had not seen his dad "stand like that for about 10 years" and mobilised throughout his property without any need for supervision or support, which his son had needed to provide since the most recent fall.

Both Vincent and his son felt that it was "life-changing", as the use of the new walking aid has facilitated a more independent and active lifestyle.

Use of the Rollz Motion Rhythm has broken the fall cycle, which occurs from anxiety, leading to inactivity and increased risk, due to the psychological and physical reassurance it provided. This increase in activity and confidence has a profound impact on Vincent's overall health, wellbeing, and projected outcomes.

\*Name used for illustration purposes only