

Virtuoso evaluation report

Pre launch report on clinical evaluations



The Virtuoso

Alternating Pressure Mattress Replacement System

1 Virtuoso evaluation report

1.1 Introduction

The 3 cell cycle 7½ minute fully integrated cell deck mattress replacement systems lead the way in prevention of, and in accelerated healing of pressure ulcers in the most vulnerable and critically ill patients. It is over 10 years since these systems advanced in design and functionality. This summary reports on a new mattress, 'The Virtuoso' designed by PSPTechnology and the pre launch clinical case studies undertaken to confirm its acceptability and effectiveness inline with other 3 cell cycle mattresses. In all cases the aim was to prevent further skin damage, promote healing whilst maintaining comfort.

Patients included had an existing pressure ulcer or were ulcer free but assessed, using local protocols, as being high/very high risk of pressure ulcer development. Inclusion followed discussion between the TVN and care provider, and appropriate consent gained.

Mattresses were provided free of charge by **Linnet UK**.

The Virtuoso

Alternating Pressure Mattress Replacement System



The three-cell technology of the VIRTUOSO mimics the method by which the body usually prevents pressure damage by providing frequent complete elimination of pressure.

The VIRTUOSO is a 24-hour care pressureelimination system that provides accelerated healing of all grades of pressure ulcers irrespective of mobility.

Brief summary of case series

- 11 patients from 58–95 years of age participated. (8 female, 3 male).
 - 10 of the 11 were assessed as being at very high risk of pressure ulcer development.
 - 10 of the 11 are immobile with 9 bed bound and 1 bed/chair bound.
- 8 patients had a pressure ulcer identified. (3 Sacral, 3 buttocks, 2 heels).
 - 4 x Grade 4 (2 buttocks, 2 sacrums), 2 x Grade 3 (1 buttock, 1 sacrum), 2 x Grade 2 (both on heels).
 - 6 showed signs of healing, whilst 2 remained unchanged.
- The 3 patients with no tissue damage remained intact.

88.8% of users found the mattress to be comfortable, acceptable and quiet with over 90% of the carers reporting ease of se and cleaning, with 100% satisfaction in the mattresses meeting with their expectations.

2 Case Study One

Patient Profile

Age	70
Sex	Female
Weight	60 kg (BMI 20–25)

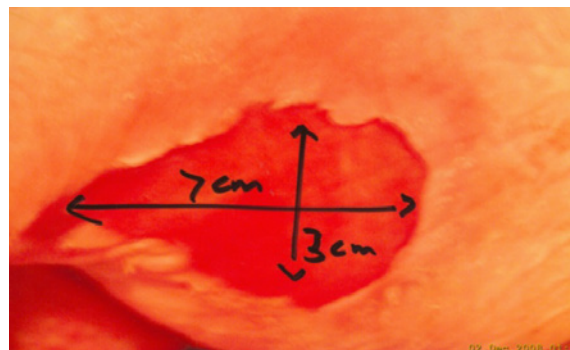
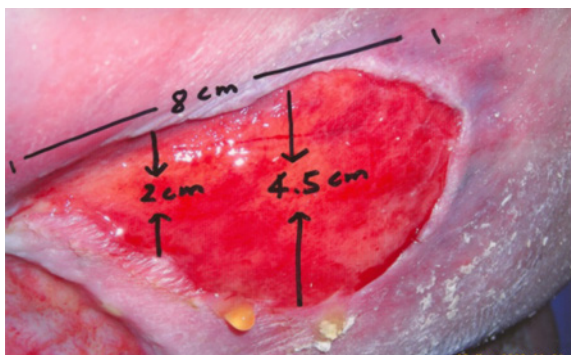
Patient's condition

This patient has MS and had a past history of CVA with right hemiplegia. For the past two years she has been a nursing home resident due to her severe mobility limitations and tissue breakdown. The lady is bed or chair bound and experiences mild pain on movement.

- Prior to the Virtuoso trial this lady was using a Low Air Loss mattress and a static air cushion in her wheelchair. She was sat out for 2–3 hours daily. Repositioning for pressure relief was given 2 hourly.

2.1 Pressure Ulcer details

- A grade 3 pressure ulcer (8.5 cm × 4.5 cm) was present on her right buttock.
- Standard wound care was in progress with Aquacell Silver being used as the main dressing.



- The Virtuoso was on trial for 30 days.
- The pressure ulcer showed signs of healing and reduced in size.
 - 7 cm – 3 cm on day 16.
 - 6.5 cm – 3 cm on day 24.

2.2 The Patient recorded

- The mattress was soft and comfortable.
- It was the quietest she had had and did not want to give it up.
- Overall it was very acceptable.

2.3 Staff recorded

- The mattress was easy to nurse the lady on.
- The mattress was easy to use and clean.
- The mattress met their expectations in patient outcomes.
- They found the mattress 'extremely efficient and worked very well'.
- They found the fully automatic setting of the mattress a key element in aiding their care.

The mattress design has clearly continued the outcome expectations placed on it inline with other products in this category.

3 Case Study Two

Patient Profile

Age	80
Sex	Female
Weight	Overweight (BMI 25–30)

Patient's condition

This lady was admitted to the acute medical ward with a chest infection and grade 3 pressure ulcer to her heel. The lady also has a large abdominal hernia. Although this lady is self caring and repositions herself she was unable to walk and was bed or chair bound for the majority of the trial, with only a few steps taken with the aid of the physiotherapist.

- Prior to the Virtuoso trial this lady was using a 3 cell cycle mattress replacement system and an air cushion in her chair. She was sat out for 3 hours daily.
- The trial last 20 days until she was discharged.

3.1 Pressure Ulcer details

- A grade 3 pressure ulcer (2.1 cm × 3 cm) was present on her right heel.
- Standard wound care was in progress with an appropriate dressing for a granulating wound.
- The pressure ulcer continued to heal over duration of the trial.

3.2 The Patient recorded

- The mattress was firm and comfortable.
- She did not notice the mattress movement and commented 'very good, once in bed I did not want to get out again.'
- Overall the mattress was very acceptable.

3.3 The Staff recorded

- The mattress was very easy to nurse the lady on.
- The mattress was very easy to use and clean.
- The mattress met with their expectations in patient outcomes.

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4 Case Study Three

Patient Profile

Age	58
Sex	Male
Weight	48.8 kg Underweight (BMI 15–20)

Patient's condition

This patient has suffered a CVA with dysphagia and requires a PEG tube for nutritinal intake. He has a past history of Emphysaemia with pneumothorax and is recovering from alcoholism. He has been assessed as very high risk of tissue damage as he is bed bound and non compliant with positional changes and the use of dynamic mattresses due to noise.

- Prior to the Virtuoso trial this man was using a two cell cycle mattress replacement system. He sits up in bed supported by pillows and requires repositioning for comfort and pressure relief every 1–2 hours.
- This gentleman is continent of urine but incontinent of faeces.
- There is no pressure ulcer damage to the skin.

4.1 Patient and staff feedback

- The patient found the mattress to be soft and comfortable, very acceptable and quiet, and did not notice the movement of the mattress.
- Staff reported that the mattress was easy to use and clean and met with their expectations.
- His pressure areas remained intact for the 43 days of the trial.
- Staff found the quietness of the mattress a key element in aiding the care of this man.

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5 Case Study Four

Patient Profile

Age	85
Sex	Female
Weight	Acceptable (BMI 20–25)

Patient's condition

This lady was in nursing home care due to her Alzheimer's. For the past eight years her mobility has reduced and she is now bed bound. Her nutritional state was also poor. She needs assistance with all activities of daily living and is doubly incontinent.

- Prior to the Virtuoso trial this lady was using an alternating pressure two cell cycle mattress replacement system. Repositioning for pressure relief was given 2 hourly.

5.1 Pressure Ulcer details

- A grade 3/4 pressure ulcer on her right buttock was tracking to a depth of 5 cm.
- The Community Tissue Viability Nurse was delivering wound care using Aquacell and Verseva Xcas the main dressing.
- The Virtuoso was on trial for 35 days
- The pressure ulcer showed signs of healing and reduced in depth.
 - 2.5 cm on day 30.
- All other areas at risk of pressure damage remained intact.
- An underlying urinary tract infection was thought to be delaying healing.



5.2 The Patient recorded

- The mattress was firm and comfortable.
- The alternating cells had not been noticed.
- Overall it was acceptable.

5.3 Staff recorded

- The mattress was easy to nurse the lady on.
- The mattress was easy to use and clean.
- The mattress met their

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6 Case Study Five

Patient Profile

Age	68
Sex	Female
Weight	34kg (BMI 15–20)

Patient's condition

This immobile and bed bound lady was in nursing home care due to a pressure ulcer that had developed on her sacrum in her own home 11 months previously. This lady was also suffering from Alzheimer's and was receiving all aspects care for her daily needs.

- Prior to the Virtuoso trial this lady was using a two cell cycle alternating pressure overlay mattress. Repositioning for pressure relief and comfort was given 2 to 3 hourly.
- This lady was doubly incontinent.
- The lady felt pain on movement and was scored by staff on a scale of 6 out of 10.

6.1 Pressure Ulcer details

- A grade 4 pressure ulcer on her sacrum was measured at 5.5 cm × 5.5 cm and to a depth of 5 cm.
- The Community Tissue Viability Nurse was delivering wound care along with the care home staff. The dressing in use was Acticoat + Verseva XC.
- The wound had a very offensive malodour.
- The Virtuoso was on trial for 33 days.
- An underlying urinary tract infection was thought to be contributing to the delayed healing and offensive odour.



- All other areas at risk of pressure damage remained intact.
- The mattress was found to be soft and comfortable.
- The alternating cells had not been noticed.

6.2 Staff recorded

- The mattress was easy to nurse the lady on.
- The mattress was easy to use and clean.
- The mattress met their expectations in patient outcomes.
- They liked the fact that the cells supported the patient at all times.
- The TVS considered the trial a success as no deterioration.

The mattress design has clearly continued the outcome expectations placed on it inline with other products in this category.

7 Case Study Six

Patient Profile

Age	75
Sex	Male
Weight	Underweight (BMI 15–20)

Patient's condition

This immobile and bed bound gentleman was in acute medical care due to a deterioration in his general condition and is suffering from Alzheimer's and was receiving all aspects care for his daily needs. All pressure areas remain intact.

- Prior to the Virtuoso trial this gentleman was using a standard foam replacement mattress. This was in place from admission (3 days earlier) repositioning for pressure relief and comfort was given 2 to 3 hourly.
- The patient was non compliant with positional changes and would roll back onto his back.
- This man was doubly incontinent.
- He was pressure ulcer free and was assessed as high risk of pressure ulcer development.
- The wound was very offensive malodour.

7.1 The Virtuoso Trial

- The virtuoso was in place for 20 days.
- Skin inspection was done 3 hourly, no damage to skin was found.
- The gentleman remained on his back for the duration of the trial and used a four section profiling bed frame to change positions. Due to the Alzheimer's the patient was unable to provide feedback on the mattress use.

7.2 Staff recorded

- The mattress was very easy to nurse the man on.
- The mattress was easy to use and clean.
- The mattress met their expectations in patient outcomes.
- They also recorded that that the mattress was 'much easier to clean than the other.

The mattress design has clearly continued the outcome expectations placed on it inline with other products in this category.

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Members of LINET Group

LINET spol. s r. o.

Želevčice 5 | 274 01 Slaný | Czech Republic

tel.: +420 312 576 400 | fax: +420 312 522 668 | e-mail: info@linet.com | www.linet.com

