Seating Matters

Why are we allowing our patients to decondition?

Clinical Seating in the Acute

Edd Donoghue – Clinical Partnership Manager

Agenda

- **Clinical Background** – Good Practice and Clinical Evidence
- **Principles of Pressure Care in Seating**
- **Seating In the Acute Setting** – Relating to Hospital Acquired Deconditioning
- **Patient Case studies and a Recent Large NHS Trust audit**
- **Financial Data from a Recent large NHS Project**
- **Seating Matters Clinical Evidence**

Clinical Background

What is good sitting?

- By approximately ten months of age, a typically developing infant demonstrates good sitting posture.
- Pelvis and spine in a straight line.
- Head balanced securely over the body and both hands are free to interact with the environment.
- This is an efficient posture, i.e., it requires the least amount of exertion to maintain.

What happens to our body when we lose postural control?

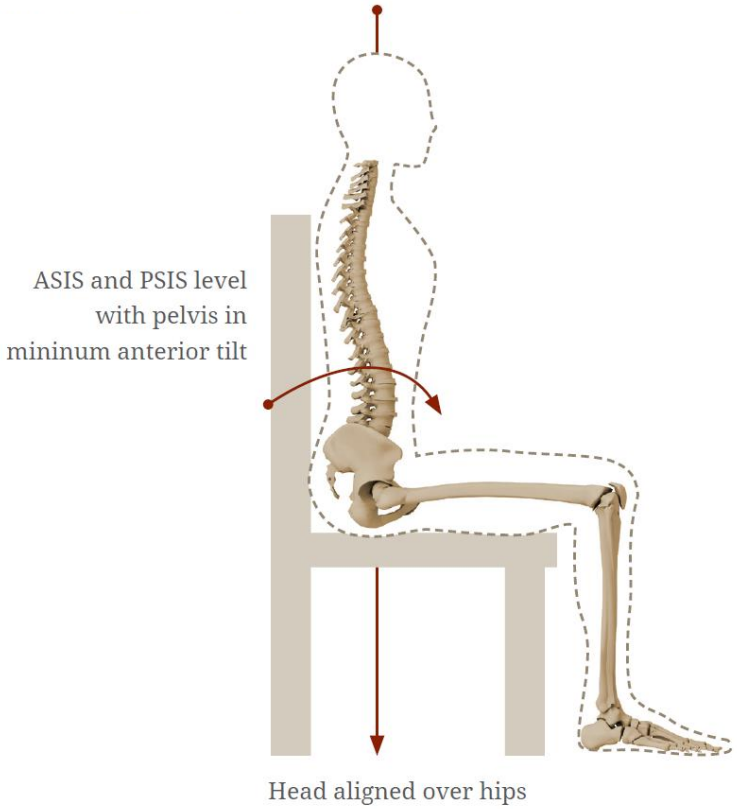
Seating goals

- **Functional/Activity** related e.g., feeding, drinking, reading.
- **Physiological function** e.g., swallowing, respiration, digestion, elimination.
- **Psychological function** e.g., effective communication, socialising, self image

Normal vs. deviated posture

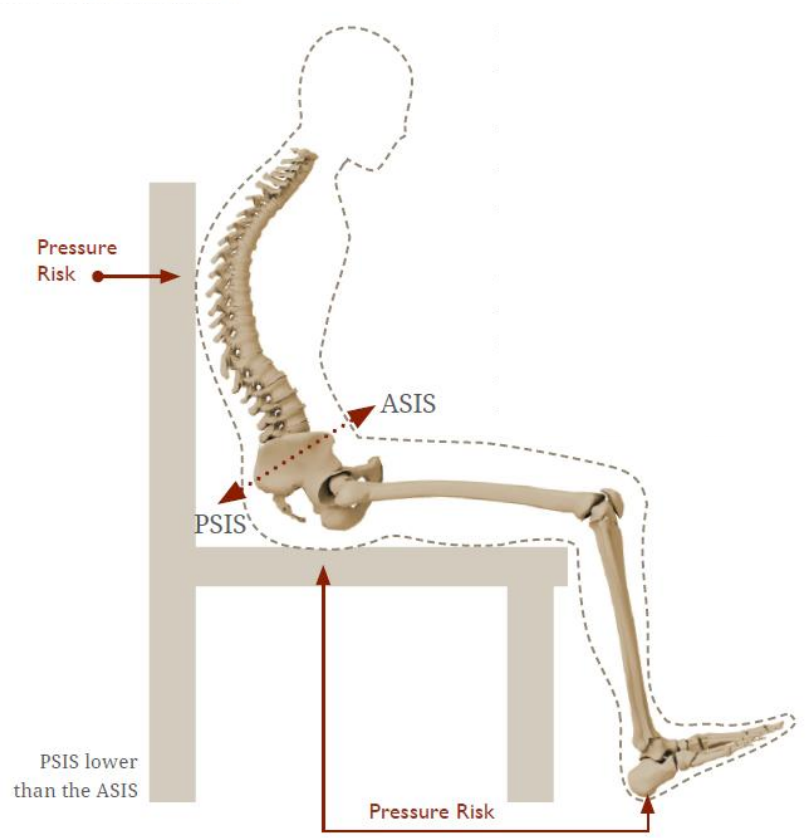
Normal / correct sitting posture

- **Weight taken evenly through both IT’s.**
- **Pelvis minimal anterior tilt.**
- **Head balanced and aligned above hips.**
- **Feet rested in neutral.**



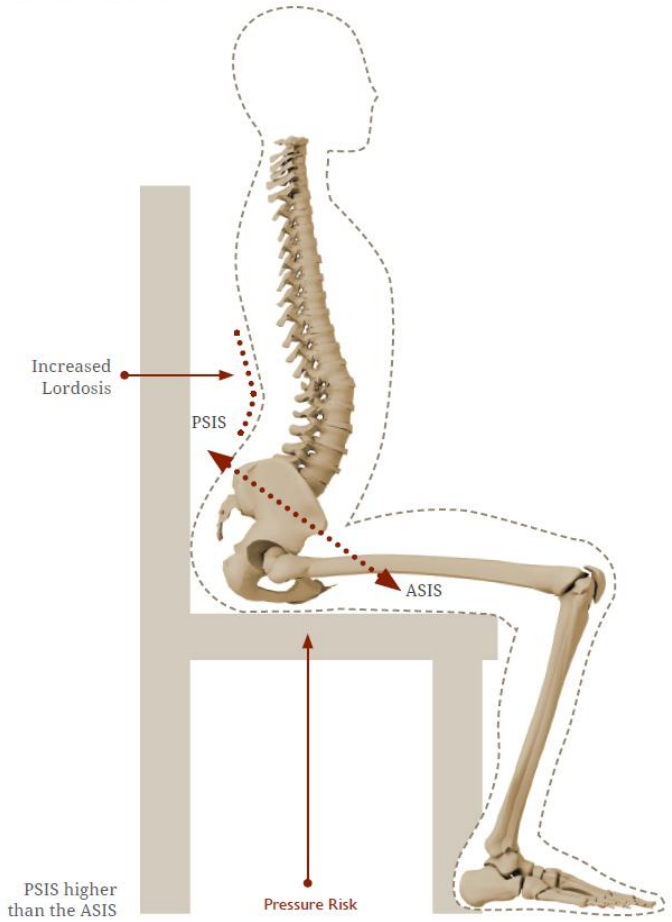
Posterior pelvic tilt

- ‘Sacral’ sitting.
- Common when sitting for long periods.
- Most dangerous.
- Associated with sacral, spine and heel pressure injuries.
- PSIS lower than ASIS.



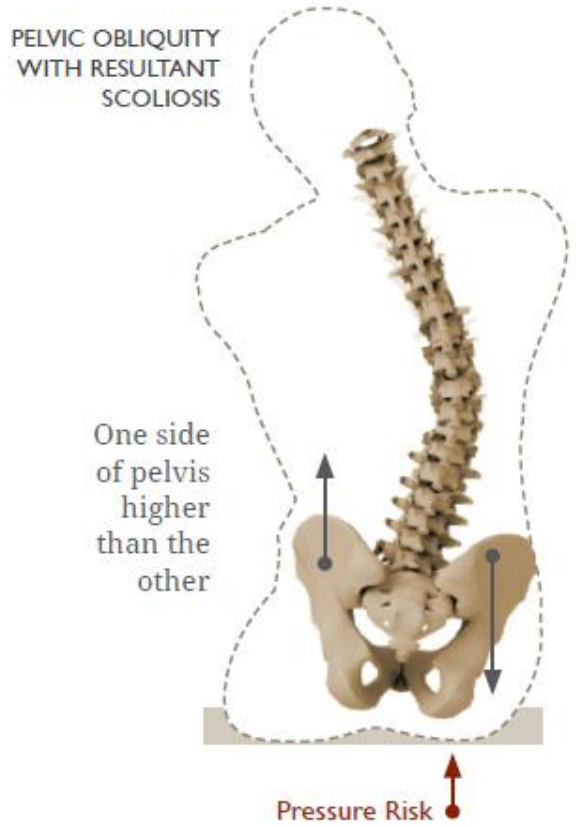
Anterior pelvic tilt

- Less common.
- Sitting at a desk.
- ITs push backwards-weight on pubis risk of injuries.
- PSIS higher than ASIS.



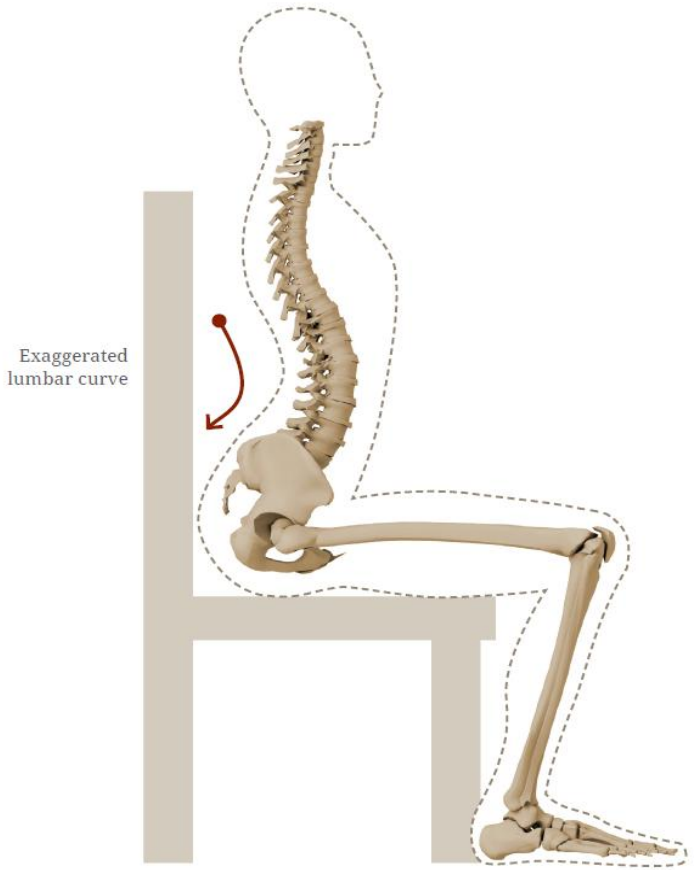
Pelvic obliquity

- Common when sitting for long period.
- Caused by instability of chair or person.
- Weight taken through one IT (risk of pressure injuries.)
- Associated with friction & shearing & scoliosis.



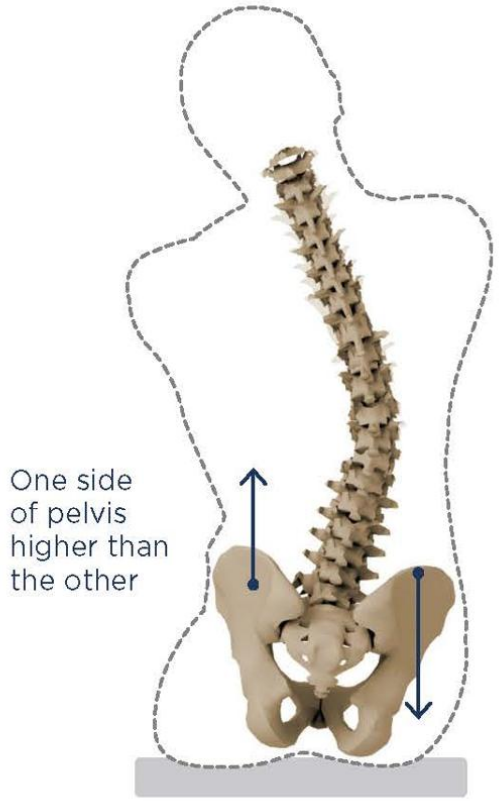
Lordosis

- **Can be associated with anterior pelvic tilt.**
- **Increased tone in hip flexors.**
- **Associated with weakened abdominals** (relative to extensors)**.**
- **Lower back pain.**



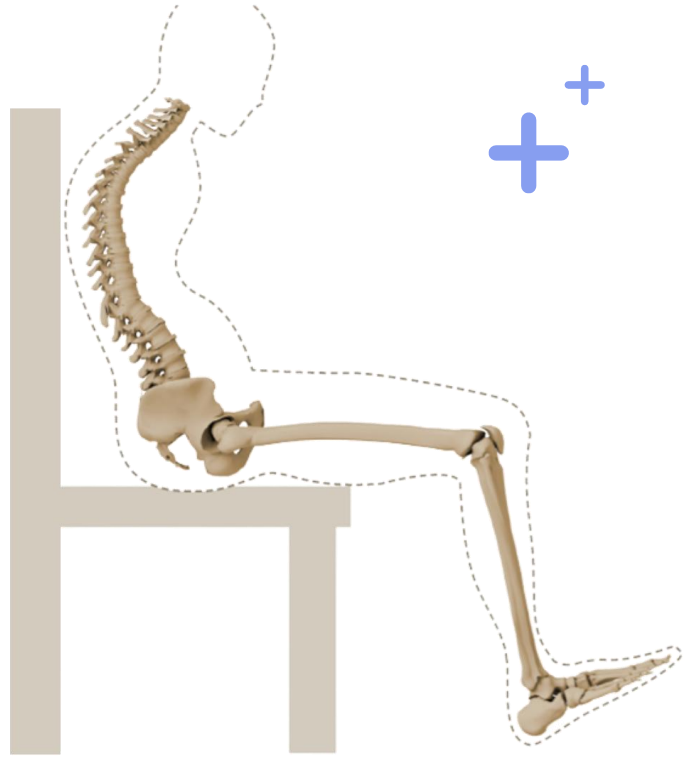
Scoliosis

- Can be associated with pelvic obliquity.
- Can be ‘C’ shape or ‘S’ shape.
- Can be associated with osteoporosis.



Kyphosis

- Can be associated with posterior pelvic tilt.
- Can be associated with osteoporosis.
- Reduces physiological functioning.
- ‘Hump’.



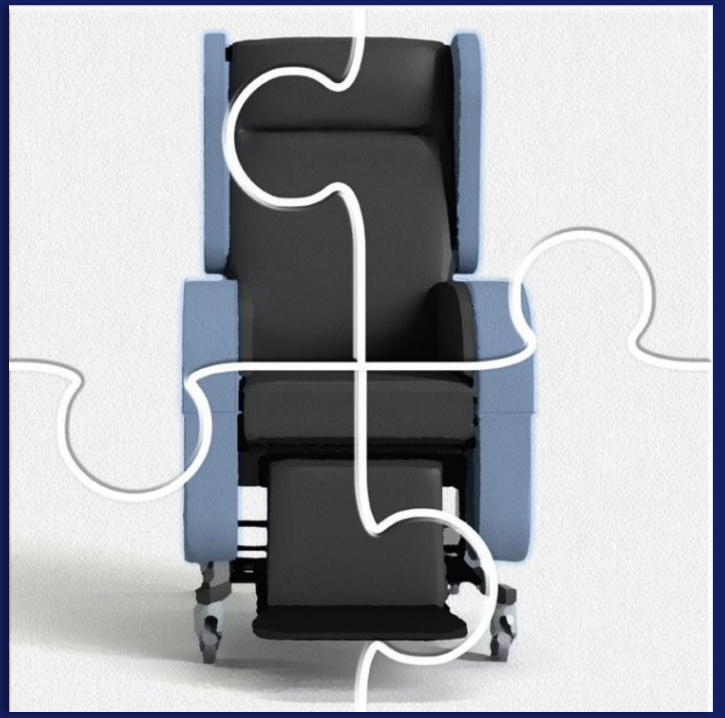
Correctable vs Non-Correctable

- Always accommodate a non-correctable posture.
- Try to correct flexible or partially flexible deformities.

Improving Pressure Management in Seating

4 Principles of Seating

1. Load the body
2. Provide postural support
3. Allow effective repositioning
4. Use an appropriate surface/cushion



1

Load the body

Examples of poor loading

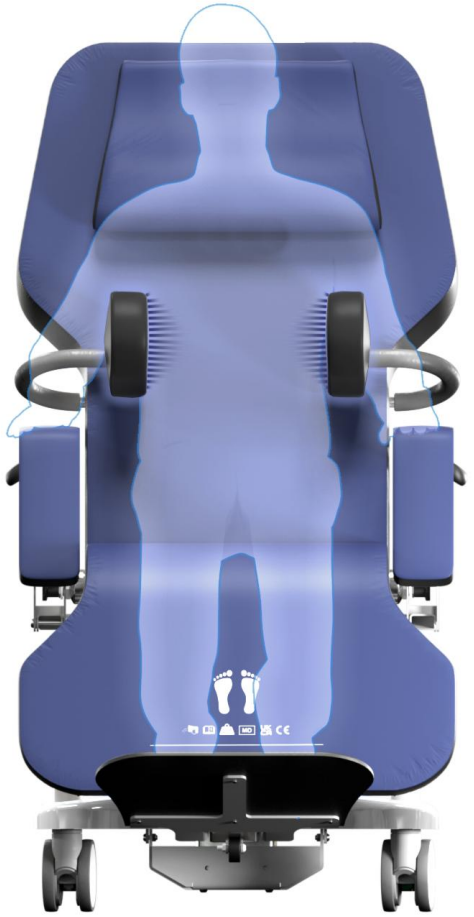
Incorrect
Seat Width

Feet
Not Loaded

Back and Head
Not Loaded

2

Provide postural support



3

Allow effective repositioning

4

Use an appropriate surface

4 Principles of Seating

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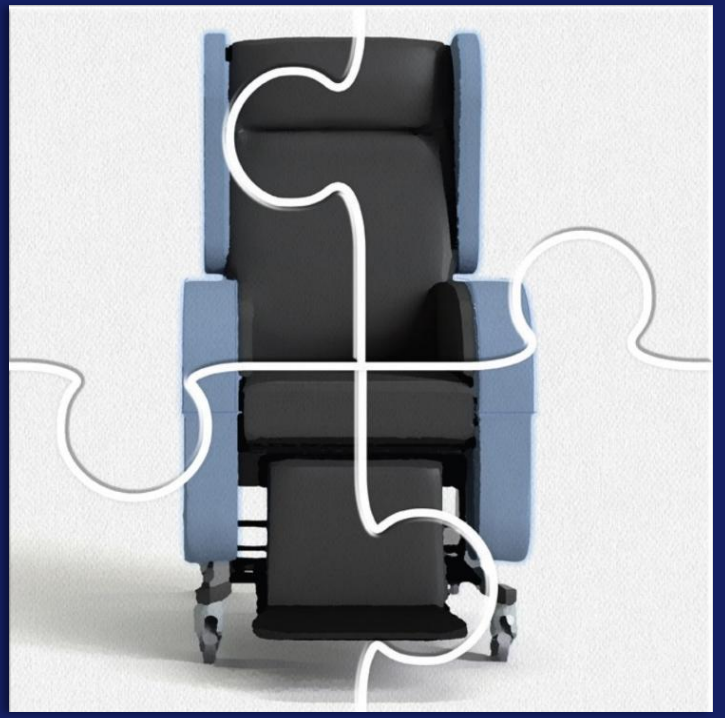

Hospital Acquired Deconditioning (HAD)

Hospital Acquired Deconditioning (HAD)

- Muscle atrophy and sarcopenia.
- Impaired muscle protein synthesis.
- Declining cognitive function.
- Diminishing physical function
- Reduced mental health and wellbeing.

(Panagioti et al., 2019)

What is Deconditioning?

"The decline in physical function, strength, and mobility that occurs due to prolonged bed rest, inactivity, or illness.

It can lead to muscle weakness, reduced endurance, and an increased risk of falls, making recovery more difficult and higher rates of hospital readmission."

(Loyd et al., 2020)

Hospital Acquired Deconditioning (HAD)

- Prevalence of HAD estimated to be around **30%.**
- HAD is a strong risk factor for the following within the following year:
    - **Mortality.**
    - **Re-hospitalisation.**
    - **Institutionalisation.**

(Loyd et al., 2020)

Hospitalised Community-Dwelling Older People Study

6 Months post-discharge assessment:

43% needed continuing help with medications.

24% were still unable to walk a quarter of a mile.

45% were still unable to drive.

Cohort of 515 patients hospitalised for a non-critical condition

(Dharmarajan et al., 2020)

Hospital Acquired Deconditioning (HAD)

To put it simply…

??? days in **bed** can equate to
10 years of **muscle wastage**

Ref: NHS The Royal Wolverhampton (NHS Trust)
Eat, Drink, Dress and Move to Improve Campaign 2024

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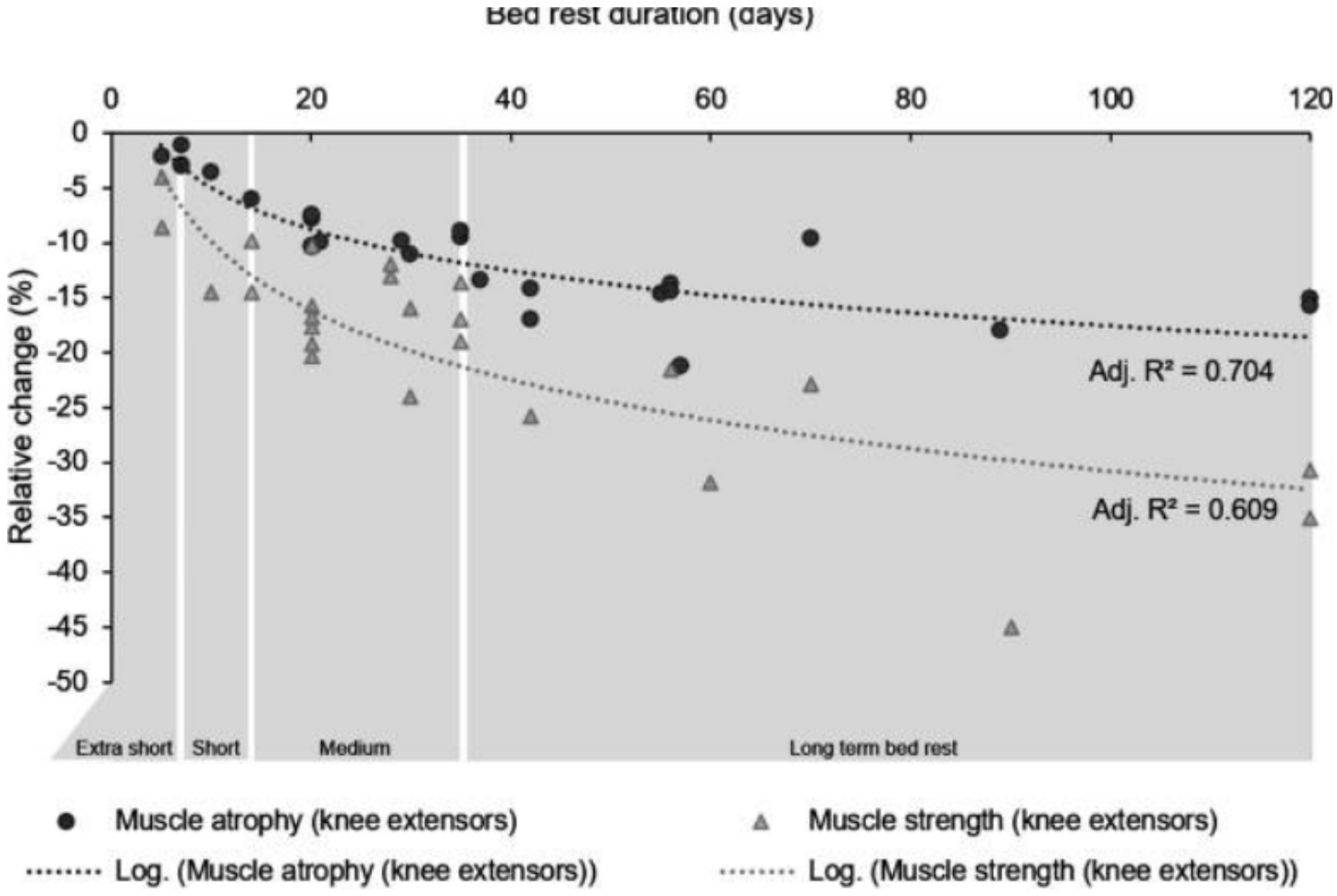

(Marusic et al., 2021)

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    - **Re-hospitalisation.**
    - **Institutionalisation.**

(Loyd et al., 2020)

Why?

- To improve pressure care
- To reduce patient deconditioning
- To promote independence
- To increase dignity and improve patient experience
- To improve clinical management of patients
- To improve rate of recovery discharge
- To reduce falls
- To improve patient food and fluid intake
- To reduce the burden on care staff (reduced manual handling, staff injuries etc.)

Why?

To reduce costs associated with all of the above

Why?

Total cost for **hospital acquired** and **on-admission pressure injuries** (in a large 1200 bed NHS Trust)

£26,397,939

Total cost of **injuries** to the **buttocks/sacral region** per year

£15,838,763

NHS Trust Data: Based on 2016/2017 data adjusted for inflation

Diagnosis doesn’t change!

Limited postural and pressure care support

↓

Increased risk of pressure damage, infection, malnutrition

↓

Challenges with repositioning and sit to stand transfers

↓

Unwillingness to engage, request to be returned to bed, refusal to mobilise altogether

Diagnosis doesn’t change!

Enhanced Seating

Fully adjustable chair, tailored to the patient's individual needs

Built in pressure management, even pressure distribution and full postural support

Easy to facilitate stand transfer and repositioning using tilt in space

Patient's physical and mental wellbeing are positively impacted

What Are we Trying to Prove?

Is a lack of appropriate seating associated with patient immobility and prolonged bedrest, contributing to preventable deconditioning and acquired weakness?

Can pressure injuries in this facility be attributed to inappropriate seating?

- At a select time between 10am and 3pm, how many patients on the ward are sat out of bed?
- What type of mattress and level of pressure management is offered for the patient's bed?
- What type of pressure management surface is offered with the patient's chair?
- Of the portion of patients who were sat out, how many patients were sat well?
- Which chairs are currently available to patients on the ward?

905 patients assessed randomly 10am – 3pm

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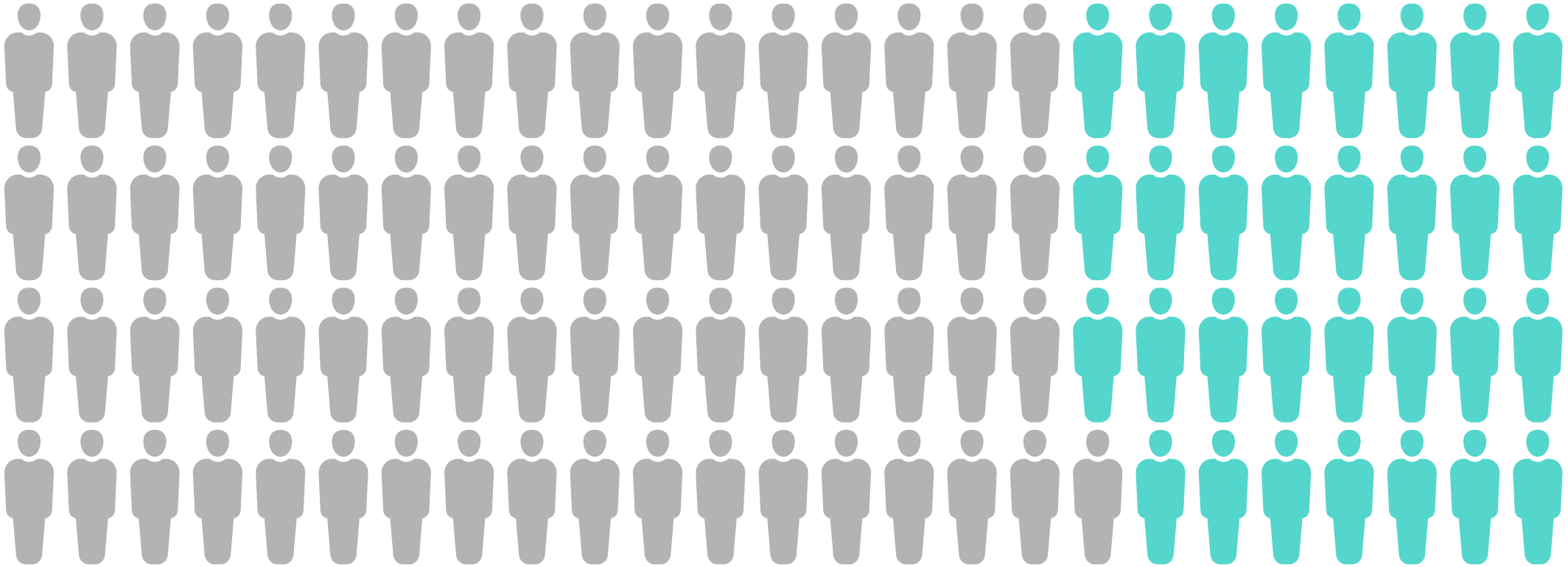
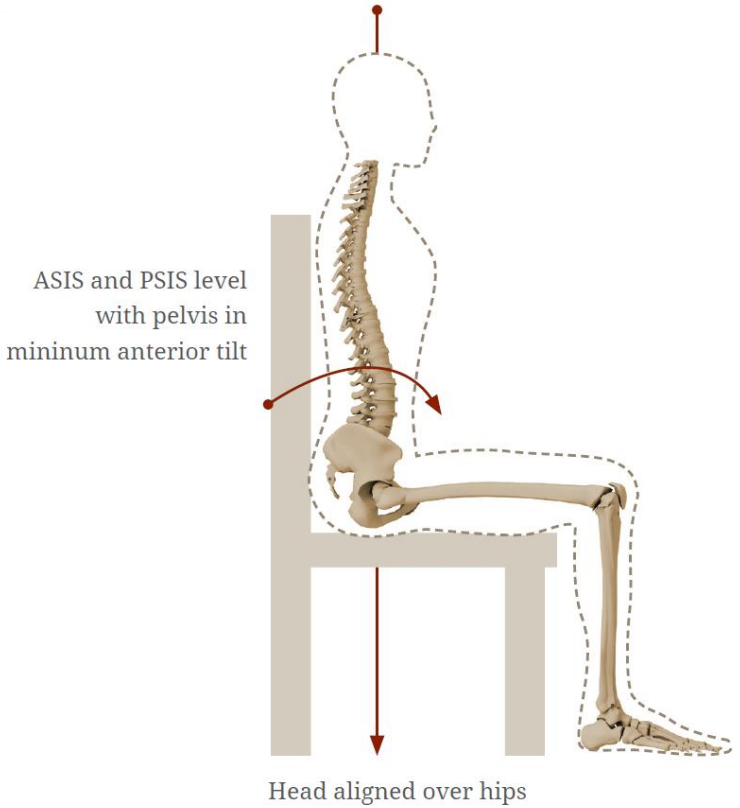


69% in bed

31% in chairs

‘Acceptable Posture’

- Weight taken evenly through both IT’s.
- Pelvis minimal anterior tilt.
- Head balanced and aligned above hips.
- Feet rested in neutral.



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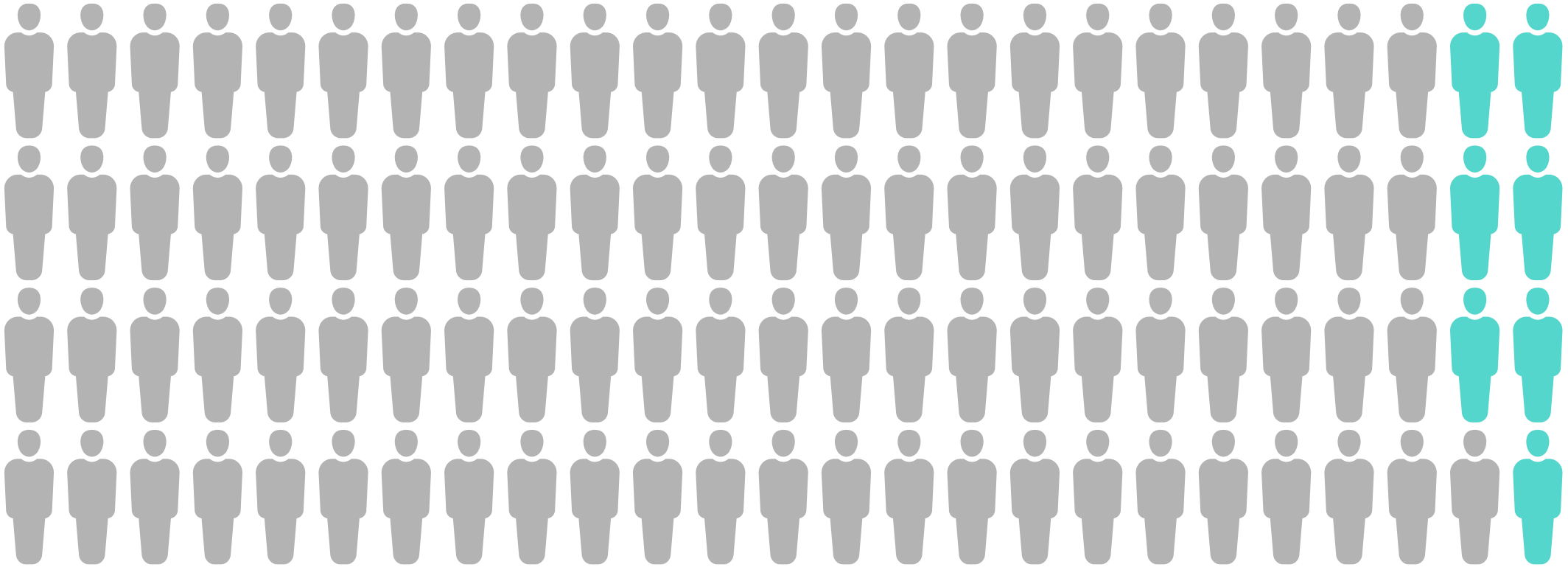
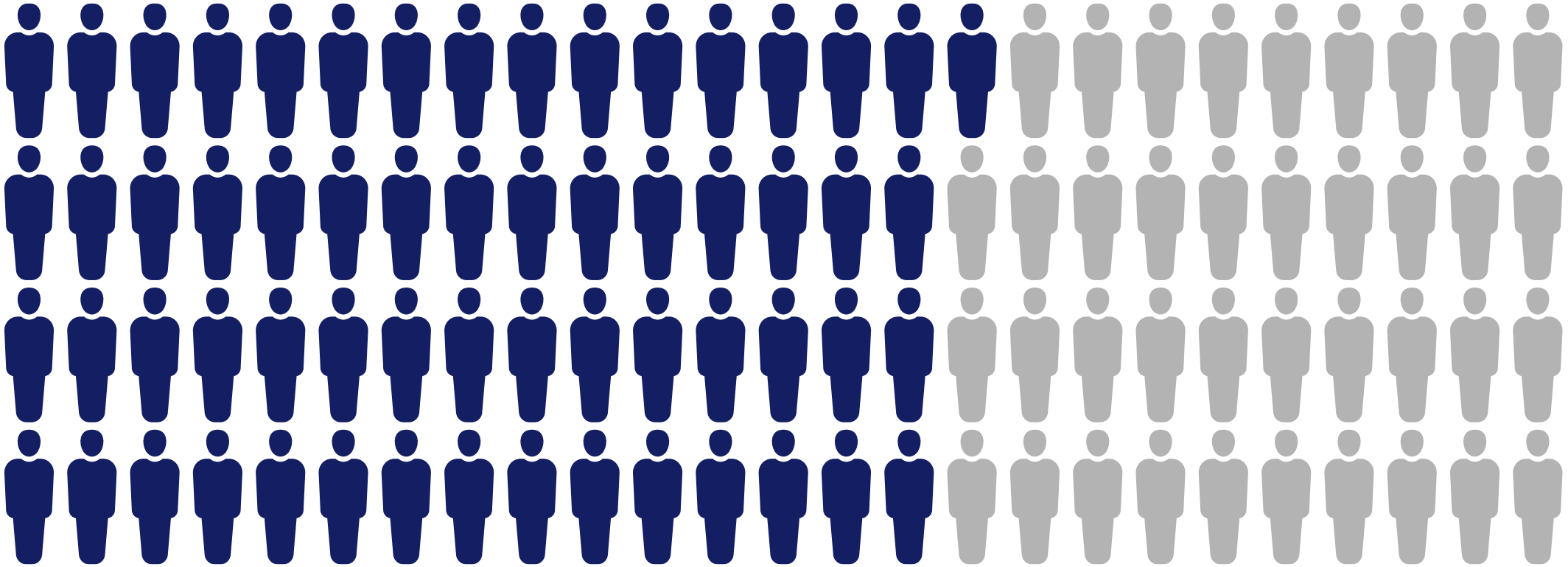


Only **7%** of the patients were seated in an acceptable posture

3 Hospitals - 812 chairs for the 905 beds

91% (742)

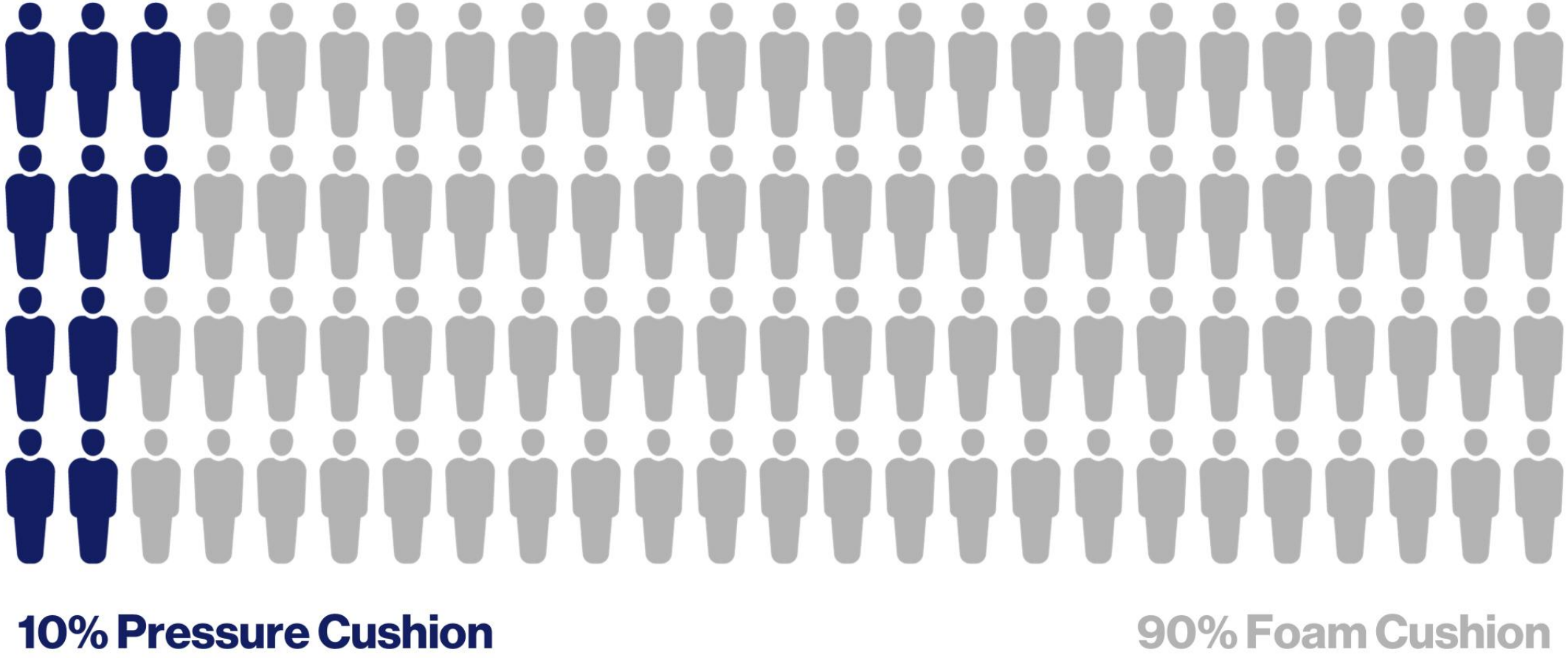
Beds



61% Air / Enhanced Mattress

39% Foam Mattress

Chairs



Resource	Cost (2016/17)	Source	Present Day
General Ward Cost PPPD	£586.59	https://www.england.nhs.uk/	**£758.75**
General Ward Cost per Excess bed day	£351.00	https://www.england.nhs.uk/	**£454.47**
Isolation Ward Cost per day	£586.00	https://www.england.nhs.uk/	**£758.75**
ICU Cost per day	£1,621.16	https://www.england.nhs.uk/	**£2,098.00**
NHS Bank Staff Per Day	£286.19	https://www.pssru.ac.uk/project-pages/unit-costs/unit-costs-2017/	**£370.31**
Agency staff per day	£443.59	https://www.england.nhs.uk/ltwp/	**£573.59**
Grade 2 Pressure Ulcer	£7,000.00	https://www.england.nhs.uk/	**£9,063.51**
Grade 3 Pressure Ulcer	£11,000.00	https://www.england.nhs.uk/	**£14,242.00**
Grade 4 Pressure Ulcer	£16,000.00	https://www.england.nhs.uk/	**£18,127.00**
Hip Fracture Surgery (2015)	£30,465.00	https://www.england.nhs.uk/	**£40,771.28**
Fall	£2,600	NICE	**£3,479.58**

Second NHS Trust Example

Hospital Acquired Pressure Injury by Grade

The average additional hospital stay following an acquired pressure injury is an **additional 5-8 days in hospital**.

Grade 1	Grade 2	Grade 3	Grade 4
19	45	5	1

NICE Guidelines, 2024

Hospital Acquired Pressure Injury by Grade

This would indicate wards included in 2024 had a potential of **350-560 days of additional hospital stay** (£265 - £425,000)

Grand Total (2024 Indicated Costs)

£537,128

NICE Guidelines, 2024

Litigation Costs for Pressure Injuries

	Average out-of-court settlement	Number in 2024	Potential pay out if patient pursued litigation
Grade 1 Acquired Pressure Injury	£3,950.00	19	£75,050
Grade 2 Acquired Pressure Injury	£8,950.00	45	£402,750
Grade 3 Acquired Pressure Injury	£17,000.00	5	£85,000
Grade 4 Acquired Pressure Injury	£19,200.00	1	£19,200
		Total Approximate Potential:	£582,000

Falls Analysis

Total cost of falls in 2024 across the 4 wards:

£118,286

(*NICE 2017 Indication, adjusted for Inflation*)

Falls Analysis

9 falls from chair.

£3600 furniture purchase (9 individual chairs at £400 each)

£31,031

Medical Furniture Tender ~ 15 years

£465,465

NICE Guidelines, 2024

Falls Analysis

Estimated **12.3 days** on average additional stay following a fall (34 x 12.3 = 418.2 potential additional days)

12.3 days x £759 per day = **£9,335.70 per patient**

418.2 x £759 = **£317,413 in avoidable bed blocking costs**

British Journal of Nursing

St Camillus Hospital, Republic of Ireland

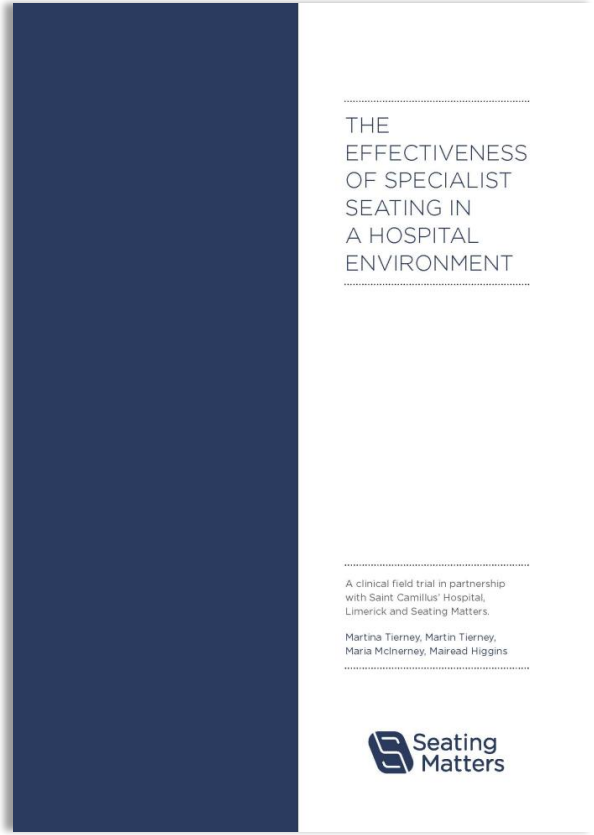
100% reduction in **falls** and **sliding**

46% overall increase in **functional activity**

31% less time spent in **bed**

75% decrease in **pressure injuries**

No new pressure injuries recorded



If each of the **905 patients** had the **correct chair** for their needs
(Approx £1,000,000 investment)

Savings in **Hospital Acquired Sacral/Buttocks Pressure Injuries** over **1 year** :

£5,138,619

Ref: Seating Matters research
Effectiveness of Specialist Seating Provision of Nursing Home Residents, 2013
Effectiveness of Seating Provision in Hospital Environment St Camillus, 2020

If each of the **905 patients** had the **correct chair** for their needs
(Approx £1,000,000 investment)

Return on £1,000,000 **investment** after only

71 Days

Seating Matters Case Studies and Clinical Research

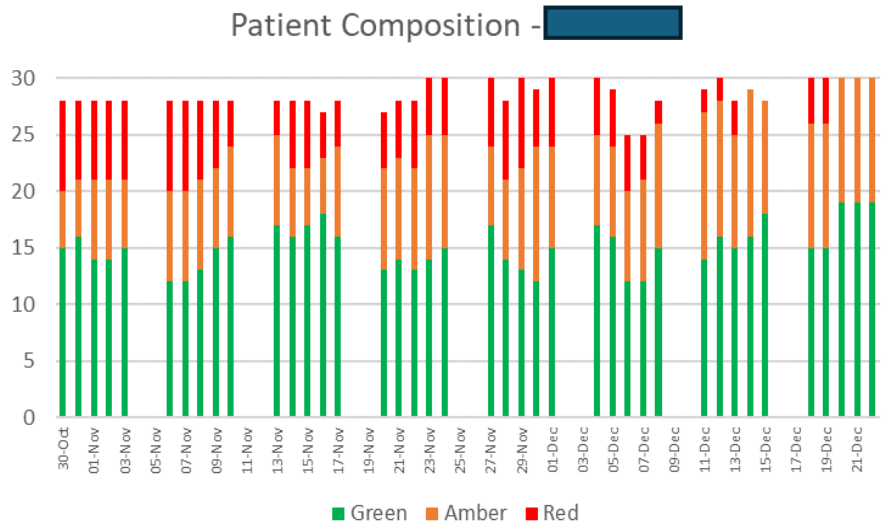
Seating Trial: Gastro, Respiratory & Elderly Care

- Patients were assigned to red/amber/green criteria based on their need for more supportive seating.

- Patients that met the amber and red criteria would qualify as needing additional support for Seating.

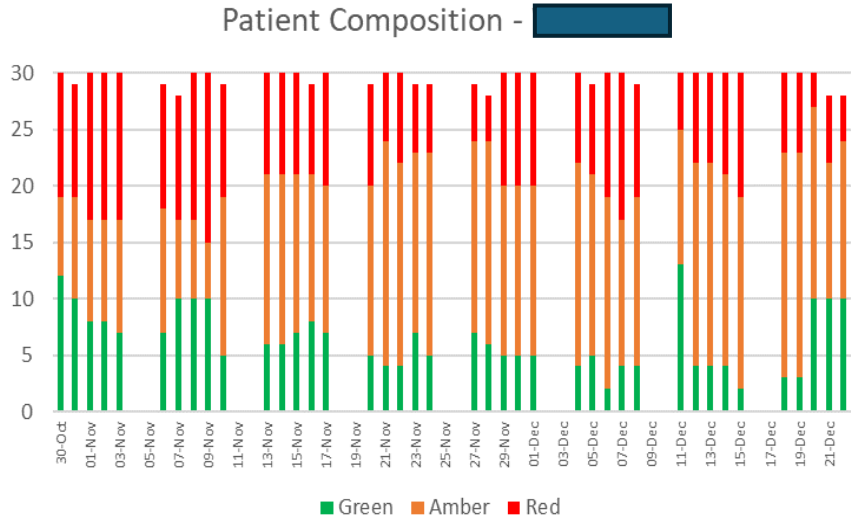
Red – Higher Risk (triggers on Intermediate categories and the following)	Acutely unwell on admission – not fit for mobilization but high risk of deconditioning/ further medical deterioration if remains in bed i.e. secondary complications with chest, risk of contractures etc.
	Unable to alert staff to needs if there was a need around positional change when sat in chair
	Significantly below functional baseline but potential to progress/ improve medical status
	Prolonged periods in bed increasing risk of poor nutritional status
	Existing pressure needs which are at further risk of deterioration without support of change of positioning
	Already has existing seating at home which is used daily to enhance and promote quality of life, and without would remain bedbound during inpatient stay
Amber – Intermediate Risk	Element of reduced cognition – confusion/ delirium/ memory impairment
	At risk of developing pressure damage
	Increased level of assistance needed for transfers
	Seating provision will promote reducing pain levels; supporting progression and rehab by increasing ability to tolerate sitting out
	Seating would promote independent maintenance of nutrition
	Acute medical condition increasing risks of secondary complications due prolonged periods in bed. e.g. – pressure damage, reduced Sa02, deconditioning

Traffic light risk indicator - No. Patients per day



Average:
5
9
15

48% of patients requiring more supportive seating



Average:
9
14
9

77% of patients requiring more supportive seating

Elderly Care & Gastro and Respiratory Ward

Measure	Current Chairs	Seating Matters Chairs	Improvement
Average time sat each day (hours)	2	2.7	**+35%**
Comfort of the chair (0-10)	4.4/10	7.9/10	**+78%**
Pain sitting in the chair (0-10)	4.4/10	3/10	**-31%**
Can complete daily tasks with more ease sitting in the chair vs the bed?	85%	95%	**+10%**
Feeding	60%	92%	**+32%**
Drinking	72%	86%	**+14%**
Interaction/engagement with others	57%	80%	**+23%**
Personal care tasks	27%	59%	**+22%**
Promoting functional progression	17%	39%	**+22%**

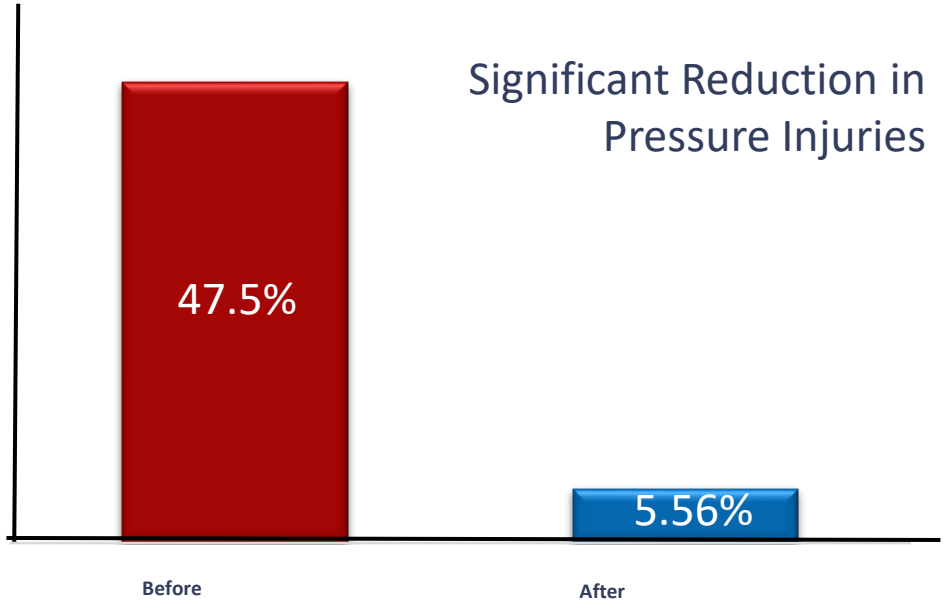
The Effectiveness of Specialist Seating in a Nursing Home

Ulster University Research

- 40 participants recruited from three nursing homes.
- Two groups - Control Group ‘Existing Chair’, Intervention Group ‘Seating Matters Chair.
- Full ethical approval.
- Both groups monitored by Occupational Therapists over a 12-week period.
- A pre and post seating assessment was conducted to monitor any changes in posture, skin breakdown or medical presentation.
- A questionnaire was completed before and after the 12-week trial period.

No New Pressure Injuries Recorded

Intervention Group



Ref: Seating Matters Research, 2013

Before

After

The Effectiveness of Specialist Seating in a Hospital Setting

St Camillus Hospital, Republic of Ireland

- 26 long term care patients included.
- 12 - week trial period per patient
- Patients were maximum dependency, rehabilitation, stroke, respite, and continuing care.
- Each client had an individual Seating Assessment and was provided with a Seating Matters Chair.
- A ‘Seating Passport’ on the back of the chair provided guidance for caregivers.

100%

Reduction in falls.

75%

Decrease in pressure injuries

46%

Overall increase in functional activity.

31%

Less time spent in bed

The Value of Seating in an Acute Neuro-Rehab Unit

Existing bedside recliner

2022 | 25% of falls

⚠️ **2023 | 33% of falls**

Objectives

- **Reduce chair associated falls**

- **Increase mobility**
  - Out of bed opportunities (OOB)
  - Time in chair

- **Improve patient experience**
  - Reduce pain & discomfort
  - Improve posture & support
  - Improve mood & interaction

- **Reduce care team safety concerns**

ZERO Falls!

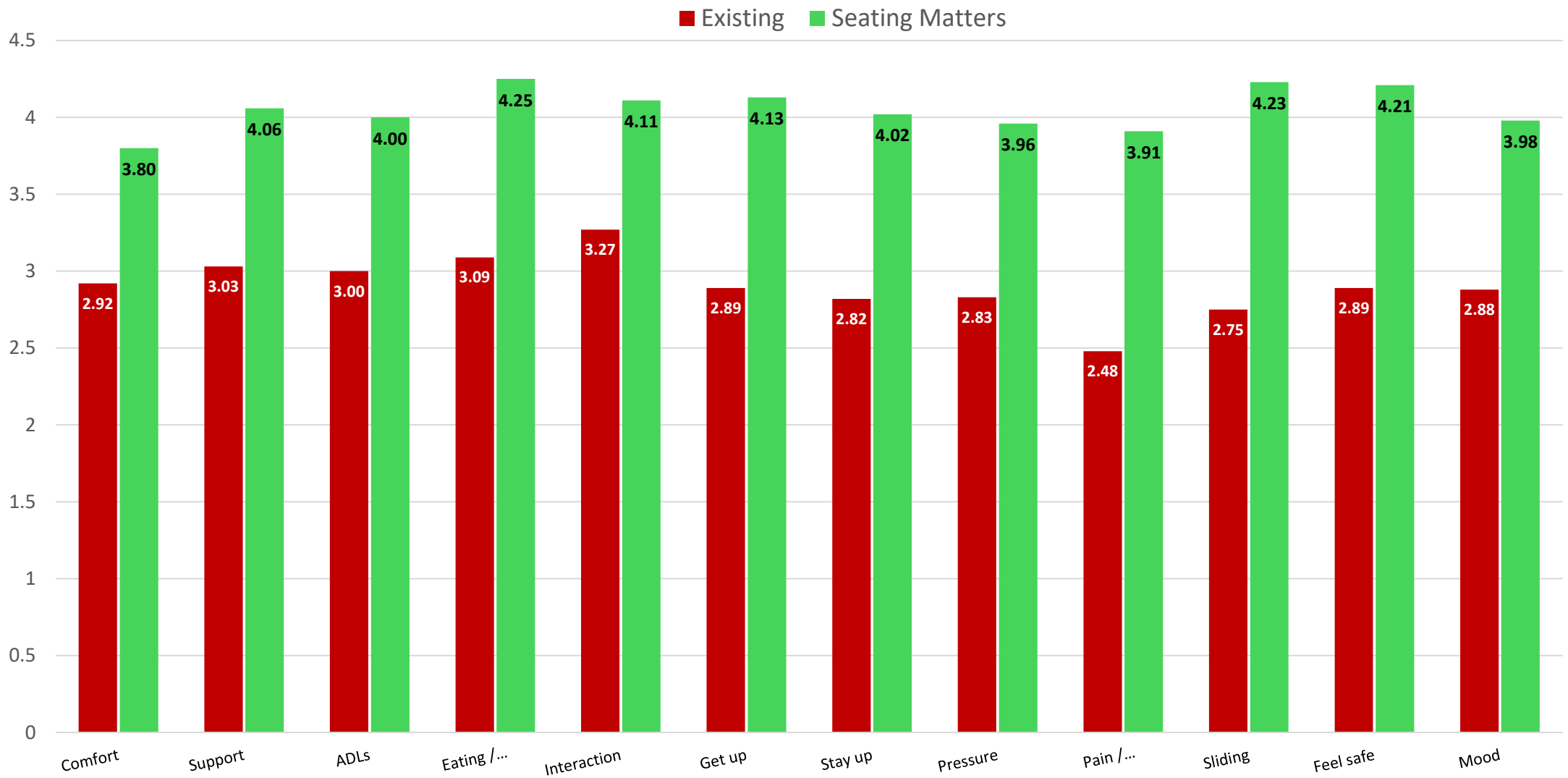
ZERO HAPIs!

Reduced harm events by 50% year on year

33% Increase in Out of Bed Opportunities

21% in Time Spent Out of Bed

Patient Satisfaction (scores out of 5)



Thank you