

The Medifab logo consists of the word "medifab" in a white, lowercase, sans-serif font, positioned inside a blue, rounded, semi-circular shape that resembles a stylized drop or a partial circle.

medifab

# Custom vs. Off-the-Shelf Iyng Systems: The Big W's: What, When, and Why?

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The Spex logo features the word "spex" in a white, lowercase, sans-serif font, with a small registered trademark symbol (®) to its upper right. Above the word "spex" is the text "Manufacturer of" in a smaller, white, sans-serif font. The logo is set against a dark red, rounded, semi-circular background.

Manufacturer of  
spex

## What is postural care?

The protection of body shape by supporting the body in a straight and comfortable posture, both in the day and at night.

## What is 24hr postural care?

It is a multi disciplinary and client centered approach involving the assessment and management of all the positions an individual adopts throughout the 24-hour period

# Who needs postural care support?

Everyone with **movement difficulties** is at higher risk of body distortion and may benefit from 24-hour Posture Care Management

- Casey et al, (2020) Children unable to maintain or change position independently were at higher risk for postural asymmetries in both supine and sitting positions. Impact of pain strongly highlighted
- Twenty-Four-hour proper body positioning and postural techniques improved gross motor functioning in all five dimensions of functioning. Statistically significant improvements in: Lying, rolling, sitting, crawling, kneeling, standing, walking/running. Rauf, W et al (2021)
- Casey et al (2022) Cross-sectional study involving 2,450 children with CP. Prevalence: 10.5% had scoliosis, 8.7% had windswept hips, 6.6% had hip flexion contractures, and 19.2% had knee contractures. Pain: Hip flexion contractures and windswept hips increased the likelihood of pain by 1.5-1.6 times

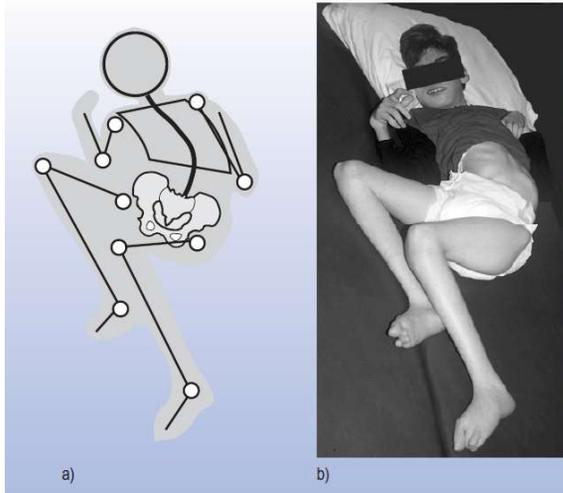
## Research continued...

- Paleg and Livingstone, (2022) Clinical recommendations combining research and clinical opinion support the early use of comfortable positioning routines and/or equipment to reduce time spent in sustained asymmetrical or potentially harmful sitting and lying positions
- Kittelson et al, (2024) A study on the use of lying positioning systems found 56-76% of participants improved body symmetry. 53% saw improvements in body symmetry without worsening pain or sleep quality

# Asymmetric postures

The main cause of distortion of the human body is the inability to stabilize body parts

Regardless the nature of the instability, staying too long in a harmful position will encourage musculoskeletal tissues to remodel in adapting to a new environment leading to body shape changes



**Prolonged Posture**

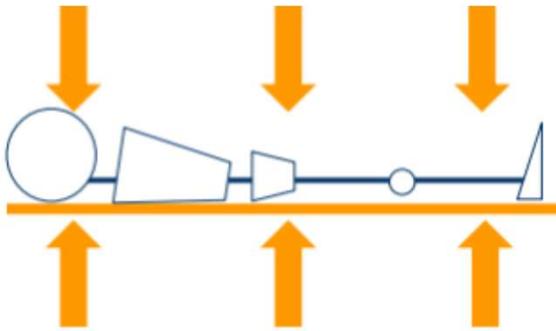
**Tissue Adaptation**

**Contracture**

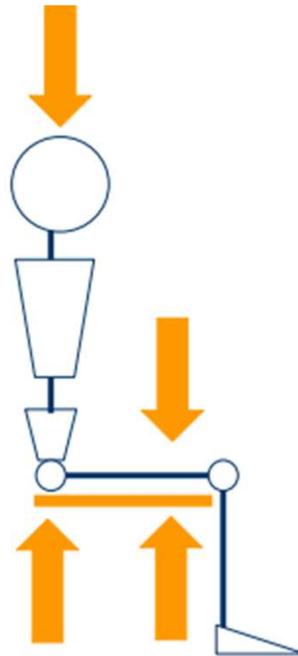
**Deformity**



## Under pressure- Human Sandwich effect

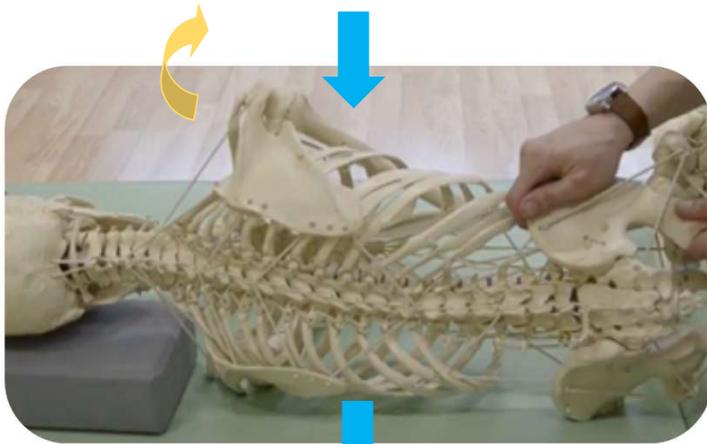


The person acts as the filling being squashed between two forces



Reduced life box space

# Unsupported side lying

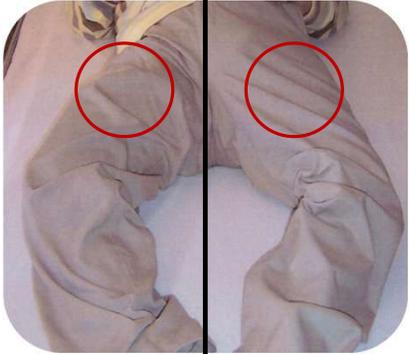
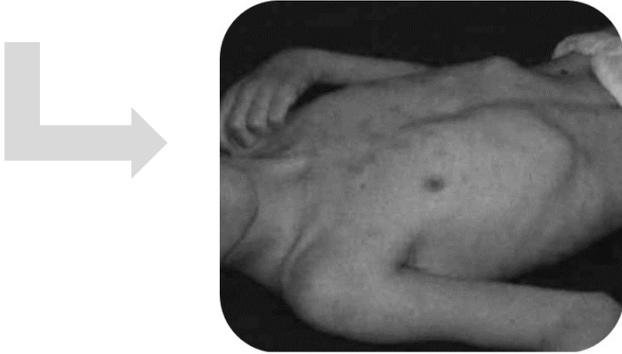
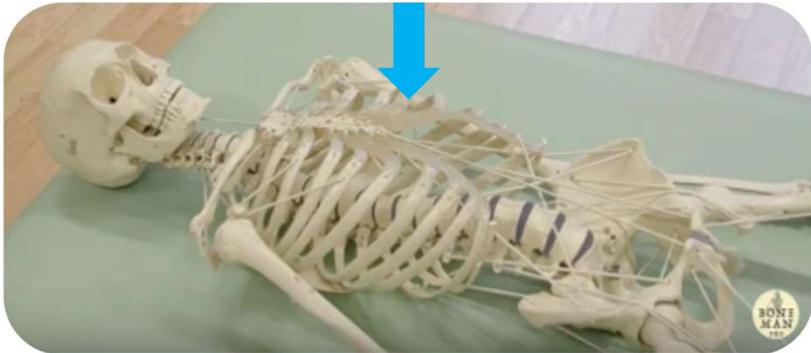


Pelvic obliquity,  
Scoliosis,  
Hip dislocation

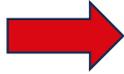


Pelvic rotation,  
Scoliosis, Rib flare,  
Hip dislocation

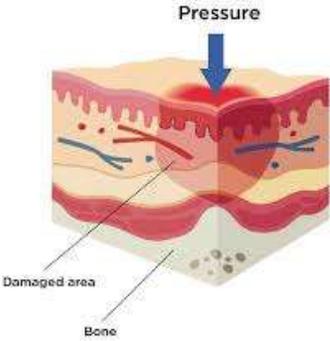
# Unsupported Supine Lying



## Predictable deformities are usually spot on...



# Secondary complications from poor posture management



Hip Dislocation

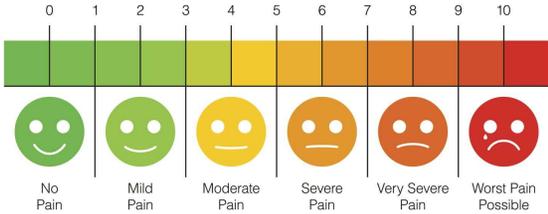


Windswept Posture



Scoliosis

## PAIN SCALE



## Improved trunk/Life box space

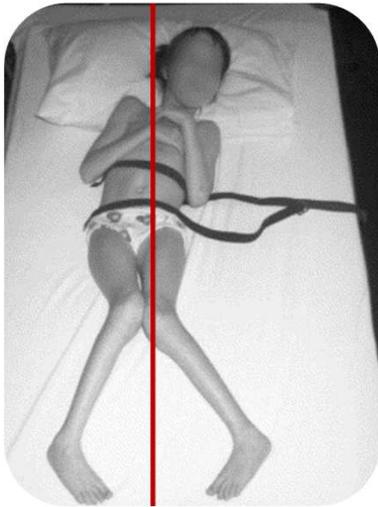
If we are unable to sit up tall, all our main physiological functions such as breathing, swallow and digestion are compromised (thanks to gravity, muscle tone and strength)

One of the most important goals to achieve in seating and lying with clients with movement disorders is **improved trunk space/aligned positioning**.

Visualising the “**Life-Box**” is a tool that can be used to check trunk/chest space and the possible implications of chest rotation/ compression.



# Supported supine lying



Source: [https://www.physiotherapyjournal.com/article/S0031-9406\(05\)60987-X/fulltext](https://www.physiotherapyjournal.com/article/S0031-9406(05)60987-X/fulltext)

Source: <http://usir.salford.ac.uk/id/eprint/48470/>

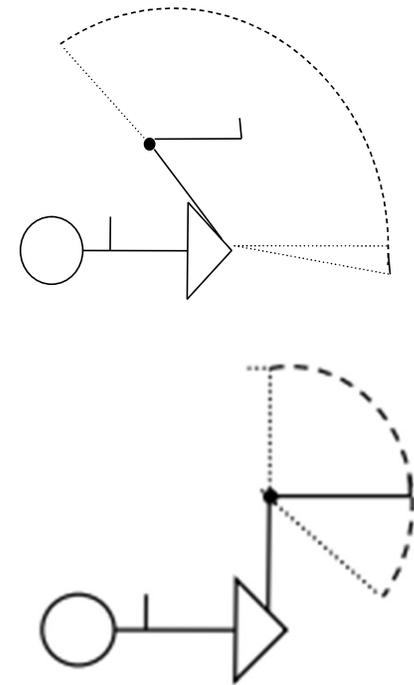
**Prevention** is key, but the body is a mobile structure which is vulnerable to distortion but also susceptible to **restoration**, as long as the correct biomechanical forces are applied.

(Hill, S., 2010)

# Identifying what is and what isn't achievable with positioning equipment

## What we need to consider=

- ROM/Physical assessment
- Comfortable lying position
- Daytime lying
- Knee position
- Environment
- Preference
- Goal= correct or maintain?

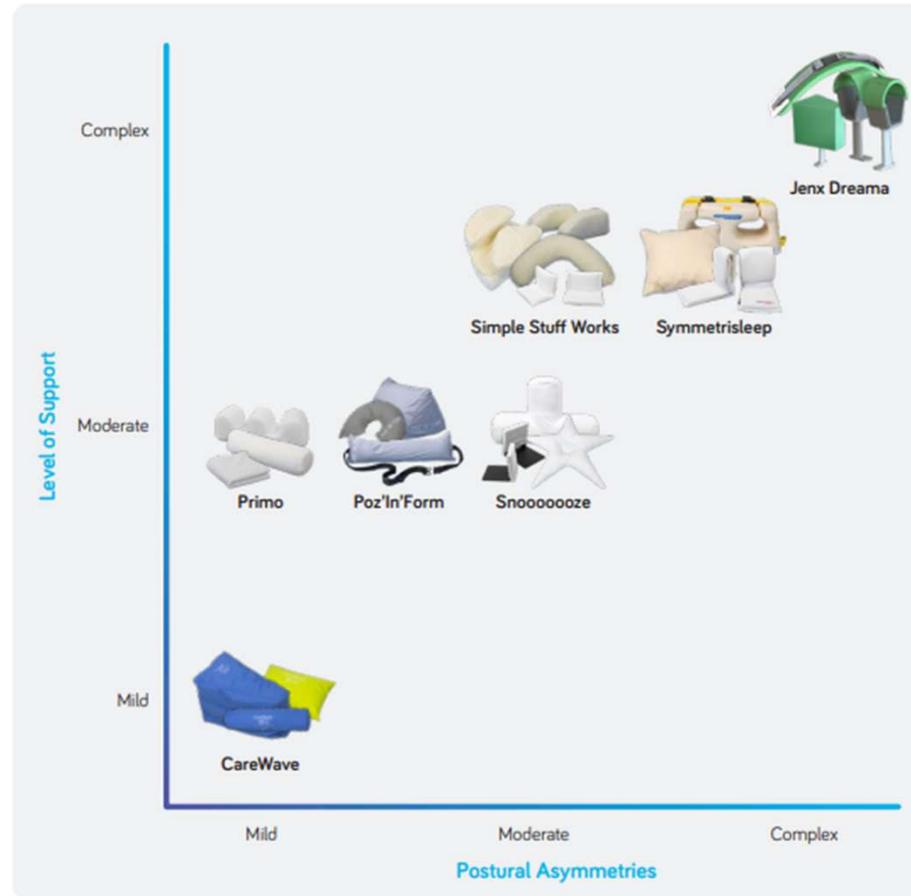


# Physical red flags for postural asymmetry

## When the person is in a lying position

- Does their body stay in a limited number of positions?
- Do their knees seem to be usually resting to one side? Or inwards? Or outwards?
- Do they keep their head turned to only one side?
- Do they already have an asymmetric body shape?
- Do they have tight muscles in the morning?
- Is it hard to complete personal cares?
- Do they have pain overnight or when trying to get into a seated position?

# What's available? Equipment Selection- off the shelf



## Why off the shelf products?

- Replicable
- Resource efficient for time and cost
- Therapist
- Client
- Funding body
- Reduces wait times
- Re-issue



# Importance of assessment





➤ Carer preference

➤ Environment

➤ Ease of use

➤ Comfort





## Off the shelf Modular Systems

- Systems that rely on a combination of brackets and pillows to supports clients into a good position
- Change and adapt as posture changes



# Off the shelf modifications

## Benefits of off the shelf modifications

- Replicable
- Resource efficient for time and cost
  - Therapist
  - Client
  - Funding body
  - Fabricators
- Allows for changes to be made
- Reduces wait times
- Allows us to make informed product selection



## What can be done?



- Cushions can be sewed/joined together
- Removal or over-fill of foam
- Changes in size and dimensions
- Different covers/material
- Change Velcro for zips or poppers
- Modify designs



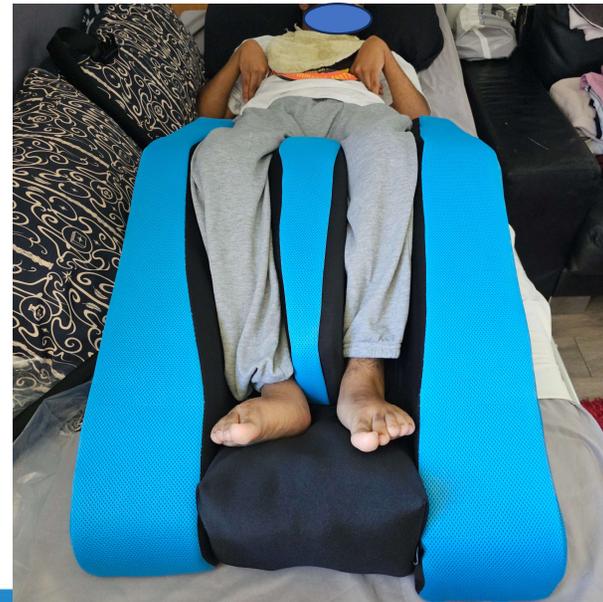


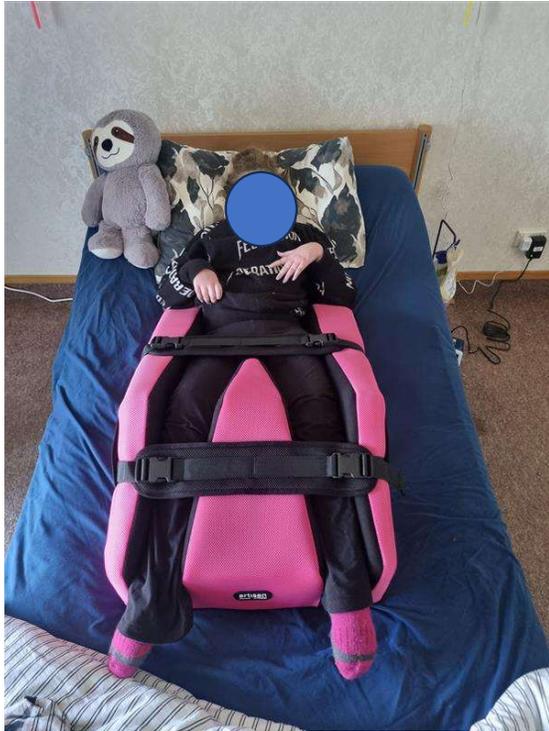
## Indications for custom



- Unusual dimensions
- Tone
- Strength
- Fixed asymmetry
- Off the shelf has been unsuccessful

# Custom









# Decision pathway

## Pathway for Selecting or Designing Support Products

### ✓ Stage 1: Off-the-Shelf

Start simple and cost-effective.  
If it works—brilliant!  
If not, explore modular tweaks:

**🔧 Covers**

- Breathable
- Washable
- Wipeable

Address hygiene, sensory, and temperature needs

**🔧 Fillings**

Swapable options; beads, microfiber, chipped foam

**🔧 Modular Contouring**

- Combine or separate sections
- Add/remove/modulate shape
- Tailor pressure relief, posture, or protection needs

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### 🔨 Stage 3: Full Custom

Every step reflects:

- 💰 Cost-effectiveness
- 🙌 Respect for autonomy
- 🌱 Inclusive design (e.g. Māori values, trauma-informed lens)

**💡 Values Anchoring**

- 💰 Cost-effectiveness
- 🙌 Respect for autonomy

## Stage 1: Off-the-Shelf First Approach

Start simple and cost-effective. If it works — brilliant!  
If not, explore modular tweaks:

### **Covers**

- Breathable
- Washable
- Wipeable
- Address hygiene, sensory, and temperature needs

### **Fillings**

- Swapable options: beads, microfiber, chipped foam
  - Consider support, immersion, and breathability

### **Modular Contouring**

- Combine or separate sections
- Add/remove/modulate shape
- Tailor pressure relief, posture, or protection needs

## Stage 2: Semi-Custom Modifications

Inspired by off-the-shelf, but tailored more closely to the individual.

- Mix-and-match components
- Modify key elements (shape, density, covers)
- Align with ROM, sensory profile, and goals

### Stage 3: Full Custom

When nothing existing meets the need, shift to a thorough, ethical process:

- **Custom Script Form**
  - Functional goals
  - ROM & safety considerations
  - Cultural/Environmental preferences
- Reference successful elements from existing products!

- [References](#)

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- [Clinical Resources – Simple Stuff Works](#)
- [Let's Talk About the "Life Box"](#) Sharon Sutherland