



MULTIFUNCTIONAL POSITIONING AID FOR EARLY
MOBILISATION AND ICU REHABILITATION

Sara® Combilizer

Early mobility

Starting patient mobilisation as early as clinically possible is an important method of reducing the significant impact of critical illness immobility¹. When implemented, programmes of early mobility have demonstrated numerous benefits to both the patient and healthcare organisation²

Key challenge in the mobility process

A key step in the mobility process can be difficult to achieve with a significant number of ICU patients. The move to sitting on the edge of the bed, a natural first step to standing and walking, can be a challenging and labour intensive process.

When edge of bed sitting is difficult to achieve patients often remain in bed longer than necessary, increasing the risks associated with critical illness immobility³.

Challenges to Edge of Bed Sitting

Moving to sitting on the edge of bed is especially challenging for those who are obese, of low arousal or with profound icu-acquired weakness where it may take several members of staff to move the patient to the edge of bed.

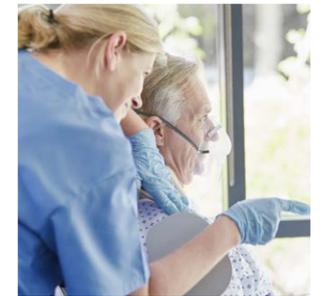
Alternatively, factors such as a poorly tolerated airway, multiple attachments including positional femoral lines, low dose inotropic support and postural hypotension may raise safety concerns around this process.



Sara Combilizer

Where edge of bed sitting is likely to be difficult to achieve, but early weight bearing and upright positioning are desirable, the Sara Combilizer multiposition aid can be utilised to help achieve out of bed rehabilitation goals early in the care pathway.

The patient can be easily repositioned into a supine, standing, or seated position, as this versatile aid combines the functions of a tilt table, stretcher and tilt in space chair.



Reduction in time to mobilise

A recent study⁴ evaluating the impact of the introduction of the Sara Combilizer demonstrated a significant reduction in time taken to mobilise for patients' ventilated > 5 days.

Mobilisation during acute phase of critical illness

This corresponded with significantly higher SOFA scores at the point of mobilisation in the Sara Combilizer group, suggesting patients were also mobilising at a more acute stage of their illness / in a higher degree of organ failure⁴.

The Sara Combilizer allowed safe mobilisation of patients at a more acute phase of their illness⁴

The introduction of the Sara Combilizer was associated with a significant reduction in time to first mobilise⁴

Transfer to Sara Combilizer

Patients can be easily transferred from bed to Sara Combilizer using a choice of lateral transfer techniques. The height adjustable, flat stretcher position helps facilitate lateral transfers to and from the device



Slide sheets



Air assisted transfer



Ceiling lifter

Choice of positioning

Following transfer to Sara Combilizer a choice of positioning options are available:

- Chair position with tilt in space and choice of lateral tilt
- Progressive tilting to full standing and choice of lateral tilt

Combining stretcher, chair and tilting standing position in one device reduces the need for multiple transfers

Reduced transfers
Flexibility to switch from sitting to tilting/standing at the touch of a button reduces need to transfer patients between devices



Chair position with tilt in space and lateral tilt position



Progressive tilting



Full standing position

Sitting position

The sitting position has a number of benefits both physically⁵ and psychologically. Upright posture challenges the patients sitting balance and trunk control and can be adjusted according to their current ability. A more upright posture will also support functional tasks such as eating and drinking, brushing teeth or communicating with family. There are benefits psychologically for the patient and their relatives and caregivers as mobility progresses out of bed.

Due to the more gradual change to a sitting position, the Sara Combilizer can provide a safe and controlled method to continue early mobilisation with more challenging patients.

As the Sara Combilizer is mobile it enables the patient to be wheeled short distances often to the window to give the patient a new perspective and get in touch with the outside world again.



Safety straps help secure the patient in position



The Sara Combilizer provides a variety of available seating options supported by the following:

- The tilt in space feature allows more supported sitting positions to be achieved, even in those patients with low arousal or poor upper body control
- 20 degree lateral tilt, can be utilised for asymmetric postures or position changes.
- Armrest height and width are adjustable to accommodate different clinical or physical requirements
- The head cushion +/- the head strap can be used to support those patients with little or no head control.
- User controls enable easy access to switch functions



Control panel



Inclinometer



Head cushion and optional head strap

Tilting and standing

For patients with a reduced Glasgow Coma Scale (GCS), postural hypotension or who are ready to commence more active rehabilitation the tilting to standing position of the Sara Combilizer could be used.⁶ This position may also be helpful for more alert patients who still have limited sitting balance and are unable to stand.

Standing has been shown to provide an excellent method of increasing arousal whilst facilitating weight-bearing through the lower limbs, helping prevent joint contractures and improving lower limb strength.⁹

Adjustable straps to support the knees and trunk make this a very stable position, while the addition of the head support and strap could be beneficial for those patients with a low GCS to maintain a more supported posture.

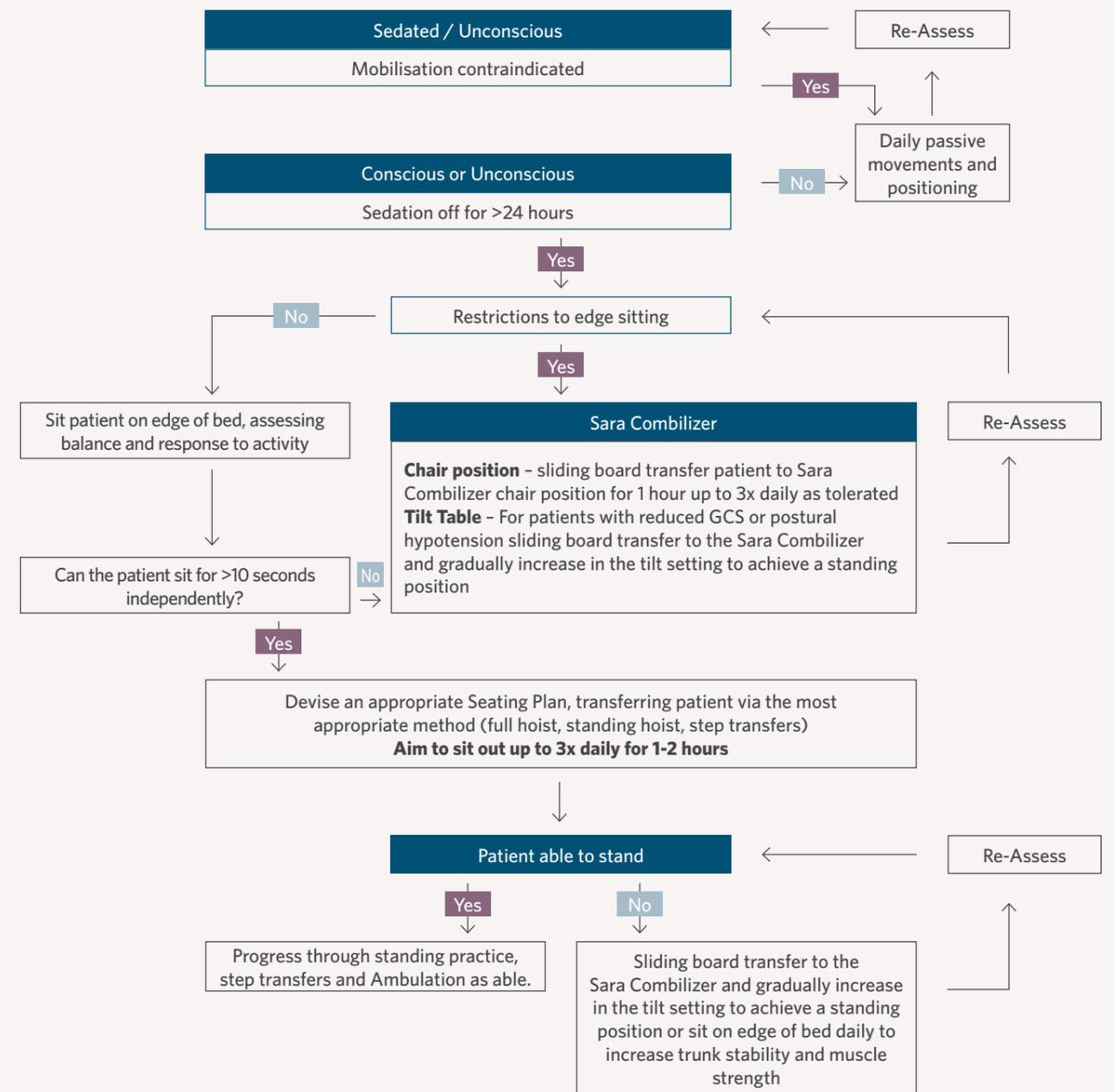
An inclinometer provides a method of tracking the tilt angle achieved to help set ongoing mobility goals.

The full tilt position allows standing and full weight bearing to be achieved early in the patient's care pathway to support additional activities in the patient's rehabilitation plan.

With increasing emphasis on early mobility and rehabilitation initiatives starting in the ICU as soon as patients are clinically stable, the Sara Combilizer has proven to be a versatile aid enabling caregivers to initiate out of bed mobilisation earlier with more complex patients during the acute phase of their critical illness



Sara Combilizer early and structured mobility protocol



* Sara Combilizer Early and Structured Mobility Protocol used with kind permission of Dr David McWilliams

Safely and easily reposition the patient without strain on the caregiver.



Sara Combilizer Video
Sitting out of bed in Sara Combilizer



Sara Combilizer Video
Tilting and Standing in Sara Combilizer



Sara Combilizer Video
Sitting out of bed in Sara Combilizer (special care)

SPECIFICATIONS

Max patient length:	196 cm
Min patient length:	148 cm
Weight of Sara Combilizer:	115 kg (265 lbs)
Width (surface, incl. arm supports):	720 mm (29 ½")
Chassis dimensions (incl. castors):	915 x 714 mm (36 x 28 ½")
Max length (stretcher):	2045 mm (80 ½")
Min length (chair incl. foot plate):	1890 mm (74 ¾")
Max height (seat surface):	984 mm (38 ¾")
Max Safe Working Load (SWL):	200 kg (440 lbs)
Min height (seat surface):	588 mm (23 ¼")
Turning radius, stretcher:	2111 mm (80 ½")
Turning radius, chair:	1840 mm (72 ¾")
Max elevation, standing:	75°
Max sideways tilting:	20°
Trendelenburg tilt:	-15°
Protection class, Sara Combilizer:	IPX4
Protection class, hand control:	IPX6
Battery:	NiMH, 2,5Ah, 24 V DC

PRODUCT FEATURES

- All patient positioning options powered and hand control operated.
- Removable NiMH battery, to be charged in a separate charging station.
- Inclinator indicating the level of inclination.
- Low friction castors, all with brakes.
- Adjustable foot plate with anti-slip properties.
- Adjustable arm-rests.
- Adjustable and foldable shoulder supports
- Mattress covers in breathable fabric that provides multidirectional stretch.
- Designed for easy cleaning and disinfection, with no fastener strips or push buttons.
- Adjustable safety belt system securing the patient at knee, hip and chest.
- Three level redundant manoeuvring controls for safety.
- Manual "Quick-down" emergency lowering option from standing to lying position.
- Built in pinch protection.
- Dual emergency stops and system failure override.

References

1. Zhang L, Hu W, Cai Z, Liu J, Wu J, Deng Y, et al. (2019) Early mobilization of critically ill patients in the intensive care unit: A systematic review and meta-analysis. PLoS ONE 14(10):e0223185
2. McWilliams D., Weblin J., Atkins G. Enhancing rehabilitation of mechanically ventilated patients in the intensive care unit: a quality improvement project. J Crit Care. 2015;30(1):13-18
3. Fan E, Dowdy DW, Colantuoni E, et al. Physical complications in acute lung injury survivors: a two-year longitudinal prospective study. Crit Care Med. 2014;42(4):849-859.
4. McWilliams, D., Atkins, G., Hodson, J., Snelson, C. The Sara Combilizer as an early mobilisation aid for critically ill patients: A prospective before and after study. Australian Critical Care. 2017; 30(4): 189-195
5. Zafiroopoulos B, Alison JA, McCarren B. Physiological responses to the early mobilisation of the intubated, ventilated abdominal surgery patient. Aust J Physiother 2004; 50: 95-100
6. McWilliams DJ, Lea TJ, 2013 EPUAP congress E Poster, Does the Introduction of the Sara Combilizer® Reduce the time taken to first mobilisation in Intensive Care

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At Arjo, we are committed to improving the everyday lives of people affected by reduced mobility and age-related health challenges. With products and solutions that ensure ergonomic patient handling, personal hygiene, disinfection, diagnostics, and the effective prevention of pressure injury and venous thromboembolism, we help professionals across care environments to continually raise the standard of safe and dignified care. Everything we do, we do with people in mind.

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