CLINICAL EVIDENCE SUMMARY

ICU Early Mobility Solutions

Your trusted partner for early mobility solutions

Mobilising critically ill patients in the complicated and often crowded ICU environment can be a significant challenge for the ICU team. Access to appropriate equipment, processes and know-how is often required to support the introduction of early rehabilitation and mobility programmes in the ICU.

With over 60 years' experience as a global leader in the development of innovative patient mobility and patient handling solutions and programmes, Arjo can bring a wealth of experience and an unrivalled product portfolio to support your ICU early mobility goals.

We strive to deliver best-in-class solutions that combine clinical performance and technological innovation to help clinicians achieve early mobility more often for their patients.

This clinical evidence summary provides an introduction to early mobility of critically ill patients, and some of the key studies that have contributed to practice in this area.

The impact of prolonged immobility

Intensive care unit (ICU) patients frequently have extreme derangement of physiological function. There is an initial focus on aggressive life support, coupled with continuous monitoring and treatment for organ failure[1]. While providing this care, ICU management of the critically ill patient has traditionally involved supine or semi recumbent positioning and bed rest, mechanical ventilation, analgesia, and sedation but with historically little attention placed on long-term outcomes and in particular neuromuscular function.

Up to 20% muscle wasting in first week

Muscle wasting occurs early and rapidly during the first week of critical illness, with losses of up to 20% seen for those in multi organ failure[2]

Failure to wean from mechanical ventilation

A strong correlation between muscular weakness and poor outcomes has been observed, with weakness directly associated with failure to wean from mechanical ventilation and increased in-hospital mortality rates[3,4]

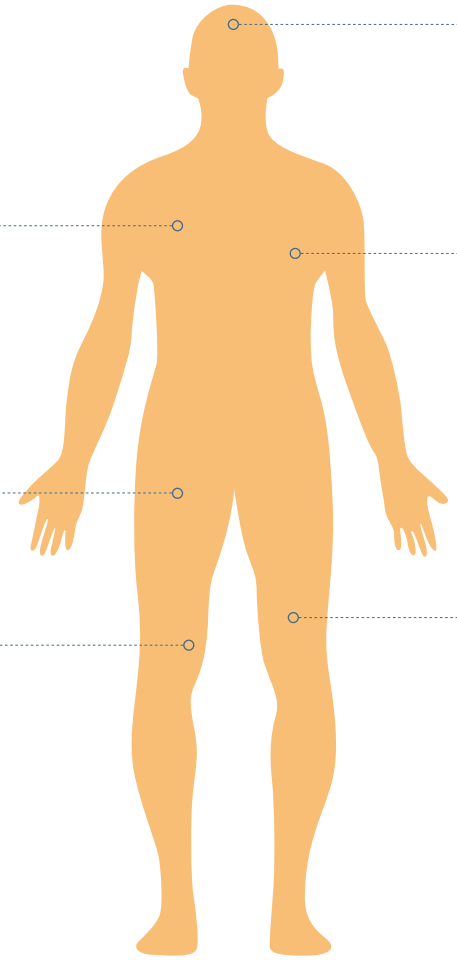
Severe functional impairments

ICU survivors frequently suffer severe functional impairments and reduced pace and degree of recovery[5]. These effects can last months to years after hospital discharge[6], with a negative impact on employment and income in ICU survivors and their care-givers, and mortality and utilization of primary care services are high in the immediate post-discharge period[7]

Clinical evidence

Author	Study	Design	Key Findings
Puthucheary et al 2013[2]	Prospective study Patients admitted to ICU anticipated to be intubated for >48 hours and LOS > 7 days	63 patients recruited on day of admission to ICU. Muscle loss was determined through ultrasound measurements of rectus femoris cross sectional area (CSA) on days 1, 3, 7 and 10	Muscle wasting occurred from first day of admission Significant reduction in rectus femoris CSA at day 10 in all patients. Losses were highest in those patients with multi organ failure
Herridge et al 2011[6]	Prospective, longitudinal cohort study.	Follow up study of 109 survivors of ARDS following hospital discharge. Interviews and examinations performed at 3, 6 and 12 months and at 2, 3, 4 and 5 years	Significant exercise limitation and reduced HRQOL still present 5 years following hospital discharge Greater rate of recovery in younger patients but still had not returned to normal predicted levels at 5 years Increased costs and usage of healthcare services in survivors of ARDS
Yende et al 2016[8]	Secondary analysis of 2 international RCT's	Controlled comparison of outcomes for patients with severe sepsis. Only patients who were functional and living at home without help before sepsis and hospitalisation were included	Approximately one third of patients with severe sepsis had died at 6 months 41% were unable to live independently following hospital discharge Almost half of patients with mobility and self-care problems at 6 months had either died or continued to report problems at 1 year

Key body systems impacted by immobility in critically ill patients



Brain
Sleep deprivation[9], delirium[10] and cognitive dysfunction[11].

Lung
Decreased functional residual capacity (FRC) and development of atelectasis, reduced cough strength and increased risk of ventilator associated pneumonia[12].

Heart
- 28% decrease in stroke volume within first 10 days, increased heart rate to compensate[13]
- Orthostatic intolerance within 72 hours of immobility[14]

Skin
Increased risk of pressure ulcers[15]

Bone
- 2% decrease in bone density in 1 month[18]
- 20% increase in fracture risk in acute respiratory distress syndrome (ARDS) survivors[19]

Muscle loss
- Mass decreased by 20% in first 7 days for those in multi organ failure[2]
- Strength reductions up to 40% in first week of immobility[16]
- Largest effect seen in antigravity muscles[17]

With so many negative consequences of immobility, preventing or minimising the physical consequences of critical illness and supporting recovery from intensive care is essential to improve patient outcomes.

This has placed an increased focus on the importance of early rehabilitation incorporating early mobility during intensive care. To achieve this, patients need to be awake, comfortable and able to actively participate in their own treatment.

Early mobility

The term 'early rehabilitation' within the ICU refers to interventions that commence immediately after stabilization of physiologic derangements[20]. These interventions may start within 1 or 2 days of initiation of mechanical ventilation, although often those patients most at risk of prolonged sequelae are often still too acutely unwell for out of bed mobilisation.

In this instance the focus is placed on preventative measures such as regular positional change and passive /active exercise until out of bed mobilisation can be initiated. The time taken to mobilise appears to have a significant bearing on a patient's short and long-term recovery (see evidence table).
The ability to minimise the duration and subsequently the impact of critical illness associated bedrest is therefore of paramount importance

Start Early – after patient stabilization

Typically within 1-2 days of initiation of mechanical ventilation

Passive/ active in bed exercises and repositioning until active mobilisation is possible

Time taken to mobilise impacts short and long-term recovery

Clinical evidence

Author	Study	Design	Key Findings
Morris et al 2008[21]	Prospective study Medical ICU	330 patients Mobility protocol led by mobility team, initiated within 48 hours	More physiotherapy received, Patients sat out of bed earlier Reduced ICU and hospital length of stay Reduced duration of mechanical ventilation
McWilliams et al, 2015[22]	Quality Improvement Project Multi specialty ICU	582 patients mechanically ventilated for ≥ 5 days Structured approach to rehabilitation	Reduced time to first mobilise by 3 days Improved mobility level at ICU discharge Reduced duration of mechanical ventilation Reduced ICU and hospital length of stay

The benefits of early mobilisation

Early mobilisation has been demonstrated to be feasible for patients admitted to critical care[9], including those requiring high levels of cardiovascular and airway support[46]. When implemented, programmes of early mobility have demonstrated numerous benefits to both the patient and the organisation. As a result, early mobilisation is now included as a key component in a number of national and international guidelines[23-25].

Patient

- Reduces the degree of muscle loss and minimises the poor physical condition associated with prolonged bed rest[27, 28]
- Improved functional status at hospital discharge[29, 30]
- Improved walking ability at discharge[28]
- Improved health related quality of life[28]
- Reduced incidence and duration of delirium[29, 30]

Organisation

Cost reductions associated with

- Reduced ICU and hospital length of stay[21, 22, 26]
- Increased patient flow[22, 26]
- Reduced duration of mechanical ventilation[21, 22, 29]
- Reduced readmissions
- Increased patient satisfaction levels

Clincial evidence

Author	Study	Design	Key Findings
Schweickert et al 2009[29]	RCT 2 x Medical ICU's	104 patients PT / OT initiated within 72 hours until discharge	Achieved mobility milestones earlier Improved function at hospital discharge Reduced incidence and duration of delirium Reduced duration of mechanical ventilation
Needham et al, 2010[26]	Quality improvement project Medical ICU	57 patients mechanically ventilated ≥ 4 days	Improved sedation and delirium status Increased number of rehabilitation sessions per patient Reduced ICU and hospital length of stay 20% increase in admissions through bed days saved

Barriers to early mobilisation

Despite the increasing evidence base to support programmes of early mobilisation, along with clinical consensus guidelines to guide initiation, the levels of rehabilitation within critical care remain low. A number of point prevalence surveys have demonstrated low levels of rehabilitation within critical care, particularly whilst patients were receiving mechanical ventilation. A 3 day point prevalence survey of 38 ICU's in Australia and New Zealand found no patients requiring mechanical ventilation sitting out of bed or walking on the days in question[31]. This was also the case in a similar study to assess mobility levels in German ICU's which found only 4% of mechanically ventilated patients in ICU standing or walking[32]. As a result, an increasing focus has been placed on identifying barriers to the initiation and delivery of rehabilitation, finding whilst barriers were multifactorial, important common themes were identified[33].

Patient factors

- Delirium
- Anxiety
- Co morbidities
- Weakness
- Confidence
- Motivation

Environmental Factors

- Physiological stability
- Multiple attachments
- Staffing
- Lack of Equipment
- Risk of caregiver injury

Unit Culture and environment

- Lack of leadership
- Communication
- Competing priorities
- Expertise
- Clinician buy in
- Sedation practice

To successfully implement programmes of early mobilisation, significant culture change is required and relies on involvement from all members of the multidisciplinary team.

Having access to the right tools, training and processes is key.

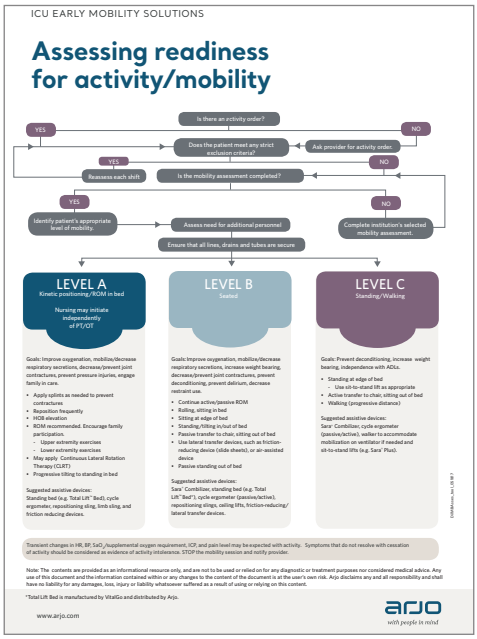
Assessment of patient readiness for mobility

Starting mobilisation as early as clinically possible is an important method of reducing the significant impact of critical illness immobility. To help guide decision making, expert consensus guidelines have been produced to guide in bed and out of bed mobilisation[34]. Ultimately, the decision to commence mobilisation should be based on an assessment of cardiovascular stability and respiratory reserve[35]. The arousal level should be considered, but reduced arousal is not necessarily a contraindication to rehabilitation, where supported sitting or verticalisation may serve as a stimulus to aid wakening and form part of the assessment of neurological status.

The Arjo tool kit

To assist you in assessing and activating your patient's mobility according to their clinical need, we have developed the following tools and processes.

Assess patient



Communicate mobility status

We aim to ensure every patient can be mobilised at their optimal level of functionality every day

Mobility milestones

Measuring mobility milestones is an important indication of patient progress. The evaluation can help identify those who may require rehabilitation interventions and also assess a patient's responsiveness to the intervention carried out. Many assessment tools exist ranging from the ICU Mobility Scale (IMS) and Bedside Mobility Assessment Tool (BMAT) used by the ICU nurse through to more specific assessments such as Physical Function in Intensive Care Test scored (PFIT-s), and Functional Status Score for the ICU (FSS-ICU) providing more detailed assessments often utilised by physiotherapists during patient evaluation.

Example Protocol 'Start to Move' Leuven ICU, Belgium.

Used with kind permission of Professor Rik Gosselink

Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
No cooperation S5Q = 0	Variable Coop. S5Q = 0-5	Variable Coop. S5Q = 0-5	Close to full coop. S5Q ≥ 4/5	Full coop. S5Q = 5	Full coop. S5Q = 5
Fail basic assessment	Passes basic assessment	Passes basic assessment	Passes basic assessment	Passes basic assessment	Passes basic assessment
	Transfer to chair **not allowed** because of neurological or surgical or trauma condition	Active transfer to chair **not allowed** because of obesity or neurological or surgical or trauma condition	MRCsum ≥ 36 ($MRCsum_{LL}$ ≥ 18) BBS Sit to stand = 0 BBS Standing = 0 BBS Sitting ≥ 1	MRCsum ≥ 48 ($MRCsum_{LL}$ ≥ 24) BBS Sit to stand ≥ 0 BBS Standing = 0 BBS Sitting ≥ 2	MRCsum ≥ 48 BBS Sit to stand ≥ 1 BBS Standing ≥ 2 BBS Sitting ≥ 3
Body positioning • 2h turning • Splinting • Positioning	**Body positioning** • 2h turning • Splinting • Fowler's position	**Body positioning** • 2h turning • Splinting • Upright sitting position in bed • Passive transfer bed to chair	**Body positioning** • 2h turning • Passive transfer bed to chair • Sitting out of bed • Standing with assist (≥ 2 pers)	**Body positioning** • Active transfer bed to chair • Sitting out of bed • Standing with assist (≥ 1 pers)	**Body positioning** • Active transfer bed to chair • Sitting out of bed • Standing
Physiotherapy • No treatment	**Physiotherapy** • Passive/active ROM • Passive/active leg and/or arm cycling in bed • NMES • ADL	**Physiotherapy** • Passive/active ROM • Resistance training arms and legs • Passive/active leg and/or arm cycling in bed or chair • NMES • ADL	**Physiotherapy** • Passive/active ROM • Resistance training arms and legs • Active leg and/or arm cycling in bed or chair • Standing (with assistance/frame) • NMES • ADL	**Physiotherapy** • Passive/active ROM • Resistance training arms and legs • Active leg and/or arm cycling in bed or chair • Walking (with assistance/frame) • NMES • ADL	**Physiotherapy** • Passive/active ROM • Resistance training arms and legs • Active leg and/or arm cycling in chair • Walking (with assistance) • NMES • ADL

In bed mobilisation

Where out of bed mobilisation is contraindicated or options are limited, there are methods for supporting rehabilitation and recovery for patients confined to bed:

Regular repositioning

For those patients where out of bed mobilisation is contraindicated or options are limited, there are still methods for supporting early mobility and recovery.

- Daily passive movements and stretches are important to maintain joint range of motion and muscle length.
- The use of positioning therapy has long been advocated for the management of respiratory conditions in critically ill patients[36]. Regular repositioning into alternate side lying positions or the use of Continuous Lateral Rotation Therapy (CLRT) or Kinetic Therapy has a number of benefits.

- The side lying position is useful for aiding in drainage of pulmonary secretions, with evidence to support reduced incidence of pneumonia with regular positional change[33] and appropriate turn angles. Kinetic therapy is defined as rotation of at least 40° for at least 18 hours per day and has been associated with the prevention and treatment of pulmonary complications in critically ill and mechanically ventilated patients[37].
- Regular repositioning is also essential to help prevent the development of pressure injuries/ulcers whenever patients are spending extended periods in bed.
- A selection of repositioning and transfer solutions to assist caregivers may be required.

Patient repositioning with Maxi Sky® 2 and Maxi Transfer Sheet

Progressive verticalisation

Alongside side lying, progressive verticalisation in the bed into either seated or standing positions is recommended in the early stages of a patients recovery.

- The orthostatic challenge provided by this early verticalisation can help to reduce the deterioration in cardiac function or act as an early challenge for those with postural hypotension.
- This may start with a gradual move into upright sitting positions in bed, utilising the reverse Trendelenburg or cardiac chair position. Whilst not being as effective as sitting out in a chair due to the supportive surface, this seated position has a number of benefits. The change in perspective allows reorientation of the patient with their surroundings, providing a better position for communication, eating and drinking or functional activities where appropriate.

Citadel® Patient Care System Reverse Trendelenburg

Citadel Patient Care System Chair Position

Upright Positioning →

As appropriate the patient can be progressed to full in bed tilting to achieve standing positions while in bed.

- This provides additional benefits over the chair position by facilitating weight bearing through the lower limbs preventing or reducing the impact of immobilisation of bone demineralisation.
- Upright positioning is often used as an adjunct to therapy – i.e. challenged sitting regularly during the day[21] and can be particularly useful for those patients where regular sitting out is more challenging or requires high numbers of staff.

Benefits of upright positioning

- Provides an orthostatic challenge to prevent deterioration in CVS [35]
- Increase functional residual capacity [38]
- Better position for active exercise
- Slight increase in physiological demand [38]

Upright positioning with Sara Combilizer™

Cycle ergometry

Cycle ergometry is another method of supporting in bed rehabilitation, either during acute phase of illness when out of bed mobility is contraindicated (e.g. open abdomen or poorly tolerated ET tube) or as an adjunct to progressive mobility to improve strength and cardiorespiratory fitness. The feasibility of using cycle ergometry for critically ill patients has been demonstrated[39], with evidence to suggest when utilised, patients receiving additional rehabilitation sessions of cycle ergometry were able to walk further at the point of hospital discharge in comparison to controls[28].

Electrical muscle stimulation

Electrical muscle stimulation may also be utilised during periods of immobility, although at present the effectiveness of this remains inconclusive[40].

Patient transfer out of bed

When lateral and seated transfers out of bed are required, a range of patient handling equipment options are available to help the caregiver.

Lateral Transfers

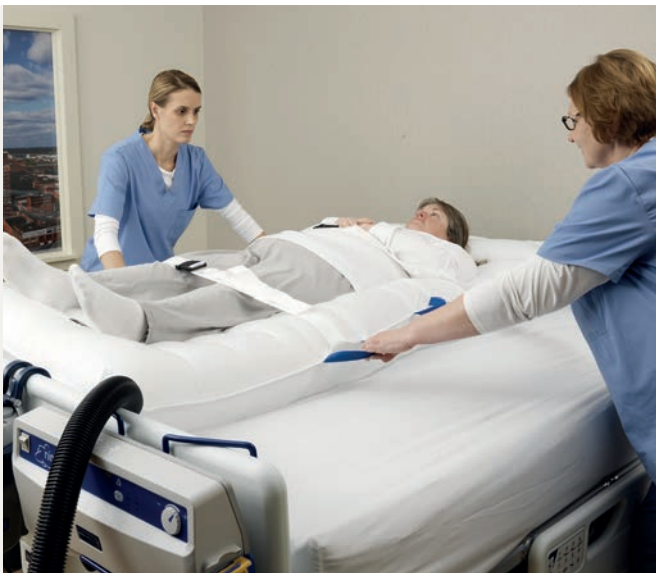
When a transfer out of bed in a supine position is required, e.g. onto a stretcher chair, tilt table or a multi-position aid like Sara Combilizer®, a lateral transfer aid or a patient lift system can be used.

Maxi Slides®

- Sliding sheets made from a strong, ultra low friction material with excellent gliding properties in both directions.
- A choice of single patient use Maxi Slide™ Flites or washable, reusable Maxi Slides™ help caregivers with everyday patient repositioning.

Maxi Air®

- Single patient use air assisted mattress system for lateral transfers.
- The system includes a perforated inflatable mattress and an air supply pump.
- The perforated underside of the mattress enables air to flow through the mattress to create a cushion that helps lighten static load, reducing the push-pull forces and allowing the patient to be transferred comfortably and securely.



Seated Transfers

If the patient is ready for more active transfers out of bed, this may involve utilising equipment such as a patient lift system initially, until assisted standing transfers to the chair can be achieved. Appropriate transfer equipment and seating is fundamental to meet this aim and ensure patients at varying levels of critical care support can sit out of bed. The effort of rolling side-to side and upright positioning during transfer can make this a slightly more active transfer than used with the stretcher chair / Sara Combilizer. Patient transfers require careful consideration of logistics due to the multiple line and attachments often seen in ICU patients. Seated transfers are useful for more challenging patients to help reduce the risk of caregiver injury.

Maxi Sky 2 / Maxi Move®

- Maxi Sky 2 ceiling lift and Maxi Move floor lifter.
- Seated transfers and lateral transfers with a variety of spreader bars and Arjo slings specific to the needs of the patient.
- Maxi Sky 2 can be used for walking and stepping practice with walking slings protecting the patient from falls during such activities.
- Appropriate sling selection matching the assessment of Patient Readiness is fundamental to ensure patients at varying levels are transferred securely.

Maxi Transfer Sheet

- Used together with Maxi Sky 2 or Maxi Move.
- The dual purpose Maxi Transfer Sheet is designed to replace the hospital bed sheet.
- Combining the benefits of a transfer sling for lateral transfer, and the functionality of bed linen, with soft breathable fabric construction, Maxi Transfer Sheet can remain in place under the patient in between transfers.

Out-of-bed mobilisation

Whether the patient is ventilated or not, the process of sitting a patient on the edge of the bed forms an important part of the early patient assessment and subsequent provision of a structured rehabilitation programme and seating plan. This process provides vital information with regard to patients' sitting balance and readiness for sitting out of bed and their physiological stability in response to activity and positional change, as well as many other specific physical and psychological benefits.

Once sitting balance and physiological reserve have been determined, an individualised seating programme can be devised to aid recovery. In the early stages this may require specialist equipment and a range of early mobility solutions are available to support this process at all stages.

Benefit of sitting on edge of bed

- Increased functional residual capacity[38]
- Challenges the trunk and allows assessment of static and dynamic sitting balance[35]
- Less supportive / more physically demanding position promotes a cardiorespiratory response[41]
- Provides neurological stimulus to aid waking and reorientation[42]
- Positive psychological benefits of commencing rehabilitation for patient and family

Sitting out of bed

The change to an upright position challenges both the cardiovascular and respiratory systems. Earlier work has demonstrated that critically ill, mechanically ventilated patients show a positive response to exercise and increased activity in respiratory and cardiovascular parameters[43, 44]. This suggests that patients within critical care may benefit from the effects of training, albeit in a modified way to meet their current levels of physical capacity and reserve.

Following an extended stay on the ICU, patients are likely to experience the equivalent response to vigorous exercise (i.e. an increase in heart rate and respiratory rate) at even low levels of activity, such as moving from lying to sitting or completing activities of daily living such as washing. This is due to an overall reduction in the oxidative capacity of muscle[45]. This suggests that having a robust and consistent structure for rehabilitation is equally important in the proceeding days / weeks in order to support ongoing recovery.

Benefit of sitting out of bed

Increased functional residual capacity[38]

Chair provides support to the trunk so less demanding from a respiratory point of view than edge of bed sitting[41]

Upright posture challenges cardiovascular system and provides orthostatic stimulus[35]

Provides neurological stimulus to aid waking and reorientation[42]

Positive psychological benefits of being out of bed

When sitting on edge of bed is too challenging

The process of sitting on the edge of the bed can at times be labour intensive, particularly for patients who are obese, of low arousal or with profound ICU-AW, where it may take four or even five members of staff to transfer the patient to the edge of the bed. Alternatively, factors such as a poorly tolerated airway, multiple attachments including positional femoral lines, low dose inotropic support, postural hypotension may raise concerns around the process of moving a patient to sitting on the edge of the bed.

In these instances the Sara Combilizer, a multi-position aid, can provide an ideal solution. Due to the controlled and passive nature of the transfer and the more gradual change to a sitting or standing position, the Sara Combilizer provides a controlled method of assessing or mobilising these patients. In these early stages length of sitting or standing time should be limited to prevent the patient becoming overly fatigued.

- Secure transfer of high risk patients
- Less burden to staff[43]
- Controlled verticalistion helps to ameliorate impact of orthostatic stresses[34]
- Tilt in space feature allows supportive and secure seating positions to be achieved, even in those patients with low arousal or profound weakness

A recent study evaluating the impact of the introduction of the Sara Combilizer demonstrated a significant reduction in time taken to mobilise for patients' ventilated ≥ 5 days[46]. 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 failure.

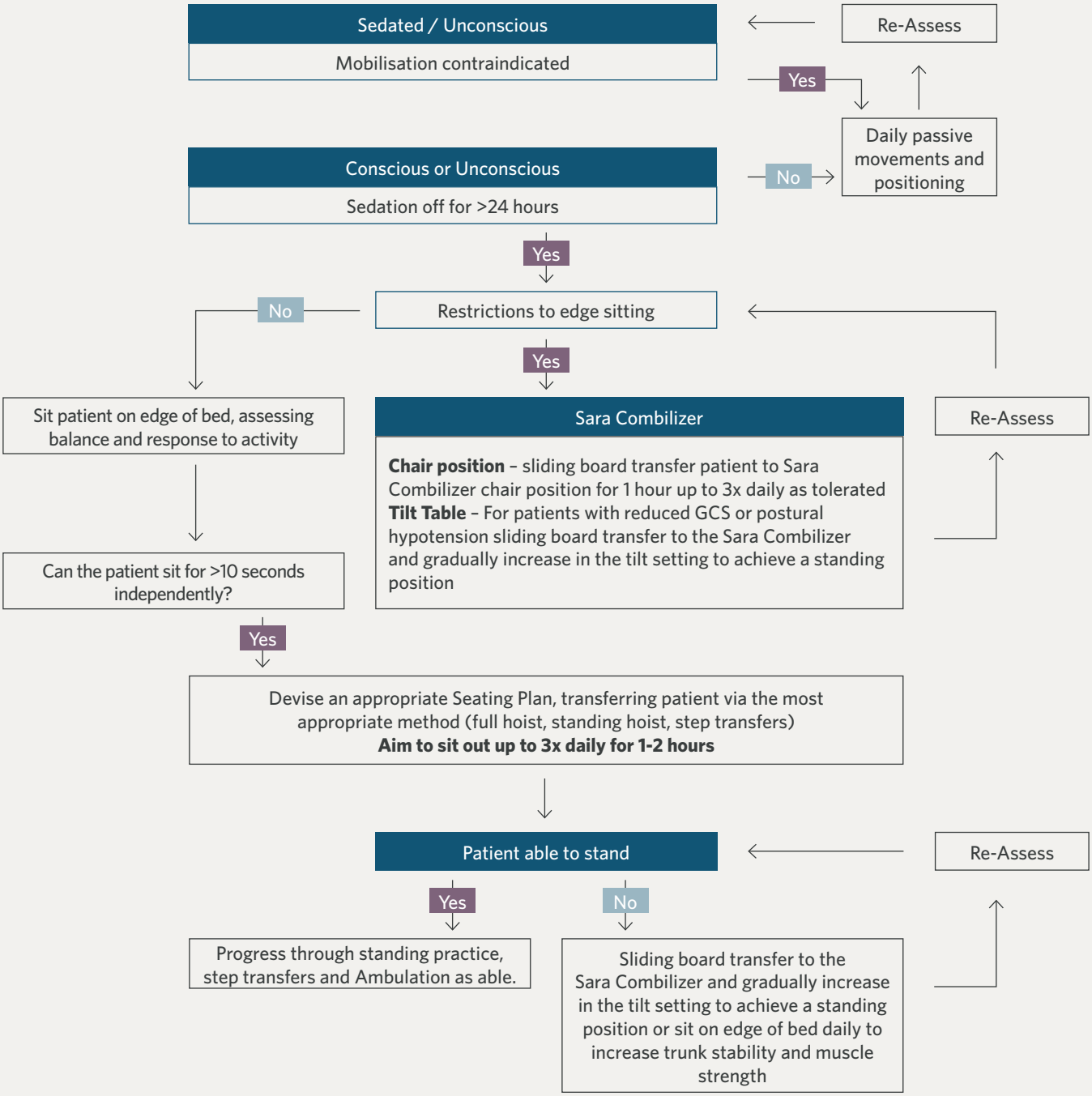
The introduction of the Sara Combilizer was associated with a significant reduction in time to first mobilise[46]

The Sara Combilizer allowed mobilisation of patients at a more acute phase of their illness[46]

Evidence Summary

Author	Study	Design	Key Findings
McWilliams et al, 2017[46]	Prospective before and after study Multi specialty ICU	80 patients mechanically ventilated for ≥ 5 days Sara Combilizer introduced coupled with training for staff and protocol for use	Reduced time to first mobilise by 3 days Patients were mobilised at a more acute phase of illness with no adverse events

Sara Combilizer early and structured mobility protocol



Passive standing

For those patients with a reduced Glasgow Coma Scale (GCS), postural hypotension or ready to commence more active rehabilitation the standing position of the Sara Combilizer can be used. This provides an excellent method of increasing arousal whilst facilitating weight-bearing through the lower limbs, helping prevent joint contractures and improving lower limb strength. Straps to support the knees and trunk make this a very stable position, with the addition of the head pillow and head straps recommended for those patients with a low GCS to maintain a more supported posture.

In the case of low arousal or postural hypotension the device should be tilted gradually whilst keeping a close eye on the patients Blood Pressure (BP). The tilt angle can be monitored using the inclinometer.

Where possible active exercise, particularly of the lower limbs, is encouraged to support circulation and venous return.

The standing position can also be utilised for more alert patients who still have limited sitting balance and are unable to stand. The full tilt position allows an upright standing position to be achieved much earlier with a number of benefits. As well as those listed above, the addition of functional or reaching tasks and squats can also be considered to start to challenge dynamic balance and reciprocal trunk activity. As patients progress there is also the option to remove the knee support to allow knee bends / squats using the patient's own weight as a source of resistance training. This can be commenced at lower inclines such as 30 degrees in the early stages, increasing the degree of tilt and hence the effect of gravity as patients progress.

Standing in Sara Combilizer Benefits of tilt table

- Allows standing position to be achieved much earlier
- A tilt of > 60 degrees is associated with:
  - Respiratory improvements including ↑ functional residual capacity, ↑ minute volume and ↑ tidal volumes[38]
  - Promotes weight bearing through the lower limbs
  - Facilitates stretching of the calf muscles to maintain muscle length
  - Improved trunk stability
  - Provides an orthostatic challenge

Active standing

Once the patient is able to maintain their sitting balance with minimal support and move their legs against gravity, they are ready to start attempts at standing.

Using a Standing and Raising Aid is one potential solution for those patients struggling to achieve a full standing position. It is supporting early standing activity such as standing transfers, weight bearing exercise and standing practice. As it can be used by a single person, it can also reduce the staff required for secure transfers out to the chair.

Sara® Plus

- Can be used with patients who have a degree of sitting balance and are able to participate in therapy
- Uses a supportive sling around waist to facilitate stand
- Reduces load and requires less staff for transfer
- Footplate and knee block can also be removed to allow ambulation

Sara® Stedy

As the patient continues to progress, they may be able to achieve a full standing position but not quite have the ability to take any steps. This can often be a frustrating time for the patient and place a risk for staff in any subsequent attempts at stepping to a chair. In this situation the Sara Stedy is an ideal mobility solution to allow patients to stand and be transferred to a chair with minimal caregiver assistance.

- For patients able to stand with or without assistance but unable to step
- Must have good trunk stability / independent sitting balance
- Hand rail with Knee block and pelvic support
- Allows transfer again with reduced staff

Walking

Once an established seating plan has been formulated, with patients sitting out on a daily basis preferably on multiple occasions, progression can be made to more active exercise, standing and ambulation.

Gradually increasing muscle strength and stamina will lead to increasing levels of functional independence and have beneficial effects on a patient's psychological status as he or she becomes more independent and the improvements become more tangible.

To support mobilisation in the early stages, ceiling lifts or walking harnesses can be used to support the patient and protect them from falls during stepping or walking practice. This process of mobilisation does, however, bring additional safety considerations such as airway stability, portability of equipment (e.g. the use of portable ventilators), management of multiple attachments and a reduced level of monitoring once the bed space has been left.

Some degree of monitoring is vital in terms of the intensity level and physiological response to ensure the safety of these interventions, with portable SATS probes and the Borg breathlessness scale providing quick and simple methods of achieving this.

Summary

We recognise that you have a choice of equipment provider to support your rehabilitation and early mobility programmes in ICU. With more than 60 years experience and knowledge gained as the global leader in patient handling and mobility solutions we are able to support your facility with a range of services including education, assessment and early mobility programmes to help support your initiatives. For further information please visit www.arjo.com.au or contact your local Arjo representative.

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