Content Writing Sample 0003

Support Patient Outcomes With Enhanced Adjustable Beds

Adjustable beds are a widely used tool in occupational therapy (OT) and other allied health disciplines. As therapeutic devices, they have a range of applications for patients with chronic conditions and physical disabilities.

Importantly, though, a distinction needs to be made between basic adjustable beds, which deliver benefits purely through adjustments in height and positioning, and enhanced adjustable beds (EABs), which complement their intrinsic mechanical benefits with other therapeutic technologies.

This article will explore exactly what enhanced adjustable beds are, the research behind their benefits, and how allied health practitioners can use them in interventions.

What Are Enhanced Adjustable Beds?

An enhanced adjustable bed can be defined by two key traits:

1. It is a full sleep system that comprises a mattress and a base.
2. It features therapeutic technologies other than just height and positioning adjustment.

For example, many EABs use whole-body vibration therapy (WBVT), a technology that has been proven to benefit patients with chronic back pain, muscular strength, circulation, and bone density.[1,2,3,4]

Side-supported mattresses are also popular – contrasting edge and centre densities minimise the risk of accidentally rolling off the EAB, and can also help mobility-impaired patients (for example, people with arthritis) get up and down more easily.

Less commonly, frontier technologies like CELLIANT ® are also used in EABs. CELLIANT is a thermo-reactive textile that converts body heat into full-spectrum infrared energy, promoting local circulation and cell oxygenation. In Australia, only EABs manufactured by Seniors Plus by SleepHive are enriched with CELLIANT.

In the following sections, we'll examine how EABs can be used to manage a variety of conditions.

Lower Extremity Oedema

One clear use case for EABs is to ease lower extremity oedema (swelling in the lower legs). The aetiology of oedema is complicated, but it's often correlated with diabetes.[5] Left unmanaged, oedema can cause pain, weakness, self-consciousness, and limited mobility.[6]

Leg elevation is a commonly recommended treatment for oedema; raising the swollen body parts above the heart decreases hydrostatic and venous pressure, which reduces swelling.[6,7] As such, EABs with independent leg elevation can be ideal as management tools – they can be used to regulate oedema at night or during sedentary periods, such as when patients are watching television or using laptops.

Just as importantly, therapeutic technologies like CELLIANT® and WBVT can increase local circulation, minimising lower leg swelling and promoting oxygenation.[8,9] A side effect of leg elevation can be that tissue oxygenation is decreased – CELLIANT and WBVT can help counter this, making an EAB generally preferable compared to a basic adjustable bed.

Back Pain

Chronic lower back pain (LBP) is one of the world's most common health conditions, affecting around 26.25% of Australians over 65 years.[10] In addition to the general occupational impacts, chronic LBP can contribute to poor sleep health – one study found that 52% of adults with comorbidities experience sleep problems.[11]

Although LBP is a complex condition with many causes, its impact on sleep can be minimised by choosing the right sleeping position. In a regular bed, a side position with the legs curled towards the chest and propped apart with a pillow helps relieve lumbar pressure. Unfortunately, this position can contribute to shoulder and joint pain.

When EABs are used, though, their lumbar and leg tilt functions can support spinal alignment from a back sleeping position, minimising the risk of joint or shoulder complications.

Having the right sleep surface also plays an important role in alleviating LBP. Several studies have indicated that medium-firm mattresses are, generally, the best option (although individualised mattress prescriptions might be appropriate in some cases).[11,12]

Mobility Conditions

One of the biggest benefits of EABs is their transformative impact on patient mobility. Age-related conditions like sarcopenia and arthritis, as well as mobility-limiting physical disabilities, can make sitting up and getting in and out of bed difficult.

In many cases, patients may need assistance from clinical staff and allied health practitioners. This reduces independence and poses health risks to staff and practitioners, who may not have the equipment or physical capabilities to easily manoeuvre patients.[13,14]

A height-adjustable EAB obviates these risks through two mechanisms: a back tilt function that helps patients sit up, and a vertical adjustment function that elevates the bed from a normal height to a standing height, which acts as a lift to help the patient to their feet. Having both these features may reduce occupational stress in staff and carers, especially in relation to lower back strain.[13,14,15]

Importantly, EABs also eliminate the need for bed railings (for the majority of patients). Despite their prevalence, bed rails have been strongly linked to problems like bed-rail entrapment, which can result in adverse patient outcomes, and have not been proven to reduce fall incidences.[16]

Pressure Ulcers

Pressure ulcers are a serious condition common in older people and people with disabilities. Typically, they're caused by a combination of tissue ischemia and necrosis, local tissue hypoxia, and maceration from excess moisture (i.e. sweat).[17]

The majority of ulcer prevention strategies aim to reduce either the magnitude or the duration of pressure between a patient and a support surface. The tilt functions of EABs can, to a point, alleviate pressure on certain parts of the body (such as the occiput and heels) – this may provide limited, temporary relief.

Allied health practitioners, though, should focus on mattress choice. Selecting an EAB with a pressure-relieving support surface is essential for evenly distributing pressure throughout the patient's body.[18] Although high-specification options like air-fluidised beds exist, more widely available mattresses feature technologies like memory foam and micro-coils.[18]

Mattress enhancements like CELLIANT may also be beneficial. CELLIANT has been strongly linked to better local tissue oxygenation in five peer-reviewed studies; separate research indicates that tissue oxygenation may help prevent ischemia and hypoxia.[8,19,20,21,22]

Other Conditions (Joint Pain and Sleep Disorders)

Beyond oedema, back pain, mobility issues, and pressure sores, EABs can be used in interventions for a variety of other conditions, including joint pain and sleep disorders.

Joint pain, for example, may be relieved by changes in position (such as leg elevation). Several clinical trials have also indicated that CELLIANT may have a beneficial impact on perceived pain.[23] These increases in comfort could conceivably improve sleep quality – comorbidities are generally associated with poorer sleep.[11]

Similarly, CELLIANT has also shown promise as an inducer of longer, better sleep. A pilot study found that CELLIANT mattress coverings improved time-to-sleep by 18.3 minutes and increased median sleep efficiency by 2.6% in people with chronic back pain.[24]

Summary

Restful sleep is critical for occupational performance. When patients live with chronic conditions, their ability to get the sleep they need is compromised, which can affect everything from mental health to independence.

Enhanced adjustable beds combine the benefits of better sleep with therapeutic technologies, making them a useful addition to the allied health toolkit. No single device is a panacea, but EABs, with their broad variety of use cases, certainly merit consideration for many allied health interventions.

Find out more about enhanced adjustable beds by contacting Seniors Plus by SleepHive.

Email: healthysleep@seniorsplus.com.au

Call: 1300 375 337

Web: www.seniorsplus.com.au

About Seniors Plus

Seniors Plus by SleepHive is a leading Australian manufacturer of therapeutic sleep systems. Founded in 2012, Seniors Plus promotes better health for older Australians by making good sleep accessible for everyone, including people with chronic health conditions.

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