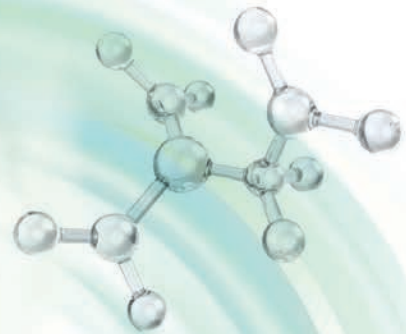


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The Importance of Sleep Training Before Surgery

Dr Sara Samari



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The importance of sleep before surgery

During sleep, the body temperature drops, heart and breathing rates are more regular, and growth hormones are released, which are needed to repair the damaged tissue and activate the immune system.



Why is sleep deprivation dangerous in the postoperative setting?

Sleep deprivation in healthy individuals can cause serious problems. Younger people usually have more extended sleep patterns, with less frequent awake windows. In contrast, older people report shorter sleep and frequent wakes. However, regardless of age, the quality of sleep and its architecture can be affected by several factors. Lifestyle, such as time of sleep

during the day, time dedicated to sleep, consumption of caffeine, alcohol, nicotine and generic sleep disorders, are among the main disturbing factors that can alter sleep patterns even for the same person.¹ A requirement to change sleep position on top of all these disturbances can be 'the last straw'.

Lack of sleep interferes with the healing process

Sleep promotes the recovery and regeneration of damaged tissue. During sleep, the body regenerates by increasing the activity of the immune system and replenishing lost energy. Lack of sleep interferes with the healing process. Therefore, the consequences of sleep deprivation are even more severe in the postoperative setting.

Following primary and minor surgery, patients reported significant sleep architecture alternations.² Polygraphic records showed a decrease or loss of N3 (deep sleep) and rapid eye movement (REM). In the cases reported most, patients have essential fragmented sleep or complete sleep deprivation.³ Insomnia following surgery can be harmful and critical in

some specific circumstances, as reported by Leung and colleagues in a study published in the *Journal of Clinical Sleep Medicine* in 2015. According to this study, sleep deprivation can be associated with postoperative delirium, especially for older people.⁴

Moreover, a cohort study with almost 400 patients reported a higher risk of developing cardiovascular conditions with only one month of disturbed sleep.⁵ Lastly, sleep deprivation following different forms of surgery (e.g. hysterectomy, knee replacement) was associated with more extended hospitalisation, slower recovery, poorer emotional state and quality of life.⁶⁻⁹

What factors are associated with sleep disturbance post-surgery?

Several factors are associated with the disturbance of postoperative sleep. According to studies, the two main factors responsible for the development of sleep disturbance are pain and environmental changes.

A patient survey showed that, even for minor and non-invasive surgery, pain manifested as a form of discomfort. There is a reciprocal relationship between pain and lack of sleep; even a minor alteration of sleep pattern

causes an increase in pain sensitivity. Therefore, a poor night's sleep can increase pain the following day. This effect is even more evident in patients suffering from chronic pain, such as back pain.¹¹

Environmental changes, e.g. spending a couple of nights in the healthcare ward or following doctor recommendations to sleep supine for weeks at home, are the leading causes of sleep disturbance.¹⁰

Sleeping supine

Supine sleep is achieved by sleeping on the back or with the face upward. The table below lists all major surgery – divided into face and body areas

– for which doctors recommend sleeping supine, the minimum amount of weeks and where the aid of supporting pillows can improve sleep quality.

	Surgery	Weeks	Pillow for extra support
Body	Breast Augmentation or Reduction	≥6	Legs
	Abdominoplasty	≥6	Legs
	Hip replacement	≥6	Legs
	Knee replacement	≥6	Legs
	Heart surgery	3	Spine and neck
	Hysterectomy	≥6	Legs
	C-section	≥6	Legs
Face	Rhinoplasty	3	Spine and neck
	Hyaluronic filler injections	≥2	Spine and neck
	Bbotox injections	≥2	Spine and neck
	Rhytidectomy	≥4	Spine and neck
	Dental Surgery	≥4	Spine and neck

Conclusions

Sleep disturbance is expected after several types of surgery. The factors that affect sleep are primarily pain or discomfort and changes in the environment. The risks associated with sleep disturbance can be as minor as an increase in pain sensitivity, but a medium disturbance risk could evoke a delay in full recovery as significant as delirium and increased cardiovascular events. Ensuring restful and undisturbed sleep is critical for postoperative nights.

The medical device that aids supine sleep

The importance of a restful and restoring night of sleep following surgery is the key to a better, faster and more significant recovery. Training preoperative without the complications of pain and fear might be the best chance to avoid sleep disturbances. Several measures can be adopted to improve postoperative sleep, particularly accustoming patients to sleep supine before surgery. The Waking Beauty Sleep System is a medical device invented to help patients rest comfortably during the most uncomfortable nights. Currently patented in the UK, China and USA, the system consists of five components designed to support supine sleep

Getting used to sleeping supine before surgery increases the client's chance of a speedy recovery.

Waking Beauty's Sleep System is a registered medical device that can support a patient's supine sleep before and after facial and body surgeries. Ethical source materials, engineering design and ergonomics support are only three of the main aspects that the Sleep System can offer.

comfortably while offering emotional and physical comfort. It adjusts to the patient's needs rather than forcing them into an unfamiliar position they cannot relax. The different layers enable complete customisation never before achieved in this field.¹²



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Dr Samari's main areas of expertise are biomedical science, musculoskeletal microbiology and physiology. She holds a PhD in Biomedicine and an MRes in Biomedical Research from Imperial College London. She has authored numerous scientific papers and works as a freelance medical writer and scientific consultant. She has also presented her published work at international conferences.

The Waking Beauty® Sleep System



HARMONISE

Gives both emotional and physical support

The first element is Harmonise. Harmonise enables supine sleep while offering the comforting impression of side sleep. It supports the head and gives lateral support to the neck.



STABILISE

Allows individual adjustment

The second element, Stabilise, has a central zip on the reverse, allowing for ventilation and filling variation. Patients have all levels of firmness available in one pillow.



ELEVATE

Raises the head to a comfortable position

The third element, Elevate, is a small pillow that works synergistically with Stabilise to elevate the head enabling patient to retain a familiar sleep height.



ALIGN

Targets support under the knees

Inspired by Alexander's position of Constructive Rest, the fourth element, Align, provides targeted support, uniquely increasing the comfort of sleeping in a new position by raising the legs and spine to an optimum level and angle. Similar to Stabilise, the central reverse zip can be used to adjust filling and firmness.



REPOSE

Naturally warms the eye area

The fifth element, Repose, unlike the traditional too restrictive eye mask, blocks the light while gently resting on the eyes and forehead.

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