

Sleep position

Adoption of habitual sleep position

A definite sleep position starts to develop at about three months of age, when infants begin to move freely and turn over by themselves. By the age of seven years a definitive individual sleep position is assumed.¹

Adults are able to provide valid, reliable and consistent self-reports of their sleep position.² Most commonly they report sleep in the semi-foetal position, followed by the full-foetal, prone (tummy) and supine (back) positions.¹ Although individuals have a pattern of constancy with regard to sleep position³ as age advances this pattern changes with increased preference for the side sleep position, decreased preference for the prone (tummy) sleep position, less changes in position during the night and increased amounts of time spent in one position⁴, lasting between 45 and 110 minutes.⁵⁻⁷ Videotape studies show that adults change their body position an average of 11 to 13 times per night^{2,6} with the majority of sleep time spent lying on the side.²

Sleep position and cervico-thoracic symptoms

Many experts have suggested that poor neck posture and support during the night may be responsible for waking with neck pain and stiffness, headache and shoulder blade or arm pain.⁸⁻¹⁴ Headaches originating from the neck are called cervicogenic headaches. They are referred from the upper three levels of the neck. Shoulder blade and arm pain can be referred from the lower three levels of the cervical spine.^{11,15} It is suggested that individuals who wake in the morning with symptoms that were not present the night before, or patients whose symptoms are worse in the morning than when they retired the preceding night, are probably either using an unsuitable pillow or adopting an inappropriate posture overnight.¹⁶

Supporting the spine during sleep

Written advice regarding sleep position first appeared in 1946¹⁷ when it was suggested that people should lie on their side with the gap between the head and mattress filled (with a pillow) so that the head was an equal distance from each shoulder in a semifoetal position. Although most authors suggest that a neutral position of the neck is optimal for spinal health some suggest sleeping on the back^{14,12} while others suggest either sleeping on the side or on the back.^{10,13} However, all agree that the tummy sleep position should be avoided.^{10,12-14} Outcomes from my recent research regarding sleep position and waking neck symptoms are currently under review for publication and will be posted to this website at a later date.

Sleep position and handedness

There has been much inquiry and controversy regarding the relationship of handedness to sleep position. It has been reported that the majority of right handed people go to sleep on their right side, while left handed people go to sleep on their left side,¹⁸ that children are more likely to sleep on the side opposite to the preferred hand¹⁹ and that the majority of people whether left or right handed went to sleep on their right side.²⁰ The true relationship between sleep position and handedness remains uncertain.

Sleep position and personality

Personality has been cited as the reason for choice of sleep position. Many different sleep positions and the personality traits associated with them have been described. It has been reported that people who sleep in the full-foetal position score significantly lower in sociability and sense of well-being. Those who sleep in this position shun involvement and appear to have diminished vitality and self-sufficiency. The two sleep positions that are believed to reflect good psychological adjustment and above average scores on the social maturity index, are the semi-foetal and swastika positions.^{1,3} In the swastika position the person lies on their tummy with one arm extended above the head and the opposite leg is bent at the knee.¹

It has been suggested that during the night our initial sleep positions are an extension of the defensive behavioural manoeuvres the individual uses in waking life, but that once we are completely relaxed we shift from a position reflecting our standard defences to one that gives greater security. This position then becomes the preferred one throughout the night and is the one in which the person will wake.¹

Sleep position shifts

It is accepted that a change in sleep position may benefit the health of individuals, for example the adoption of an upright sleep position by people with heartburn or respiratory disorders or the avoidance of sleeping on the back by people with sleep apnoea or snoring.

Adult subjects are reported to change their sleep position between three and 45 times per night^{1,6,7,21,22} with up to 12 different sleep positions used during the night.¹ With increasing age the amount of time spent in bed and asleep decreases, that there is an increase in the duration spent in one position and the number of periods of more than thirty minutes of postural immobility increases. The number of position shifts per night decreased from an average of 42.3 in the children (3-5 years) to 16.4 shifts in the elderly (65-80 years).⁴ Periods of immobility in the elderly may last up to 110 minutes.⁷

There are a range of factors that influence the number of movements made by an individual during a night's sleep - illnesses which affect sleep (such as sleep apnoea), caffeine and heavy meals (which increase sleep movements) and alcohol (which decreases motion early in the night and increases movement during the latter half of sleep) and dreams²³, uncomfortable bedding²⁴ and the level of comfort, which may be related to temperature, unfamiliar surroundings, noise, anxiety and stress²⁵ may also affect the number of movements during sleep.

When sleeping with a partner a high degree of synchrony in movement and immobility occurs between the partners. Movements of one couple aged 46 and 44 years who had been bed partners for 23 years were videotaped. Sixty percent of the males' movements occurred synchronously with his female partners movements while 70 % of the females' movements occurred synchronously with her male partner. Eighty-two percent of the males and 76% of the females' periods of immobility occurred synchronously. Obviously having a partner who is uncomfortable or unsettled will disrupt the sleep of both partners.²⁶

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