pab® – For People who are Wise about their Health

How to sit in Neutral Spine with pab®. Inflate the TOGU Dynair® Senso/Wedge ball cushion between ± 0.3 - 0.7 mbar with the pab® device.

Start in a Slump Posture (FIGURE 1): Sit in slump posture (posterior pelvic tilt), lower and upper back slumping, pab® graph shows increased value (figure 3).

Correct position in Neutral Spine (FIGURE 2): Roll pelvis forward (anterior pelvic tilt) while sitting up straight in Neutral Spine (do not force shoulders back or hyper-extend lumbar spine. If doing Neutral Spine correct, pab® graph shows a decreased value (figure 3). NOTE: take micro-breaks every 30 minutes by varying sit posture and by walking around.
FIGURE 4: pab® KINESIOLOGICAL NEUTRAL SPINE PROFILE – STAGE 2 (Concentric Phase).

NOTE: This rehabilitation exercise must be done in a slow and controlled way. Do each step in ± 4-5 seconds/counts.
FIGURE 5: pab® KINESIOLOGICAL NEUTRAL SPINE PROFILE – STAGE 3 (Concentric and Eccentric Phase).

NOTE: This rehabilitation exercise must be done in a slow and controlled way. Do each step in ± 4-5 seconds/counts.
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**pab® & TOGU® – NEUTRAL SPINE POSTURE (NSP) IN BACK REHABILITATION**

Most low back pain patients can develop healthy and strong backs by proper exercise techniques and it should not affect their lives negatively. However, sitting has become part of everyday life and if done wrongly, can cause major unwanted biomechanical stresses on the spine (Pienaar, 2009). For this reason, pab® has developed a medical device that measures and teaches patients the neutral spine posture. If corrected with the pab® / TOGU Dynair® ball cushion, the neutral spine can then also be applied in activities of everyday life when the body is put under physical stress. Scientific research has underlined the clinical importance of the neutral spine in everyday life as highlighted by various research studies, e.g. Patients during the day should try to correct the lumbar spine position or neutral spine actively and hold this for short periods of time which is facilitatory for the deep lumbo pelvic muscles (McGill, 2007; Richardson et al., 2005; Williams et al., 2000) and superficial paraspinal muscles (Hides, 2005; Richardson, 2005; O’Sullivan et al., 2006), which if properly activated will lead to the neutral spine which can be monitored by the pab® device. One of the most common movement functions of daily living is bending forward where, in full flexion, the lumbar extensors shut down.
their neural drive by reflex while the passive tissues (spinal discs, joints and ligaments) absorb the load as they strain under full flexion (Figures 9, 11) (Schultz et al., 1985; Shin et al., 2004; McGill, 2007; Verkhoshansky & Siff, 2009). This is called the “flexion-relaxation” syndrome which also happens when sitting in slump posture. By teaching patients neutral spine awareness with the Pab® / TOGU Dynair® ball cushion, they will learn to protect their backs against the “flexion-relaxation” syndrome during common movement functions of daily living. It is important to know that the ability of the paraspinal muscles to protect the spine against anterior shear forces is a function of spine curvature, especially when lifting in a stoop or squat style. In this regard, Adams et al. (1994:5), McGill (1997b:465) and McGill (2007:102) stressed the importance of a neutral lumbar posture in lifting (Figure 10) (squat style) avoiding the flexion-relaxation response. Teaching patients the neutral spine with the Pab® / TOGU Dynair® ball cushion will create a pelvic awareness how to protect their backs while lifting (squat style) in a neutral lumbar posture. Further to this, McGill (2009) stated that generating high strength (or force) is much safer with a back that is not bending while engaging in activities of everyday life (Figures 7, 8, 10, 12). To create the neutral spine within the complex 3-dimensional movement pattern of the pelvis (Verkhoshansky & Siff, 2009), the anterior- and posterior pelvic tilt is arguably most crucial (Pienaar, 2009).

REFERENCES


Activities of Daily Living – When Neutral Spine is Important

Figures 7, 8, 10, and 12: Correct.
Figures 9 and 11: Incorrect.