



**Fig. 7-5** The Back Bubble.

- Patient secures the device around the waist and under the arms.
- Patient assumes a seated posture while suspended in the device.
- Patient maintains seated posture and maintains the position of knees flexed, with feet flat on the floor, creating traction on the lower back. (Courtesy Back Bubble, Inc., Solana Beach, Calif.)

portable gravity-dependent, self-operated traction device for use in either a clinical or home setting. The unit consists of two upright members, adjustable for height and width. The upper section of the unit contains a sling seat, with arm rests further toward the top of the unit. These arm rests include a padded structure that, when fully engaged, rests against the lower rib cage. This support is important because it provides support for the body as it sits suspended, with the pelvis creating the weight for tractioning the lower back. (Figs. 7-6 through 7-12.)

The initial purpose for the unit was to create traction for the lower back. The LTX 3000 has evolved, however, and is now used extensively in the rehabilitation process, with exercises and stretching positions developed for use with the unit. A recent study by the University of Minnesota tested the capability of the device to produce spinal unloading. Fourteen subjects used the device for a series of sessions lasting 4 weeks.

Radiographic images taken at various times during the unloading process show a considerable increase in intervertebral spaces. The results of the study led researchers to determine that 10 minutes of this traction appears to be the optimum time for maximal lumbar lengthening. The study also reports that nearly all subjects demonstrated a dramatic reduction in lumbar curvature.<sup>9</sup>

The results expected from use of the LTX 3000 include increasing the intradiscal area by providing traction on the lumbar spine and unloading the spine, thereby reducing low back pain. Sitting in the position required by the LTX 3000 allows the patient to perform certain rehabilitation exercises to stretch and strengthen the low back. This device also allows the clinician to perform mobilizing manipulation.

### THE GRAVITY LUMBAR TRACTION FRAME

The Gravity Lumbar Traction Frame was used prominently and written about by Charles Burton, M.D. This device was used frequently at the Sister Kenny Institute in Minneapolis, Minnesota, since the mid 1970s, when the program of low back treatment known as the Gravity Lumbar Reduction Therapy Program (GLRTP) was introduced. As noted by Burton,<sup>10</sup> the protocol for use of the device was to gradually load the lower body in traction by increasing the tilt of the frame over several days. This allowed the patient to acclimate to the traction and allowed the force to be applied gradually. (Fig. 7-13.)

This device is used on both chronic and acute patients with low back pain and is coupled with a course of exercises and toughening, or hardening, activities. This treatment has become generally an outpatient activity, and the Low Back Club was formed for ambulatory patients at the Sister Kenny Institute. The objective is to return the injured worker to work as soon as possible, before compensation issues arise.

### INVERSION: THE BACK-A-TRACTION AND GRAVITY GUIDING SYSTEM

The Back-A-Traction is a Swedish-designed form of inversion therapy performed on a table. Most inversion devices are related to the early gravity boots or Gravity Guiding System that were used in the past but have since fallen from favor because they allow little control by the patient. The Gravity Guiding System required the use of special foot and ankle supports that snapped into place. Each support had a hook on the front that allowed a temporary connection to an overhead bar, which had to be installed by the patient. The inverted mounting of the bar by the patient proved difficult or impossible for most patients. (Fig. 7-14)