Fig. 10.**10** Starting position when lifting a heavy object.

Fig. 10.**11** Lifting should be combined with exhalation while tightening the pelvic floor and abdominal muscles.

halation and slightly forward during inhalation (Figs. 10.**14**–10.**16**).

Note:

- As proper lifting requires a wide base of support, the low back muscles must be in a neutral position.
- The pelvic floor muscles should contract during exhalation.
- It is important to avoid straining the pelvic floor muscles or increasing abdominal pressure (Valsalva maneuver) during lifting (Figs. 10.**10** and 10.**11**).
- All of the exercises described in this book for training awareness and strength of the pelvic floor muscles in all directions and planes can be practiced prior to surgery.
- Favorite exercises from a patient's exercise program can be reviewed and adapted to include strengthening of the pelvic floor muscles to avoid straining while exercising.
- Many men prefer to use a Swiss ball for the exercises for comfort of the prostate gland.
- Patients should practicing urinating in sitting as this allows the urethra to be in a straight position and the urine to flow better (Baumann and Tauber 1991). Urinating in sitting may also prevent high residuals of urine in the bladder.
- Contraction of the pelvic floor muscles prior to coughing and sneezing can be practiced prior to surgery. ■

Suitable Exercises after Prostate Surgery

After surgery the patient usually wears a catheter. Depending on the reason for surgery, the patient's overall health and condition, and the seriousness of the operation, the patient's condition afterwards can vary considerably.

Fig. 10.**12** Contracting the pelvic floor muscles while lying on the stomach.

Fig. 10.**13** The pelvic floor muscles are activated during exhalation when lying on the back.

Fig. 10.**14** On the hands and knees, the pelvis can be tilted in a backward direction during exhalation.

- Exercises begin with the coordination of breathing and gentle puckering of the anal sphincter, especially before coughing and sneezing. It is equally important for men to exercise the muscles in front (bulbocavernosus and ischiocavernous) by pretending to squirt out the last drop of urine and feel a scrotal lift.
- Once the catheter is removed and the doctor has approved further exercises, a therapist should re-evaluate the patient's condition and review exercises according to the findings.
- Usually pelvic floor contraction can be intensified after the catheter is removed. Pre-contractions are recommended prior to turning

Fig. 10.**15** Side-lying exhalation.

Fig. 10.**16** Side-lying inhalation.

in bed, moving from a lying to a sitting position and from a sitting to a standing position.
- Before the patient begins to drive again, these pre-contractions should also be practiced when moving the legs into and out of a car.
- The exercises described above (Figs. 10.**3**, 10.**4**, and 10.**13**–10.**16**) can also be done, adjusting the intensity so as not to increase the pain.
- The progression of exercises depends on the speed and extent of the patient's recovery and on the doctor's findings. The patient can always contact the surgeon with any questions about the progress. The therapist should adapt the exercises to the individual's needs.
- When sitting on the ball the exercises should primarily be performed in a forward/backward direction to avoid straining the scar until it is well healed. Healing may take about 4–6 weeks.
- The patient then slowly progresses to doing exercises on the ball in all directions and increases the contraction around the urethra, that is in front of the seat, near the base of the penis.

Note:
- After a prostatectomy bladder dysfunction and inability to tighten the external sphincter of the urethra can cause incontinence. Other individuals may suffer from urine retention, which may cause overflow and dribbling (Van Kampen et al. 1997).
- Incontinence can occur after prostate surgery for benign hyperplasia of the prostate.
- All patients have to develop a keen awareness of when they are leaking urine. The therapist can customize the exercises for individual patients; the activity causing leakage can be practiced by taking the movement sequence as a whole apart and training only individual movement sequences at first.
- Slow fibers of the pelvic floor are trained by holding a contraction for 5–10 seconds or more; fast fibers are trained with repeated quick contractions (quick flicks). Both muscle fiber types of the pelvic floor muscles should be trained.
- Most patients, after a radical prostatectomy, are greatly improved at 4–12 weeks after surgery; a small number may leak urine up to a year and an even smaller percentage can leak beyond this time frame.