The purpose of this study was to determine the effectiveness of supportive underwear and pelvic floor muscle training (PFMT) in reducing pelvic relaxation after delivery. The position of the bladder neck and its mobility, which were evaluated by using magnetic resonance imaging, were compared in 34 postpartum women (20-40 years of age, 4 weeks after delivery) and 24 nulliparous women (20-40 years of age). Subsequently, the 34 postpartum women were randomly classified into the supportive underwear group, the PFMT group, and the control group. The position of the bladder neck and its mobility before and after the 12-week-long intervention was compared. The position of the bladder neck in postpartum women 4 weeks after delivery was significantly lower than in the nulliparous women (difference, 3.6 mm; 95% confidence interval, 0.4-7.3 mm, P < 0.05). Moreover, the force of contraction of the pelvic floor muscles in postpartum women was weaker than in nulliparous women. After 12 weeks (16 weeks after delivery), the force of contraction of the pelvic floor muscles in the supportive underwear and PFMT groups was higher than before (P < 0.05). Moreover, the supportive underwear and PFMT groups had more women who elevated the bladder neck than the control group. Wearing supportive underwear and PFMT may therefore help in reducing pelvic relaxation after delivery.