

# Rehabilitation After Shoulder Replacement: Be All You Can Be!

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Rehabilitation after shoulder arthroplasty should reflect an understanding of the postsurgical phases of healing. The surgeon must balance the need to allow healing while gradually restoring flexibility, functional active motion, endurance, strength, and ultimately return to daily function at home, at workplace, and in participation of recreational activities. At the completion of the surgical procedure, the surgeon should provide an environment that will allow mobility, restore stability, and ultimately allow use of the surrounding and supportive musculature to attain functional goals. The stages of rehabilitation include early passive exercises followed gradually by active and active-assisted exercises, including the use of therapeutic aqua exercises. Gradually, progressive muscular endurance and strengthening exercises are added over time, specifically designed to achieve each individual's unique functional goals. Clearly, the physiological age, the general health quality, and the severity of the preexisting pathology will dictate the degree of activity that can be ultimately achieved. Essentially, patients want relief of pain and restoration of function. A detailed approach to the phases of rehabilitation, nuances based on the type of arthroplasty, and limitations based on the initial pathology and specifics of arthroplasty will be discussed.

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Reduction of pain and restoration of function are the ultimate goals after total shoulder arthroplasty. Realization of these goals is a "50/50" proposition. The surgical procedure restores anatomy (the first 50%). Rehabilitation restores motion and function (the second 50%). The outcome, however, depends on both the surgery and the rehabilitation.<sup>1</sup>

There are a number of phases used in shoulder rehabilitation after total shoulder arthroplasty. These phases should actually begin before, and in preparation of, the surgical procedure (phase 0). (Fig. 1).

Education of the patient by both the surgeon and the therapist who will be working with him/her postoperatively and preparatory exercises designed to at least maintain the level of

mobility and function are begun in anticipation of surgical correction.<sup>2</sup> Postsurgically, passive exercises are begun with education designed to help diminish edema in the involved arm and restore some degree of function without stressing the reconstructed shoulder. These take place during the first 6 weeks after surgery (phase 1) (Fig. 2).

Phase 2 exercises including active and active-assisted exercises without resistance, such as aqua therapy, to re-educate muscles take place during the second 6 weeks of the postoperative period (Fig. 3).

Gradual strengthening and endurance exercises using various forms of resistance begin after postoperative week 12 (phase 3) (Fig. 4), and continue for months focusing on specific activities of daily living (ADL)/work-/sports-specific goals (phase 4). Achieving the goals of decreased pain and increased function with an outcome plan specifically designed for each individual requires teamwork between the surgeon, the therapist, and the patient. This teamwork requires dialogue and feedback; all parties must be on "the same page" and must be aiming for the same realist goals. To achieve this, all members of the team must use the same "game plan." This process begins by educating the patient well before the time of surgery. The surgeon and therapist

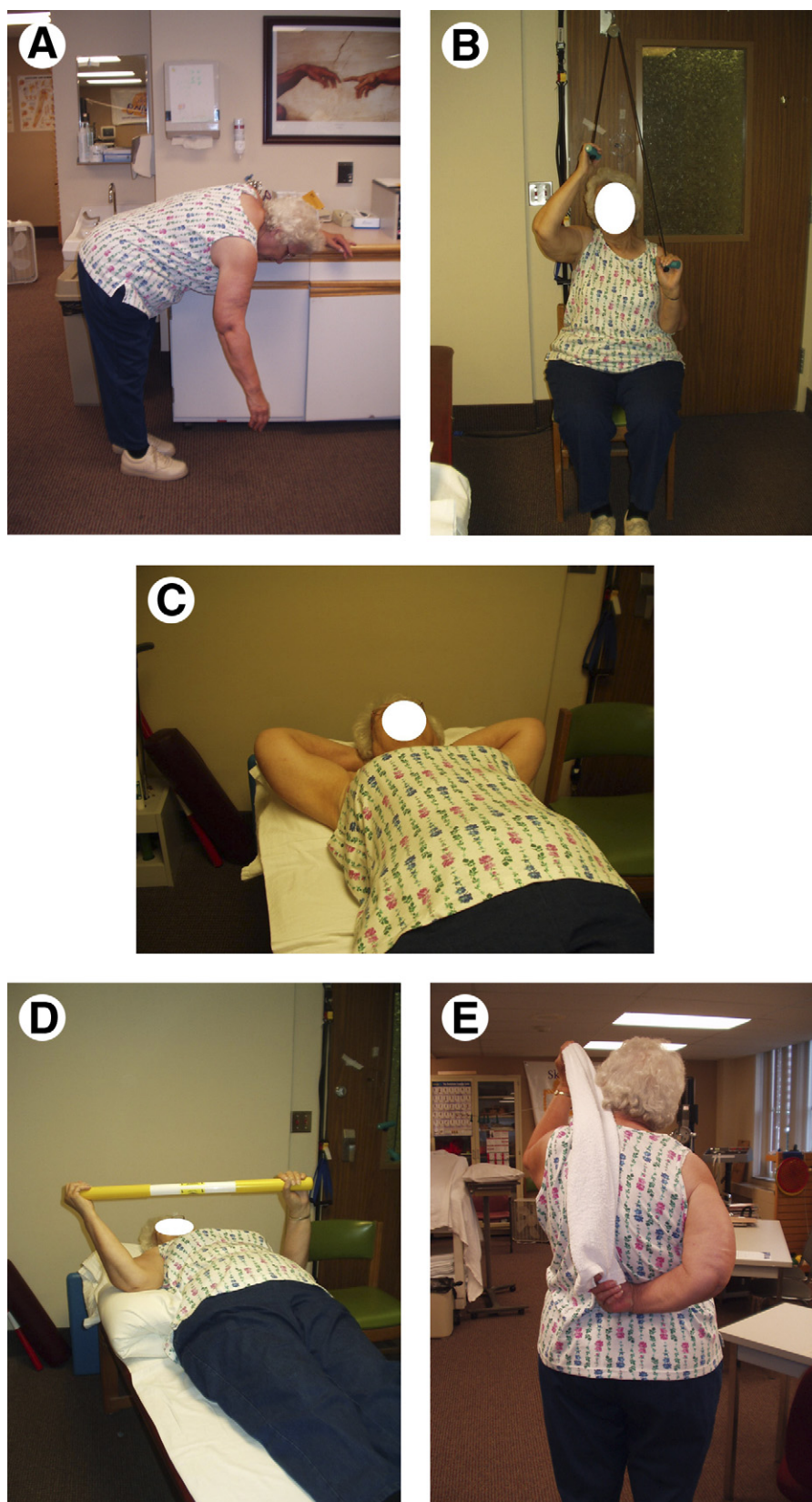
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**Figure 1** (Phase 0) Simple passive/active exercises are used preoperatively to maintain existing limited range of motion and strength (A-E). (Color version of figure is available online.)

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