

# Adaptive Prostheses for Recreation

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## OBJECTIVES

1. Introduce the concept of adaptive prostheses for sports and other recreation
2. Relate a physical fitness program to prosthetic use
3. Describe lower- and upper-extremity adaptive prostheses
4. Link activities of varying levels of intensity with specific prosthetic demands and options
  - a. Lower intensity activities: gardening, fishing, walking, golfing
  - b. Intermediate intensity activities: cycling, skating, swimming, football
  - c. High intensity activities: mountaineering, running, skiing, skydiving
5. Explore the prosthetic options available for participation in professional sports

## INTRODUCTION

Prosthesis users of every amputation level share a universal desire: they want to be able to do more. They want to walk, run, carry, dance, work, and play. These wishes have fueled the development of an array of adaptive prosthetic components by large companies and small specialty manufacturers. Hundreds of innovative designs are enabling prosthesis wearers to participate in various recreational sports activities. This trend is a positive move from the widely held misconception that people who use prostheses should not expect to reach high levels of activity or be able to participate in activities they enjoyed before amputation. A survey of lower-limb prosthesis users indicated participation in activities including basketball, bicycling, bowling, camping, dancing, fishing, hunting, gardening, golfing and walking.<sup>1</sup> Although every person is unique and must be evaluated individually, no one should be discouraged from pursuing favorite activities.<sup>2</sup>

The term “adaptive prostheses” has multiple meanings depending on the person and the activity.

Sometimes an adaptive prosthesis is a separate device used for a specific activity. In other situations, a person may wear the everyday prosthetic arm or leg but change a single component. Occasionally, simple modifications to the basic prosthesis can enhance performance. Often, prosthetists work closely with their patients to modify the prosthesis or to fashion unique components so the client can engage in a particular activity.

Snow skiing outriggers are an example of adaptations. Advances in the primary prosthesis including improved socket technology, gel liners, and computerized upper- and lower-limb components provide users with more comfort and greater performance capability.

People who seek an adaptive prosthesis cross the spectrum from the older adult who wants to garden to the competitive athlete who wants to win the triathlon. Through the expanding world of adaptive prosthetics, people are able to enjoy the self-confidence and personal growth that spring from sports and other recreational involvement. The person who combines intense personal motivation with cutting-edge prosthetic technology may pursue virtually any activity (Figure 17-1).