

# The Occupational Therapy Role in Rehabilitation for the Person With an Upper-Limb Amputation

*Occupational therapy practitioners can play a critical part in helping people with upper-limb amputations resume meaningful activities in their lives.*



## How Common Is Upper-Limb Amputation?

**Upper-limb amputations are most often the result of sudden trauma to the body**, although they also can be caused by malignancy, congenital deficiencies, and vascular disease. About 16,000 new upper-limb amputations occur annually, of which only 2,000 are at or above the wrist (Dillingham, Pezzin, & MacKenzie, 2002). A person faced with such a life-altering change will have to make many physical and psychological adjustments to be able to fully participate in everyday life.

Occupational therapy is a critical rehabilitation component, providing support to individuals and facilitating optimum performance of daily life activities as well as quality of life. A therapeutic team that includes the skills of an occupational therapist or occupational

therapy assistant will provide the client with the most successful rehabilitation and prosthetic training.

## How Does Occupational Therapy Benefit a Person With Upper-Limb Amputation?

**Upper-limb amputation not only affects a person's physical functioning but also his or her psychological and emotional well-being.** Occupational therapy is integral to the rehabilitation process for the person with an upper-limb amputation. Occupational therapists recognize the complexity of this condition and use a holistic approach that emphasizes the client's perspective—the roles and activities he or she finds meaningful, his or her background and values—in developing treatment plans and goals.

Reaching the client's goals is made easier through the occupational therapy practitioner's unique ability to synthesize all of the client's psychosocial factors, physical strengths and abilities, and desire to participate in their daily activities.

The occupational therapy practitioner provides critical interventions such as

- identifying the client's functional goals, both necessary and for personal fulfillment,
- task analysis,
- education,
- prosthetic training, and
- identifying and addressing psychosocial issues.

## What Is the Role of an Occupational Therapy Practitioner?

**While an interdisciplinary team experienced in all of the aspects of amputee care**—from psychology to technology to prosthetic fitting and community reintegration—is critical to successful rehabilitation, the role of occupational therapy is to provide the client with adaptive techniques and strategies that enable them to regain the ability to participate in all desired life tasks. Occupational therapists identify the client's individual needs and goals and provide guidance to the rehabilitation team regarding potential prosthetic options. Occupational therapy practitioners also provide training in the care and use of any prosthetic device when and if that is prescribed.

Occupational therapy intervention will vary according to individual needs, and phases of treatment may overlap depending on progress.

Prosthetic options will be discussed with the client when he or she is medically stable. Options include

- no prosthesis,
- a passive prosthesis,
- a body-powered prosthesis,
- an electric prosthesis,
- a hybrid prosthesis, or a
- task-specific prosthesis.

Many technological advances in prosthetic devices have been made in the recent years. Componentry, for example, is lighter weight, faster, and offers more realistic functions than more traditional devices. Prostheses are available with specialized attachments that allow the person with an amputation to resume or begin participation in work, athletic activities, and leisure pursuits like hobbies.

The following general guideline addresses occupational therapy practitioner roles through four therapeutic phases:

#### Acute phase

The occupational therapist will begin evaluation and development of a client-centered intervention plan. Occupational therapists or occupational therapy assistants will provide wound care, range of motion, desensitization, augment pain control, and provide psychological support. Short-term and long-term goals related to activities that the client needs and wants to do will be identified.

#### Pre-prosthetic training phase

The occupational therapy practitioner will introduce exercises for general conditioning as well as exercises specific to changes in posture due to limb loss or to the foreign weight of a prosthesis. During this phase, intervention will focus more fully on the skills needed to accomplish the activities that are most important the client and the achievement of the client's goals. In the acute setting this often begins with basic daily living tasks such as feeding and dressing. During this time, adaptive equipment will be introduced and change of dominance training will be addressed if necessary.



As part of this phase, occupational therapy has a special role in preparing clients for fitting and optimal use of their prosthesis by using interventions such as non-invasive feedback for muscle control and instruction in body motions that may be used to operate the prosthesis.

#### Basic prosthetic training phase

When the client receives his or her prosthesis, the occupational therapy practitioner will provide instruction in the basics of care and the componentry of the prosthesis: donning and doffing, wear schedule, and basic controls. Once the client has achieved this, he or she will begin to use the prosthesis for those basic daily living tasks that they have identified as critical for achieving their personal goals. The occupational therapy practitioner will continue to monitor the client's ability to perform specific activities as competence in using the device continues.

Throughout the rehabilitation process, occupational therapy practitioners provide support to help clients cope with the potentially devastating psychosocial effects of an upper-limb amputation. For example, the practitioner may suggest that the client can benefit by meeting with a peer prosthetic user. Interacting with someone who has been through a similar experience, successfully met their goals, and achieved a good quality of life can offer critical hope and motivation to the client.

#### Advanced prosthetic training

The occupational therapy practitioner will assist the client in integrating the prosthesis into more advanced activities such as child care, home maintenance, work activities, driving, sports, and hobbies.

Discharge planning is occurring throughout this entire process. Progressive community reintegration, consultation with vocational rehabilitation, and resources are provided for the client and his or her family. By now the collaboration between the occupational therapy practitioner(s) and the client should have provided the client with the education and resources to once again engage competently and productively in self-care, vocational, and leisure activities.

The ultimate outcome of occupational therapy intervention for people with upper-limb amputations is the resumption of former activities and a meaningful quality of life.

*Developed for AOTA by Kristin L. Gulick, OTR/L, CHT*

#### Reference

- Dillingham, T. R., Pezzin, L. E., MacKenzie, E. J. (2002). Limb amputation and limb deficiency: Epidemiology and recent trends in the United States. *South Med J*, 95(8), 875-83.



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