

An amputation is the removal, by accident or by surgery, of a body part. Amputations in the hand are commonly the result of a traumatic injury but may be the result of a planned operation to prevent the spread of disease in an infected finger or hand. Occasionally, traumatically-amputated fingers may be replanted (reattached). However, in many cases, reattachment of the amputated finger is not possible or advisable because a person may be more comfortable and have better function if the part is not reattached. This is due to risk that the reattached part could be chronically painful, stiff, and/or have an abnormal or absent feeling.

Amputation Surgery

PRE-SURGERY

Prior to surgery, the surgeon will do a careful examination of your hand. Often the surgeon will obtain x-rays or other imaging studies to assess the damage to your finger or hand. The area and amount of tissue that will be removed during surgery is based on the extent of the injury and the health of the remaining body part.

SURGERY

In many cases, the surgeon is able to close the amputation wound by rearranging skin. It may be necessary to shorten the bone or tendon so that there's enough soft tissue to cover the bone. Sometimes, the surgeon may have to use skin, muscle or tendons from another part of your body to cover the wound. In more extensive injuries, the surgeon may shape the finger or the hand to be able fit a prosthesis later.

Sometimes, it is necessary to undergo more than one procedure to maintain maximal length and function of the injured area.

RECOVERY

For the first couple of weeks after surgery, you should expect some pain. Pain may be controlled with pain medications, other medication, hand therapy, orthotics (braces or other supports), and other methods such as ice or heat. While you are healing, your doctor will tell you how to bandage and care for the surgical site and when to return to the office for follow-up care.

Because amputations involve injury or surgery to your nerves, there may be some long-term symptoms such as pain, cold sensitivity, abnormal sensations, or phantom sensation or pain, which is when you feel that the absent part is still present. Keep your surgeon up to date with symptoms so appropriate treatments can be implemented. If your symptoms are disabling and persistent,



Figure 1 - A thumb prosthesis - not attached



Figure 2 - Same hand with thumb prosthesis attached

they can often be managed with revision surgery. For example, you may feel hypersensitive in an area, which is caused by a neuroma (an enlarged end of the nerve that can be easily irritated). There are new techniques available that can be helpful for some to relieve neuroma pain.

Therapy

Post-amputation, you may be referred to an occupational or certified hand therapist to help regain function and address pain and abnormal sensation. You'll likely be given exercises to build your strength and improve range of motion or flexibility. You may be asked to touch and move your skin to desensitize it and keep it mobile. Different splints and supportive devices such as silicone gel sleeves may be provided. Guided motor imagery, mirror therapy, joint mobilization, tendon and nerve gliding, and blocking exercises are often used for both a home and formal therapy program.

Prosthesis

A prosthesis is an artificial body part that replaces some of the function and appearance of the missing part. The type of your prosthesis will depend on the location and length of your remaining finger or hand and your functional and lifestyle needs. It is important to share the

activities that you feel are most important with your surgeon and prosthetist so that an appropriate prosthesis can be provided for you.

Prostheses are helpful in many ways and can:

- Restore length to a partially amputated finger
- Enable opposition between the thumb and a finger
- Allow a hand amputee to stabilize and hold objects with bendable fingers

If your hand is amputated through or above the wrist, you may be given a full-arm prosthesis with an electric or mechanical hand. Some patients may decide not to use a prosthesis.

A prosthesis is made from impression casts taken from the remaining finger or limb and the same area on the undamaged hand. This process can create an exact match of the details of the entire hand. The finger or hand prosthesis is made from a flexible, transparent silicone rubber. The colors in the silicone are carefully matched to your skin tones to give the prosthesis the life-like look and texture of real skin. It is usually held on by suction, and the flexibility of the silicone permits good range of motion of the remaining body parts. Fingernails can be individually colored to match almost perfectly. The nails

can be polished with any nail polish, and the polish can be removed with a gentle-action nail polish remover. Silicones are resistant to staining, so inks wash off easily with alcohol or soap and warm water.

With proper care, a silicone prosthesis may last 3-5 years. Usually, creation of your prosthesis can begin three months after you are completely healed from surgery and all swelling has subsided. You may need therapy to learn to use your new prosthesis.

Emotional Recovery

The loss of a body part, especially one as visible as a finger or hand, can be emotionally upsetting. It may take time to adapt to changes in your appearance and your ability to function. Talking about these feelings with your doctor or other patients who have had this condition often helps you come to terms with your loss. You may ask your doctor to recommend a counselor to assist with this process. It is important to remember that, with time, you will adapt to your situation by finding new ways of doing your daily activities. The Amputee Coalition of America is another helpful resource. These resources can help you to cope with change during recovery. It is vital to remember that quality of life is directly related to attitude and expectations – not just obtaining and using a prosthesis.