

## Introduction

Amputation is the surgical removal of all or part of a limb. Below- or above-knee amputations are some of the most commonly practiced major amputations in orthopedic surgery. To patient, this represents loss of a major body part.

## Indications

1. Dead limb: usually results from peripheral vascular disease, but sometimes follows severe trauma or burns.
2. Dangerous limb: with a malignant tumour or potentially lethal infection or because of a crush injury.
3. Nuisance limb: because of rest pain, recurrent infection, gross deformity beyond reconstruction (either congenital or acquired) or severe loss of function.

In Hong Kong, the most common causes for lower limb amputation are peripheral vascular disease and complications of diabetes mellitus, such as infection or intractable ulcerations. The level of amputation i.e. below or above the knee joint depends on the viability of the soft tissue, the level of infection and the knee joint deformity.

## The Operation

1. The procedure will be performed under either general or spinal anesthesia.
2. The skin, muscles, nerves and blood vessels are divided around the selected level of amputation, the bone(s) is then sawed.
3. Stop the bleeding, the soft tissue is closed around the bone end to create a stump.
4. A plastic drain is inserted into the stump to drain hematoma. The drain is usually removed within 2 days.
5. The skin is closed with stitches or staples and they are usually removed 2 weeks after the operation if the wound heals uneventfully.

## Preoperative Preparation

1. Admit 1 day before or on same day of this “elective” operation.
2. Anesthetic assessment. **Inform your doctors** about drug allergy, regular medications or other medical conditions.
3. Optimization of the underlying disease: better control of the blood sugar level, if possible.
4. Improve the circulation by vascular surgery or improve the nutritional status.
5. Regular wound dressing.
6. Counseling on rehabilitation plan.
7. Keep fast for 6 to 8 hours before operation.
8. Empty bladder and change to operation clothes before transfer to operating room.
9. Pre-medication, antibiotic prophylaxis intravenous line may be required.

## Postoperative Instruction

### A. General

1. Mild throat discomfort or pain because of intubation.
2. Mild discomfort or pain over the operation site. Inform nurse or doctor if pain severe.
3. Nausea or vomiting are common; inform nurses if symptoms severe.
4. Inform nurses if more analgesics are required.

## **B. Wound care**

1. Compressive wound dressing is commonly used for controlling of swelling and minimizing.
2. Patient with above-knee amputation is usually given a soft dressing which is sterile, compressive stump bandage.
3. Patient with below-knee amputation is usually given a rigid dressing, such as a Plaster-of-Paris cast to protect the stump immediately after the operation. This “constant volume” dressing offers some advantages in minimizing the stump pain and controlling edema and knee joint contracture.
4. A prosthesis may be prescribed for ambulatory rehabilitation, depending on the patient’s training potential, condition before and after the operation.
5. Stitches or skin clips (if present) will be taken off around 10-14 days.
6. The drainage tube will be removed by doctor when drainage decreases, but patient may go home with the drainage tube

## **C. Diet**

Resume diet, usually 4 hours after anesthesia, and when taking sips of water well.

## **Common Risks and Complications** (not all possible complications are listed)

### **A. Anesthesia related complications**

1. Cardiovascular: myocardial infarction or ischemia, stroke, deep vein thrombosis, pulmonary embolism, etc.
2. Respiratory: atelectasis, pneumonia, asthmatic attack, exacerbation of chronic obstructive airway disease
3. Allergic reaction and shock
4. Toxicity of local anesthetic may result in serious complication although rare.

### **B. Procedure related complications**

1. Slow or non-healing of stump wound from bleeding hematoma, infection or wound dehiscence, requiring revision or further amputation.
2. Wound scar problem such as repeated breakdown, hypersensitivity or contracture.
3. Stump pain and numbness, phantom limb pain.
4. Progression of disease and further amputation if not well controlled.
5. Prosthesis related complications: skin ulceration, impingement by bony prominence, contracture etc.
6. Repeated surgery may be necessary to rectify the complications.

## **Things to take note after discharge**

1. Contact your doctor or a nearby Accident & Emergency Department if you find increasing discharge, pain and or redness around the wound.
2. Take analgesics prescribed by your doctor if required.
3. Resume daily activity gradually.

### **Remarks**

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

### **Reference**

Hospital Authority: “Below or Above-Knee Amputations” (2021)

Smart Patient: [http://www.ekg.org.hk/pilic/public/O&T\\_PILIC/O&T\\_BelowAboveKneeAmputation\\_0088\\_eng.pdf](http://www.ekg.org.hk/pilic/public/O&T_PILIC/O&T_BelowAboveKneeAmputation_0088_eng.pdf) (12-07-2023)