
**Prosthetics and orthotics — Terms
relating to the treatment and
rehabilitation of persons having a
lower limb amputation**

*Prothèses et orthèses — Termes associés au traitement et à la
réadaptation de personnes amputées du membre inférieur*

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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Introduction

Currently there is no internationally accepted terminology to describe the phases of treatment and rehabilitation of persons having a lower limb amputation and the treatments which are used during these phases.

As a consequence the members of the clinic teams in different parts of the world have adopted their own terminology to meet their own needs. This situation makes it difficult to compare the clinical practices adopted in different treatment centres.

This document proposes a terminology which is designed to overcome this problem. It is suitable for use in clinical records and will facilitate the analysis of treatment outcomes.

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Prosthetics and orthotics — Terms relating to the treatment and rehabilitation of persons having a lower limb amputation

1 Scope

This document specifies a vocabulary for the description of the phases of treatment and rehabilitation of persons having a lower limb amputation and the treatments which are used during these phases.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

pre-operative care

treatment provided from the time the decision to amputate is made until surgery is performed

3.2

surgery

treatment provided when the person is in the operating room

3.3

stump residuum

that part of the limb remaining after amputation surgery

3.4

immediate post-operative care

treatment provided after surgery where the focus is recovery from the procedure, achieving medical stability, preventing complications and initiating mobility

Note 1 to entry: This is normally up to three days.

3.5

complication

adverse event affecting the expected progress of treatment

3.6

debridement

surgical removal of non-viable and necrotic tissues

3.7

phantom pain

pain felt as if in the amputated part of the limb

**3.8
early rehabilitation**

treatment, provided once the person is medically stable, to achieve optimum conditions for rehabilitation with or without a prosthesis

**3.9
early walking aids**

EWA

prefabricated assistive devices applied to the stump

Note 1 to entry: They can be used to assess suitability for prosthetic fitting, to promote early mobilization and gait re-education and to control oedema and promote healing. They are intended for use during the early rehabilitation phase.

**3.10
temporary prostheses**

preparatory prostheses

individually manufactured prostheses, to permit early mobilization and gait re-education prior to provision of a definitive prosthesis

**3.11
definitive prostheses**

individually manufactured prostheses intended for continuing use

**3.12
rehabilitation with a prosthesis**

treatment provided to the person who is being supplied with a prosthesis

**3.13
rehabilitation without a prosthesis**

treatment provided to the person who is not being supplied with a prosthesis

**3.14
continuing care**

education and treatment intended to maintain optimal medical, physical and functional status and quality of life

4 Phases of treatment and rehabilitation

The treatment and rehabilitation of a person having a lower limb amputation, from the time the decision is made to amputate, and for the remainder of their lives, may be considered as comprising the following phases:

- preoperative care;
- surgery;
- immediate postoperative care;
- early rehabilitation;
- rehabilitation with or without a prosthesis;
- continuing care.

5 Modes of treatment

5.1 General

During each phase a range of modes of treatment (including education and provision of information) are routinely delivered and a number of complications may occur which will require further treatment, as specified below.

5.2 Pre-operative care

5.2.1 Treatments

- Assessment (medical, functional, psychological and social) of suitability for amputation and to determine level of amputation.
- Counselling of patient, family and/or carer.
- Obtaining informed consent and marking the site(s) of operation(s).
- Medical, physical therapy and psychological treatment as appropriate.

5.3 Surgery

5.3.1 Treatments

- Anaesthesia and pain management.
- Positioning.
- Amputation.
- Infection prophylaxis.
- Thromboembolic prophylaxis.
- Surgical site dressing (including rigid dressings).

5.4 Immediate post-operative care

5.4.1 Treatments

- Routine postoperative medical, physical therapy and nursing care.
- Pain management.
- Surgical site management.
- Stump (residuum) management (including oedema control, muscle strengthening and contracture prophylaxis).
- Psychological support.
- Physical therapy (including positioning, mobility in bed, general strengthening, standing and balance training, falls awareness, and transfers).
- Care of the contralateral limb (including prevention of pressure ulcers and contractures, and thromboembolic prophylaxis).

5.4.2 Complications

- Surgical site infection.
- Bleeding and haematoma.
- Wound dehiscence.
- Excessive oedema.
- Other infections (e.g. pneumonia, urinary).
- Excessive wound or unexplained pain.
- Phantom pain.
- Pressure ulcers (contralateral limb).
- Venous thrombosis.
- Psychological issues.

5.4.3 Treatment of complications

- Antimicrobial therapy.
- Debridement.
- Revision amputation.
- Re-amputation.
- Intensified compression therapy.
- Additional pain management (e.g. medication, nerve block).
- Pressure relieving measures.
- Anti-coagulation therapy.
- Wound dressings (e.g. negative pressure).

5.5 Early rehabilitation

5.5.1 Treatments

All the treatments used in the previous phase as appropriate, plus:

- occupational therapy (e.g. ADL, wheelchair mobility, assessment of living environment);
- physical therapy (e.g. intensified strength and mobility training, residuum conditioning, hopping and single leg walking training, falls strategy);
- education and training in stump care and hygiene;
- training using early walking aids and temporary/preparatory prostheses;
- assessment of suitability for prosthetic fitting;
- provision of information regarding prosthetic options and supply procedures.

5.5.2 Complications

All the complications of the immediate postoperative phase, plus:

- joint stiffness and/or contracture;
- phantom pain;
- cognitive impairment;
- depression.

5.5.3 Treatment of complications

All the treatments of complications used in the immediate postoperative phase, plus:

- psychological therapy (e.g. cognitive behavioural therapy) and medication;
- provision of pressure relieving orthoses and/or footwear;
- mirror therapy, transcutaneous electrical nerve stimulation (TENS) and alternative therapies;
- manual and mechanical joint stretching, serial casting and orthoses.

5.6 Rehabilitation without a prosthesis

5.6.1 Treatments

All the treatments of the early rehabilitation phase as appropriate, plus:

- discharge planning (including placement, home adaptation and assistive product provision);
- wheelchair provision and training;
- cosmetic-only prosthesis provision if appropriate;
- appropriate ADL training;
- specialized rehabilitation (e.g. recreational, sporting and vocational activities).

5.6.2 Complications and their treatments

All the complications and their treatments of the early rehabilitation phase.

5.7 Rehabilitation with a prosthesis

5.7.1 Treatments

All the treatments of the early rehabilitation phase as appropriate, plus:

- discharge planning (including placement, home adaptation and assistive product provision);
- prosthetic provision;
- education and training in the use, care and acceptance of the prosthesis (including handling, putting on and taking off, hygiene and cleaning);
- gait training and provision of walking aids;
- wheelchair provision and training (when appropriate);
- appropriate ADL training;