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**Implants for surgery — Wear of total  
hip-joint prostheses —**

**Part 2:  
Methods of measurement**

*Implants chirurgicaux — Usure des prothèses totales de l'articulation de la  
hanche —*

*Partie 2: Méthodes de mesurage*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 14242 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14242-2 was prepared by Technical Committee ISO/TC 150, *Implants for surgery*, Subcommittee SC 4, *Bone and joint replacements*.

ISO 14242 consists of the following parts, under the general title *Implants for surgery — Wear of total hip-joint prostheses*:

- *Part 1: Loading and displacement parameters for wear-testing machines and corresponding environmental conditions for test*
- *Part 2: Methods of measurement*

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# Implants for surgery — Wear of total hip-joint prostheses —

## Part 2:

## Methods of measurement

### 1 Scope

This part of ISO 14242 specifies methods of assessment of wear of the acetabular component of total hip-joint prostheses using gravimetric techniques and changes in dimensional form of components tested in accordance with ISO 14242-1.

NOTE Some investigators have experienced problems with organic deposits affecting the results of measurements, especially with hard/hard combinations. No specific precautions are included in this part of ISO 14242, but cleaning techniques adopted should be suitable for the soils produced.

### 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 14242. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 14242 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 14242-1, *Implants for surgery — Wear of total hip-joint prostheses — Part 1: Loading and displacement parameters for wear-testing machines and corresponding environmental conditions for test.*

### 3 Term and definition

For the purposes of this part of ISO 14242, the following term and definition applies.

#### 3.1

##### **wear**

material loss from components of the prosthetic joint due to combined movement and loading

### 4 Gravimetric method

#### 4.1 Principle

The test specimen is soaked in a lubricant. It is repeatedly removed from the lubricant, cleaned, dried and weighed until a steady rate of fluid sorption is established. The test specimen is assessed subsequently for wear by testing for loss in mass in a knee-hip simulator. A loaded, non-articulating control specimen is intended to allow for fluid sorption and undergoes the same procedure for reference purposes.