INTERNATIONAL STANDARD

ISO 12749-6

First edition
2020-11

Nuclear energy, nuclear technologies, and radiological protection — Vocabulary —

Part 6: Nuclear medicine

Énergie nucléaire, technologies nucléaires et protection radiologique — Vocabulaire —

Partie 6: Médecine nucléaire

Reference number
ISO 12749-6:2020(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*.

A list of all parts in the ISO 12749 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document provides terms and definitions for nuclear medicine, the medical discipline whereby radionuclides as unsealed sources are administered to patients, in order to carry out diagnostic exams, therapeutic treatments for various pathologies and to monitor the evolution of the disease.

This multidisciplinary activity is fundamentally made up of medical, radiopharmaceutical and medical physics components, although it also relies on nuclear science, biology, biochemistry, radiochemistry, nuclear chemistry, electronics, electro-mechanics, computing, metrology of ionizing radiation and dosimetry. It involves tasks relating to support, research and development as well as staff training, which are all carried out intensively in this field.

The specific areas of most relevance to nuclear medicine are oncology, cardiology, endocrinology and neurology. However, its reaches practically every medical specialty.

The professional and technical staff who work in nuclear medicine are highly specialized, carrying out their activities in highly complex facilities, using a large range of equipment, within a strict healthcare and radiological regulatory setting.

These activities produce a large amount of documentation such as reports, publications, legal documents and teaching texts, all of which require the use of precise, coherent and unambiguous terms and definitions. Therefore, it becomes essential to harmonize the terminology used by all of the above-mentioned sectors and professions.

Conceptual arrangement of terms and definitions is based on concepts systems that show corresponding relationships among nuclear medicine concepts. Such arrangement provides users with a structured view of the nuclear medicine sector and will facilitate common understanding of all related concepts, see also Annex A. Besides, concept systems and conceptual arrangement of terminological data will be helpful to any kind of user because it will promote clear, accurate and useful communication.

Nuclear energy, nuclear technologies, and radiological protection — Vocabulary —

Part 6: Nuclear medicine

1 Scope

This document contains the terms, definitions, notes to entry and examples corresponding to the frequently used concepts which apply to diagnostic and therapeutic nuclear medicine.

It comprises the minimum essential information for each nuclear medicine concept represented by a single term. It provides the reader with the information required to approach this multidisciplinary speciality, such as medical, radiopharmacy and medical physics point of view. It is intended to facilitate communication and promote common understanding.

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 https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Basic terms related to nuclear medicine

3.1.1
nuclear medicine
field of medicine in which unsealed radioactive sources, namely *radiopharmaceuticals* (3.4.3), are used for diagnosis or therapy

3.1.1.1
diagnostic nuclear medicine
scientific and clinical discipline in which radiopharmaceuticals, administered by different routes, are used for diagnostic purposes

Note 1 to entry: Diagnostic nuclear medicine is mainly carried out through imaging but may also be measurements of the global or regional function of an organ.

Note 2 to entry: Diagnostic nuclear medicine also includes quantitative imaging and patient monitoring for the follow-up of both the disease progression and the treatment response.

3.1.1.2
therapeutic nuclear medicine
scientific and clinical discipline in which radiopharmaceuticals are administered for therapeutic purposes