Task Group 36
Historical Overview

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TG36 WORKSHOP | 29 JULY 2025 | 12:00 - 14:00 UTC

RADIATION DOSE TO PATIENTS IN DIAGNOSTIC NUCLEAR MEDICINE

ICRP Digital Events

ICRP Task Group 36

ICRP Task Group 36
Radiation Dose to Patients in Diagnostic Nuclear Medicine
under Committee 2 and Committee 3

Objective:

to develop dose coefficients for radiopharmaceuticals administered to patients in diagnostic nuclear medicine

Committee 2 "Doses From Radiation Exposure"
expertise on dose calculations

Committee 3 "Radiological Protection in Medicine"
expertise in the application of radiopharmaceuticals in medical diagnostics

Task Group 36 – Historical Overview

Task Group 36 has an extremely long history

- since the 80ies of the last century work on doses to patients in nuclear medicine
- being numbered 2009 as Task Group 36.

This presentation more general:
Historical Overview on ICRP Publications dealing with radiation doses in diagnostic nuclear medicine

ICRP Publication 17

ICRP Publication 17 (1971)
Protection of the Patient in Radionuclide Investigations

- prepared by R.E. Ellis
- in parallel to ICRP Publication 16 "Protection of the Patient in X-ray Diagnosis" prepared by a C3 Task Group chaired by R.F. Brown

ICRP Publication 17
- describes the basic principles for minimizing the dose to patients receiving radiopharmaceuticals;
- presents a compilation of estimates of the absorbed doses resulting from the administration of the more commonly-used pharmaceuticals;
- contains an appendix with absorbed dose estimates and literature references for 92 compounds.

ICRP Publication 53

ICRP Publication 53 (1988)
Radiation dose to patients from radiopharmaceuticals

prepared by a Task Group of Committee 2:

B. Nosslin (chair)	K. Henrichs	L. Johansson	A. Kaul
S. Mattsson	H.D. Roedler	T. Smith	N. Veall

It contains absorbed doses for
- 20 organs and tissues and effective dose equivalent for
- 5 age groups from 1 year to adults and
- about 120 radiopharmaceuticals

based on biokinetic and dosimetric models similar to those of ICRP Publication 30 but
- more specific biokinetic models (for example) for urinary and biliary excretion
- dosimetric parameters derived from age-dependent mathematical phantoms

Addendum 1 to ICRP Publication 53

Addendum 1 to ICRP Publication 53 (1992)
Radiation Dose to Patients from Radiopharmaceuticals

published within ICRP Publication 62

prepared by a Task Group of Committee 2 and Committee 3:
S. Mattsson (chair) L. Johansson B. Nosslin T. Smith
D.M. Taylor
corresponding members:
K.F. Eckerman S. Leide-Svegborn M.G. Stabin

This Addendum contains
- models for 6 additional radiopharmaceuticals
- effective dose coefficients for adults according to the system recommended by ICRP Publication 60

ICRP Publication 80

ICRP Publication 80 (1998)
Addendum 2 to ICRP Publication 53

J. Liniecki (C3 Vice-Chair) was a new (corresponding) member of the Task Group

This Addendum contains
- models for 10 additional radiopharmaceuticals
- recalculations for 19 most frequently used radiopharmaceuticals from Publication 53 (considering age-dependent urinary bladder voiding intervals and the concept of ICRP Publication 60 to calculate effective dose)
- reprint of Addendum 1 with slight corrections and recalculations

ICRP Publication 106

ICRP Publication 106 (2008)
Addendum 3 to ICRP Publication 53

prepared by a Task Group of Committees 2 and 3:

S. Mattson (chair)	L. Johansson	J. Liniecki
S. Leide-Svegborn	D. Noßke	M.G. Stabin
D.M. Taylor		

corresponding members:

S. Carlsson	K. Norrgren	B. Nosslin
S. Valind		

This Addendum contains

- models and doses for further radiopharmaceuticals (partly published in interim reports before on the website)
- recommendations on breast-feeding interruptions for various radiopharmaceuticals

Addendum 4 to ICRP Publication 53

ICRP Web Publication (2013)
Addendum 4 to ICRP Publication 53

There were web publications which are more flexible than reports in the ICRP Publication series to be more up-to-date in the consideration of new radiopharmaceuticals.

Authors
S. Mattsson, L. Johansson, S. Leide Svegborn, J. Liniecki, D. Noßke, M. Stabin, D. Taylor, K. Åhlström Riklund, W. Bolch, S. Carlsson, K. Eckerman, A. Giussani, L. Söderberg, S. Valind

This Addendum contains
- models and dose coefficients for 6 further radiopharmaceuticals
- 2 corrections to ICRP Publication 106

ICRP Publication 128

ICRP Publication 128 (2015)
Radiation Dose to Patients from Radiopharmaceuticals
A Compendium of Current Information Related to Frequently Used Substances

prepared by a Task Group of Committee 2 and Committee 3:

S. Mattsson (chair)	L. Johansson	S. Leide-Svegborn	J. Liniecki
D. Noßke	K. Å. Riklund	M.G. Stabin	D.M. Taylor

corresponding members:

W.E. Bolch	S. Carlsson	K. Eckerman	A. Giussani
L. Söderberg	S. Valind		

This Publication contains

- a compendium of all available information for widely used radiopharmaceuticals
- still based on old biokinetic and dosimetric models and the radiation protection guidance given in ICRP Publication 60

Need for Updating ICRP Publication 128

Clinical Significance

A Global Reference for Internal Dose Assessment

- Publication 128 has long served as the global reference for assessing internal radiation doses of patients administered radiopharmaceuticals.

Compare and Optimise the Radiological Imagings

- As the use of radiological techniques diversifies (NM imaging, CT, MRT, etc.), reasonably accurate dosimetry for representative patient groups for all imaging methods is increasingly required as a basis for optimization of different imaging options and as a support for informed clinical decision-making.
- In daily practices and in clinical studies, managing radiation dose and estimating potential risks from diagnostic nuclear medicine procedures are indispensable components for ethical review and optimisation.
- Therefore, also dosimetry for diagnostic radiopharmaceuticals must be based on the best information and latest recommendations.

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Present Task Group 36

Revision of ICRP Publication 128
Radiation Dose to Patients in Diagnostic Nuclear Medicine

Augusto Giussani will report on its new features and why it is needed

The present membership of TG 36 is

A. Giussani (Chair)
S. Mattsson (honourary Co-chair)
M. Andersson (secretary)
M. Hosono
D. Jokisch
A. Kamp
K. Kang
S. Leide-Svegborn
D. Noßke
J.C. Ocampo Ramos
N. Petoussi-Henß
K. Shi
L. Söderberg

Future of Task Group 36

Future of the Task Group 36

It will end its long history (over about 40 years) with the revision of ICRP Publication 128.

A new **Task Group 130** "Doses from Diagnostic Radiopharmaceuticals During Pregnancy and Breastfeeding" under Committees 2 and 3 chaired by S. Leide Svegborn will start to work.

This Task Group should also continuously publish models and dose coefficients for new radiopharmaceuticals on the website and in ad-hoc addenda.

=> TG 36 will stop to exist, but its work will still be alive and continued within TG 130 (and following Task Groups).

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