



## **PRACTICAL RECOMMENDATIONS TO OCCUPATIONAL PHYSICIANS FOR MEDICAL MONITORING AND DOSE ASSESSMENT OF INTERNAL EXPOSURE OF NUCLEAR WORKERS TO RADIONUCLIDES**

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# OBJECTIVES OF THIS WORK

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- **A reference guide to good practices in order to harmonize:**
  - the set up of individual monitoring programs
  - the interpretation of the results and the estimate of intake and dose
  - the evaluation of the risk associated with a committed effective dose and the communication with the employees and the employer
  
- **Intended for radiobiologists and occupational physicians** in charge of workers in a basic nuclear facility: 450 occupational physicians in France
  
- ➡ **improvement in monitoring the workers** in basic nuclear facilities potentially exposed to a risk of internal contamination: 64,000 employees in France

# HISTORY OF THE WORK

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- In 2004: Constitution of a task group (physicians - biologists - experts) in order to share their practice in actual cases of internal dosimetry and to build a methodological reference frame
- Since 2008: Follow-up of the method of “recommendations for the clinical practice” made by **the French National Authority for Health (HAS)**
- **Under the promotion of the French Society of Occupational Medicine (SFMT)**
- In April 2010: **group of 50 reviewers** for the quotation from 1 to 9 of the 128 recommendations on 3 criteria: relevance - legibility - applicability
- Since Septembre 2010: taking into account the remarks of the group of reviewers and finalization of the document (14 days of meeting in 2010...)
- **March 2011: The documents was sent the to the HAS**
- **The label has been obtained in july 2011**

# MAKING RECOMMENDATIONS FOR CLINICAL PRACTICE FOLLOWING THE METHOD OF THE HAS



Elaboration of the questions coming from the professional practice



For each question: bibliographical review + experience feedback of the professional practices



For each question: Argumentation and Position of the task group



1 group of recommendations for each question with gradation according to basis: regulation, literature with level of evidence (A, B, C) or professional agreement



Validation by a group of reviewers



Revising of the document after the reviewing stage



Examination by the HAS

## 1st OBJECTIVE:

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### To improve the implementation of monitoring programs



1. **Need to evaluate the risk of exposure:**
  - After actual incident or abnormal situations (special monitoring)
  - In normal situations (routine monitoring)
  
2. **Define individual monitoring adapted to the circumstances, specifying:**
  - type of analysis
  - frequency of analysis
  - conditions of analysis
  
3. **Periodically evaluate the relevance of these monitoring programs**

## 2nd OBJECTIVE:

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### To optimize the estimate of the dose



**1. How to choose the parameters of the ICRP model according to the available data:**

- date and route of intake
- physico-chemical form

**2. How to use operational levels for quick interpretation of the results**

**3. How to use curves and abaci of the ICRP publication 78**

**4. How to validate the result of an estimate through the consistency of :**

- the various results of analysis with the selected model
- the estimate with the data of exposure
- the results of the employees between them

**5. When calling upon expertise, taking into account uncertainties:**

- dependent on the analyses
- dependent on the model of the ICRP and its parameters
- dependent on the physiological parameters

## 3rd OBJECTIVE:

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**to estimate the health risk associated with a dose**



**1. For which level of committed effective dose is it necessary to raise the question ?**

**2. How to evaluate the risk ?**

- determinist
- stochastic

**3. How to communicate on the subject ?**

- worker concerned
- employer, staff representatives, authorities

# DISTRIBUTION OF THE DOCUMENT

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## Layout:

- a summary (4 pages)
- an information sheet for the workers
- a short document (60 pages) with the recommendations and an explanation of the work method
- complete document (250 pages) with the recommendations plus: bibliographical analysis - argumentation and technical appendices

**Access:** on the website of the SFMT :

<http://www.chu-rouen.fr/sfmt/pages/liens.php>



# MEMBERSHIP OF THE TASK GROUP

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