

# Acute intake of $^{131}\text{I}$

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## ➤ EVENT OF EXPOSURE

- ❖ **Characteristics of work:** Distillation procedure.  $^{131}\text{I}$ . Routine monitoring (30 days)
- ❖ **The event:** Accidental intake of  $^{131}\text{I}$  occurred during distillation procedure when the iodine escaped from the hot cell in volatile form. Since this procedure was repeated several times in the last 30 days and no indication showed any accidental situation during this period, the internal contamination has been discovered at the next routine monitoring measurement by thyroid activity monitoring. A routine thyroid monitoring program was established with a monitoring interval of 30 days.
- ❖ **Actions taken:** Special thyroid measurements were performed after discovering internal contamination in order to assess I(Bq) and E(50)

## ➤ ADDITIONAL INFORMATION

- ❖ Personal data: Male, 25 years, 75 Kg
- ❖ Radionuclide:  $^{131}\text{I}$
- ❖ Route of INTAKE: Inhalation
- ❖ Type of exposure: Acute
- ❖ Chemical form: type F assumed
- ❖ Size of particle: AMAD= 5  $\mu\text{m}$  assumed.
- ❖ Date of intake: mid-point of the Interval.
- ❖ **Other comments:**
  - ❖ Previous monitoring date : 2-June-2023. No detectable activity.



### Activity results in **thyroid**

| Date         | Monitoring Program | Organ content |         |                    |                             |
|--------------|--------------------|---------------|---------|--------------------|-----------------------------|
|              |                    | Organ         | Nuclide | Activity [Bq]      | Uncertainty % (2 $\sigma$ ) |
| 2 July 2023  | Routine            | Thyroid       | I-131   | $8.75 \times 10^3$ | 14%                         |
| 9 July 2023  | Special            | Thyroid       | I-131   | $5.64 \times 10^3$ | 17%                         |
| 16 July 2023 | Special            | Thyroid       | I-131   | $1.95 \times 10^3$ | 22%                         |