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# IMPLEMANTATION OF DOSIMETRIC BIOLOGY FOR CERTIFICATION ACCORDING TO ISO 15189 STANDARD.

IRSN medicine laboratory is currently waiting for the label from the French accreditation Committee (COFRAC), belonging to International Laboratory Accreditation Cooperation. Indeed, it is mandatory in France to get the certification through EN ISO 15189 standard for laboratory medicine.
Biological dosimetry is a method to quantify the exposure and to perform a dose assessment following a suspected radiation exposure. For this purpose, a specific cytogenetic analysis is required. A sample of blood from the victim is needed in order to culture the lymphocytes and isolate the mitotic metaphase chromosomes. The dicentric chromosome is a damaged chromosome. It results from the misrepair of breaks in two different chromosomes. It carries two centromeres instead of one centromere in normal chromosomes. These cytogenetic anomalies are almost pathognomonic for acute radiation exposure upper than 100mGy . They are counted by a trained Biologist with a dedicated microscope linked with a specific software.
The confidence interval of the dose received by the victim is then estimated via dose-response calibration curves.
In France, biological dosimetry is part of the laboratory medicine exams. Performing biological dosimetry is highly regulated, therefore accreditation is mandatory.

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