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METHODS: Quantitative, transversal, prospective and analytical study; which evaluated a non-probabilistic sample for the convenience of 29 CO in training and base. Twenty-nine personal dosimeters were used to evaluate ED for 12 months, Inlight reader, demographic, labor questionnaire, RP knowledge and surgery data. The statistical analysis included descriptive and inferential statistics: Student's t test ($p < 0.05$).
RESULTS: OS in training presented an average of SD of 3.17 ± 0.90 mSv; 7.88 ± 6.38 surgeries and 2.02 ± 2.23 minutes of exposure and the base OS 2.77 ± 1.74; 20.85 ± 12.31 and 3.48 ± 2.16 respectively, finding significant differences in the number of surgeries between both groups ($p < 0.05$); spine surgeries were more frequent ($n = 177$), there are significant differences in exposure time (ET) in spinal surgeries between both groups ($p < 0.05$). 62% ($n = 18$) of the participants never received PR training and 76% ($n = 22$) did not know the annual dose limit to ionizing radiation.
CONCLUSIONS: The ED is <5 mSv. Compliance with PR measures is low. There is a misinformation in PR. There are no significant differences in the ED and exposure time (ET) between the groups studied. There are significant differences in the number of surgeries between both groups and the ET during spinal surgeries.

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Thyroid parameters variations in healthcare workers and students exposed to low-dose ionizing radiations

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Background: Ionizing Radiations (IR) are an important occupational risk factor for the potential damage that can cause to workers' health and for their presence in numerous professional settings. Thyroid gland is one of the most sensitive organs to damage and an important target of IR, leading to functional and organic diseases. The aim of this study is to assess the variations in thyroid hormones, in a population of HCW exposed to low-dose IR.
Methods: 121 individuals of the teaching hospital Umberto I in Rome exposed to IR (78 HCW, 17 Residents and 26 Students Radiology Technicians) were observed assessing serum levels of different thyroid function parameters as free triiodothyronine, free thyroxine and thyroid stimulating hormone at T1, T2 and DeltaT. Age, gender, history of thyroid diseases, BMI and smoke were analyzed as possible influencing factors using linear and multiple logistic regression analysis.
Results: Analyzing TSH, fT3 and fT4 serum levels, in two different measurements (T1 and T2) and considering Delta between them, adjusting for different confounding factors, data showed no variation of TSH levels related to occupational exposure, an increase of fT3 hormone values (ß=0,896) in HCW and residents, and a decrease of fT4 in HCW (ß= -1,095).
Conclusion: Low dose IR influences levels of free thyroid hormones, with no variation in TSH, which could result in a functional or organic disease. So, a continuous surveillance through a periodic check of all the thyroid hormones for an overall view of each HCW is recommended.

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Occupational exposure to solar UV radiation: methods and first results of a multi-disciplinary expert assessment within the EPHOR project

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Introduction: Solar radiation exposure is a relevant risk factor in many occupational activities and a widespread occupational carcinogen. A proper quantitative assessment of ultra violet (UV) exposure levels in different occupations is among the main issues for an adequate risk evaluation and prevention.
Material and Methods: Within the "Exposome Project for Health and Occupational Research" (EPHOR), three expert groups, i.e. for Northern, Central and Southern Europe, including 10 individual assessors, independently evaluated the probability and duration of daytime outdoor work between April and September for all occupations of the International Standard Classification of Occupations 88 (ISCO-88). The assessment is a multi-step process, in order to reach final European expert scores for the three regions. All 390 ISCO-88 occupations have been rated by the assessors, within four categories of a) 0; >0 to <25; ≥25 to <50; ≥50% and b) 0; >0 to 2; >2 to 4; >4 hours respectively for probability and duration of current outdoor work.
Results: The results of the first round of assessment of the three groups have shown good agreement between assessors for the low and high categories and ranged between 0.48 and 0.64 both with respect to probability and duration. The overall interrater agreements ranged between 0.43 and 0.48 across the three European regions.
Conclusion: This effort will finally aim at building a quantitative job exposure matrix (JEM) for a detailed evaluation of occupational solar UV radiation exposure in different occupations, that will also include personal UV measurements.