

ASSESSMENT OF THE INDOOR RADON DOSE FROM BUILDING MATERIALS IN
ORDINARY HOUSES

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Mankind's interest in the level of natural radiation exposure has increased over the past forty years and it is now recognized that inhaled radon contributes about half of the total natural environmental ionizing radiation dose to the world population.

As building materials are one of the major sources of indoor radon, it was decided to assess the indoor dose in a condominium of ordinary houses at Santo André district of São Paulo, Brazil, built almost of concrete. Ambient levels of radon in the home environment were measured with solid state track detectors over one year. As expected, winter average levels are higher than summer ones.

The effective dose equivalent rates due to indoor radon were assessed through the radon concentrations, using the 1988 UNSCEAR procedures and considering one air change per hour, obtaining, 0.54, 0.66, 0.75 and 0.73 mSv/y, respectively for summer, autumn, winter and spring. The total effective dose equivalent rates due both to external exposure from building materials and radon inhalation are 1.21, 1.33, 1.42 and 1.40 mSv/y respectively for summer, autumn, winter and spring, all values below the 1988 UNSCEAR adopted value of 2.4 mSv/y for natural radiation sources.