



Impact of cosmic-origin background radiation on human survival

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We evaluate lifetime attributable risks induced by increasing concentration of cosmic radiation and cosmogenic radionuclides during periods of low solar activity for the specific conditions in the Czech Republic. The concentration of cosmic radiation and cosmogenic radionuclides reaches the highest values during the solar minima when their penetrability into the Earth magnetosphere is enforced. The computed estimate of lifetime attributable risks from solid neoplasms (colon, lung, and stomach) induced by natural background dose is higher for the period of the low activity solar cycle No. 24 than for the previous period of forced solar activity of the solar cycles No. 19 – No. 23. We estimated lifetime attributable risks induced by annual natural background dose by sex for the Czech Republic and USA. In addition, three different scenarios based on dose radiation level were explored. The cosmogenic radionuclides in our environment may thus play a greater role than in the last decades.