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### The direct and indirect healthcare costs of lung cancer CT screening in Denmark

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**Background and Aim:** To make a detailed analysis of the healthcare costs and utilization in relation to lung cancer CT screening using the "Healthcare costs in the Danish randomized controlled lung cancer CT-screening trial (DLCST): A registry study" as basis. This prior study calculated the direct and indirect healthcare costs of lung cancer screening by comparing costs in the CT group and the control group in the DLCST. After the publication of this study, the authors demonstrated that the participants in both groups experienced significantly increased concern after randomization compared with baseline. Moreover, participation bias has been documented. This bias plus the psychosocial impact on the control group could have resulted in over- or underestimation of costs.

**Method:** This analysis compared the healthcare costs and utilization of participants in the DLCST to a new reference group: a comparable random sample of the general population never invited to screening. The random sample, the CT group and the control group were compared respectively in a time period from randomization (2004-2006) until 2014.

**Results:** Compared with the new reference group, the participants in both the control group and the CT group had significantly increased total healthcare costs, 48% and 60% respectively. The increase in costs was caused by increased use in the secondary as well as in the primary healthcare sector.

**Conclusion:** CT screening leads to 60% increased total healthcare costs. Such increase would raise the expected healthcare cost per participant from EUR 2348 to EUR 3756. Cost analysis, which only includes costs directly related to the screening, and follow-up procedures are most likely underestimating costs, as our data show that the increased costs are not limited to the secondary sector.