

## Positioning quality related to the number of yearly performed mammograms?

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**Background:** In the European guidelines for quality assurance in breast cancer screening and diagnosis a minimum involvement of two days per week is recommended for radiographers in a population based screening program. In the Netherlands this translates to performing 6400 mammograms per year per radiographer. However, this minimum value is based on expert opinion and there is no scientific evidence to support this view. The purpose of this study is to investigate the relation between positioning quality and the number of yearly performed mammograms.

**Methods:** We retrieved 30 screening examinations performed in 2014 per radiographer for 100 radiographers working in the Dutch breast cancer screening program. The positioning quality of these examinations was evaluated by three referent radiographers from the Dutch reference centre for screening. Each examination consisted of two mediolateral-oblique-views (MLO-view) and two craniocaudal-views (CC-view). The referent radiographers scored each image as 'adequate' or 'inadequate' according to Dutch positioning quality guidelines. In addition, the number of performed mammograms in 2014 was collected for each radiographer. The Pearson correlation coefficient between positioning quality and the number of mammograms was assessed.

**Results:** Positioning quality was adequate in 80.4% of the MLO-views (range 53.3%-100%) and in 92.1% of the CC-views (range 75.9%-100%). The mean number of mammograms performed yearly was 8168 (range 836-14.391). There was no correlation between positioning quality and the number of mammograms performed ( $r=0.16$  and  $r=0.08$  for MLO- and CC-view respectively).

**Conclusions:** In the Netherlands only few radiographers perform less than 6400 mammograms per year. Given this limited distribution of annual number of screening examinations performed, our study is not able to provide evidence for the minimum value of 6400 mammograms per year. At the same time, the study also does not allow us to draw conclusions on positioning quality at levels lower than the current recommendation.