

# **SKIN CANCER SCREENING: PARTICIPATION RATE, EFFECTIVENESS AND COST OF STANDARD TOTAL SKIN EXAMINATION VERSUS A LESION-DIRECTED SCREENING**

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## **Importance**

Skin cancer is at present the most frequent cancer type. The question remains if and how screening programs can be organized in a cost-effective manner.

## **Objective**

Two screening strategies (systematic total body examination (TBE) and lesion-directed screening (LDS)) were compared as to their participation rate, effectiveness, adverse effects and costs.

## **Design**

Population-based cross-sectional screenings were organized in two socio-demographically similar regions.

## **Participants**

The first population received a personal invitation for a standard TBE. In the second population people were invited for a LDS, if they had a lesion meeting one or more of the criteria listed: ABCD rule, ugly duckling sign, new lesion since more than 4 weeks, red non-healing lesions.

## **Setting**

The TBE was organized in a community of 9325 inhabitants older than 18 years (Wichelen, East Flanders, Belgium) during a five-day screening (March 2014). The LDS was organized in a socio-demographically comparable community (Nevele, East Flanders, Belgium) of 9484 adult inhabitants during a four-day screening (April 2014).

## **Main outcomes and measures**

In total 1982 persons were screened and 47 (2.4%) skin cancers were confirmed histologically (0.45% melanoma, 1.9% basal cell carcinoma, 0.05% squamous cell or Bowen).

## **Results**

The positive predictive value for all suspicious lesions was 56.6%. Participation rate was higher in the TBE group compared to the LDS group (17.9% versus 3.3%,  $P < 0.01$ ). Detection rate did not differ significantly between the two groups per 100 participants (2.3 TBE versus 3.2 LDS,  $P = 0.40$ ). The diagnostic yield per 100 invitees for TBE was 0.42 and 0.08 for the LDS method ( $P < 0.01$ ). LDS was 5.6 times less time-consuming than TBE. Participants in the LDS group had a significant higher baseline anxiety compared to the TBE group (3.7 versus 3.3 points,  $P < 0.01$ ). In screenees without a suspicious lesion anxiety significantly dropped after screening.

## **Conclusion and relevance**

TBE yielded a higher absolute number of skin cancers, LDS has similar detection rate (3.2%) but was 5.6 times less time consuming. LDS can be an alternative screening method in health care systems with limited budget and/or long waiting lists.

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None reported.

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