

## Prediction of contralateral breast cancer: statistical aspects and prediction performance Giardiello. D.

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## Prediction of contralateral breast cancer Statistical aspects and performance assessment

## Daniele Giardiello

- 1. Decision-making about preventive strategies for contralateral breast cancer in clinical practice is unlikely to improve without genetic information (this thesis).
- 2. External validation is essential to assess the performance of prediction models (this thesis).
- 3. To guide clinical decision making more information is needed to differentiate contralateral breast cancer risks among patients diagnosed with ductal carcinoma in situ (this thesis).
- 4. There are still opportunities to improve the current contralateral breast cancer risk prediction performances and the corresponding clinical utility (this thesis).
- 5. Clinical utility of a prediction model is beyond discrimination and calibration performances.
- 6. When prediction models are used to support decision making, there is often a need for predicting outcomes under hypothetical interventions (Lin et al., BMC, 2021).
- 7. Through an alliance between information technology and statistics, clinical prediction can be progressed to a continual service that minimizes the data-action latency in preventative medicine (Jenkins et al., BMC, 2021).
- 8. The practical relevance of machine and deep learning methods for risk prediction needs to be further investigated based on more rigorous methodologies.
- 9. Prediction is hard especially about the future (Donovan et al., Critical Care Medicine, 2011)
- 10. Only uncertainty is a sure thing, certainty is an illusion (Simpkin et al., NEJM, 2016)