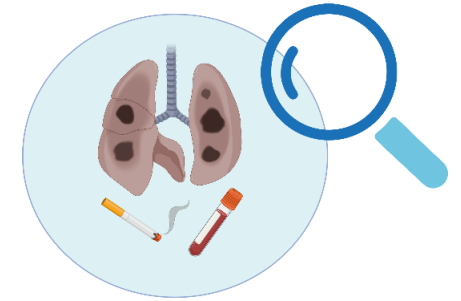


A group of five diverse people are seated in a waiting room. In the foreground, a man with grey hair in a light green shirt sits in a wooden chair, looking thoughtfully to the left with his hands clasped. Behind him, an elderly woman with white hair and a man with a shaved head are also seated, looking in the same direction. In the background, a woman with dark hair sits with her arms crossed, and a man in a blue striped shirt sits on the right, looking down at a book or magazine. The room has a blue wall with a white door, a red fire alarm, and a wooden table in the center.

**Hjælperedskab til opsporing af lungekræft
baseret på data fra almen praksis**



Detection of lung cancer based on smoking history and standard blood sample analyses



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Ole Hilberg², Claus Lohman Brasen³,
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Uffe Kock Wiil⁴, Torben Frøstrup Hansen¹

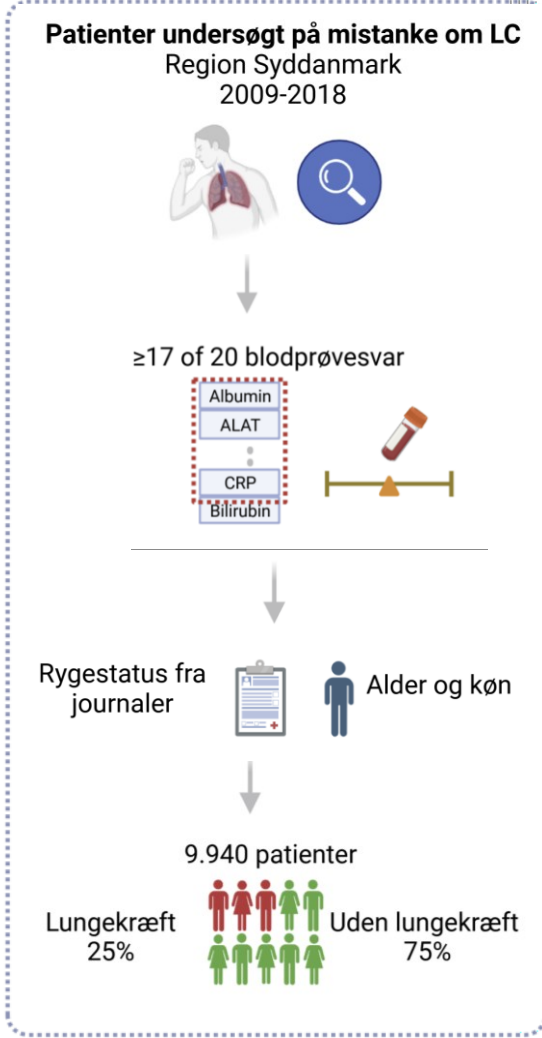
1 Onkologisk afdeling, Vejle Sygehus

2 Medicinsk afdeling, Vejle Sygehus

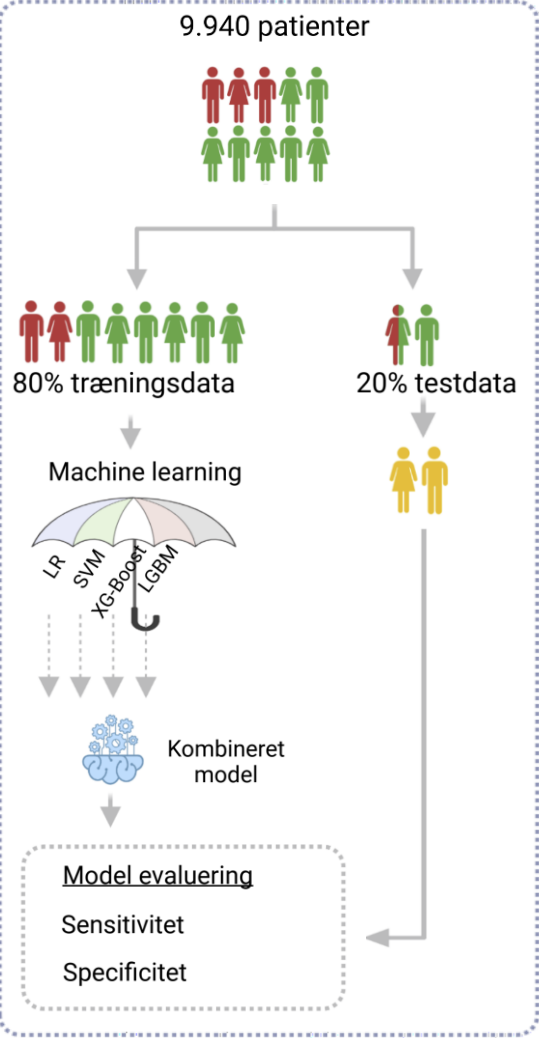
3 Biokemi og Immunologi, Vejle Sygehus

4 SDU Health Informatics and Technology, Maersk Mckinney Moller Institutet, SDU

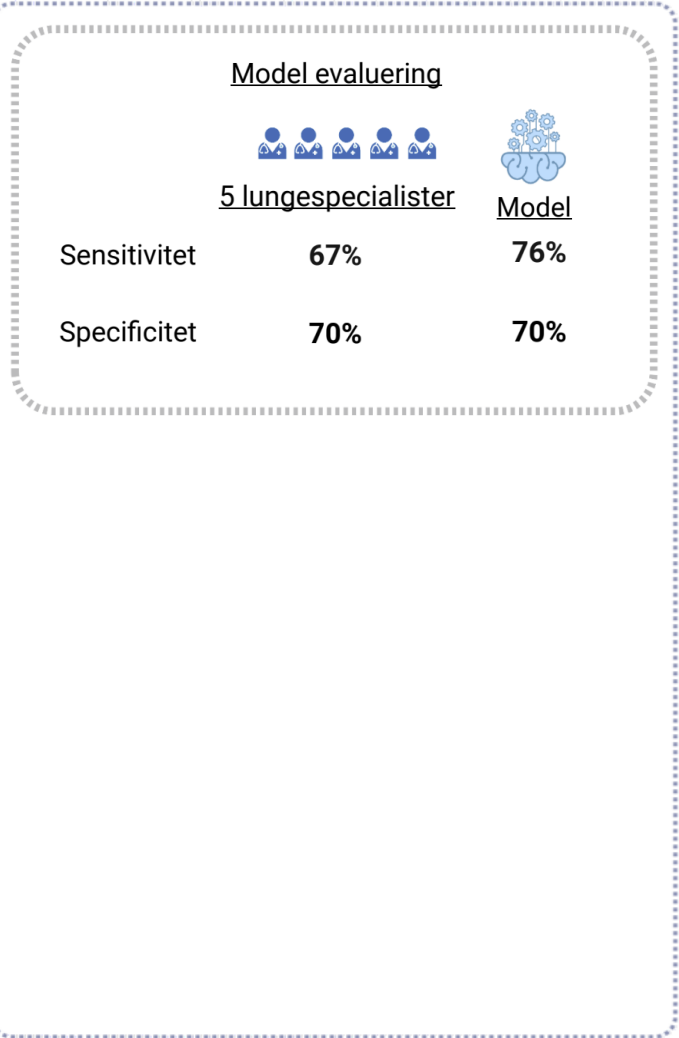
Population



Metode



Resultater



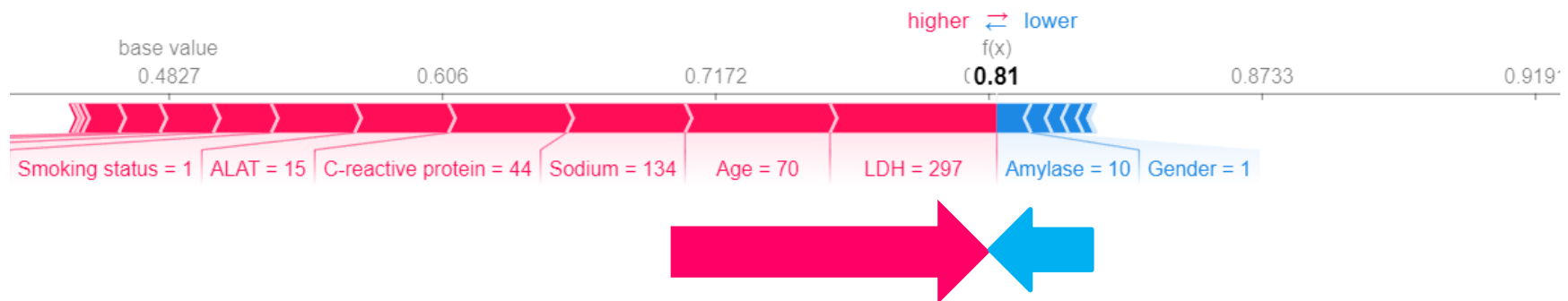


Hvordan kan det bruges?



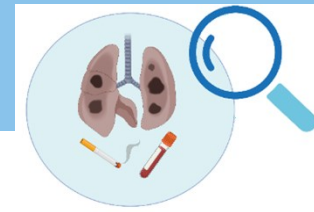
Mand, 70år
Tidligere ryger
LDH 297, Natrium 134, CRP 44...

**Risiko for LC over grænseværdien
Anbefales udredning**





Tak for opmærksomheden



Vi ses ved min poster!

Detection of lung cancer based on smoking history and standard blood sample analyses

Sygehus Lillebælt
SDU

Lung Cancer prediction model based on smoking history & standard blood sample analyses outperforms pulmonologists presented with the same information.

Margrethe Hostgaard Bang, henriksen@rsyd.dk

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Figure 1 ROC-curve for the Dynamic Ensemble Selection model (DES) and pulmonologists, both on a subset of 100 patients.

Figure 2 Confusion matrix for the DES model and the average pulmonologists' LCM-Lung Cancer.

Figure 3 Shapley importance, the relative contribution of features.

Figure 4 SHAP summary plot of the top eight features listed according to importance.

Figure 5 SHAP force plot displaying results of a lung cancer patient classified correctly.

Intro

- Present lung cancer screening trials present promising results, but risk assessment models are mostly based on linear regression models and include only limited clinical information on highly selected cohorts.

Aim

- To develop an AI-based predictive model for the identification of high-risk individuals eligible for screening due to a risk of lung cancer.

Results

- The best model was able to classify patients with lung cancer based on smoking and laboratory results with moderate performance: AUC 77%, sensitivity 76%, specificity 64%, outperforming specialists presented with the same information.
- Smoking, high age, elevated neutrophils and calcium were among the most important risk factors.

Perspectives

- A future validation study and a suitable probability cutoff needs to be assessed before this model can be used in pilot-studies.

Med støtte fra:

”Et Sundere Syddanmark”, Region Syddanmark
Region Syddanmarks Innovationspulje
Syddansk Universitet
Sygehus Lillebælt's Forskningsråd
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Dagmar Marshalls Fond
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Lily and Herbert Hansens Fond
Familien Hede Nielsens Foundation