Strang Cancer Prevention Institute
Dedicated to Promoting Cure by Early Detection and Research to Prevent Cancer since 1933

Prevention

Lung Cancer Awareness Month November 2023

PREVENTING LUNG CANCER

Note to Readers: Innovation is essential to cancer prevention. Genomic data and other analytic techniques support **precision prevention** as well as precision medicine. Strang is increasingly focused on innovation in cancer prevention. We will continue to highlight novel approaches as we have the consequences of Covid.

LUNG CANCER SCREENING

INNOVATION

Scanning the EHR to find CT screening patients: Data from medical records may help **identify screening candidates overlooked by busy providers**. The Population-based Research to Optimize the Screening Process Lung Consortium (**PROSPR-Lung**) used data from the electronic health record (EHR) to develop and test a **model to identify patients eligible** for lung cancer screening (**LCS**) with low-dose CT (**LDCT**).[1] A 6-variable model using EHR data, including use of a smoking cessation medication, recent diagnostic codes for smoking or chronic bronchitis, and, when available, more specific smoking history, produced a **numerical likelihood of screening eligibility**. The model was **very accurate**, with **sensitivity over 90% and specificity over 75%**. Patients with the highest likelihood of being LCS -eligible could be identified as outreach resources permit.

Blood biomarkers may identify patients at highest risk of death from lung cancer: The goal of cancer screening is to identify and treat cancers that would be lethal. A **4-marker protein blood panel (4MP)** that combined with the **PLCOm2012 lung cancer risk prediction model** helped identify patients at high risk of lung cancer **also predicts the risk of a lethal lung cancer**.[2] The combined model better identifies patients with a **1% risk of dying from lung cancer in the next 6 years**, the recommended threshold for screening. The information could **help patients considering screening decide** to screen or not.

Artificial intelligence (AI) can improve feedback and quality control for lung cancer screening (LCS): To evaluate radiologist performance and carry out quality control for screening, information is extracted from written LDCT reports. To determine whether a written report indicates that **a lung nodule was found** requires an effective **natural language processing (NLP) model**. Investigators used an AI technique, neural networking, to perform this task better.[3] The model found 3-fold differences between radiologists in the number of nodules found. AI can provide feedback to improve lung cancer screening.

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REFERENCES

1.Burnett-Hartman AN, Powers JD, Hixon BP, Carroll NM, Frankland TB, Honda SA, et al. Development of an electronic health record-based algorithm for predicting lung cancer screening eligibility in the Population-Based Research to Optimize the Screening Process Lung Research Consortium. JCO Clin Cancer Inform 2023;7:e2300063.
2.Irajizad E, Fahrmann JF, Marsh T, Vykoukal J, Dennison JB, Long JP, et al. Mortality benefit of a blood-based biomarker panel for lung cancer on the basis of the Prostate, Lung, Colorectal, and Ovarian Cohort. J Clin Oncol 2023;41:4360-8.
3.Zhang Y, Grant BMM, Hope AJ, Hung RJ, Warkentin MT, Lam ACL, et al. Using recurrent neural networks to extract high-quality information from lung cancer screening computerized tomography reports for inter-radiologist audit and feedback quality improvement. JCO Clin Cancer Inform 2023;7:e2200153.

The Strang Cancer Prevention Cookbook

Reduce your Risk for Cancer by Eating a Healthy Diet!

Citrus Cranberry Sauce * 10 Servings

3/4 pound fresh cranberries, 1/2 cup packed brown sugar,

1 cup fresh orange juice, grated zest of 1 orange and 1 lime

In a medium saucepan combine all the ingredients. Bring to a boil, then lower the heat to simmer. Cover and cook until the cranberries burst open, about 10 minutes. Let the sauce cool and refrigerate.

Calories 70, Protein 1g, Carbohydrates 17g, Fat 0g, Cholesterol 0 mg, Dietary fiber 2g Saturated fat 1g

Major sources of Potential Cancer fighters:

Phytochemicals: plant polyphenols (flavonoids, phenolic acids) plant sterols, terpenes (carotenoids, limonene).

Recipe by Laura Pensiero, R.D., Strang Nutrition Consultant
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