



Cochrane
Library

Cochrane Database of Systematic Reviews

Drugs for preventing lung cancer in healthy people (Review)

Cortés-Jofré M, Rueda JR, Corsini-Muñoz G, Fonseca-Cortés C, Caraballoso M, Bonfill Cosp X

Cortés-Jofré M, Rueda JR, Corsini-Muñoz G, Fonseca-Cortés C, Caraballoso M, Bonfill Cosp X.

Drugs for preventing lung cancer in healthy people.

Cochrane Database of Systematic Reviews 2012, Issue 10. Art. No.: CD002141.

DOI: [10.1002/14651858.CD002141.pub2](https://doi.org/10.1002/14651858.CD002141.pub2).

www.cochranelibrary.com

Drugs for preventing lung cancer in healthy people (Review)

Copyright © 2012 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

WILEY

[Intervention Review]

Drugs for preventing lung cancer in healthy people

Marcela Cortés-Jofré¹, José-Ramón Rueda², Gilda Corsini-Muñoz³, Carolina Fonseca-Cortés⁴, Magali Caraballos⁵, Xavier Bonfill Cosp⁶

¹Facultad de Medicina, Universidad Católica de la SS. Concepción, Programa Doctorado en Ciencias Médicas, Universidad de La Frontera, Concepción, Chile. ²Department of Preventive Medicine and Public Health. GIU 10/24., University of the Basque Country, Leioa, Spain. ³Odontología Integral. Facultad de Medicina, Universidad de La Frontera. Temuco, Temuco, Chile. ⁴Facultad de Medicina, Universidad Católica de la Santísima Concepción, Concepción, Chile. ⁵Departament of Epidemiology, Escuela Nacional de Salud Pública de Cuba, Ciudad de la Habana, Cuba. ⁶Iberoamerican Cochrane Centre - Institute of Biomedical Research (IIB Sant Pau), CIBER Epidemiología y Salud Pública (CIBERESP), Spain - Universitat Autònoma de Barcelona, Barcelona, Spain

Contact address: Marcela Cortés-Jofré, Facultad de Medicina, Universidad Católica de la SS. Concepción, Programa Doctorado en Ciencias Médicas, Universidad de La Frontera, Av. Costanera 7488, Condominio Bosque Mar Depto. 1003, S. Pedro de la P. Concepción, Concepción, VIII, 4030000, Chile. tutor.mimbe@cochrane.es, p.cortes@ucsc.cl.

Editorial group: Cochrane Lung Cancer Group.

Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 10, 2012.

Citation: Cortés-Jofré M, Rueda JR, Corsini-Muñoz G, Fonseca-Cortés C, Caraballos M, Bonfill Cosp X. Drugs for preventing lung cancer in healthy people. *Cochrane Database of Systematic Reviews* 2012, Issue 10. Art. No.: CD002141. DOI: [10.1002/14651858.CD002141.pub2](https://doi.org/10.1002/14651858.CD002141.pub2).

Copyright © 2012 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

Background

This is an updated version of the original review published in Issue 2, 2003. Some studies have suggested a protective effect of antioxidant nutrients on lung cancer. Observational epidemiological studies suggest an association between higher dietary levels of fruits and vegetables containing beta-carotene and a lower risk of lung cancer.

Objectives

To determine whether vitamins, minerals and other potential agents, alone or in combination, reduce incidence and mortality from lung cancer in healthy people.

Search methods

For this update we have used a search strategy adapted from the design in the original review. The following electronic databases have been searched up to December 2011: MEDLINE, EMBASE and the Cochrane Central Register of Controlled Trials (CENTRAL). References included in published studies and reviews were also screened.

Selection criteria

Included studies were randomised controlled clinical trials comparing different vitamins, mineral supplements or supplements with placebo, administered to healthy people with the aim of preventing lung cancer.

Data collection and analysis

Two authors independently selected the trials to be included in the review, assessed the methodological quality of each trial and extracted data using a standardised form. For each study, relative risk and 95% confidence limits were calculated for dichotomous outcomes and pooled results were calculated using the random-effect model.

Main results

In the first version of this review four studies were included; in this review update, an additional five studies have been included. Four studies included only males and two only females; two studies included only participants considered at high risk, namely smokers or

exposed to asbestos, and one study included people deficient in many micronutrients. Six studies analysed vitamin A, three vitamin C, four vitamin E, one selenium supplements, and six studied combinations of two or more products. All the RCTs included in this review were classified as being of low risk of bias.

For people not at high risk of lung cancer and compared to placebo, none of the supplements of vitamins or minerals or their combinations resulted in a statistically significant difference in lung cancer incidence or mortality, except for a single study that included 7627 women and found a higher risk of lung cancer incidence for those taking vitamin C but not for total cancer incidence, but that effect was not seen in males or when the results for males and females were pooled.

For people at high risk of lung cancer, such as smokers and those exposed to asbestos and compared to placebo, beta-carotene intake showed a small but statistically significant higher risk of lung cancer incidence, lung cancer mortality and for all-causes mortality.

Authors' conclusions

There is no evidence for recommending supplements of vitamins A, C, E, selenium, either alone or in different combinations, for the prevention of lung cancer and lung cancer mortality in healthy people. There is some evidence that the use of beta-carotene supplements could be associated with a small increase in lung cancer incidence and mortality in smokers or persons exposed to asbestos.

PLAIN LANGUAGE SUMMARY

Antioxidant drugs for preventing lung cancer in healthy people

Lung cancer is among the leading causes of cancer death all over the world and its prevention has become a public health priority. It has been suggested that vitamin supplements may prevent lung cancer. In this new updated version of a previous review five additional studies have been added to the four previous ones. Updated analysis of the data shows that taking supplements of vitamins or minerals, either alone or combined, does not result in a reduction in either lung cancer incidence or lung cancer mortality, neither on males nor females. So current evidence does not support recommending the use of supplements of vitamins A, C and E or selenium, either alone or combined, for the prevention of lung cancer in healthy people. Indeed, in smokers and people exposed to asbestos the use of beta-carotene supplements should be avoided because it may be associated with a small increase in lung cancer incidence and mortality.