Question: What is the relationship between dietary patterns and risk of lung cancer?

Table 1. Summary of studies examining the relationship between dietary patterns and risk of lung cancer

Author, Year Study Design; Location (Cohort) Risk of Bias*	Sample Size (Gender; Age) Number of lung cancer cases; Duration of Follow-up	Dietary Patterns**	Results	Summary of Findings
Balder, 2005 **Nested Case-Cohort; Netherlands (Netherlands Cohort)** **Risk of Bias: 5/24**	N=1,425 cases, 2,190 controls (100% men; Age=55-69y) 1,425 cases; 9.3y	• **"Salad vegetables"** (raw vegetables, fruit, pasta, rice, poultry, fish, oil) • **"Cooked vegetables"** (cooked leafy vegetables, cabbages, legumes, carrots) • **"Pork, processed meat, and potatoes"** (pork, processed meat, potatoes, coffee, low-fat margarine) • **"Sweet foods"** (cakes, cookies, sweet sandwich spread, candies, strawberries/other berries) • **"Brown/white bread substitution"** (whole wheat bread, apples, pears)	**"Salad vegetables":** Inverse association with total lung cancer (Q1 vs. 5): RR=0.75 (95% CI=0.55-1.01; P for trend=0.008). **"Sweet foods":** Inverse association with total lung cancer (Q1 vs. 5): RR=0.62 (95% CI=0.43-0.89; P for trend=0.002). **"Cooked vegetables," "Pork, processed meat, and potatoes," "Brown/white bread substitution":** NS association with lung cancer.	The "Salad vegetable" and "Sweet foods" patterns were associated with reduced male lung cancer risk. The major contributor to reduced risk in the "Salad vegetable" group was raw vegetables. It is likely the high fruit and low alcohol intake of the "Sweet foods" pattern contributed to some, but not all, of its protective effect. The "Cooked vegetables" and "Brown/white bread substitution" were not associated with cancer risk. Total cooked vegetables consumed was associated with decreased lung cancer risk and it is likely other foods in the pattern counteract their protective effect. There was a non-significant trend for increased cancer risk with the "Pork, processed meat, and potatoes" dietary pattern, which was more evident in current smokers.
Gnagnarella, 2013 **PCS; Italy (Continuous Observation of**	N=4,336 current/ former heavy smokers (34% women; Age	Alternative Mediterranean diet (aMED) score	**aMed score:** Inverse association with total lung cancer (Score 0-1 vs. 8-9): HR=0.10 (95% CI=0.01-0.77; P for trend=0.045).	Very high adherence to the Mediterranean diet was associated with lower risk of lung cancer among current and former heavy smokers.

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Smoking Subjects (COSMOS)) **Risk of Bias: 4/24**	=~57y) 178 cases; 5.7y			
Key, 2009 **PCS; US (EPIC-Oxford)** **Risk of Bias: 9/24**	N=52,706 (77% women; Age=~45y) 117 cases; ~8y	• **Vegetarians** (eggs/dairy, no meat/fish) • **Non-vegetarians** (eggs, dairy, meat, or fish) • **Meat eaters** (meat) • **Fish eaters** (fish, no meat)	**Vegetarian vs. Non-vegetarian:** NS association with lung cancer. **Fish eaters vs. Meat eaters:** Inverse association with total lung cancer (IRR=0.23 (95% CI=0.06-0.95; P for trend=0.028)).	There was a significant inverse relationship between increased RFS score and lung cancer incidence. There was a non-significant trend for positive relationship between increased RFS score and increased breast cancer incidence. There was no relationship between RFS score and colorectal cancer incidence.
Mai, 2005 **PCS; US (Breast Cancer Detection Demonstration Project)** **Risk of Bias: 7/24**	N=37,135 (100% women; Age=~61y) 279 cases; 9.5y	Recommended Foods Score (RFS)	**RFS score:** Inverse association with total lung cancer (Q1 vs. 4): RR=0.62 (95% CI=0.46-0.84; P for trend=<0.01).	None of the dietary patterns examined (vegetarian, non-vegetarian, meat eater, fish eater) were associated with risk of breast cancer. Risk of colorectal cancer was higher in vegetarians compared to non-vegetarians, and in vegetarians compared to meat eaters. Risk of lung cancer was lower in fish eaters compared to meat eaters, but not in vegetarians compared to non-vegetarians. None of the dietary patterns examined (vegetarian, non-vegetarian, meat eater, fish eater) were associated with risk of prostate cancer.

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*Risk of Bias as determined using the Nutrition Evidence Library Bias Assessment Tool
**Additional details regarding the dietary patterns, as reported by the authors, are found in the “Description of Evidence” section of the Evidence Portfolio