
ESTABLISHED ESCC RISK FACTORS

NCI-IARC MEETING 2016

DEFINITE ESCC RISK FACTORS

- Older age
- Male sex
- Tobacco use
- Alcohol consumption
- Achalasia



TOBACCO USE

- **Smoking**
 - Cigarettes
 - Cigar
 - Pipe
 - **Hookah**
- **Chewing/other**
 - Betel quid
 - **Nass**



SEVERAL STUDIES ON HOOKAH

Data synthesis 13 case–control studies met the inclusion criteria and were considered for meta-analysis. The methodological quality of included studies was assessed using the Newcastle-Ottawa Scale (NOS). Meta-analysis revealed a positive association between waterpipe smoking and lung cancer (OR=4.58 (2.61 to 8.03); $I^2=44.67\%$), and oesophageal cancer (OR=3.63 (1.39 to 9.44); $I^2=94.49\%$). The majority of studies had a NOS score of 5–6 or 7, indicating ‘fair’ or ‘good’ quality, respectively.



Results: We identified 50 eligible studies. We found that waterpipe tobacco smoking was significantly associated with: respiratory diseases [COPD; odds ratio (OR) = 3.18, 95% confidence interval CI = 1.25, 8.08; bronchitis OR = 2.37, 95% CI = 1.49, 3.77; passive waterpipe smoking and wheeze OR) = 1.97, 95% CI = 1.28, 3.04]; oral cancer OR = 4.17, 95% CI = 2.53, 6.89; lung cancer OR = 2.12, 95% CI = 1.32, 3.42; low birthweight (OR = 2.39, 95% CI = 1.32, 4.32); metabolic syndrome (OR 1.63–1.95, 95% CI = 1.25, 2.45); cardiovascular disease (OR = 1.67, 95% CI = 1.25, 2.24); and mental health (OR 1.30–2.4,

PROBABLE ESCC RISK FACTORS

- Maté consumption
 - Other very hot drinks
 - Opium use
 - Chinese pickled vegetables
 - Low socioeconomic status
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- Achalasia
 - Gastric atrophy



POSSIBLE ESCC RISK FACTORS

- **High amounts of processed meat**
- **Low fruit and vegetables consumption**
- **Poor oral health**
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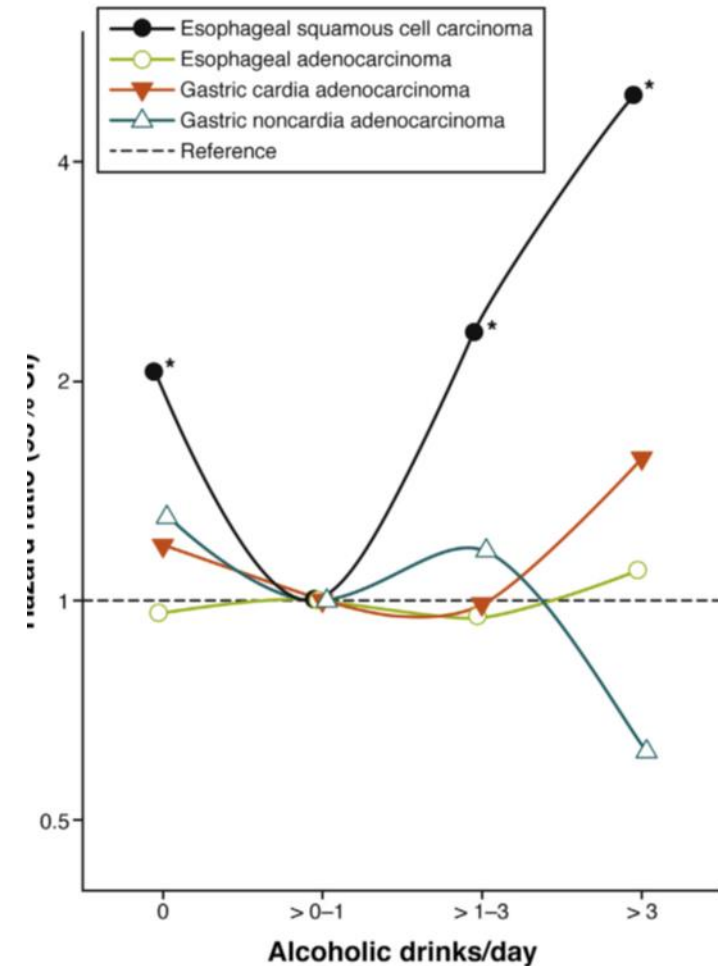
TOBACCO: NOT EXACTLY NEWS

- **The U.S. Surgeon General, 1979:**
 - Cigarette smoking is a significant causal factor ...The risk increases with the amount smoked.
- **The U.S. Surgeon General, 1982:**
 - Cigar and pipe confer the same risk.
- **The U.S. Surgeon General, 1989:**
 - 78% of cases in men and 75% of cases in women



ALCOHOL CONSUMPTION: NOT NEW EITHER

- **Similar to tobacco use:**
 - Long established, many epidemiologic studies
 - Known as a class I carcinogen
 - Moderate or heavy consumption increases the risk of ESCC
 - All types of alcohol (wine, beer, hard liquor)
 - Major increased risk in those with ALDH-2



HOT BEVERAGES

- Old theory
- Associated with higher risk of ESCC
- Types
 - Tea
 - Coffee
 - Mate
- Increased temperature of the esophagus with very hot tea
- Mate the most consistent association
- Most likely the temperature, but content too



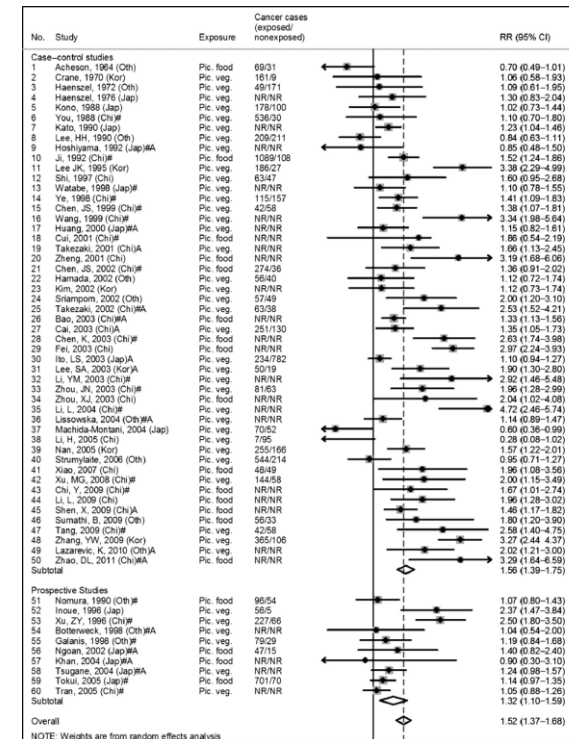
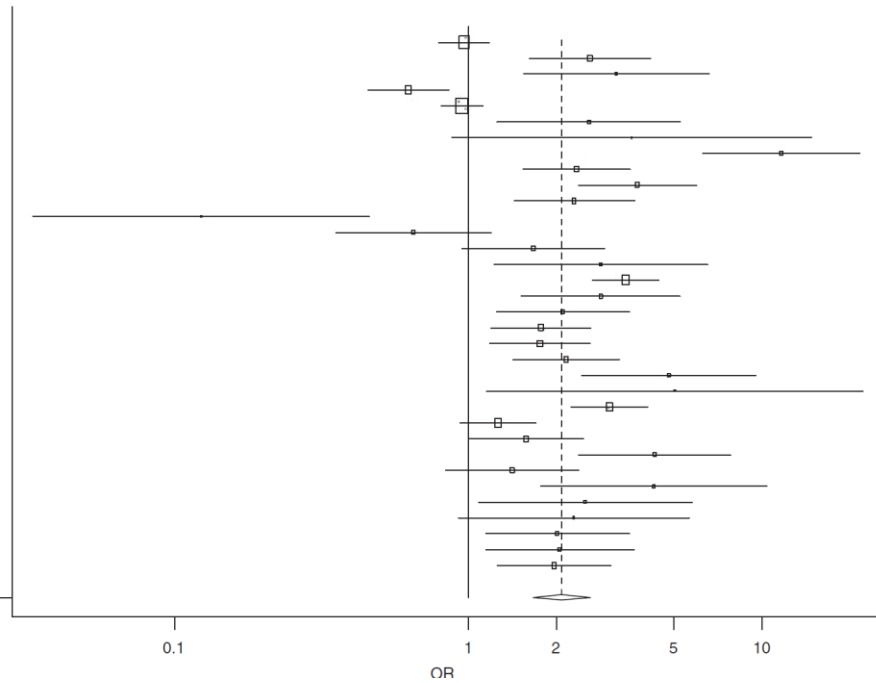
CHINESE PICKLED VEGETABLES

- A potential risk factor for ESCC
- Highly used in high risk areas of China
- Traditional way of preparation leads to production of mycotoxins and N-nitroso compounds
- Two meta-analyses have found an increased risk in association with EC and GC



CHINESE PICKLED VEGETABLES

Kinjo Y - 1966
 Zhang GS - 1973
 Tao X - 1984
 Hu J - 1985
 Tran GD - 1986
 Ren AG - 1987
 Wang YP (1) - 1988
 Wang YP (2) - 1988
 Chu JJ - 1988
 Liu XM (1) - 1988
 Cheng KK - 1989
 Wang Y - 1990
 Chen KL - 1990
 Shen HB - 1993
 Wang MR - 1994
 Gao CM - 1995
 Ji YM - 1995
 Chen W (2) - 1995
 Huang GD - 1996
 Takezaki T - 1996
 Hung HC - 1996
 Chen ZY - 1997
 Phukan PK - 1997
 Li K - 1997
 Xibin - 1998
 Qi GY - 1999
 Liu XM (2) - 1999
 Gao CM - 1999
 Chen ZY - 1999
 Chitra S - 1999
 Peng XE - 2001
 Feng XX - 2001
 Wang CX - 2003
 Zhao - Not reported



SO, IT'S NOT BAD, BUT WHY NOT MORE?

- **Low risk areas:**
 - Chance
 - Look for strong risk factors that have a low PAR (e.g., achalasia)
 - Look for mechanisms (e.g., atrophy)
- **High-risk areas:**
 - Have not used comprehensive strategies (e.g., animal studies)
 - Too much emphasis on sample size

