CENTRO NAZIONALE
DIPENDENZE E DOPING

Osservatorio Nazionale Alcol

Ministero della Salute

PROGRAMMA PRELIMINARE

WORKSHOP
INTERNAZIONALE
Alcohol Prevention Day

19 aprile 2023

organizzato da

ISTITUTO SUPERIORE DI SANITÀ
Osservatorio Nazionale Alcol
Centro Nazionale Dipendenze e Doping

in collaborazione con

MINISTERO DELLA SALUTE

e

SIA- Società Italiana di Alcologia
AICAT - Associazione Italiana Club Alcologici Territoriali
Eurocare ITALIA

Alcol e cancro: l'evidenza scientifica per il rafforzamento delle strategie di prevenzione oncologica
Società Italiana di Alcologia

Gianni Testino

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Azienda Ospedaliera Universitaria Ospedale San Martino, Genova - Presidente Sezione Liguria – Societa' Italiana di Alcologia

Alcohol and Cancer

Results from several large epidemiological studies have firmly established that alcohol is associated with higher cancer incidence and mortality. The mechanisms underlying alcohol-related cancers are unclear but several factors have been suggested to play a role (Table I) (1, 2, 3).

Table I – Role of alcohol in carcinogenesis
- Local effect of ethanol
- Acetaldehyde (ALDH isoenzymes polymorphism)
- Polymorphisms of ADH1B – ADH1C
- Induction of CYP2E1 (conversion of various xenobiotics)
- Nutritional deficiencies
- Interactions with retinoids
- Changes in the degree of methylation
- Immune surveillance

Alcologia 2008; 3: 5-9

Number of Cancer Cases Worldwide Attributed to Alcohol Consumption

Level of daily alcohol consumption	Estimated number of cancer cases
Heavy drinking (60 grams* or more)	346,400
Moderate-to-heavy drinking (between 20 and 60 grams)	291,800
Moderate drinking (20 grams or less)	103,100

**In measurements used in the United States, roughly 14 grams of pure alcohol (ethanol) corresponds to one standard drink (12 ounces of beer, 5 ounces of wine, or a 1.5 ounce shot of 80-proof distilled spirits (liquor).*

41.300 (light drinking - < 10 gr/day)

WESTERN EUROPE

-Heavy drinking 25.000 (47.9%)
-Moderate-to-heavy drinking 21.000 (39.5%)
-Moderate 6.700 (12.6%)

ITALY

-Heavy drinking 3.400 (34.2%)
-Moderate-to-heavy drinking 4.600 (46.0%)
-Moderate 2.000 (19.8%)

Rumgay et al, Lancet 2021

IARC; Lancet Oncology, November 2009

	Tumour sites for which there is sufficient evidence	Tumour sites for which there is limited evidence	Tumour sites for which there is evidence suggesting lack of carcinogenicity
Tobacco smoking	Oral cavity, oropharynx, nasopharynx, and hypopharynx, oesophagus (adenocarcinoma and squamous-cell carcinoma), stomach, colorectum,* liver, pancreas, nasal cavity and paranasal sinuses, larynx, lung, uterine cervix, ovary (mucinous)*, urinary bladder, kidney (body and pelvis), ureter, bone marrow (myeloid leukaemia)	Female breast*	Endometrium (postmenopausal*), thyroid*
Parental smoking (cancer in the offspring)	Hepatoblastoma*	Childhood leukaemia (in particular acute lymphocytic leukaemia)*	
Second-hand smoke	Lung	Larynx,* pharynx*	
Smokeless tobacco	Oral cavity, oesophagus,* pancreas		
Areca nut			
Betel quid with added tobacco	Oral cavity, pharynx, oesophagus		
Betel quid without added tobacco	Oral cavity, oesophagus*	Liver*	
Alcohol consumption	Oral cavity, pharynx, larynx, oesophagus, liver, colorectum, female breast	Pancreas*	Kidney, non-Hodgkin lymphoma
Acetaldehyde associated with alcohol consumption	Oesophagus,* head and neck*		
Chinese-style salted fish	Nasopharynx	Stomach*	
Indoor emissions from household combustion of coal	Lung		

*New sites.

Table: Evidence for carcinogenicity in humans of Group 1 agents assessed

IARC; Lancet Oncology, November 2009

	Tumour sites for which there is sufficient evidence	Tumour sites for which there is limited evidence	Tumour sites for which there is evidence suggesting lack of carcinogenicity
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Parental smoking (cancer in the offspring)	Hepatoblastoma*	Childhood leukaemia (in particular acute lymphocytic leukaemia)*	
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Areca nut			
Betel quid with added tobacco	Oral cavity, pharynx, oesophagus		
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Acetaldehyde associated with alcohol consumption	Oesophagus,* head and neck*		
Chinese-style salted fish	Nasopharynx	Stomach*	
Indoor emissions from household combustion of coal	Lung		

*New sites.

Table: Evidence for carcinogenicity in humans of Group 1 agents assessed

WORLD HEALTH ORGANIZATION
International Agency for Research on Cancer
(IARC)
Evaluation of Carcinogenic Risks to Humans

Group 1 Carcinogenic to humans
(arsenic, asbesto, benzene, radionuclide, tobacco smoking …..)

Group 2 A Probably carcinogenic to humans

Group 2B Possibly carcinogenic to humans
(radio frequency elettromagnetic fields from wireless phones ….)

Group 3 Unclassifiable as to carcinogenicity in humans

Group 4 Probably not carcinogenic to humans

WORLD HEALTH ORGANIZATION
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

VOLUME 96

Alcohol Consumption and Ethyl Carbamate

LYON, FRANCE
2010

WORLD HEALTH ORGANIZATION
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

VOLUME 100

A Review of Human Carcinogens

Part E: Personal Habits and Indoor Combustions

LYON, FRANCE

2012

Agents Classified by the *IARC Monographs*, Volumes 1–104

CAS No	Agent	Group	Volume	Year
000075-07-0	Acetaldehyde associated with consumption of alcoholic beverages	1	100E	2012
	Acid mists, strong inorganic	1	54, 100F	2012
001402-68-2	Aflatoxins	1	56, 82, 100F	2012
	Alcoholic beverages	1	44, 96, 100E	2012
	Aluminium production	1	34, Sup 7, 100F	2012
000092-67-1	4-Aminobiphenyl	1	1, Sup 7, 99, 100F	2012
	Areca nut	1	85, 100E	2012
000313-67-7	Aristolochic acid (NB: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data)	1	82, 100A	2012
000313-67-7	Aristolochic acid, plants containing	1	82, 100A	2012
007440-38-2	Arsenic and inorganic arsenic compounds	1	23, Sup 7, 100C	2012
000064-17-5	Ethanol in alcoholic beverages	1	96, 100E	2012
000075-21-8	Ethylene oxide (NB: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data)	1	97, 100F	2012
033419-42-0	Etoposide (NB: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data)	1	76, 100A	2012
033419-42-0 015663-27-1 011056-06-7	Etoposide in combination with cisplatin and bleomycin	1	76, 100A	2012
	Fission products, including strontium-90	1	100D	2012
000050-00-0	Formaldehyde	1	88, 100F	2012

OMS, IARC 2012

There is *sufficient evidence* in humans for the carcinogenicity of alcohol consumption. Alcohol consumption causes cancers of the oral cavity, pharynx, larynx, oesophagus, colorectum, liver (hepatocellular carcinoma) and female breast. Also, an association has been observed between alcohol consumption and cancer of the pancreas.

For cancer of the kidney and non-Hodgkin lymphoma, there is *evidence suggesting lack of carcinogenicity.*

There is *sufficient evidence* in humans for the carcinogenicity of acetaldehyde associated with the consumption of alcoholic beverages. Acetaldehyde associated with the consumption of alcoholic beverages causes cancer of the oesophagus and of the upper aerodigestive tract combined.

There is *sufficient evidence* in experimental animals for the carcinogenicity of ethanol.

There is *sufficient evidence* in experimental animals for the carcinogenicity of acetaldehyde.

Alcohol consumption is *carcinogenic to humans (Group 1).*

Ethanol in alcoholic beverages is *carcinogenic to humans (Group 1).*

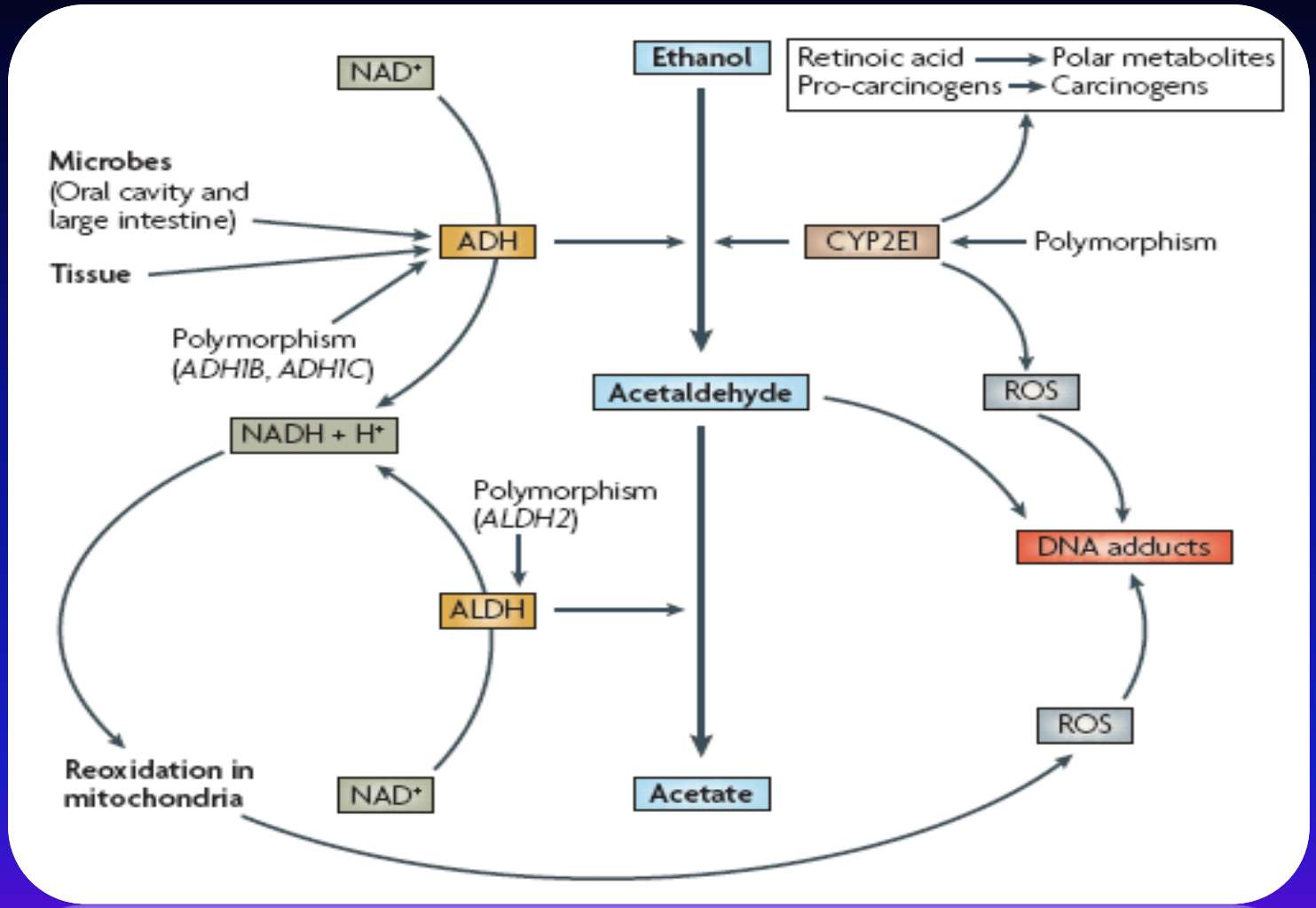
Acetaldehyde associated with the consumption of alcoholic beverages is *carcinogenic to humans (Group 1).*

World Health Organization, International Agency for Cancer Research,

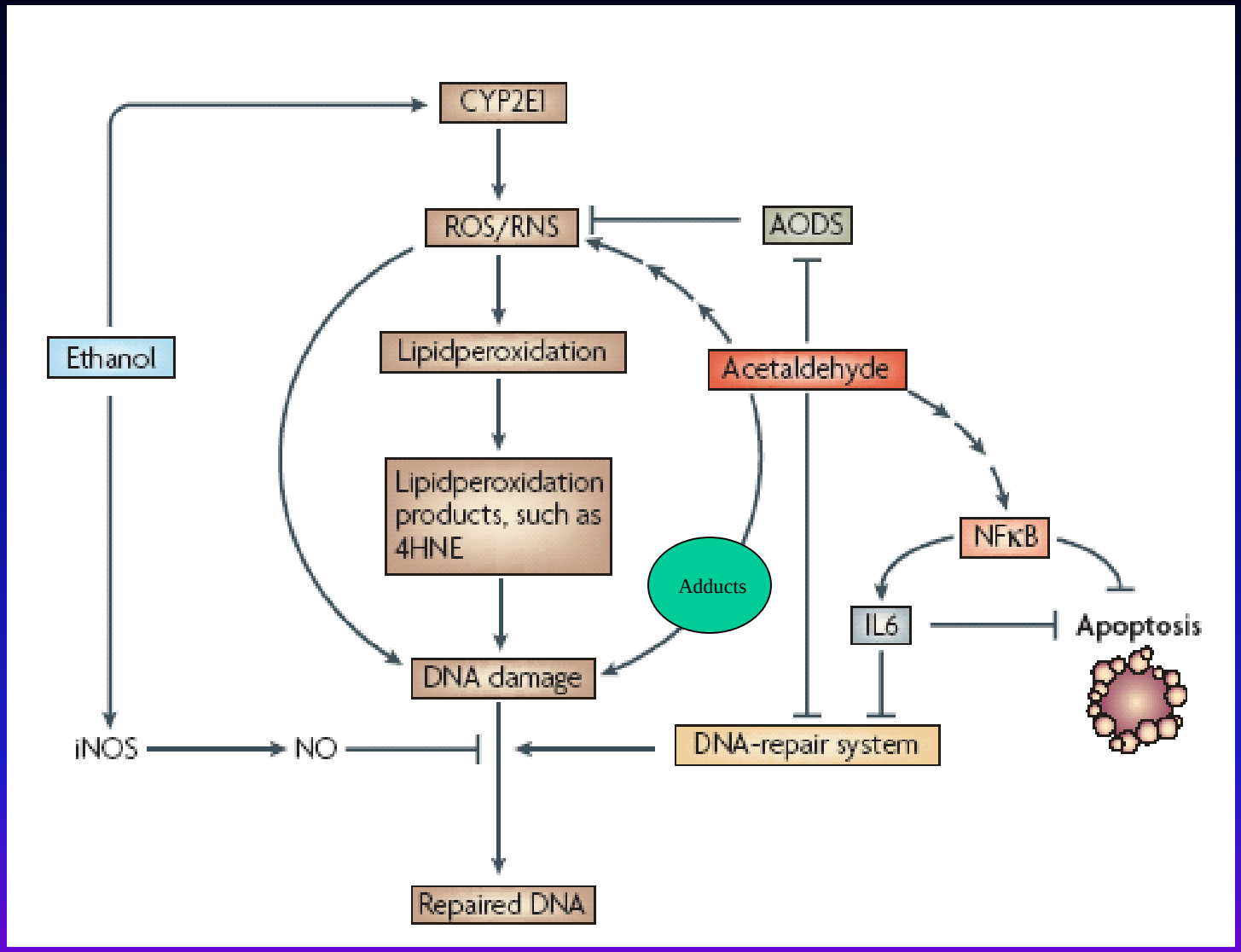
Volume 100 E, pag. 476 – Lyon, France 2012

ALCOHOL AND CARCINOGENESIS

- ✓ Local Effect
- ✓ Acetaldehyde (ALDH isoenzymes polymorphism)
- ✓ Polymorphisms of ADH1B, ADH1C
- ✓ Induction of CYP2E1 (conversion of various xenobiotics)
- ✓ ROS (lipid peroxidation)
- ✓ DNA Adducts
- ✓ Nutritional Deficiencies
- ✓ Interaction with Retinoids
- ✓ Changes in the degree of Methylation
- ✓ Telomere shortening
- ✓ Dysbiosis of microbiome
- ✓ Hormone levels
- ✓ Immune Surveillance



Seitz and Stickel, Nat Rev Cancer 2007


CYP2E1
ROS/RNS
AODS
Ethanol
Lipidperoxidation
Acetaldehyde
Lipidperoxidation products, such as 4HNE
NFκB
Adducts
IL6
Apoptosis
DNA damage
iNOS
NO
DNA-repair system
Repaired DNA

IMPACT OF ALDH2-DEFICIENCY GENES ON THE RISK FOR OESOPHAGEAL CANCER

Genes/polymorphisms	Alcohol 1-30 g/day	Alcohol > 30/ g/day
ALDH2-active	OR 7.2	
ALDH2-deficiency	OR 14.5	OR 102.5
Slow ADH1B + ALDH2-deficiency	OR 37.5	OR 382.3

Salaspuro M, Scand J Gastroenterol 2009

….. mutagenic amount of acetaldehyde in saliva falls between 50 and 150 micronM/L

Salaspuro M, Novartis Found Symp 2007

Lachenmeier and Monakhova, 2011

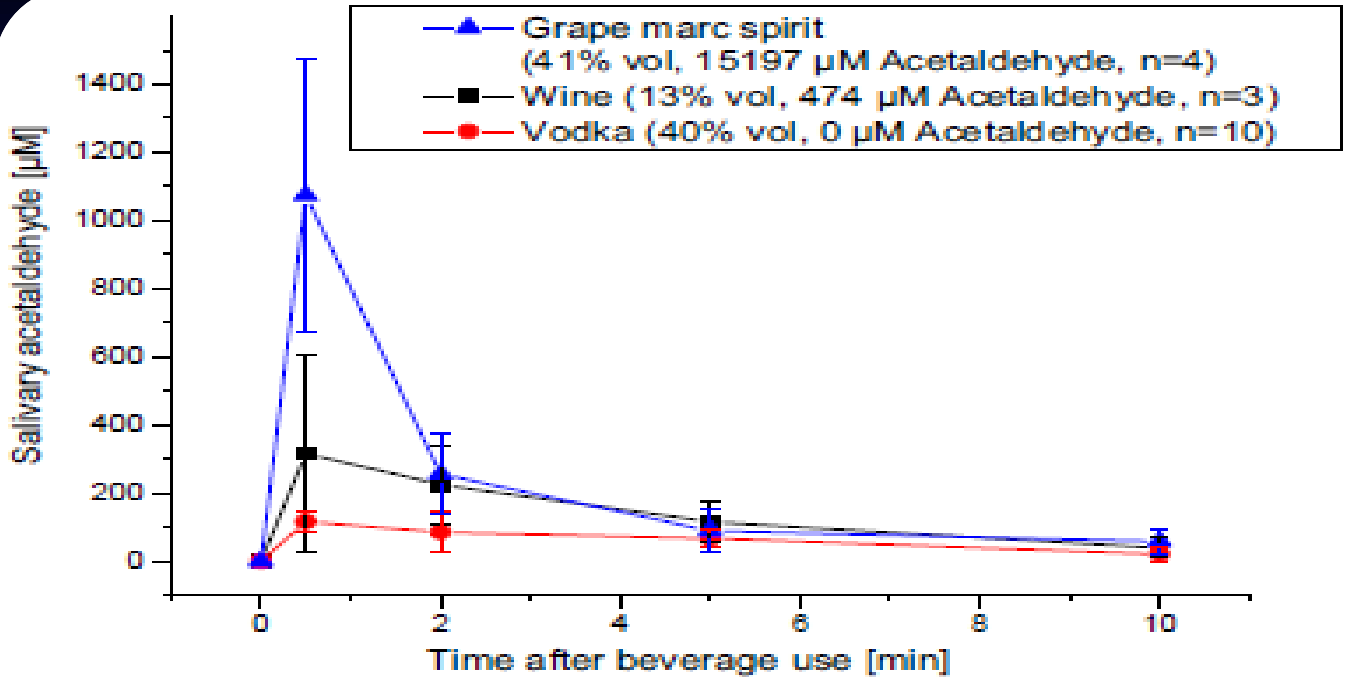
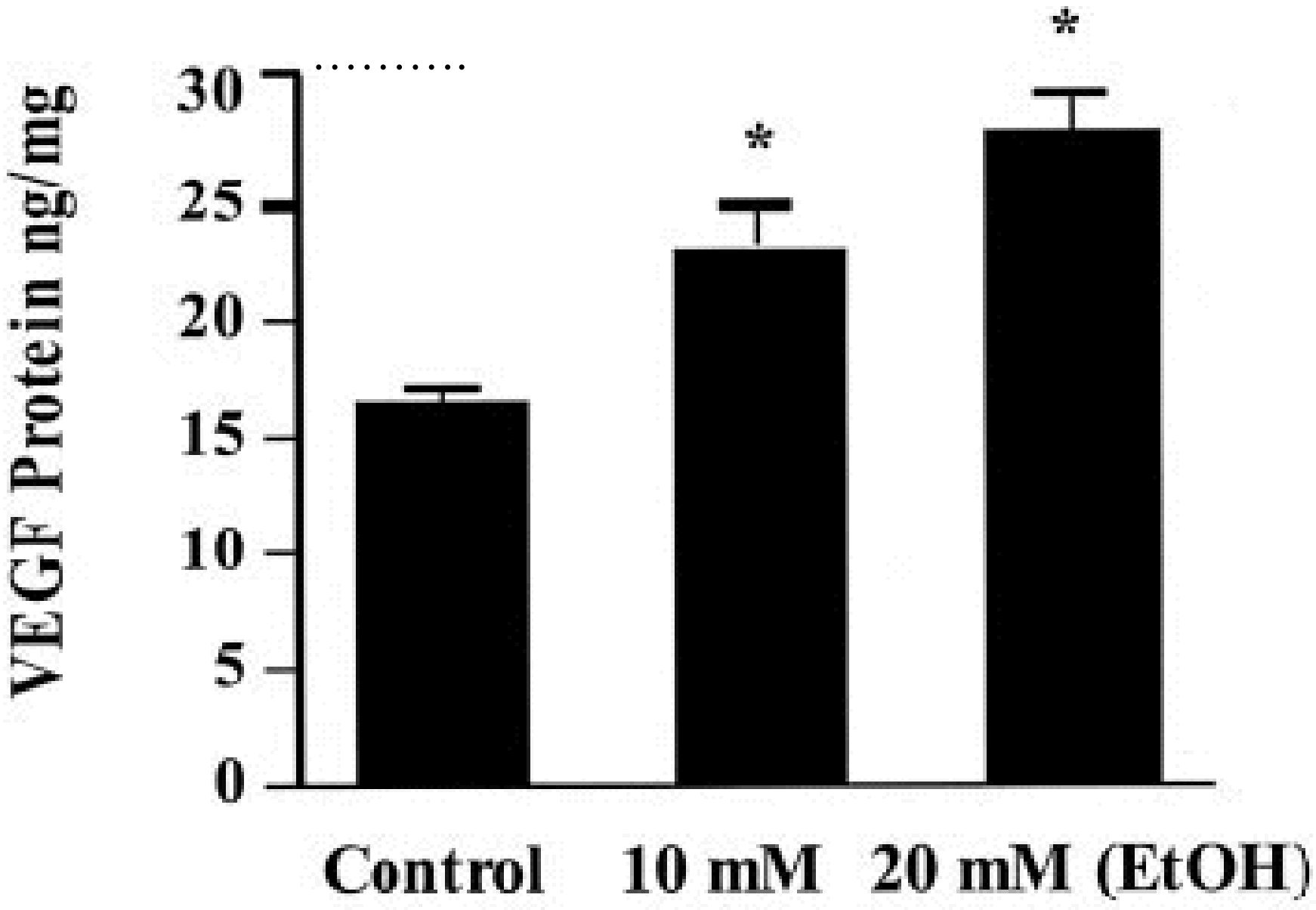
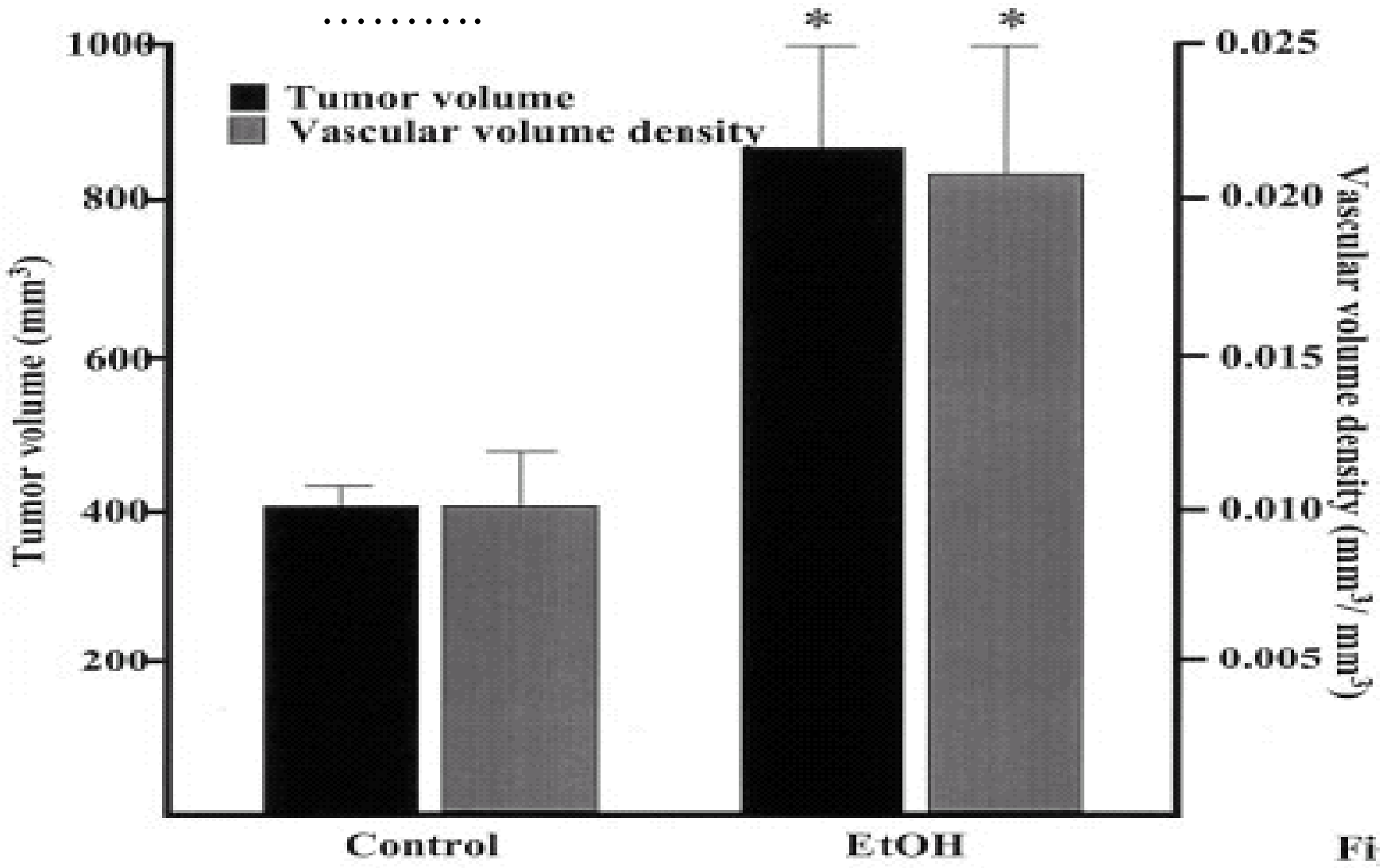


Figure 1 Salivary acetaldehyde concentrations after alcoholic beverage use in three different samples. The values are average and standard deviation of all assessors. The figure legend states the alcoholic strength (in % vol) and the acetaldehyde content (in µM) in the beverages, as well as the number of assessors used for each beverage.

Lachenmeier and Monakhova, J Exp Clin Cancer Res 2011



Gu JW et al, Cancer 2005



Fi

Gu JW et al, Cancer 2005

Table 1. Summary of WHO International Agency for Research on Cancer (IARC) evaluation of carcinogenicity of substances that may be present in alcoholic beverages (updated from IARC[2])

	IARC Monographs evaluation of Carcinogenicity			
Agent	**In animals**	**In humans**	**IARC group[1]**	***IARC Monographs* (Volume Number)**
Acetaldehyde associated with consumption of alcoholic beverages	Sufficient	Sufficient	1	36, Sup 7, 71, 100E
Acrylamide	Sufficient	Inadequate	2A	60
Aflatoxins	Sufficient	Sufficient	1	56, 82, 100F
Arsenic	Sufficient	Sufficient	1	23, Sup 7, 100C
Benzene	Sufficient	Sufficient	1	29, Sup 7, 100F
Cadmium	Sufficient	Sufficient	1	58, 100C
Ethanol in alcoholic beverages	Sufficient	Sufficient	1	44, 96, 100E
Ethyl carbamate (urethane)	Sufficient	Inadequate	2A	7, Sup 7, 96
Formaldehyde	Sufficient	Sufficient	1	88, 100F
Furan	Sufficient	Inadequate	2B	63
Lead compounds, inorganic	Sufficient	Limited	2A	87
4-Methylimidazole	Sufficient	Inadequate	2B	101
N-Nitrosodimethylamine	Sufficient	Inadequate	2A	17, Sup 7
Ochratoxin A	Sufficient	Inadequate	2B	56
Safrole	Sufficient	Inadequate	2B	10, Sup 7

[1]Group 1: Carcinogenic to humans; Group 2A: Probably carcinogenic to humans; Group 2B: Possibly carcinogenic to humans (for definitions of groups, see monographs.iarc.fr).

Lachenmeier et al, Int J Cancer 2012; 131: E995-E1003

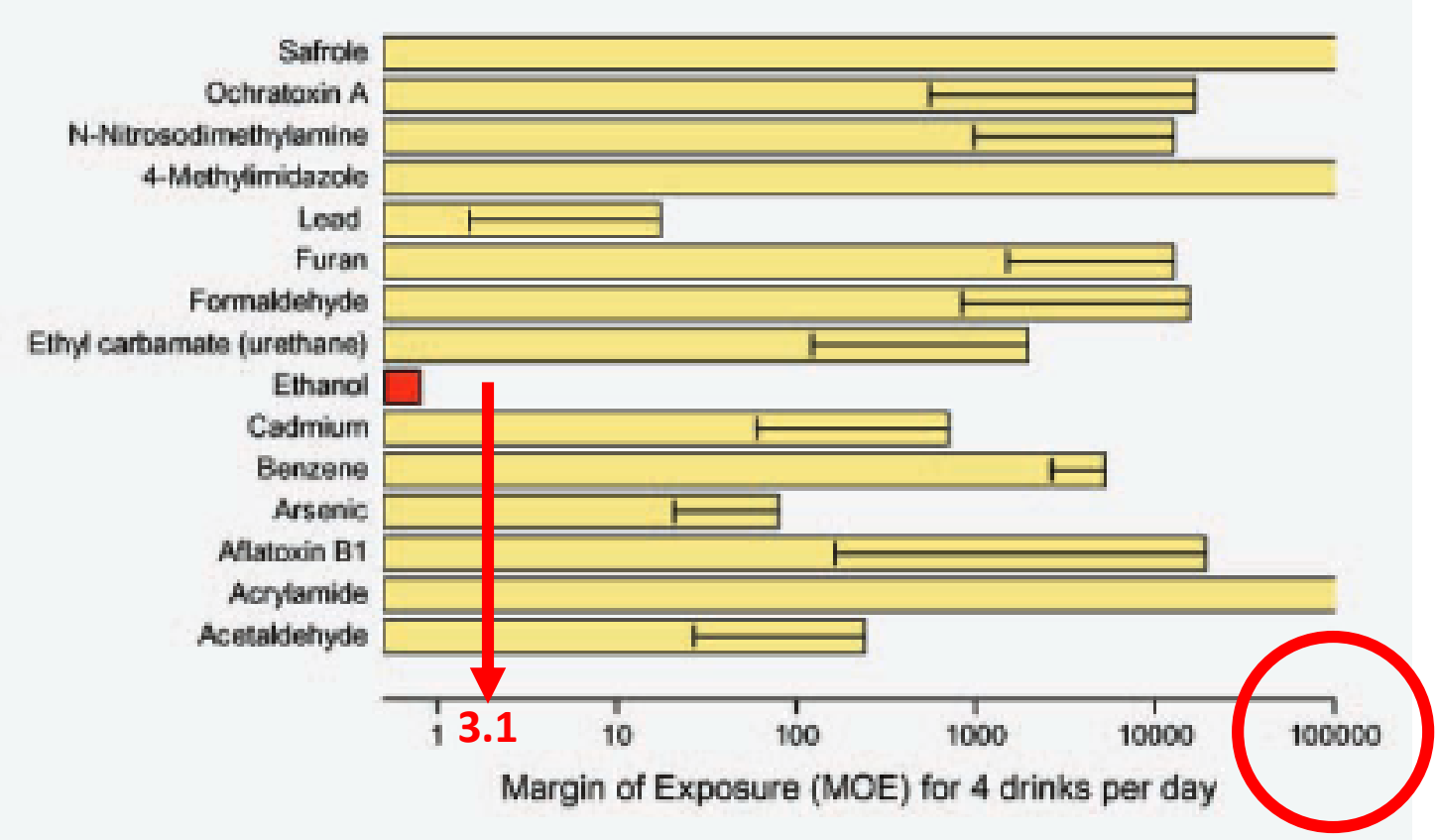


Figure 1. Margin of Exposure (MOE) for carcinogens occurring in alcoholic beverages for heavy drinking scenario (averages based on data from Table 4; error bar indicates worst case contamination).

Pflaum et al, Arch Toxicol 2016 (doi: 10.1007/s00204-016-1770-3)

Table 1. Risks of cancer at different sites with alcohol consumption.

Cancer Sites	Relative Risks or Odds Ratio for Drinkers	Reference
Upper aero-digestive tract	less than 12.5 g/day: 1.26 (95% CI, 0.94–1.67); 12.6 to 49.9 g/day: 1.79 (95% CI, 1.26–2.53); more than 50 g/day: 3.63 (95% CI, 2.63–5.00)	[17]
Colorectum	less than 12.5 g/day: 1.07 (95% CI, 1.02–1.13); 12.6 to 49.9 g/day: 1.23 (95% CI, 1.15–1.32); more than 50 g/day: 1.37 (95% CI, 1.26–1.49)	[4]
Liver	less than 37.5 g/day: 0.91 (95% CI, 0.81–1.02); 37.5 g/day or more: 1.16 (95% CI, 1.01–1.34)	[18]
Breast	5 to 15 g/day: 1.06 (95% CI, 1.01–1.11); 15 to 30 g/day: 1.12 (95% CI, 1.06–1.19); more than 30 g/day: 1.25 (95% CI, 1.17–1.35)	[19]
Pancreas	less than 37.5 g/day: 0.92 (95% CI, 0.86–0.97); 37.5 g/day or more: 1.22 (95% CI, 1.12–1.34)	[20]

Note: The drinking amount refers to the dose of pure alcohol. The range of 95% CI below 1 indicates significant protective effects, the range including 1 indicates no statistical significance, and the range above 1 indicates significant harmful effects.

Int. J. Environ. Res. Public Health 2016, 13, 522; doi:10.3390/ijerph13060522

Applying the Precautionary Principle to Nutrition and Cancer
Journal of the American College of Nutrition, 2014

SOGGETTO SANO

Cancro bocca, faringe e laringe:
un drink/settimana → incremento rischio del 24%

Carcinoma Squamo-Cellulare del tratto aereo-digestivo superiore: 10 grammi etanolo/die → incremento rischio 10-15%

Carcinoma Esofago:
un drink/settimana → aumento rischio del 4%

Cancro Colorettale:
10 grammi di etanolo/die → incremento del rischio del 9%

Cancro Mammella:
10 grammi di etanolo/die → incremento del rischio del 10%

Gonzales et al, J Am College Nutr 2014

Prospective Study of Adolescent Alcohol Consumption and Risk of Benign Breast Disease in Young Women

Drinking Frequency	OR
Never to less than weekly	1.00 (referent)
1-2 U/ wk	1.72
3-5 U/ wk	3.34
6-7 U/ wk	5.94

Berkey CS et al, Pediatrics 2010

Printz C, Cancer 2010

ALCOL E CANCRO: ASSOCIAZIONI IN FASE DI STUDIO

STOMACO ***(Deng et al, Chem Biol Interact 2021)***

PROSTATA ***(Zhao et al, BMC Cancer 2016; Macke and Petrosan, Biomolecules 2022)***

POLMONE ***(Brenner et al, Cancer Epidemiol 2019)***

MELANOMA ***(Rivera et al, Cancer Epidemiol Biomarkers Prev 2016)***

CUTE (Mahamat-Saleh et al, Int J Cancer 2023)

Table 2. Policy Recommendations of International Cancer Care and Public Health Organizations

Organization	Recommendation
Association of European Cancer Leagues (25 associations)[111,112]	• Supports minimum pricing legislation • Monitoring implementation of the European Union Alcohol Strategy and the impact of the strategy on marketing to young people and reducing alcohol-related harm • Calls for stronger recognition of alcohol causality of cancer and other chronic diseases and European Code Against Cancer
Cancer Research UK[113]	• Supports a comprehensive alcohol strategy to reduce drinking in the United Kingdom to levels where the risks are minimal • Recognizes need for measures to reduce the affordability of alcohol and to restrict young people's exposure to alcohol advertising are needed if alcohol consumption will be reduced to historic levels and reduce the risk of cancer in the United Kingdom
Irish Cancer Society[114]	• In May 2013, called on government to ban alcohol advertising
Cancer Council Australia[115-117]	• Recommends the increased price of alcohol through taxation and an investigation into the need for the introduction of minimum pricing of alcohol[115] • Endorses the need for compulsory warning labels on all alcoholic products[116] • Supports a strategy to limit the exposure of marketing and promotion of alcohol overall and specifically to children[117]
Cancer Council Victoria (Australia)[118,119]	• Member of the Alcohol Policy Coalition • Recognizes the harmful link between advertising and harmful drinking in young people, and actively works to implement alcohol advertising restrictions to reduce exposure among people age 18 years and younger
Cancer Association of South Africa[120]	• Advocates against consumption of any alcohol • Does not support any form of pink washing to market any product that contributes to cancer disease and death (including the alcohol industry)
World Cancer Research Fund International[121]	• Recommends policies that will reduce the availability and affordability of alcohol

European Society for Medical Oncology[123]	• Party to the European Chronic Disease Alliance position statement on the need for European Union action to help Europeans reduce alcohol consumption, and supports the following policy goals[122]:
	  ° ensure the implementation of the WHO Global Strategy to Reduce the Harmful Use of Alcohol
	  ° ensure achievement of WHO Global noncommunicable disease target for a 10% relative reduction in the harmful use of alcohol
	  ° ensure a new comprehensive European Union alcohol strategy
	  ° ensure that countries also have national alcohol strategies
	• Supports both supply- and demand-oriented strategies to reduce alcohol consumption including[123]:
	  ° increasing prices of alcoholic beverages;
	  ° limit the number of alcohol outlets (outlet density);
	  ° limit the hours of sales and establish regulations for minimum age of purchase;
	  ° implement school-based education to influence drinking behavior; and
	  ° restrict advertising, particularly to young people

American Medical Association[124,125]	• Advocates for legislation aimed at minimizing alcohol promotions, advertising, and other marketing strategies by the alcohol industry aimed at adolescents[124] • Supports a ban on the marketing of products, such as alcopops, gelatin-based alcohol products, food-based alcohol products, alcohol mists, and beverages that contain alcohol and caffeine and other additives to produce alcohol energy drinks that have special appeal to youths under the age of 21 years and supports state and federal regulations that would reclassify alcopops as a distilled spirit so that they can be taxed at a higher rate and cannot be advertised or sold in certain locations[125]
American Academy of Family Physicians[126]	• Supports efforts to reduce the amount of alcohol advertising, particularly content appealing to youth, and the development of educational programs and counter-advertising designed to illustrate more realistic images on the effects of alcohol
American Public Health Association[127]	• Supports the development and adoption of an international framework convention on alcohol control[127] • Supports the implementation of the recommendations of the National Research Council and Institute of Medicine's report entitled "Reducing Underage Drinking: A Collective Responsibility," including the monitoring of youth exposure to alcohol advertising and the raising of excise taxes[128]
European Public Health Alliance[129]	• Supports limitations on advertising of alcohol and product placement to minimize youth exposure to the marketing of these products

AMERICAN ASSOCIATION OF CLINICAL ONCOLOGY, J CLIN ONCOL 2018

fanpage.it

ATTUALITÀ | CRISI ENERGETICA | GUERRA UCRAINA | COVID | CRONACA N

RICHIAMI E RITIRI DI PRODOTTI ALIMENTARI · 6 SETTEMBRE 2021 · 19:03

Esselunga ritira yogurt, rischio ossido di etilene. L'allerta del Ministero della Salute

Il richiamo segnalato oggi, 6 settembre, sul sito del Ministero della Salute riguarda due lotti di tre diversi gusti di yogut greco prodotti per Esselunga dall'azienda Kri Kri S.A. Il motivo è la possibile "presenza di ossido di etilene in un ingrediente (farina di semi di carrube)".

A cura di **Biagio Chiariello**

International Agency for Research on Cancer
World Health Organization

IARC MONOGRAPHS ON THE IDENTIFICATION OF CARCINOGENIC HAZARDS TO HUMANS

IARC NEWSLETTER

NEWS | MEETINGS | CLASSIFICATIONS | PUBLICATIONS | PRIORITIES | PREAMBLE | STAFF | CONTACT

List of Classifications

Agents classified by the IARC Monographs, Volumes 1–132

Copy | CSV | Excel | PDF | Print

Search: ethylene oxide

CAS No.	Agent	Group	Volume	Year	Additional information
75-21-8	Ethylene oxide	1	Sup 7, 60, 97, 100F	2012	NB Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data

Showing 1 to 1 of 1 entries (filtered from 1,105 total entries)

Previous 1 Next

Last updated: *2022-09-07 10.34am (CEST)*

Moving beyond the "Health Halo" of Alcohol: What Will it Take to Achieve Population Awareness of the Cancer Risks of Alcohol?

Jennifer L. Hay[1], Marc T. Kiviniemi[2], Heather Orom[3], and Erika A. Waters[4]

ABSTRACT

We discuss the implications of Seidenberg and colleagues' report confirming low levels of accurate awareness of the cancer harms associated with alcohol use, including wine, beer, and liquor consumption. The authors propose that academic and lay messaging describing consumption of wine and other forms of alcohol as reducing heart disease risk has created generalized beliefs about the health benefits of drinking alcohol. This "health halo" surrounding alcohol consumption leads the public to overgeneralize alcohol health benefits to other diseases, including cancer. We discuss the need to address high levels of perceived risk uncertainty to help the public distinguish between the impact of alcohol on heart disease versus cancer, and to overcome other barriers to including alcohol use reduction as a cancer prevention strategy. Given recent increases in U.S. population drinking rates, as well as morbidity and mortality associated with alcohol use, the time is right to marshal multilevel efforts to educate the public regarding the fact that alcohol is carcinogenic. If successful, these efforts will have multiple downstream benefits, including the ability of the lay public to use the most up-to-date scientific evidence to make informed decisions about whether, and how much, to engage in a risky behavior.

See related article by Seidenberg et al., p. 46

Cancer Epidemiol Biomarkers Prev 2023; 9: 9-11

ALCOHOL USE DISORDER AND PHYSICIAN

Impaired healthcare professional

Marie R. Baldisseri, MD, FCCM

Crit Care Med, 2007

18.8%

Risky alcohol use in Danish physicians: Associated with alexithymia and burnout?

Anette Fischer Pedersen[a,*], Johanne Korsdal Sørensen[b], Niels Henrik Bruun[c], Bo Christensen[c], Peter Vedsted[a]

Drug Alcohol Depend, 2016

10-15%

Original Investigation | Occupational Health

Characterization of Problematic Alcohol Use Among Physicians: A Systematic Review

Janet Wilson; Peter Tanuseputro, MD, MHSc; Daniel T. Myran, MD; Shan Dhaliwal, BSc; Junayd Hussain, BSc; Patrick Tang, MBA; Salmi Noor, BSc; Rhiannon L. Roberts, MScPH, BSc; Marco Solmi, MD, PhD; Manish M. Sood, MD, MSc

Jama Netw Open, 2022

AUDIT; 9% to 35% with AUDIT-C; 4% to 22% with CAGE). Reported problematic alcohol use increased over time from 16.3% in 2006 to 2010 to 26.8% in 2017 to 2020. The extent of

BMJ 2014;349:g4164 doi: 10.1136/bmj.g4164 (Published 10 July 2014)

RESEARCH

Association between alcohol and cardiovascular disease: Mendelian randomisation analysis based on individual participant data

Conclusions Individuals with a genetic variant associated with non-drinking and lower alcohol consumption had a more favourable cardiovascular profile and a reduced risk of coronary heart disease than those without the genetic variant. This suggests that reduction of alcohol consumption, even for light to moderate drinkers, is beneficial for cardiovascular health.

Holmes MV et al, British Medical Journal 2014

Do "Moderate" Drinkers Have Reduced Mortality Risk? A Systematic Review and Meta-Analysis of Alcohol Consumption and All-Cause Mortality

= 1.22, 95% CI [1.14, 1.31]). After adjustment for abstainer biases and quality-related study characteristics, no significant reduction in mortality risk was observed for low-volume drinkers

Drinking categories[b]	RR[c]	[95% CI]	*p*
Former drinker	**1.31**	[1.11, 1.55]	.0022
Low volume (1.30–<25 g /day)	1.04	[0.95, 1.15]	.3557
Medium volume (25–<45 g/day)	**1.29**	[1.06, 1.56]	.0106
High volume (45–<65 g/day)	1.07	[0.83, 1.36]	.6100
Higher volume (≥65 g/day)	**1.85**	[1.51, 2.27]	.0001
All drinkers combined	1.19	[0.94, 1.49]	.1065

Stockwell et al, 2016

HCV, ALCOHOL, MORTALITY

	All-cause mortality HR	Cardiovascular mortality HR	Liver-related mortality HR
HCV + ALCOHOL > 20 gr/die	5.12 (1.97-13.28)	3.34 (0.55-20.5)	183.74 (15.98-infinity)
HCV + ALCOHOL < 20 gr/ die	2.44 (1.59-3.75)	0.71 (0.23-2.21)	74.25 (19.62-280.92)

Third National Health and Nutrition Examination Survey

Younossi ZM et al, Aliment Pharmacol Ther 2013

Alcohol consumption and cardiovascular disease, cancer, injury, admission to hospital, and mortality: a prospective cohort study

*Andrew Smyth, Koon K Teo, Sumathy Rangarajan, Martin O'Donnell, Xiaohe Zhang, Punam Rana, Darryl P Leong, Gilles Dagenais, Pamela Seron, Annika Rosengren, Aletta E Schutte, Patricio Lopez-Jaramillo, Ayetkin Oguz, Jephat Chifamba, Rafael Diaz, Scott Lear, Alvaro Avezum, Rajesh Kumar, Viswanathan Mohan, Andrzej Szuba, Li Wei, Wang Yang, Bo Jian, Martin McKee, Salim Yusuf, on behalf of the PURE Investigators**

Summary

Background Alcohol consumption is proposed to be the third most important modifiable risk factor for death and disability. However, alcohol consumption has been associated with both benefits and harms, and previous studies were mostly done in high-income countries. We investigated associations between alcohol consumption and outcomes in a prospective cohort of countries at different economic levels in five continents.

Methods We included information from 12 countries participating in the Prospective Urban Rural Epidemiological (PURE) study, a prospective cohort study of individuals aged 35–70 years. We used Cox proportional hazards regression to study associations with mortality (n=2723), cardiovascular disease (n=2742), myocardial infarction (n=979), stroke (n=817), alcohol-related cancer (n=764), injury (n=824), admission to hospital (n=8786), and for a composite of these outcomes (n=11 963).

Findings We included 114 970 adults, of whom 12 904 (11%) were from high-income countries (HICs), 24 408 (21%) were from upper-middle-income countries (UMICs), 48 845 (43%) were from lower-middle-income countries (LMICs), and 28 813 (25%) were from low-income countries (LICs). Median follow-up was 4·3 years (IQR 3·0–6·0). Current drinking was reported by 36 030 (31%) individuals, and was associated with reduced myocardial infarction (hazard ratio [HR] 0·76 [95% CI 0·63–0·93]), but increased alcohol-related cancers (HR 1·51 [1·22–1·89]) and injury (HR 1·29 [1·04–1·61]). High intake was associated with increased mortality (HR 1·31 [1·04–1·66]). Compared with never drinkers, we identified significantly reduced hazards for the composite outcome for current drinkers in HICs and UMICs (HR 0·84 [0·77–0·92]), but not in LMICs and LICs, for which we identified no reductions in this outcome (HR 1·07 [0·95–1·21]; $p_{interaction}<0·0001$).

Interpretation Current alcohol consumption had differing associations by clinical outcome, and differing associations by income region. However, we identified sufficient commonalities to support global health strategies and national initiatives to reduce harmful alcohol use.

Lancet 2015; 386: 1945–54

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See Comment page 1922

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Lancet 2015; 386: 1945-1954

2016 European Guidelines on cardiovascular disease prevention in clinical practice

The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts)

Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR)

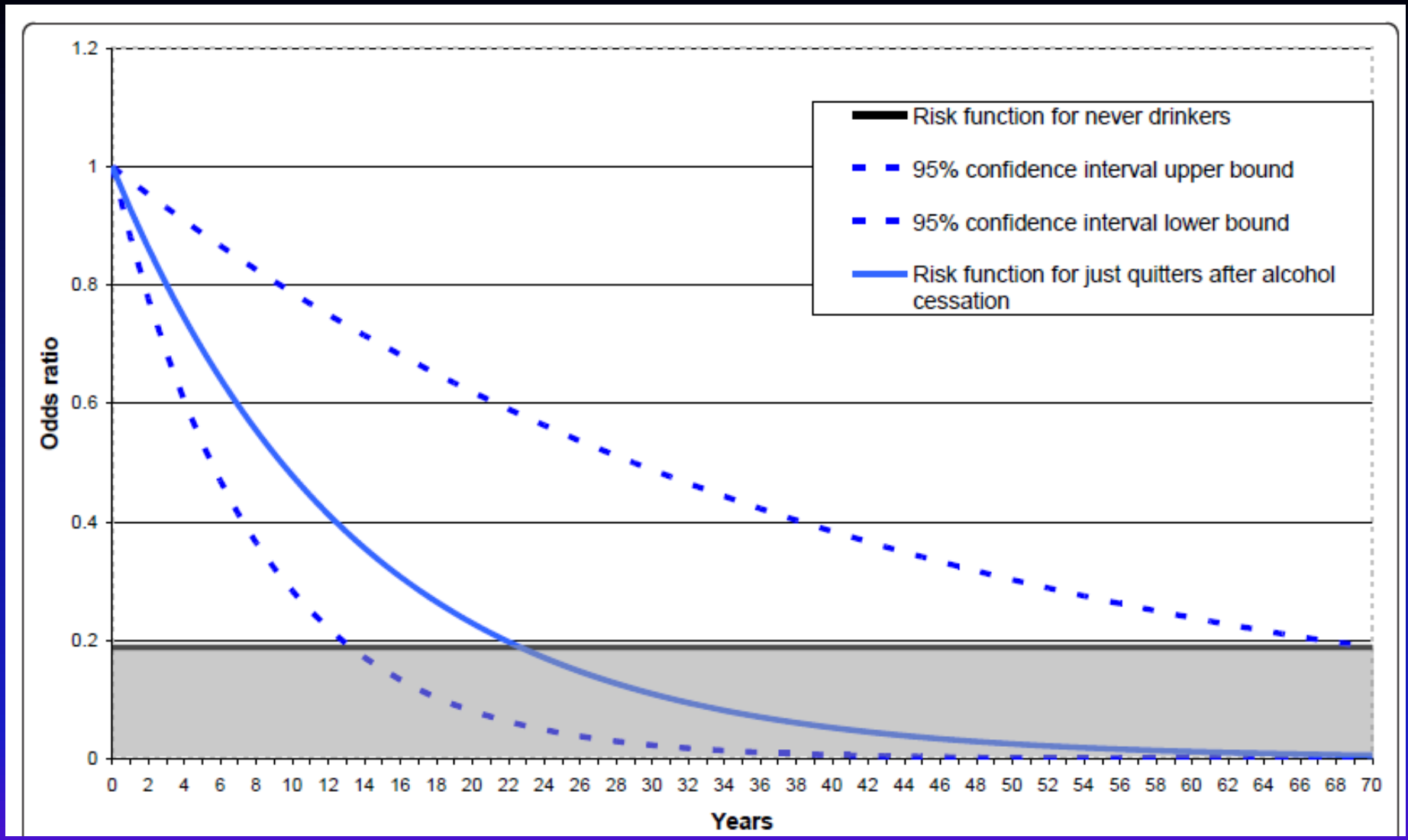
European Society of Cardiology, European Heart Journal 2016; 37: 2315-2381

moderate alcohol consumption,[332] suggesting that the lowest risks for CV outcomes were in abstainers and that any amount of alcohol is associated with elevated BP and BMI.

2021 Dietary Guidance to Improve Cardiovascular Health: A Scientific Statement From the American Heart Association

Lichtenstein et al, Circulation 2021; 144: e472-e487

Feature 9: If You Do Not Drink Alcohol, Do Not Start; If You Choose to Drink Alcohol, Limit Intake



LIVER

Heckley GA et al, BMC Cancer 2011

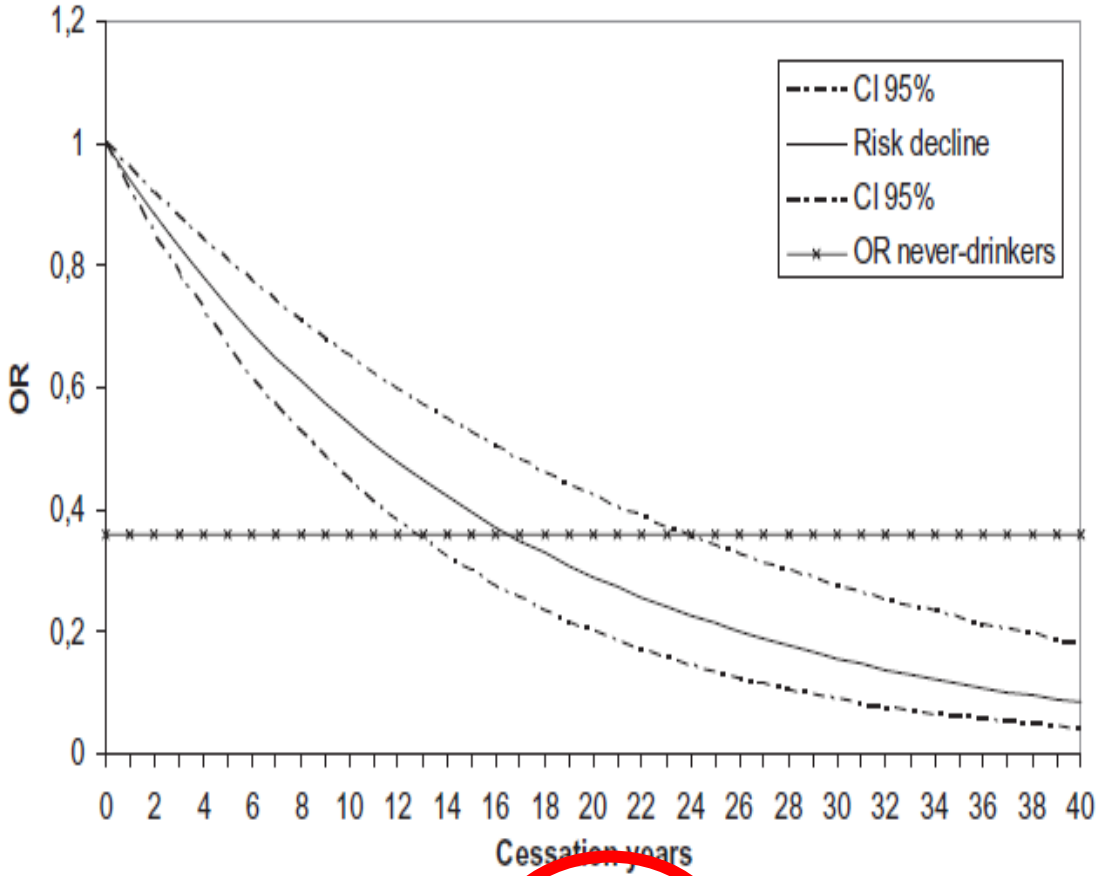
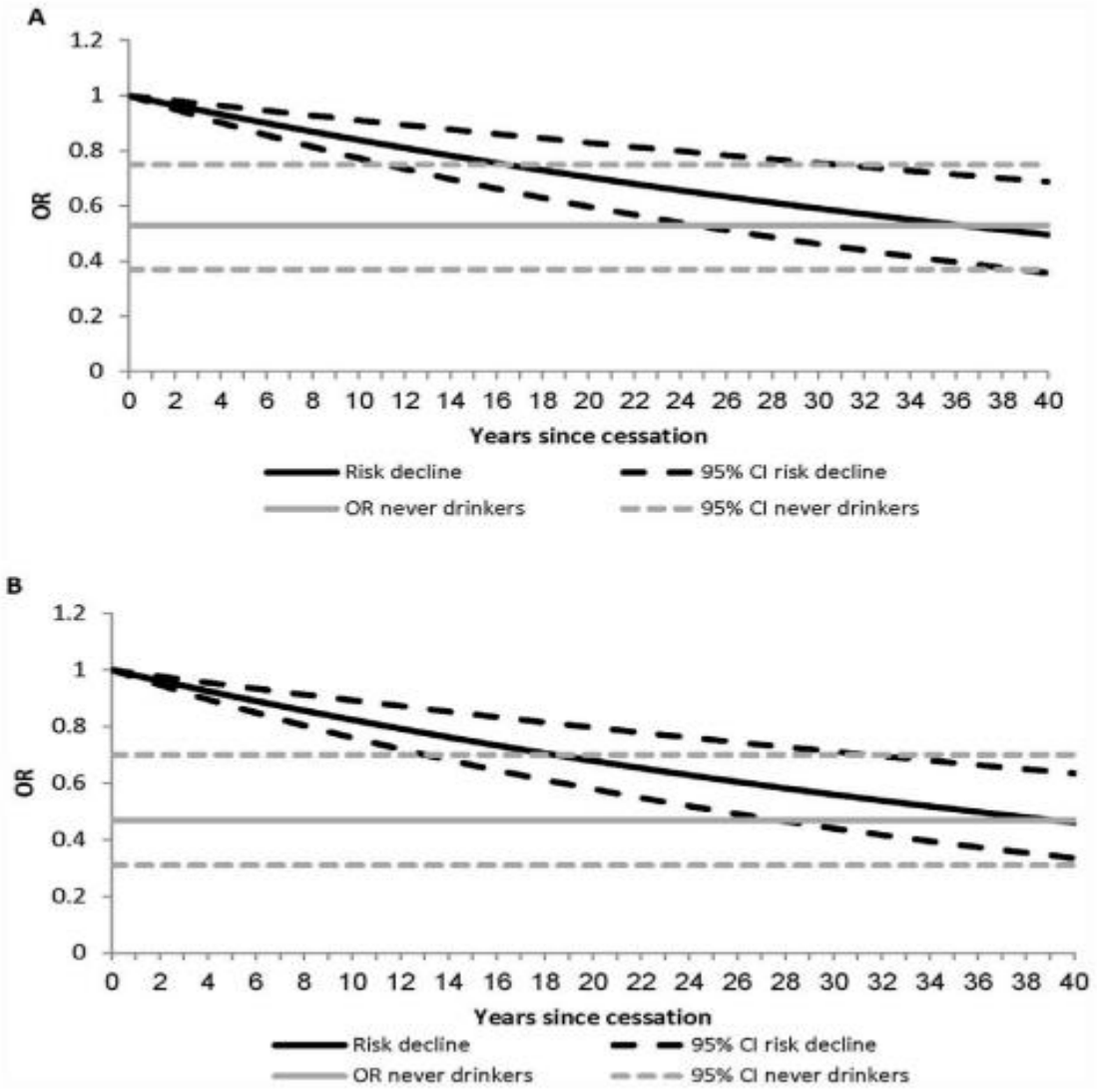


Figure 3 Estimated temporal characteristics of decline in risk of oesophageal cancer after drinking cessation; OR: odds ratio; CI: confidence interval

Jarl and Gerdtham, Addiction 2011



LARYNGEAL CANCER

PHARYNGEAL CANCER

Figure 4. Risk decline of laryngeal and pharyngeal cancer over forty years after drinking cessation. It should be noted that the risk is not expected to fall below that of never drinkers, even though the figures imply this.
doi:10.1371/journal.pone.0058158.g004

Kiadaliri AA et al, PLOS ONE 2013

FURTHERMORE

RISK OF RECURRENCE

RISK OF SECOND NEOPLASIA

INTERACTION WITH ORAL CHEMOTHERAPY AND SUPPORTIVE CARE MEDICATIONS

INCREASE THE RISK OF COMPLICATIONS

Lo Conte et al, J Clin Oncol 2018
Zhao et al, WMJ 2023

CONSUMO ALCOLICO DANNOSO

RIVEDERE PROGRAMMI DI PREVENZIONE SECONDARIA?

- **CAVITÀ ORALE**
- **ESOFAGO**
- **COLON-RETTO**
- **FEGATO**
- **MAMMELLA**

Società Italiana di Alcologia; Alcologia 2013; 17: 11-18

WHAT ARE THE STRATEGIES TO USE TO REDUCE THE CANCER BURDEN DUE TO ALCOHOL CONSUMPTION?

TAXATION (Kilian et al, Eur Addict Res 2023)

AWERENESS (Seidenberg et al, Cancer Epidemiol Biomarkers Prev 2023)

ALCOHOL USE DISORDER IDENTIFICATION TEST (AUDIT)
(Scafato et al, Eur Rev Med Pharmacol Sci 2020)

HEALTH EDUCATION (Balbinot et al, Minerva Ped 2018)

The use of expensive technologies instead of simple, sound and effective lifestyle interventions: a perpetual delusion

Silvia Carlos,[1,2] Jokin de Irala,[1,2,3] Matt Hanley,[1] Miguel Ángel Martínez-González[1,3]

Journal of Epidemiology Community Health, 2014; 68: 897-904

POSITION OF THE ITALIAN SOCIETY ON ALCOHOL

(Società Italiana di Alcologia –SIA)

The less alcohol you drink, the

lower your risk for cancer

An International Consensus for Medical Leadership on Alcohol

. . . . . Medical professionalism includes the responsability to speak out, to lead, and to voice advocacy. It is every clinician's responsability to address alcohol harm, both on a daily basis with individual patients and in the wider context of health harms and inequalities at the population level.

The voice of doctors is valued and trusted within societies, and therefore we call on all doctors to show effective leadership by holding ministries of health accountable for their lack of action in the face of such robust evidence.

We ask governments to act urgently and to champion evidence-based initiatives for the implementation of effective alcohol strategies at all levels to improve the health of populations worldwide.

Coltard C et al, Lancet 2011; vol 378: 1215


GRAZIE