EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Directorate F – Health and Food (Ispra)
Disease Prevention

European Commission Initiative on Colorectal Cancer (ECICC):

European guidelines on colorectal cancer prevention, screening and diagnosis

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Healthcare question: Should reducing alcohol consumption vs. not reducing alcohol consumption be used for primary prevention of colorectal cancer in adults at average risk? **Good practice statement:** The ECICC Working Group (WG) recommends minimising alcohol consumption for all individuals (ungraded good practice statement). Remark: The ECICC WG judged that prevention of colorectal cancer, and its recurrence, is amongst the health benefits of minimising alcohol consumption.		
Clear and actionable	Yes, the message is clear and actionable.	Yes
The message is necessary in regard to actual health care practice	The US National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines heavy drinking as follows [1]: For men, consuming more than 4 drinks on any day or more than 14 drinks per week. For women, consuming more than 3 drinks on any day or more than 7 drinks per week. The US 2015 Guidelines Advisory Committee considers moderate alcohol consumption as an average daily consumption of up to one drink per day for women and up to two drinks per day for men, with no more than three drinks in any single day for women and no more than four drinks in any single day for men. One drink is defined as 12 fluid ounces of regular beer, 5 fluid ounces of wine, or 1.5 fluid ounces of distilled spirits [2]. Several national and international institutions and regulatory bodies have addressed alcohol's effects on health [3]: European Code Against Cancer: "If you drink alcohol of any type, limit your intake. Not drinking alcohol is better for cancer prevention." European Society of Cardiology: "Moderate alcohol consumption [up to 20 g/day (2 units) for men and 10 g/day (1 unit) for women] is acceptable for those who drink alcoholic beverages, provided that triglyceride levels are not elevated. Nordic Nutrition Recommendations (several Nordic governmental bodies): "It is recommended to limit	Yes

	alcohol intake. Intake should not exceed 10g per day for women and 20g per day for men. Alcohol consumption should not exceed 5% of the energy intake in adults. Pregnant women, children and adolescents are recommended to abstain from alcohol. Lactating women are recommended to limit alcohol intake." UK Department of Health: "There is no level of regular drinking that can be considered as completely safe in relation to some cancers. People can reduce these risks by drinking less than the guidelines (no more than 14 units per week, evenly spread over 3 or more days and limiting the total amount on any occasion) or by not drinking at all." US Dietary Guidelines Advisory Committee: "If alcohol is consumed, in moderation and only by adults. Moderate (up to one drink -14g pure alcohol- per day for women, up to two drinks per day per men) alcohol consumption can be a component of a healthy eating pattern. The Dietary Guidelines do not recommend that individuals begin drinking or drink more frequently on the basis of potential health benefits." US National Institute on Alcohol Abuse and Alcoholism: "Low risk for developing alcohol use disorder (AUD): for women, no more than 3 drinks on any single day and no more than 7 drinks per week. For men, no more than 4 drinks on any single day and no more than 14 drinks per week." Without this message people may be unaware of the net desirable consequences of minimising alcohol consumption. In absolute terms, these net desirable consequences are larger if the message reaches the population level. This message is not always routinely given, particularly in the context of colorectal cancer screening.	
After consideration of all relevant outcomes and potential downstream consequences, implementing the good practice statement results in a large net positive consequences	1. Importance of the problem WHO: Global status report on alcohol and health 2018 [4] While less than half of the world's adults have consumed alcohol in the last 12 months, the global burden of disease caused by its harmful use is enormous, exceeding those caused by many other risk factors and diseases.	Yes

	Over 200 health conditions are linked to harmful alcohol use, ranging from liver diseases, road injuries and violence, to cancers, cardiovascular diseases, suicides, tuberculosis and HIV/AIDS. Although the highest levels of alcohol consumption are in Europe, Africa bears the heaviest burden of disease and injury attributed to alcohol. Institute for Health Metrics and Evaluation (IHME), the GBD study. Global results [5]. Alcohol use was the ninth-leading Level 2 risk factor globally for disability-adjusted life year (DALYs) and the leading risk factor among males aged 15–49 years. Alcohol consumption was responsible for 2.44 million (95%CI 2.14–2.78) deaths in 2019 [5]. In 2019, there were globally an estimated 494.7 thousand cancer deaths (95%CI 439.7 to 554.1) and 13.0 million cancer DALYs (95%CI 11.6 to 14.5) that were attributable to alcohol consumption. The alcohol-attributable DALYs were much higher in men than women [6] 2. Effects of the intervention Colorectal cancer A pooled analysis of eight cohort studies conducted in Europe and North America found an increased colorectal cancer risk (45% for colon and 49% for rectal cancers) with regular high alcohol intake (≥45 g/day), compared with non-drinkers, in men and women combined [7]. A systematic review of 27 cohort and 34 case–control studies presented results for at least three categories of alcohol intake and its relation to colorectal cancer risk. The RRs were 1.21 (95%CI 1.13–1.28) for moderate (2–3 drinks/day) and 1.52 (95%CI 1.27–1.81) for heavy (≥4 drinks/day) alcohol drinking. The dose–risk analysis estimated RRs of 1.07 (95%CI 1.04–1.10), 1.38 (95%CI 1.28–1.50), and 1.82 (95%CI 1.41–2.35) for 10, 50, and 100 g/day of alcohol, respectively [8]. Several meta-analyses, and quantitative overviews have consistently associated alcoholic beverages consumption with colorectal cancer risk.	

	Cancer in general As evaluated by the International Agency for Research on Cancer (IARC) Monographs, a causal relationship is established for consumption of alcoholic beverages and cancers of the oral cavity, pharynx, larynx, oesophagus, liver, colorectum and female breast, even at low and moderate alcohol intakes. The higher the amount of alcohol consumed, the higher the risk of developing cancer. In Europe, an estimated 10% (95% CI: 7%-13%) of all cancer cases in men and 3% (95% CI: 1%-5%) of all cancer cases in women are attributable to alcohol consumption [9]. Effect of alcohol consumption on general/ multiple health outcomes (WHO) Cardiovascular health: Heavy episodic pattern of drinking has been linked to injuries and risk of cardiovascular diseases (mainly ischaemic heart disease and ischaemic stroke) Neuropsychiatric disorders: Alcohol is a psychoactive substance with dependence-producing properties. Alcohol Use Disorders (AUDs) are the most important neuropsychiatric conditions caused by alcohol consumption. Damage to mental health includes episodes of depressive disorder secondary to heavy consumption of alcohol. Gastrointestinal and liver diseases: Liver cirrhosis and pancreatitis (both acute and chronic) are causally related to alcohol consumption. Higher levels of alcohol consumption create an exponential increase in risk. The impact of alcohol is so important that for both disease categories there are subcategories which are labelled as “alcoholic” or “alcohol-induced” in the ICD . The risk of developing liver cirrhosis increases exponentially with heavier drinking. If a person has developed liver cirrhosis, no matter whether this is due to alcohol consumption or to other factors, the risk of mortality from liver cirrhosis becomes quite pronounced even at relatively moderate levels of drinking.	

	Infectious diseases: Harmful use of alcohol weakens the immune system thus enabling development of pneumonia and tuberculosis. A strong association exists between alcohol consumption and HIV infection and sexually transmitted diseases. Alcohol consumption has a causal effect on reduced adherence to antiretroviral treatment by HIV/AIDS patients. Among HIV/AIDS patients who are not yet on antiretroviral therapy, there is a negative effect of alcohol consumption on the course of the disease. Reproductive and neonatal conditions: A high alcohol intake can affect the ability to conceive as well as bring about pregnancy complications and impaired fetal development, including low birth weight, small for gestational age and preterm birth. Fetal alcohol syndrome (FAS) and preterm birth complications: alcohol consumption by an expectant mother may cause these conditions that are detrimental to the health of a newborn infant. Unintentional and intentional injuries: Almost all categories of unintentional injuries are impacted by alcohol consumption. The effect is strongly linked to the alcohol concentration in the blood and the resulting effects on psychomotor abilities. Higher levels of alcohol consumption create an exponential increase in risk. The volume of alcohol consumed on a single occasion is important for many acute consequences of drinking such as alcohol poisoning, injury and violence. Alcohol consumption, especially heavy drinking, has been causally linked to suicide and violence. The suicide risk in patients with alcohol and other substance use disorders has been estimated to be six times as high as that in the general population. Women are also affected by interpersonal violence and risky sexual behaviour as a result of the drinking problems and drinking behaviour of male partners. <u>3. Variability and certainty in the importance of outcomes</u> There is low variability on how the target population value CRC incidence and mortality.	

	4. Resource requirements and cost-effectiveness According to the 2019 Global Burden of Disease study, almost 320 thousand deaths and almost 10 million Disability - Adjusted Life Years (DALYs) are estimated to be attributable to alcohol consumption in the EU Member States in 2019 [5]. Also in the EU Member States in 2019, almost 100 thousand cancer deaths are attributable to alcohol use alongside another 78,500 deaths from cirrhosis and chronic liver diseases. Over 17,000 estimated deaths by self-harm (suicide), approximately 1,000 estimated deaths from interpersonal violence, and more than 4,000 estimated deaths arising from transport injuries were attributed to alcohol consumption in 2019 [5]. Beyond health effects, drinking behaviour may have negative economic and social consequences both on the person drinking and on third parties, including loss of earnings, unemployment, family problems, violence, crime, stigma and barriers accessing healthcare. 5. Equity Economic inequities: Harms from a given amount and pattern of drinking are higher for poorer drinkers and their families than for richer drinkers in any given society. This greater "harm per litre" is a consistent finding for many different kinds of harms from drinking (such as liver cirrhosis; injuries from drinking, both to the drinker and to others around the drinker; and infectious diseases) [10]. The 2016 age-standardised burden of deaths was highest in lower-middle-income countries. The age-adjusted burden of alcohol-attributable DALYs was highest in low-income countries (1,978 DALYs per 100,000 people; 1,375 per 100,000 people in high-income countries). Also, the burden of alcohol-attributable DALYs being higher in these countries when compared to upper-middle-income and high-income countries [10]. Alcohol causes a disproportionate amount of harm among persons of lower socioeconomic status that can be explained, in part, by the effect of socioeconomic status on the volume, patterns and context in which alcohol is consumed, on access to quality health care and on the multiplicative effects on health of risk	

	factors (smoking, obesity and sedentary lifestyles) if they occur together [10]. Gender inequities: Men generally drink considerably more alcohol than women, both on heavier-drinking occasions and in terms of the volume of drinking; the gender difference is generally greater where there is greater gender inequality [10]. Despite this fact, women receive the consequences of alcohol consumption of their partners. Women are often subjected to sexual risks by their male sexual partner's alcohol use (unprotected sex, sex with multiple partners, transactional sex and coercive sex). Sexual violence, including physical violence towards women are related to male alcohol use [10]. 6. Acceptability From 2019 to 2020 a total of 132,124 people started treatment for drug and alcohol problems. in UK People in treatment for alcohol **alone** make up the second largest group (opiates remains the largest substance group), representing 28% of all adults in treatment. Alcohol is reported as a problem (alone or combined with other substances) in 59% of the people starting treatment [11]. A survey in a large sample of participants (N = 7,058) in the UK revealed that the acceptance of policies targeting alcohol was 55%. Labelling was the most acceptable policy. Public acceptability for nudges and taxes to improve population health was generally favourable [12]. 7. Feasibility In the UK, 59% of people successfully completed alcohol treatment in 2019/20 (Public Health England 2020. Adult substance misuse treatment statistics 2019 to 2019 report) **The panel judged there to be clearly more net desirable consequences from minimising alcohol intake because there are no apparent undesirable consequences.**	
Collecting and summarizing the evidence is a poor use of the guideline panel's limited time	The ECICC WG agreed that collecting and summarising the evidence would be a poor use of the panels' time.	Yes

and energy (opportunity cost in large)		
There is a well-documented clear and explicit rationale connecting the indirect evidence	• Alcohol consumption is a recognised risk factor of adenoma, colorectal cancer and its recurrence. • Alcohol consumption is a risk factor of many other types of malignant neoplasms, liver disease, increases vascular risk, has a deleterious effect on mental health and decreases quality of life. • Alcohol consumption is related with other risky behaviours causing accidents, including traffic accidents. • Minimising alcohol consumption would therefore reduce all these associated risks • Alcohol consumption is typically related with other unhealthy lifestyles (smoking, lack of physical activity, bad dietary patterns) which are also related to colorectal cancer risk. • Reduction of alcohol consumption messages are acceptable, feasible and cost-effective and have no anticipated adverse consequences.	Yes
Implementation considerations	As a means for implementation, the ECICC WG recommends counselling to minimise the alcohol intake, according to the ECICC Good Practice statement. A special focus should be made in the heavy drinker population as the benefit would be larger. Particular emphasis should be made in targeting the different age groups (i.e. strategies to reduce drinking initiation in adolescents and young adults). Support over time is crucial for the maintenance of changes. Implementation will require population level interventions and family and community level interventions involving multiple stakeholders including also legislative measures and taxation policies.	

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