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Alcohol 'intake' in Germany – which recommendations are sensible and indeed scientifically appropriate?

Commentary on the position paper of the German Nutrition Society (DGE)

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On 12 August 2024, the German Nutrition Society (DGE) published a position paper entitled '*Alkohol – Zufuhr in Deutschland, gesundheitliche sowie soziale Folgen und Ableitung von Handlungsempfehlungen*' ('*Alcohol - intake in Germany, health and social consequences and derivation of recommendations for action*' here). It comes with the clear recommendation that, according to the latest opinion of the DGE, people in Germany should ideally avoid alcoholic beverages altogether.

This instruction, presented as the ultimate health safety recommendation, is unambiguous. However, it does not sufficiently emphasise the fact that the position paper is based largely on uncertain and inconclusive research findings. Moreover, it references an extremely narrow and selective list of publications. Indeed, a document with 80 references in the bibliography can certainly claim the title 'evidence-based'. However, the current state of evidence is inadequately reflected in this position paper and the complexity, when it comes to health consequences that are associated with alcohol consumption, is not sufficiently accounted for (Professor Kenneth Mukamal and Eric B. Rimm nicely capture the complexity in an article published on 22nd August 2024).

Uncertain research findings of the cited evidence

While the position paper does not clearly distinguish between causation and correlation, which would be necessary from a scientific point of view, especially with regard to the numerous observational (cohort) studies cited, it mentions at least some data uncertainties and lacking evidence. Amongst others, the following is noted:

- '*There is a lack of meaningful data on the link between alcohol consumption and mental health (development of depression, anxiety and suicidal thoughts)*'.[1]
- *'Despite a lack of reliable data regarding the negative effects of alcohol consumption during breastfeeding, it is recommended that alcohol should be avoided during breastfeeding and especially during exclusive breastfeeding in the interests of preventive health protection for the mother and child'*.[2]

[1] "Für einen Zusammenhang zwischen Alkoholkonsum und psychischer Gesundheit (Entwicklung von Depressionen, Angstzuständen sowie Suizidgedanken) fehlen aussagekräftige Daten"

[2] „Trotz mangelnder belastbarer Daten hinsichtlich der negativen Wirkungen eines Alkoholkonsums während der Stillzeit wird im Sinne des präventiven Gesundheitsschutzes von Mutter und Kind dazu geraten, in der Stillzeit und insbesondere während des ausschließlichen Stillens auf Alkohol zu verzichten."

- '*Self-reporting of consumption can distort the data through misreporting, i.e. reporting a lower or higher quantity or frequency of consumption than actually consumed. In addition, people who take part in surveys on alcohol consumption generally drink less alcohol than those who do not'*.[3]
- *'[...] in some cases, no distinction is made between lifelong abstainers and former alcohol drinkers'*.[4]
- or '*However, it is not possible to determine a specific alcohol consumption limit for the development of individual diseases caused by alcohol consumption'*.[5]

The unambiguous recommendations by DGE are not only derived from the above-mentioned uncertainties as regards data and evidence, but rely heavily on findings of essentially three publications, which are inaccurately reproduced in the DGE position paper. This requires some elaboration.

Incomplete replications and selective choice of publications

Firstly, the DGE position paper refers to the so-called 'Global Burden of Disease (GBD) studies', in particular the most recent version published in 2022[i] . The DGE position paper lists regional GBD study findings for Central Europe, although Germany was counted as part of Western Europe in the study. More important than this sloppy error is the fact that the GBD studies are not all-cause mortality risk analyses but modelled (based on numerous assumptions) evaluations of 22 selected alcohol-associated diseases. Some alcohol-related diseases, such as kidney cancer where moderate alcohol consumption (up to three standard drinks per day or 30g/day) is associated with a lower risk of disease, are not considered in the GBD studies.[ii] The DGE position paper alludes to two reasons why all-cause mortality risk study findings appear to be not taken into account for the derived DGE recommendations. On the one hand, all-cause mortality risk studies '*partially [...] do not differentiate between lifelong abstainers and former alcohol drinkers [...]'* meaning that people who have stopped consuming alcoholic drinks due to health issues are incorrectly categorised as abstainers, thus making the alcohol-drinking population appear healthier (the so-called 'sick-quitter' issue). On the other hand, the authors of the position paper claim that lifelong abstainers cannot serve as a comparison group, as they differ fundamentally from alcohol drinkers in terms of lifestyle, diet, wealth, etc. and therefore - as is claimed - have a lower life expectancy compared to alcohol drinkers (the so-called 'abstainer bias'). Notice that the 'abstainer bias' persists in in all GBD studies as well as in epidemiological studies that attempt to determine the relationship between alcohol consumption and cancer risks. However, the 'abstainer bias' assumption appears to be weakly supported empirically and therefore seem to remain of limited relevance (see characteristics data of abstainers and the drinking population in Wood et al, 2018).

[3] „Durch Selbstangabe des Konsums kann es zu einer Verzerrung der Daten durch Misreporting, also der Angabe einer geringeren oder höheren als der tatsächlich konsumierten Menge oder der Konsumhäufigkeiten, kommen. Darüber hinaus trinken Personen, die an Befragungen zum Alkoholkonsum teilnehmen, in der Regel weniger Alkohol als Personen, die nicht teilnehmen."

[4] „[...] teilweise wird dabei nicht zwischen lebenslangen Abstinenzler*innen und ehemaligen Alkoholtrinkenden unterschieden."

[5] „Es ist allerdings nicht möglich, einen konkreten Alkoholkonsumgrenzwert für die Entstehung einzelner Krankheiten durch Alkoholkonsum zu ermitteln."

Strikingly, the DGE position paper does refers to one all-cause mortality risk study (Zhao et al, 2023), which accounted for both possible errors mentioned above, the 'sick quitter' and 'abstainer bias'.[iii] The authors of this all-cause mortality risk study find that the consumption of more than 45g/day (around 4.5 standard drinks) over a lifetime is associated with an increased mortality risk whereas the consumption up to 45g/day is not associated with an increased mortality risk. Interestingly, the consumption of 24g/day (around 2.5 standard drinks) appears to be associated with the lowest all-cause mortality risk, but this finding is just not statistically significant. It remains unclear why the huge study (almost 600.000 participants) by Wood et al (2018)[iv], which also accounted for the two possible errors mentioned above was neither considered for inclusion by Zhao et al (2023), nor finds its way into the DGE position paper. Wood et al (2018) conclude that the consumption of up to 100g/week (around 10 standard drinks) in high income countries, such as Germany, is associated with the lowest all-cause mortality risk in the entire population. Such findings are consistent with numerous other all-cause mortality risk studies over the last decades that controlled for 'sick-quitters'.[v] Also Zhao et al (2023) findings appear to be coherent with the body of evidence because virtually all studies conclude that the consumption of more than 45g/day is associated with an increased all-cause mortality risk.

Finally, the DGE position paper focuses on a publication by the CCSA (The Canadian Centre on Substance Use and Addiction).[vi] Here, a research team around Tim Stockwell was heavily involved that also generated the Zhao et al (2023) study. Based on a mathematical model, CCSA derived drinking recommendations for Canadians, though the official Canadian drinking guidelines have not been replaced yet. Amongst others, the official Canadian drinking guidelines state that women should not consume more than 2 Canadian standard drinks per day (28g/day in Canada) and men should not consume more than 3 Canadian standard drinks per day (42g/day in Canada) (see here). Presumably the CCSA modeled drinking recommendations have not replaced official Canadian drinking guidelines, because it is riddled with scientific errors, particularly, there is a lack of transparency regarding modelling assumptions and codes, the evidence considered is highly selective (consistent disregard of evidence which associates reduced disease risks with light-to-moderate drinking), incorrect replications of previously published studies such as Bagnardi et al (2015), the confusion of 'high blood pressure' with cardiovascular disease, etc. Even if the CCSA model were correct, the absolute and relative risk change when consuming so-called 'low-risk' drinking levels are indeed neglectable small compared to everyday activities that people voluntary do.[vii]

Politically motivated background & health captured in terms of physical health alone

It is not entirely surprising that researchers, such as Tim Stockwell, appear to be working scientifically unsound and, perhaps, are driven too much by ideology or 'goodwill'. In 2017, for instance, as part of a 'special lunchtime session' entitled '*Walking the advocacy tightrope: What role can researchers play in the alcohol policy process?*' at the Kettil Bruun Society (KBS) symposium in Sheffield (see here), Stockwell stated the following: '*[…] think of research that […] motivates and sustains policy makers […] just monitoring and surveillance data about harm and things like alcohol causes cancer […]* ***putting data out there that creates a climate of opinion so that we have an appropriate level of concern***' (emphasis added). Or: '*[…] what are the main challenges for research to inform policy decisions […] first, we need to grasp the questions that*

policy makers want to know and I think the Sheffield group had been fantastic in doing that [...] ***what do you want to know and we model it, there is your answer [...] they [policy makers] love that***' (emphasis added).

The authors of the DGE position paper seem to follow a similar 'policy-based evidence' approach and appear to be intellectually close to the neo-temperance movements, which – fueled by the health-oriented 'zeitgeist' and the longing for a risk-free life – has received a strong boost in recent years. Far-reaching fundamental philosophical questions of life, including 'Genuss' (enjoyment), social connections, life satisfaction and not least the question of what it is worth living for (see Professor Pfaller Robert, 2012: *Wofür es sich zu Leben lohnt: Elemente materialistischer Philosophie*, Fischer Taschenbuch Verlag) are put aside. Essential elements of a holistically captured notion of health and well-being, including nutrition (just think of a glass of Greek tsipouro with starters on a warm evening with friends in a taverna by the sea), are absent in the DGE position paper, even though the World Health Organisation defines health holistically: '*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*' (see here). Instead, the dictate of exclusively physical health applies, without taking into account the fact that the consumption of alcoholic beverages can increase life satisfaction and general well-being and thus also has positive health effects. As stated above, there is also a lot of evidence demonstrating that even physical health benefits are associated with light-to-moderate drinking, but virtually nobody consumes alcoholic beverages to prolong life expectancy. Even the word 'consumption' appears to be too problematic for the authors of the DGE position paper who replaced it with the physical term '*intake of alcoholic beverages*' - as if alcoholic beverages were 'ingested' like cough syrup. The idea that the main reasons for the consumption of alcoholic beverages by the majority of the population could be 'Genuss' (enjoyment), taste, sociability and a positive attitude to life is thus ignored.

Indeed, the postulate of a risk-free life, as propagated by the DGE, would affect large areas of our everyday lives, including sports activities, such as bungee jumping, skiing or climbing as well as the use of various transportation means, such as bicycles, cars, trains or airplanes: all of which poses a certain level of risk. This also applies to foodstuff and drinks. Consequently, the DGE, which sees itself as the scientific organisation responsible for nutrition in Germany, would have to write position papers and recommendations on an ongoing basis. Whether such a 'life-negating' approach is scientifically necessary, sensible or even desirable for our society (and the majority of individuals) can or should be questioned.

Concluding remarks

Is the DGE, which receives around three quarters of its funding from the federal and state governments, now also trying to convey an '*appropriate level of concern*' (see Stockwell), fear and panic to German consumers and political decision-makers?

It is clear that a general recommendation to abstain from alcoholic beverages - even with the exclusive focus on physical health chosen in the paper - cannot be derived either from the evidence discussed in the DGE position paper itself or from the broader scientific evidence base. Taken the entirety of the available evidence into account, it seems sensible and advisable to inform the population that consuming more than 4 standard drinks per day (40g) is associated with a higher risk of illness and death. However, it is important to bear in mind that people who consistently consume more than 4 standard drinks per day are most likely aware that such behaviour is not conducive to good health.

Notice also that, according to the DGE position paper, the proportion of drinkers who consume alcoholic beverages in moderation appear to be rather high in Germany: 89% of women consume max. 1 standard drink per day (91.4% of women between 30-44 years of age), 84% of men consume max. 2 standard drinks per day.[viii] The proportion of drinkers consuming health harming alcohol levels (more than 45g/day) in Germany can be expected to be rather low.

It appears that the DGE position paper does not aim to provide information about the complex alcohol risk associations with various multifactorial diseases and different alcohol consumption patterns - even though the DGE position paper stated at the beginning that the '*relationship between alcohol consumption and health [...] is complex*'. Instead, it attempts to persuade and motivate people to abstain completely from alcoholic beverages with oversimplified messages, such as '*there is no amount of alcohol that could be conductive to good health and that there is no safe level of consumption*'. However, as elaborated in the text above, such claims are neither supported by the available evidence when health is narrowly defined in terms of physical health alone, nor when health comprises also mental health and social well-being (as defined by WHO). Certainly, fueling fear, anxiety, discomfort, and a guilty conscience does not improve health.

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[i] Global burden of disease alcohol collaborators (2022): Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020. In: Lancet, 400(10347), 185-235.

[ii] The GBD study has already been criticised several times, see for example here.

[iii] Zhao J, Stockwell T, Naimi T, Churchill S, Clay J, Sherk A. Association Between Daily Alcohol Intake and Risk of All-Cause Mortality: A Systematic Review and Meta-analyses. JAMA Netw Open. 2023;6(3):e236185. doi:10.1001/jamanetworkopen.2023.6185

[iv] Wood AM, Kaptoge S, Butterworth AS, Willeit P, Warnakula S, Bolton T, Paige E, Paul DS, Sweeting M, Burgess S, Bell S, Astle W, Stevens D, Koulman A, Selmer RM, Verschuren WMM, Sato S, Njølstad I, Woodward M, Salomaa V, Nordestgaard BG, Yeap BB, Fletcher A, Melander O, Kuller LH, Balkau B, Marmot M, Koenig W, Casiglia E, Cooper C, Arndt V, Franco OH, Wennberg P, Gallacher J, de la Cámara AG, Völzke H, Dahm CC, Dale CE, Bergmann MM, Crespo CJ, van der Schouw YT, Kaaks R, Simons LA, Lagiou P, Schoufour JD, Boer JMA, Key TJ, Rodriguez B, Moreno-Iribas C, Davidson KW, Taylor JO, Sacerdote C, Wallace RB, Quiros JR, Tumino R, Blazer DG 2nd, Linneberg A, Daimon M, Panico S, Howard B, Skeie G, Strandberg T, Weiderpass E, Nietert PJ, Psaty BM, Kromhout D, Salamanca-Fernandez E, Kiechl S, Krumholz HM, Grioni S, Palli D, Huerta JM, Price J, Sundström J, Arriola L, Arima H, Travis RC, Panagiotakos DB, Karakatsani A, Trichopoulou A, Kühn T, Grobbee DE, Barrett-Connor E, van Schoor N, Boeing H, Overvad K, Kauhanen J,

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[v] Bagnardi et al (2008) Does drinking pattern modify the effect of alcohol on the risk of coronary heart disease? Evidence from a meta-analysis, Journal of Epidemiology and Community Health, 62(7): 615-619.

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[vii] Sir Professor David Spiegelhalter describes the CCSA's *'low-risk'* recommendations as '*completely unnecessary*' and '*tackling a non-problem*', which could undermine the credibility of public health recommendations (see here).

[viii] 'In der Studie Gesundheit in Deutschland aktuell (GEDA 2019/2020-EHIS) wurde der Anteil von Personen mit risikoarmem Alkoholkonsum in der deutschen Bevölkerung nach Altersgruppen getrennt ausgewertet. Als solche gelten Personen, die angaben, keinen Alkohol zu trinken oder in einer Menge unterhalb des Grenzwerts für einen riskanten Konsum (Frauen: ≤ 10 g/Tag; Männer: ≤ 20 g/Tag). Dies galt für insgesamt 89 % der Frauen und 84 % der Männer. Frauen der Altersgruppe 30–44 Jahre wiesen mit 91,4 % den höchsten Anteil an risikoarmem Alkoholkonsum auf, Männer zwischen 45 und 64 Jahren mit 82 % den niedrigsten'.

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