

# Prevention of Alcohol-Related Cancers: Book Review of the IARC Handbooks of Cancer Prevention Volumes 20A and 20B

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*Prevenção do Câncer Relacionado ao Álcool: Resenha dos Manuais da Iarc sobre Prevenção de Câncer Volumes 20A e 20B*

Prevención del Cáncer Relacionado con el Alcohol: Reseña de los Manuales de la Iarc sobre Prevención del Cáncer Volúmenes 20A y 20B

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Cancer is a chronic, multi-factorial non-communicable disease that can, in many cases, be avoided by adopting healthy habits and lifestyles<sup>1</sup>. The International Agency for Research on Cancer (IARC) has been providing, since 1995, comprehensive reviews and evaluations on the robustness of scientific evidence related to cancer prevention strategies through the IARC Handbooks of Cancer Prevention series. The IARC Handbooks present a synthesis of epidemiological and experimental evidence to support effective policies for cancer prevention aimed at decision-making in public healthcare. It is, thus, highly important to disclose this material.

Between 2022 and 2025, two multidisciplinary Working Groups composed of international specialists developed a two-part volume to review the evidence that interventions in alcohol policies can reduce the incidence of alcohol-related cancer. Volume 20A – Reduction or Cessation of Alcoholic Beverage Consumption – focuses on epidemiological and mechanistic evidence that relates reduction or cessation of alcohol consumption to the risk of cancer<sup>2,3</sup>. Volume 20B – Alcohol Policies – addresses evidence related to alcohol control policies at the population level to reduce consumption<sup>4,5</sup>.

In 2019, alcohol consumption in the Americas reached an estimated 7.5 liters *per capita*<sup>6</sup>. In Brazil, heavy drinking (defined as  $\geq 4$  doses for women and  $\geq 5$  for men on a single occasion over the last 30 days) increased from 15.7% in 2006 to 20.8% in 2023<sup>7-9</sup>. In Latin America and the Caribbean, around 39,300 new cancer cases in 2020 were attributed to alcohol consumption<sup>10</sup>, demonstrating the magnitude of this risk factor for public health. In this context, Volumes 20A and 20B of the IARC Handbooks are particularly relevant to researchers, clinicians, and policy makers, because they present an integrated approach to evaluate evidence on the effects of changes in alcohol consumption on the risk of cancer and on actions

at the level of policies targeted at alcohol consumption reduction or cessation. It must be noted that the World Health Organization (WHO) has already established that no amount of alcohol is considered safe<sup>11</sup>.

## VOLUME 20A: REDUCTION OR CESSATION OF ALCOHOLIC BEVERAGE CONSUMPTION

Volume 20A is organized in five chapters, encompassing the characterization of alcoholic beverage consumption and the proportion of cancer cases that can be attributed to this consumption, the epidemiological and mechanistic evidence on the reduction or cessation of alcohol consumption, and the risk of cancer related to alcohol, in addition to evidence evaluation<sup>2,3</sup>.

Chapter 1 defines alcoholic beverages, their toxic and nutritional aspects. It also presents alcohol consumption monitoring in different countries, divided by WHO Region and globally. Individual factors, such as age, health status, smoking, social roles, religion, and accessibility, as well as community factors, such as availability, were identified as determinants of reduction or cessation.

Chapter 2 discusses core methodological considerations in the evaluation of evidence and presents data on the associations between reduction, cessation, and duration of alcoholic beverage consumption, and risk of cancer. The set of evidence is sufficient to conclude that reduction or cessation of alcohol consumption leads to a decrease of oral cavity and esophagus cancers, but is limited to proving the same for larynx, colorectal, and female breast cancers, and is inappropriate for drawing the same conclusions for pharynx and liver cancers.

In Chapter 3, the Working Group analyzed the mechanistic data on carcinogenesis related to alcohol and the reversion potential of these mechanisms after cessation of alcohol consumption. They concluded

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that cessation of alcohol consumption reduces three carcinogenic mechanisms associated with alcohol consumption: elimination of acetaldehyde in the upper aerodigestive tract and colon; reverted increase of intestinal permeability, and microbial translocation; and reduction of DNA damage.

Chapter 4 complements the previous chapters by presenting a summary of each one. Finally, Chapter 5 provides the evaluations, which consist of a concise interpretation of the evidence described in the previous chapters.

## VOLUME 20B: ALCOHOL POLICIES

This volume examines, throughout nine chapters, the effects of interventions and public policies related to alcohol on the consumption of alcoholic beverages<sup>4,5</sup>.

Chapter 1 presents an overview of the WHO's initiatives targeted at reducing damages associated with alcohol consumption. It also defines "alcohol policies", provides the justifications for the areas of alcohol control policies at the population level assessed in the Handbook, and makes important methodological considerations.

Chapters 2, 3, 4, and 5 review the evidence on intervention policies for alcohol control at the population level that were evaluated<sup>12</sup>: taxation and pricing policies; policies to limit physical availability; alcoholic beverage marketing bans; and coordinated and multiple alcohol policy interventions.

Based on the evidence reviewed in Chapter 2, the Working Group concluded that there is sufficient evidence that increases in special taxes on alcoholic beverages, which result in elevated prices, lead to reduced intake of these beverages. In addition, there is sufficient evidence that fixing minimum prices also reduces alcoholic beverage consumption. However, the Working Group identified inappropriate evidence that the prohibition of discounts on alcoholic beverages reduces consumption.

From the evidence reviewed in Chapter 3, on the restrictions to availability of alcoholic beverages, the Working Group concluded that there is sufficient evidence that restrictions to the density of alcohol selling places and to days or times of sale, the increase in the legal drinking age for purchase or consumption, as well as complete bans of alcohol sale, lead to reduced consumption of alcoholic beverages.

In Chapter 4, the Working Group defines alcoholic beverage marketing, its types, scope, and economic role, and reviews the evidence on the effects of alcohol marketing bans on consumption. Generally, sufficient evidence was found that a strict marketing ban on alcoholic beverages reduces consumption.

Considering the evidence reviewed in Chapter 5, the Working Group concluded that there is sufficient evidence that governmental monopolies and other coordinated interventions of alcohol policies lead to reduced consumption of alcoholic beverages.

Chapter 6 summarized the evidence on the effects of strategies and interventions based on healthcare services, including screening and brief interventions, as well as long-term psychosocial interventions, with or without drug therapy, on the consumption of alcoholic beverages.

Similar to Volume 20A, Chapter 7 complements the previous chapters by summarizing each one. Chapter 8 provides the evaluations of the Working Group.

Finally, in Chapter 9, the Working Group discusses several considerations from their evaluations. Through a general synthesis of Volumes 20A and 20B of the IARC Handbooks, the reader is reminded that, "Consistent with the framework described in the Preamble to the IARC Handbooks for Primary Prevention, the evaluation of alcohol policy interventions in relation to cancer incidence proceeded in a two-step process..." and that, based on the Working Group's conclusions in both volumes, "... it is reasonable to infer that alcohol policy interventions could lead to a reduction in cancer incidence".

Volumes 20A and 20B of the IARC Handbooks on Cancer Prevention represent, together, a significant contribution to worldwide public health and cancer prevention. In addition to their scientific value, Volumes 20A and 20B reaffirm the principle that effective cancer prevention requires multi-sectoral collaboration, articulating health, public policies, education, and community engagement.

## CONCLUSION

In Brazil, alcohol consumption remains elevated. The evidence compiled by IARC provide valuable guidance to integrating alcohol consumption prevention into the national health strategies. Incorporating counseling on alcohol into primary healthcare, implementing taxation policies and marketing regulations, as well as strengthening community education, are viable measures aligned with IARC's findings.

The IARC Handbooks on Cancer Prevention are essential references for researchers, clinicians, and policy makers committed to reducing the global burden of cancer through evidence-based alcohol control.

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## CONTRIBUTIONS

All the authors have substantially contributed to the study design and planning, data acquisition, analysis, interpretation, wording, and critical review. They approved the final version for publication.

## DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interest to declare.

## DATA AVAILABILITY STATEMENT

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