

# **Risk Factors in the Region of the Americas: the sources of the burden**

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## **1. Introduction**

Four totally modifiable risk factors underlie the occurrence of more than two-thirds of all new cases of Noncommunicable Diseases (NCDs) throughout the world: unhealthy diet (including ultra-processed food products high in salt, saturated fats, trans-fats, and sugars) tobacco use, harmful use of alcohol, and physical inactivity.<sup>1</sup> In turn these four risk factors lead to key metabolic/physiological changes that contribute to the development of NCDs: raised blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia.<sup>2</sup>

Economic and social conditions under which people live impact on the increase or decrease of these risk factors; these include government policies, urban planning and design, trade, fiscal and market policies. There are also stages of life, gender roles, race and culture that influence inequities in vulnerability and exposure to certain risk factors are most evident.

In this chapter we will address the specific characteristics of each risk factor in the region, discuss their conditions, and provide a perspective on the needed areas for their control to prevent NCDs.

## **2. Situation of RF in the Region of the Americas:**

### **2.1- Tobacco**

Tobacco use and exposure to second hand smoke continue to be among the main specific causes of preventable mortality, morbidity and disability throughout the world and are responsible for 12% of all deaths of adults over 30 years of age. In the Region of the Americas, this proportion is even higher than the world average, accounting for 16% of adult deaths.<sup>3</sup>

Tobacco consumption and exposure to second hand smoke kill almost 6 million people annually

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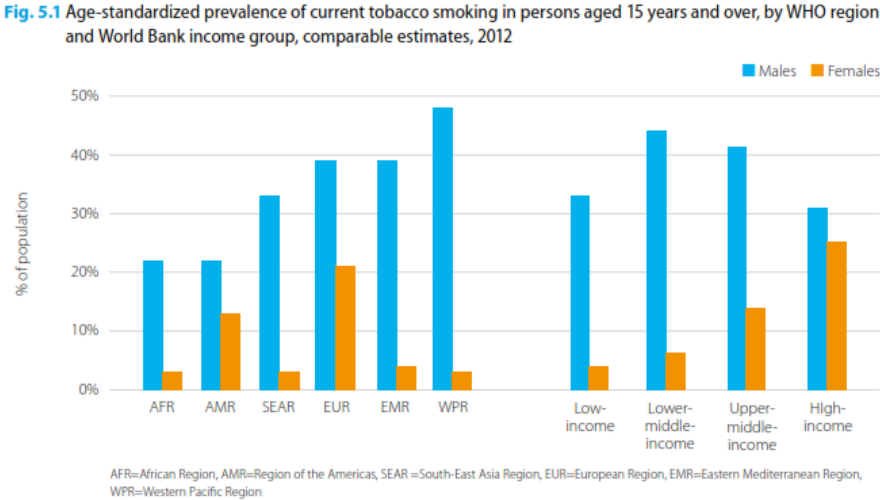
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in the world and about 1 million annually in the Americas. If current trends continue, by 2030 tobacco will kill more than 8 million people around the world, every year. Of these deaths, 80% will occur in low-and medium-income countries.<sup>4 5</sup>

Eighty two percent of the world’s 1.1 billion smokers live in low and middle income level countries. Tobacco use disproportionately affects males and lower socioeconomic groups within countries at all income levels, and is increasingly prevalent in poorer parts of the world (Figure 1). Poor households in low –income countries carry a particular heavy burden from tobacco use, with significant health, educational housing and economic opportunity costs. Negative social gradients in tobacco use translate into substantial negative gradients in relation to premature death and disease.<sup>6</sup>

**Figure 1 – Age-standardized prevalence of current tobacco smoking in persons aged 15 years old and over, by WHO Region and World Bank income group, comparable estimates, 2012**



Source: WHO Global Status Report on NCDs 2014

The Region of the Americas has a smoking rate of 22% and shows the smallest difference in prevalence rates between adult women and men, with a rising trend in tobacco use among women<sup>7</sup>. The age-standardized prevalence of smoking among adults varies widely between countries, from approximately 40% in Chile to 7% in Panamá and Barbados.<sup>8</sup>

A systematic review of the link between tobacco and poverty done by the World Health Organization (WHO) in 2011 revealed a robust trend for higher prevalence of any tobacco consumption in the most economically deprived stratum. An inverse relationship between socioeconomic status and illness and mortality was also evidenced, with an association between tobacco related illnesses and low

income level, specially for all-cause mortality, lung cancer, coronary disease and low birth weight for gestational age.<sup>9</sup>

## **2.2 - Insufficient physical activity**

Insufficient physical activity is one of the ten leading risk factors for global mortality, morbidity and quality of life, causing some 3.2 million deaths each year. In 2010, it caused 69.3 million DALYs – 2.8% of the total- globally.<sup>10</sup>

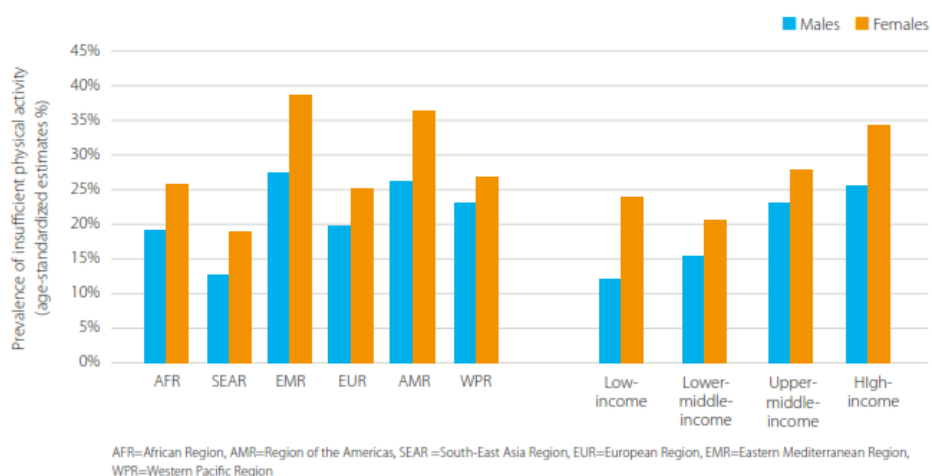
Adults who are insufficiently physically active have a 20 – 30% increased risk of all-cause mortality compared to those who do at least 150 minutes of moderate-intensity physical activity per week, or equivalent as recommended by WHO. The Region of the Americas is one of the Regions with the highest levels of insufficient physical activity among adults<sup>11</sup>.

Physical activity has been customarily measured as related to the practice of sport or structured exercise. Even though, countries with high levels of sport participation rarely reach levels above 30% of people considered “physically active.” However, in recent years, after the development of the International Physical Activity Questionnaire<sup>12</sup> (IPAQ), it has become possible to ascertain the contribution to physical activity in several other domains such as domestic, work and increasing attention to “active transportation.” The latter is relevant as walking –the most popular physical activity worldwide—can be considerably improved provided an enabling and friendly urban environment that takes into account, well designed side-walks, more open spaces for people, secure streets, and enforcing car speed limits<sup>13</sup>.

The prevalence of insufficient physical activity rises with country income. High-income countries have more than double the prevalence compared to low-income countries, for both men and women (Figure 2). These data may be related to higher levels of activity related to work and transportation in the low- and lower- middle-income countries<sup>14</sup>. In the Region of the Americas 30% to 60% of the population do not achieve even the minimum level of recommended physical activity<sup>15</sup>.

**Figure 2 - Age-standardized prevalence of insufficient physical activity in persons aged 18 years old and over, by WHO Region and World Bank income group, comparable estimates, 2010**

**Figure 3.3** Age-standardized prevalence of insufficient physical activity in adults aged 18 years and over, by WHO region and World Bank income group, men and women, comparable estimates, 2010



Source: WHO Global Status Report on NCDs 2014

### 2.3 - Unhealthy diet, overweight and obesity

Economic development is normally accompanied by improvements in a country's food supply improving the overall nutritional status of the country's population; but it also brings qualitative changes in the production, processing, distribution and marketing of food. There is evidence for a trend of increasingly availability in Latin America of calories, fat and animal products, with lower increases in vegetable products<sup>16</sup>.

The prevalence of obesity and overweight in the Americas is the highest among all five WHO regions<sup>17</sup>. Over 60% of adults of both sexes are overweight and 25% are obese. The countries most seriously impacted by this epidemic of overweight, are USA, Mexico and Chile, where 7 of every 10 adults carry excess body-weight and bear its ill-health consequences. Among school-age children and adolescents overweight prevalence rates are steadily surging now reaching on average 1 in 4 children<sup>18</sup>.

The marketing and management services company Nielsen found in a global survey that in the Americas, 50-60% of respondents who consumed ultra-processed snacks during the last month, did so as meal replacement, suggesting a displacement of traditional diets and even cooking at home. Since this phenomenon was found quite similar across continents Nielsen entitled their 2014 Global Report "Snack Attack"<sup>19</sup>.

Scientific knowledge on obesity today is in fact quite robust. This is particularly true in connection to the influence of a dietary pattern characterized by routine consumption of energy-high

and nutrient-poor foods, or ultra-processed foods, which is clearly and consistently linked to the development of obesity and other NCDs<sup>20 21</sup>. From a policy perspective, the overall evidence supports the need to protect and promote the consumption of whole and minimally processed foods, which are the mainstay of traditional cuisines, widely popular and celebrated in the Americas. This is a worth preserving cultural and social value not only because of its inherent health benefits but also because of its favorable economic, social and environmental impacts<sup>22</sup>.

In the Americas, whole or minimally processed foods are being displaced and replaced by ultra-processed products (UPP), commonly known as junk food. The market of snacks and sodas in Latin America in the last decade grew at a pace 15 times greater than the North America one. Just in 2013 the Latin American market of sodas topped that of North American by a USD 6 billion margin, reaching total sales of USD 80 billion<sup>23</sup>.

UPPs are rapidly becoming the main source of calories in several countries in the Americas. Over a two-decade period in Brazil (1987 to 2008) UPPs increased its contribution to families' energy intake, jumping from 19 to 32%<sup>24</sup>. In Chile, over the same period of time as Brazil, the contribution of UPP to energy went from 42% to 57%<sup>25</sup>. In Mexico, products with high content of added sugars or saturated fat accounted for about 25% of total energy intake in the population in 2014<sup>26</sup>. High-income countries in the Region as Canada has 55% of their family average energy consumption coming from UPPs.

It should not surprise that the aforementioned changes are significantly associated to important increases in the population average Body Mass Index (BMI) and their obesity rates as well. A recent study on obesity and UPPs consumption in several Latin American countries found that increases in sales of ultra-processed products are strongly, positively and significantly associated to changes in BMI after adjustment for population size, urban population, and national income. This study found that each 20-unit increase in annual sales per capita of ultra-processed products was associated with an increase of 0.28 in BMI (kg/m<sup>2</sup>)<sup>27</sup>.

## **2.4 - Harmful use of alcohol**

Harmful use of alcohol increases the risk of developing NCDs, reproductive, mental and behavioral disorders, including alcohol dependence, as well as unintentional and intentional injuries, including those due to road traffic accidents and violence<sup>28</sup>.

In 2012 it was estimated that 3.3 million deaths, or 5.9% of all deaths worldwide, were

attributable to alcohol consumption. More than half of these deaths occurred as a result of NCDs. An estimated 5.1% of the global burden of disease – as measured in disability-adjusted life-years (DALYs) is attributed to alcohol consumption<sup>29</sup>.

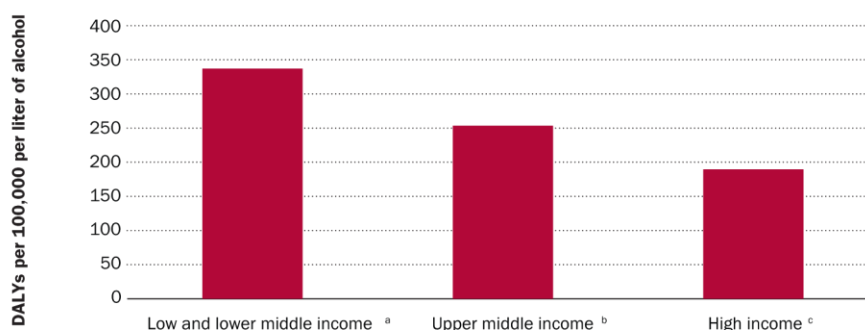
In the Americas in 2012, over 330,000 deaths were attributed to alcohol, with 59% of alcohol deaths coming from NCDs such as liver cirrhosis, cancers, and strokes. Harmful use of alcohol is also the leading risk factor for the burden of disease in the Region, with 63% of DALYs related to NCDs.<sup>30</sup>

At about 8.4 liters, the average per capita consumption of pure alcohol in the Region of the Americas is 30% higher than the global average.<sup>31</sup> The pattern of drinking is, in general, of heavy episodic drinking. Men drink more often and in higher quantities on average and with a higher frequency of episodic heavy drinking than do women in almost all countries in the Region, and young people drink more than do older people.

Economic development is positively associated with alcohol consumption, as people have more access to alcoholic beverages and more income to spend on them<sup>32</sup>. However how it translates into disease is not straightforward. For a few conditions (particularly ischemic heart disease and diabetes) among certain age groups, a small amount of alcohol consumption without episodes of excessive drinking, can have beneficial effects on the course of those conditions and at an aggregate level, reduce mortality. However, any amount of alcohol consumption increases the risk of several forms of cancer; there is no threshold for hypertension either. Overall, the health effects of alcohol consumption in every society are negative, as any positive effects are greatly outweighed by the negative outcomes<sup>33</sup>. There is no evidence that drinking small amounts of alcohol starting early (young adulthood) would prevent non communicable diseases in the future, while there is substantial evidence that early initiation into drinking increases the risk of development of alcohol use disorders in the future as well as the risk of heavy episodic drinking among youth, which in turn are a significant risk for acute injuries and early death<sup>34</sup>. Figure 3 compares the burden attributed to alcohol per liter of per capita consumption in 2012 by country income level, in the Americas, illustrating the role of alcohol on inequities.

**Figure 3 – Burden of death and disability attributed to alcohol per liter of alcohol consumed per capita, by country income level. Region of the Americas, 2012.**

**FIGURE 16.** Burden of death and disability attributed to alcohol per liter of alcohol consumed per capita, by country income level, Region of the Americas, 2012.



<sup>a</sup> Low and lower middle-income countries: BLZ, BOL, ELS, GUT, GUY, HAI, HON, NIC, PAR.

<sup>b</sup> Upper middle-income countries: ANI, ARG, BRA, CHI, COL, COR, CUB, DOM, DOR, ECU, GRA, JAM, MEX, PAN, PER, SAL, SKN, SUR, SVG, URU, VEN.

<sup>c</sup> High-income countries: BAH, BAR, CAN, TRT, USA.

**Source:** Centre for Addiction and Mental Health's World Health Organization/Pan American Health Organization (WHO/PAHO) Collaborating Centre in Addiction and Mental Health, 2014.

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At the same time, for the same level of per capita consumption, marginalized groups and countries with lower levels of socio-economic development suffer more relative harm from alcohol, possibly due to lack of access to health services, education and public safety<sup>35</sup>.

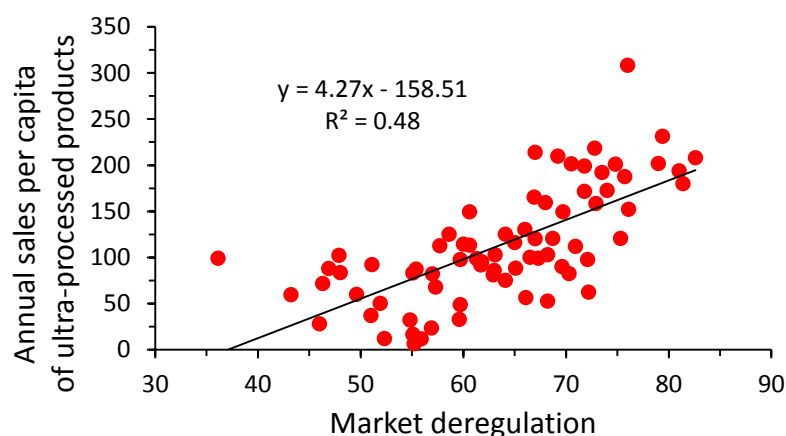
### 3. Discussion

The economic and social conditions under which people live impact on the increase or decrease of these risk factors. They are "societal risk conditions," rather than individual factors. Different government policies (or the lack of them) can either improve or worsen health and health equity. For example urban planning with low affordable housing, unsafe un-walkable sidewalks, unaffordable public transportation and lack of amenities will not facilitate physical activity. In the same line the encouragement of unregulated production, trade and consumption, may result in the enhanced promotion of goods high in fats and sugars, alcohol and tobacco doing little to stimulate healthy lifestyles. Good public policy can provide widespread health benefits immediately and in the future.<sup>36</sup>

Three of the main risk factors for NCDs are closely influenced by market practices. There are points of tension between public health and trade. For example, the general benefits of liberal trade

policies, such as greater competition (implying usually more marketing) and lower prices can generate negative health consequences<sup>37</sup>. Studies have shown that trade liberalization may stimulate the demand for tobacco and that increased levels of foreign direct investment would lead to higher levels of cigarette, alcohol and ultra-processed food products consumption<sup>38,39</sup>. Increases in consumption of approximately 56% were recorded for countries that received major tobacco industry investment, whereas a 1% drop in consumption was recorded in those countries that did not receive such investment<sup>40</sup>. When national governments adopt market deregulation policies and fiscal measures that favor multinationals, production, sales and consumption of UPPs tend to increase. The annual retail sales per capita of UPPs, as a function of market deregulation, was analyzed for 74 world countries in 2013 (Figure 4), a positive correlation was found between market deregulation and the per-capita sales of ultra-processed products (in Kilograms), indicating that the greater the degree of deregulation, the higher the sales of those products<sup>41</sup>.

**Figure 4 – Annual retail sales per capita of ultra-processed food and drink products as a function of market deregulation in 74 countries, 2013.**



Note: Ultra-processed products here include carbonated soft drinks, sweet and savory snacks, breakfast cereals, confectionery (candy), ice cream, biscuits (cookies), fruit and vegetable juices, sports and energy drinks, ready-to-drink tea or coffee, spreads, sauces, and ready-meats. Quantity in liters is converted into kilograms. Sales data are from the Euromonitor Passport Database (2014). Market deregulation is presented by the Index of Economic Freedom published by the Heritage Foundation and Wall Street Journal<sup>42</sup>.

Source: PAHO 2015 Ultra-processed food and drink products in Latin America: Trends, impact on obesity, policy implications. Pan American Health Organization, 2015.



Several studies also show empirical evidence of the relationship between trade liberalization and harmful use of alcohol, so trade liberalization may have similar effects in the alcohol sector as in the tobacco or ultra-processed food products sectors<sup>43 44 45</sup>.

There are also stages of life where inequities in vulnerability and exposure to certain risk factors are most evident. Tobacco and alcohol targeted marketing, permissive social norms leading to use during adolescence and young adulthood pose long term and disproportionate levels of exposure to the risk. This vulnerability is even bigger if they belong to low socioeconomic groups.<sup>46</sup>

The disaggregated analysis of the prevalence of NCDs risk factors in low- and middle-income countries demonstrated different patterns and varying degrees of socioeconomic inequalities across low-and middle-income settings; with smoking and low fruit and vegetable consumption being significantly higher among lower socioeconomic groups.<sup>47</sup> While there is less of a correlation between heavy drinking and socioeconomic status, evidence has shown that the socioeconomically disadvantaged experience more harm per liter of alcohol consumed than their wealthier counterparts<sup>48</sup>.

There is a need to consider how race, culture, and socially constructed gender roles may affect women's and men's risks for NCDs. Women, indigenous peoples, and Afro-descendent populations comprise the majority of the Region's poor, and they are disproportionately affected by NCDs. Culturally related patterns and practices of food consumption may also influence the incidence and progression of NCDs. Gender roles and cultural biases also determine the effectiveness of NCD responses. Women have higher rates of heart attack complications and more associated deaths<sup>49</sup>. Afro-descendent populations do not receive timely treatment and suffer higher rates of death from heart attack than do other racial groups<sup>50</sup>. Diabetes with important contribution from genetic variants is well documented to be higher in Latino and Canadian indigenous populations<sup>51 52</sup>.

#### **4. Conclusions**

The modifiable risk factors leading to NCDs show a high and, some of them, increasing prevalence in the region of the Americas. Conditions such as overweight and obesity are affecting children and young adults, forecasting further burden of disease. All of these factors are the result of economic and development policies which are not protecting public health and safety, with a very

important use of marketing and trade forces. The regulatory control of such factors are within the reach of the health authority where there is political will and governments consider public health critical for development, so that changes in the environment can facilitate the adoption of healthier lifestyles.

The consequences of not stopping and reversing these trends will translate in the continued increase of incidence of disease and more difficult control of patients, with subsequent premature mortality and increasing cost of health care impacting even more in the more vulnerable populations that means, increase health inequities.

We know there are effective interventions that can modify the determinants leading to this trend. In the case of tobacco an international legally binding treaty, the Framework Convention on Tobacco Control, provides all the scientifically proven efficient measures to curb the tobacco epidemic. With similar reasoning, measures like restriction of marketing and increasing taxes are beginning to be applied for other risk factors too. Recently, the Health Council of Union of South American Nations (UNASUR per its acronym in Spanish: *Unión de Naciones Suramericanas*) has initiated the discussion on the need of a Food Framework Convention<sup>§</sup>.

There is a need for research directed towards understanding the impact of the different levels of exposure to risk factors and of the interventions to address the risk factors on different age, sex, cultural and socioeconomic groups, complemented by the much needed strengthening of surveillance systems to monitor the causal factors of the NCDs epidemic. As a result, a fuller picture of the drivers of health and social inequities as related to NCDs will be seen and hopefully lead to changes at policy level, globally, regionally and nationally.

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<sup>§</sup> <https://www.presidencia.gub.uy/comunicacion/comunicacionnoticias/unasur-basso-alimentacion-saludable-antitabaco-alimentos-ultraprocesados> .

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