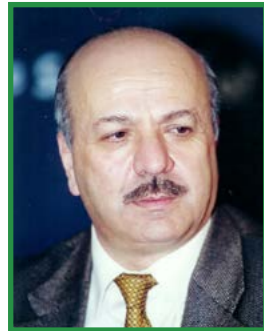


# Obesity Crisis in Lebanon & the Region



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dramatic and serious problems in dietary and physical activity patterns.

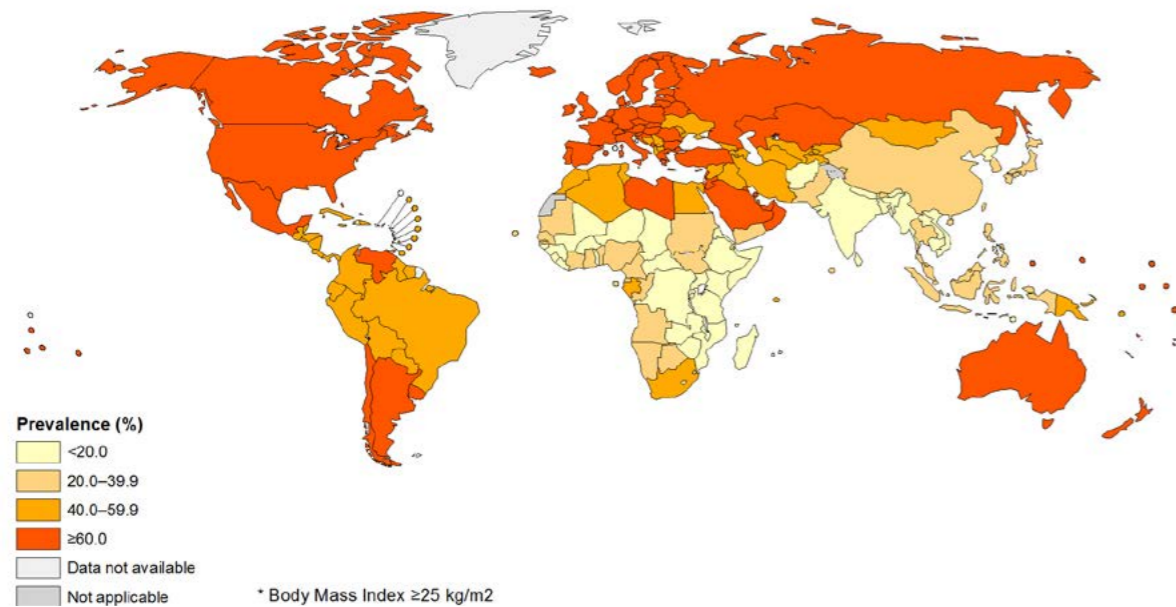
According to the world health organization (WHO) global estimates; the world wide prevalence of obesity has doubled between 1980 and 2014, with about 39% of the world's adult population is overweight (38% of men and 40% of women) and 13% suffers from obesity. More than 1.9 billion people were considered overweight in 2014 and 600 million people out of them were obese. However more alarming is the onset of the disease in very early life stages with an increase in overweight rates (42 million in 2013) among children under the age of 5 years (1).

### What is Obesity and Who is Considered Obese?

Obesity is defined as excessive fat accumulation due to the energy imbalance between consumed and expended calories. Besides the genetic predisposition, obesity results from the increased intake of energy-dense diet that is high in fats associated with the decrease in physical activities. Body mass index (BMI) is the commonly used measurement to classify overweight and obesity levels. It is defined as weight-to-height ratio (kg/m<sup>2</sup>). There are

Overweight and obesity are now the fifth leading cause of death worldwide. At least 2.8 million adults from both sexes die each year from overweight and obesity. Multiple environmental and societal changes have accompanied the rapid progression of this phenomenon. In addition, the lack of supportive strategies in various sectors including health, food processing, urbanization, marketing and education have aggravated the problem. Our world is currently facing

a. Global prevalence of overweight



b. Global prevalence of obesity

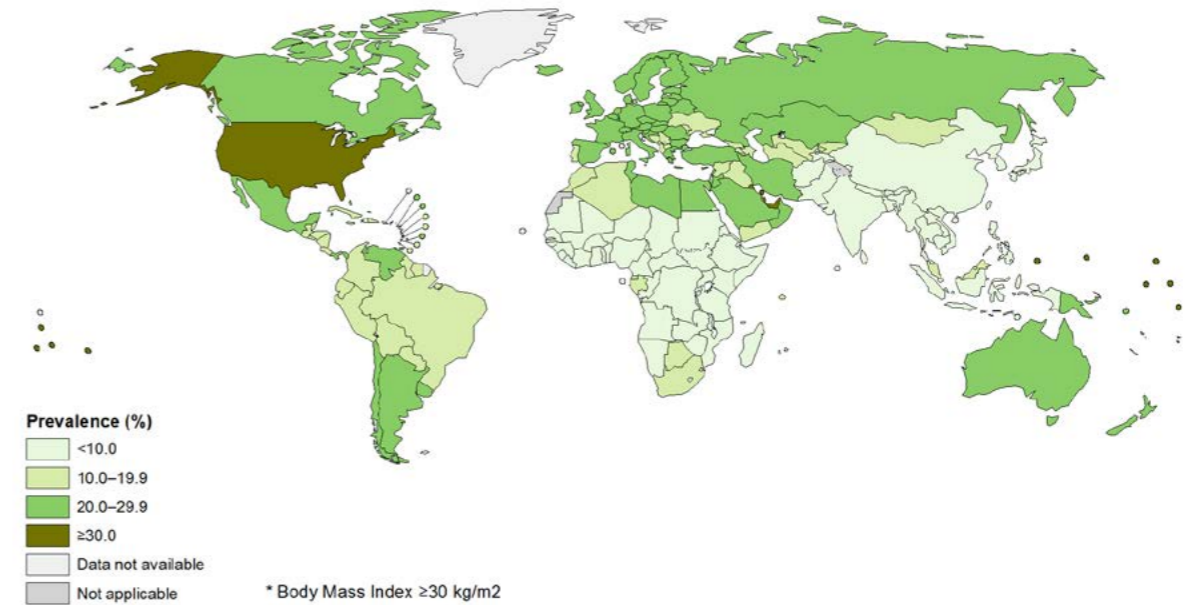


Figure 1: Global epidemic of overweight (a) and obesity (b). (BMI above 30kg/m<sup>2</sup>), 2014, World Health Organization (WHO) (2, 3)

alternative measurements of obesity that are also useful such as waist circumference which has been shown to correlate with obesity related disorders (Table 1) (4). The increase in mortality among obese individuals is likely related to comorbid conditions, rather than obesity by itself, since obese people are at high risk to develop several diseases such as diabetes and cardiovascular diseases (44% and 23% of the disease burden attributes

to overweight and obesity, respectively), musculoskeletal disorders (osteoarthritis) and cancers (endometrial, breast, and colon) (5, 6). Referring to the recent NIH statistics, obese people have a 50 to 100% increased risk of death from all causes compared to normal weight individuals, with life expectancy of a moderately obese person could be shortened by 2 to 5 years.

	BMI kg/m <sup>2</sup>	Obesity Class	Men ≤102 cm (≤40 in) Women ≤88 cm (≤35 in)	>102 cm (>40 in) >88 cm (>35 in)
Underweight	<18.5		—	—
Normal+	18.5-24.9		—	—
Overweight	25.0-29.9		Increased	High
Obesity	30.0-34.9	I	High	Very High
	35.0-39.9	II	Very High	Very High
Extreme Obesity	≥40	III	Extremely High	Extremely High

Table 1: Classification of Overweight and Obesity by BMI, Waist Circumference and Associated Disease Risk (7)

### Obesity in the Middle East and Arab Region:

the escalating Obesity crisis was once considered as high-income countries problem, however it is now on rise in developing countries with middle-to-low income, in which the increase of rate of childhood overweight and obesity

has been more than 30% higher than that in developed countries. The prevalence of obesity is also high in Eastern Mediterranean where over than 50% of the women were overweight and 24% out of them were obese in 2014 (8). (Figure 2)



Figure 2: Classification of Prevalence of obesity by region, WHO, 2014

Arab populations are not immune from the progression of obesity trend. The WHO shows in its report that gulf countries have the highest rates of obesity and that Kuwait, Bahrain, Saudi Arabia and United Arab Emirates are in the list of top ten countries worldwide in term of obesity. Qatar is affected the worst with 40% obese population. Kuwait and United Arab Emirates are not behind, with 35.5% and 33.8% obesity rates respectively. A study done

on 17 232 Saudi people in a community-based national epidemiological health survey for the prevalence of obesity, reported that nearly 35.5% of the population were obese, with the prevalence of obesity being greater in females (44%) than in males (26%). In fact, obesity and obesity-associated complications represent about 50% of all deaths in Arab region (9). (Figure 3)

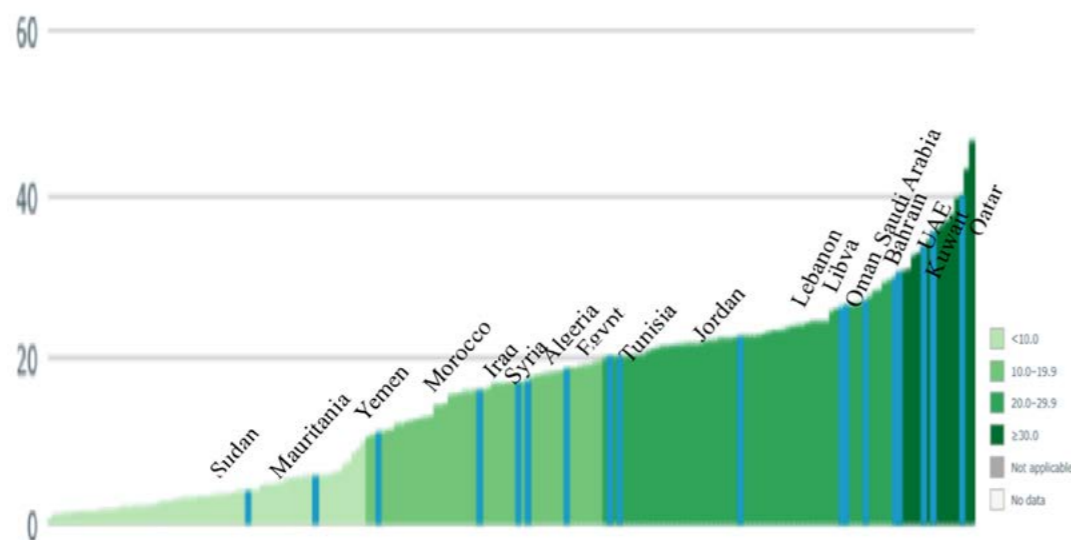


Figure 3: Prevalence (%) of obesity in the Arab region, WHO, 2014

**Obesity in the Lebanon:**

According to WHO data, the prevalence of overweight and obesity in 2014 is 67.4% and 26.3%, respectively. Two national obesity surveys were carried out by the American University of Beirut in 1997 and 2008 showing that overweight and obesity issues are becoming an alarming trend among Lebanese population in which 53%

adolescents were overweight, a number that increased two-folds by 2008. The percentage of overweight youth population rise from 20% in 1997 to 35% in 2008, with doubling in obesity rates. Lebanese men show higher prevalence rates of obesity at younger ages (20-49 years) while Lebanese women are at higher risks at older ages (above 50 years) (Table 2). These obtained data were

significantly associated with the socio-economic status and education, especially for women, whereby percentages of obesity decrease with higher education and greater household assists (10). If we look at the food consumption pattern in Beirut, we find that our average daily energy consumption is 2,523.57 kcal /day with 38.9% of fat contribution and 47.2% of carbohydrate and very low consumption of fruits and vegetables (11).

	Age groups (years)						Total
	20-29	30-39	40-49	50-59	60-69	70+	
	n = 750	n = 630	n = 495	n = 310	n = 230	n = 193	n = 2608
<b>Obese (BMI ≥ 30 Kg/m<sup>2</sup>)</b>							
Men	16.8	23.5	31.7	38.2	32.4	33.0	26.4
Women	8.1	21.0	28.7	48.7	45.7	52.4	25.9
Both genders	12.1	22.1	30.0	43.5	39.7	41.3	26.1
<b>Class I obesity (BMI 30.0 to 34.9 Kg/m<sup>2</sup>)</b>							
Men	13.4	17.4	24.8	28.9	28.8	30.0	21.1
Women	6.9	16.0	15.2	26.6	27.8	27.7	16.2
Both genders	10.0	16.7	19.4	27.7	28.3	29.0	18.5
<b>Class II obesity (BMI 35.0 to 39.9 Kg/m<sup>2</sup>)</b>							
Men	2.5	3.9	4.1	9.2	2.9	3.6	4.1
Women	1.3	3.7	8.3	16.5	12.7	15.7	6.9
Both genders	1.9	3.8	6.5	12.9	8.3	8.8	5.6
<b>Class III obesity (BMI ≥ 40 Kg/m<sup>2</sup>)</b>							
Men	1.1	2.1	2.8	0.0	1.0	0.0	1.4
Women	0.5	1.7	5.1	5.7	6.3	9.6	3.4
Both genders	0.8	1.9	4.0	2.9	3.9	4.1	2.5

Table 2: Prevalence (%) of obesity among adult Lebanese population in 2009 by gender and age (10)

In conclusion, several studies have examined the factors underlying the high prevalence of obesity within the Arab population. In fact, most of the Arab countries including Lebanon are currently facing double burden of disease where it is very common to find under-nutrition and obesity in the same community. In addition, the recent socio-demographic changes caused by the unstable political crisis in some countries have placed refugees and other socially vulnerable populations at high risk of food and nutrition insecurity, leading to under nutrition. At the same time, we found that populations in our region have experienced a rapid nutrition transition by shifting their diets towards a “westernized” diet rich in refined carbohydrates, total, saturated and trans fats, high-sugar and animal proteins, which are low in nutrient quality. Perhaps the nowadays sedentary nature of our lifestyles emerges as a major cause of obesity in the Eastern Mediterranean who demonstrated the highest prevalence of insufficient physical activity (87.5%) especially among women in 2010 (12) as compared to other regions. Such an increase is directly associated with rapid economic growth, marketing and rapid urbanization. However, proper education, obesity prevention programs and public health strategies regarding our diet, food quality

and physical activity are greatly demanded to tackle the obesity crisis. All the governments, NGOs and other private communities should take serious actions et various levels to limit this dramatic progression.

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