

UNHEALTHY EATING HABITS, PHYSICAL INACTIVITY AND SEDENTARY BEHAVIOURS AMONG ARAB ADOLESCENTS

THE MAIN RISK FACTORS FOR CHRONIC DISEASE

– *Written by Abdulrahman Musaiger, Bahrain*

Many Arab countries have faced a dramatic socio-economic and epidemiological transition since the 1960s. Although the speed of this transition varies from country to country, the results are the same, including changes in food consumption and lifestyle habits. These changes have led in turn to marked changes in the patterns of diseases, as infectious diseases are no longer the leading cause of sickness and death and have been replaced by chronic non-communicable diseases. For example, heart disease represents 25 to 30% of all deaths in Arab countries and cancer represents 8

to 12% of total deaths¹. Hypertension and diabetes are highly prevalent and are major risk factors for heart disease. Obesity has become the main public health problem in the majority of Arab countries, with the highest prevalence among Gulf states¹. The current health situation in these countries represents a considerable challenge for health authorities aiming to prevent and control non-communicable diseases.

This challenge becomes even greater when we consider that the risk factors of non-communicable diseases are increasingly prevalent among the adolescent population

in the Arab world. Overweight and obesity have reached an alarming level among Arab adolescents aged 12 to 18 years, ranging from 25% to 60%². Childhood obesity is related to both direct and long-term risk to health. Increased blood cholesterol, blood sugar and blood pressure are among the direct consequences. Childhood obesity is associated with adult obesity and its consequences include heart disease, high blood sugar, some types of cancer, low self-esteem and psychological disorders³.

Unhealthy dietary habits, physical inactivity and sedentary behaviours are

TABLE 1

Dietary habits/inactivity	Range (%)	
	Males	Females
Eating breakfast daily	27.9 - 48.3	17.5 - 35.7
Eating vegetables daily	20.9 - 46.1	20.6 - 62.3
Eating fruit daily	16 - 24.3	9.7 - 46.3
Consuming milk/dairy products daily	31.4 - 37.2	21.5 - 33.2
Drinking sugar-sweetened drinks ≥ 3 days/week	67.3 - 85.2	57.4 - 75.8
Eating fast food ≥ 3 days/week	37.2 - 53.5	24.9 - 51.0
Inactivity	7.0 - 25.6	29.0 - 54.8

Table 1: Range (%) of dietary habits and inactivity among adolescents aged 15 to 18 years in five Arab countries (Jordan, Kuwait, Iraq, Saudi Arabia and UAE) by gender¹⁶.

among the main avoidable risk factors associated with the nutrition and health status of adolescents. The aim of this paper is to highlight the current situation regarding the dietary habits, physical inactivity and sedentary behaviour of Arab adolescents and suggest some measures to promote a healthy lifestyle among this age group.

DIETARY HABITS

Several reports have documented that the dietary habits of Arab children and adolescents have become saturated with foods low in fibre and high in fat, salt and sugar. Recent studies of the dietary habits of Arab adolescents are characterised by skipping breakfast, inadequate intake of fruit, vegetables and milk, and high intake of fast foods and sugar-sweetened drinks^{4,5}.

Recently, the Arab Teen Life Study (ATLS) was carried out in seven Arab countries, supervised by King Saud University, Saudi Arabia. It was designed to determine the dietary, physical, sedentary and lifestyle habits among adolescents aged 14 to 19 years old. Findings revealed that 52% to 82% of Arab adolescents do not have breakfast every day (Table 1 – unpublished data). Girls were more likely to skip breakfast than boys. It is well documented that skipping breakfast is associated with the risk of obesity and this may be associated with cardio-metabolic health during adulthood⁶. Adequate daily intake of fruit and vegetables is associated

with a lower risk of obesity and all cause mortality, especially heart disease⁷. It was found that daily intake of fruit by Arab adolescents ranged from 22% to 50% and that of vegetables ranged from 10% to 50%. However, even those who eat fruit and vegetables every day generally consume less than the recommended daily amount of these foods (>400 grams). There is good evidence that regular intake of milk and dairy products is linked to reduced risk of obesity⁸. The ATLS data indicated that only one-third of Arab adolescents consumed milk and dairy products every day.

Fast food represents a considerable portion of the diet of Arab adolescents. The ATLS found that 16% to 35% consumed fast food more than 3 days per week. It is well-recognised that high intake of fast food is a risk factor for weight gain and is negatively associated with the intake of fruit and vegetables⁴. In general, fast foods are characterised by a high content of fat, salt and sugar; and they are highly calorific and low in dietary fibre. This means that the high intake of fast food by Arab adolescents could lead to weight gain and have other health consequences. The high consumption of sugar-sweetened drinks by Arab adolescents poses additional risk, 45% to 67% of subjects in the ATLS said they consume these drinks more than 3 days a week. Studies show that regular intake of sugar-sweetened beverages contributes to weight gain, and increased risk of type 2

diabetes and metabolic syndrome⁹. A study among Saudi Arabian children aged 10 to 19 years indicated that the high consumption of sugar-sweetened drinks was linked to other unhealthy dietary habits, such as high intake of fat, low intake of milk and low intake of fruit and vegetables⁴.

It was found that the main barriers to healthy eating among Arab adolescents aged 15 to 18 years were lack of information on healthy eating, lack of motivation to eat a healthy diet and not having time to prepare or eat healthy food because of school commitments¹⁰.

PHYSICAL INACTIVITY

The health disadvantages of physical inactivity for all age groups are well established. Although there were no historical baseline data, it is widely believed that the physical activity of Arab adolescents has diminished steeply in recent decades. It was reported that 85% of girls and 75% of boys aged 13 to 15 years in seven Arab countries (Djibouti, Egypt, Jordan, Libya, Morocco, Oman and United Arab Emirates) did not engage in the recommended daily physical activity of 60 minutes per day¹¹. Another study showed that 74 to 91% of adolescents in the same age group in nine Arab countries (Djibouti, Egypt, Jordan, Libya, Morocco, Oman, Tunisia, United Arab Emirates and Yemen) did not meet recommendations of 60 minutes activity more than four days per week¹². In general,

the proportion of physically active boys was higher than girls in all Arab countries. Inactivity ranged from 8% to 26% among boys aged 14 to 18 years in five Arab countries (Kuwait, Iraq, Jordan, Saudi Arabia and United Arab Emirates), compared with 21% to 55% among girls, according to ATLS data.

Several social, environmental and cultural factors may contribute to the decrease in physical activity among Arab adolescents. The above-mentioned study among adolescents in seven Arab countries suggested three main barriers to physical activity: lack of motivation to be physically active, lack of support from school teachers and lack of time to be physically active due to school commitments, especially in females. Parents and physically active peers were found to be supportive of physical activity¹⁰.

In this regard, it is worth mentioning that girls face more barriers to practicing in physical activity than boys in all Arab countries because of socio-cultural factors. There is greater freedom and more places for boys to be physically active than girls. The majority of sport clubs are for males, very few allow females. Furthermore, because of cultural and religious norms, most girls in Arab countries, especially in the Gulf countries, cannot exercise outdoors in sportswear, but must wear the

Abaya (a long dress covering the whole body), which is not suitable or comfortable for exercising in, even less so in a hot environment. Many Arab families do not allow their girls to exercise outdoors or even in female sports clubs, citing safety and security concerns. Commercial sport clubs are expensive and are not within the reach of the budget of many middle- and low-class families. Negative attitudes towards girls who exercise still persist in many Arab communities, especially in rural areas, which may discourage many girls from exercising.

The reliance on cars rather than walking to school, even for short distances, is another contributing factor to physical inactivity among adolescents. This is especially true in wealthy countries such as Arab Gulf states, as well as for wealthy families in other Arab countries.

SEDENTARY BEHAVIOUR

Sedentary behaviour constitutes a group of behaviours with low energy output, where energy expenditure is not raised much above the resting level¹². Such behaviours include watching television, playing video games, using computers and electronic devices such as mobile phones and iPads. The American Academy of Pediatrics suggested that sedentary behaviour in children should not exceed 2

hours per day¹³. However, published data reveal that sedentary behaviour for a high proportion of Arab adolescents does exceed 2 hours per day. Recent findings indicated that an average of 31% of Arab adolescents (13 to 15 years) spent more than 3 hours per day partaking in sedentary behaviour. The lowest percentage was found in Egypt (21%) and the highest in the United Arab Emirates (40%)¹².

Watching television represented more than half of the daily sedentary behaviour of Arab adolescents. In Kuwait, for example, 70 to 73% of adolescents (70% male, 73% female), aged 15 to 18 years watched television for more than two hours per day. Furthermore, 62% of males and 70% of females used the computer for more than 2 hours per day⁵.

There are three negative behaviours which may be closely linked to watching television for long periods:

- more sedentary behaviour,
- eating unhealthy snacks while watching television and
- televised food advertisements.

In the Arab Gulf countries, for example, it was found that chocolates, sweets, potato chips, soft drinks, nuts and seeds were the main foods consumed by schoolchildren while watching television. This may lead to overeating and weight gain². Exposure to televised food advertisements for



Overweight and obesity have reached an alarming level among Arab adolescents aged 12 to 18 years, ranging from 25% to 60%²



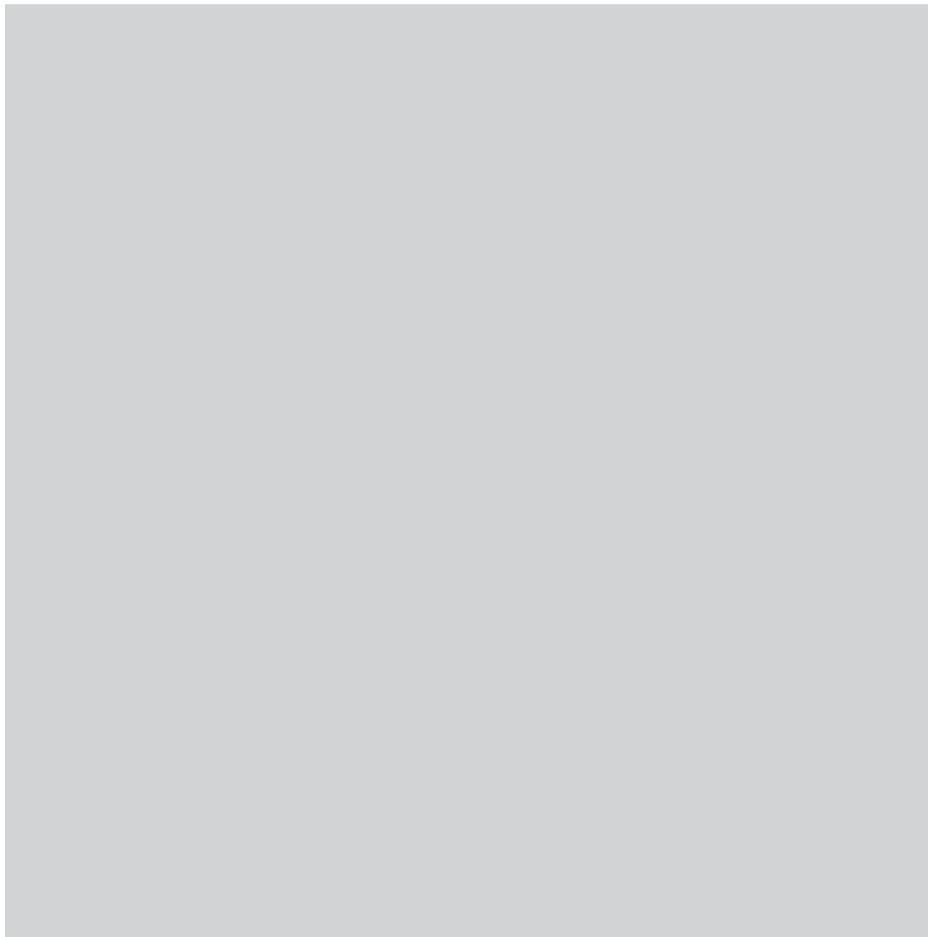


Image: Illustration.

fast foods and soft drinks may persuade children to increase their intake of these foods. A study in which Bahraini school children were asked to list their preferred television food advertisements revealed that fast foods (43%), chocolates and sweets (41%), milk (40%) and soft drinks (38%) were the most preferred television food advertisements².

Use of computers, especially the Internet, by Arab adolescents may occupy much of their leisure time. The same negative behaviours associated with watching television apply, but the situation may be even more critical. Use of computers is usually performed without the censorship of parents. Additionally, food advertisements on the internet are not controlled. Therefore, the negative effect of computer use may be greater than that of television. However such conclusions need further investigation. Mobile telephones and tablet computers have increased opportunities for sedentary behaviour, as the equipment can be used anywhere without the need for a mains electricity connection.

Need for urgent action

Unhealthy dietary habits, physical inactivity and sedentary behaviour among Arab adolescents are major risk factors for obesity and its health consequences. Therefore, any national health programme designed to promote healthy lifestyles should consider children and adolescents in addition to adults. The Cairo Regional Office of the World Health Organisation reported several barriers facing the implementation of an effective national health programme to promote physical activity and healthy lifestyle in Middle Eastern countries. These barriers include:

- lack of co-ordination between sectors,
- inadequate funding,
- lack of national policy,
- cultural and traditional norms,
- inadequate integration of physical activity in the health system,
- lack of information on the benefit of physical activity,
- low quality of physical activity programmes in schools and high turnover of government leaders and professional staff⁴.

With regard to adolescents, the priority actions to promote physical activity and healthy eating among this population should include the following¹⁴⁻¹⁵:

1. Adequate information on physical activity and healthy eating for children should be integrated in health programmes to prevent and control non-communicable diseases.
2. There should be adequate legislation and effective implementation supporting practising daily physical activity and eating healthy foods for the public.
3. A programme designed to reduce sedentary behaviours in the community should be developed. Such a programme should consider socio-cultural factors.
4. Involvement of parents and school teachers in any programme designed to promote healthy lifestyles among schoolchildren.
5. A national mass media campaign focusing on promoting daily physical activity and healthy eating, as well as addressing cultural and gender barriers to physical activity, should be organised.
6. Integration of activities and programmes to promote physical activity and healthy eating in the national school health plan.
7. Integration of concepts, information and skills related to physical activity, healthy eating and healthy weight in school curricula.
8. Development of proper legislation on health and the nutritional aspects of food provided to students in schools.
9. Provision of training courses for teachers on how to promote physical activity and healthy eating among school children.
10. Preparation of guidelines that support physical activity of school students.
11. Conducting research on dietary, lifestyle, social and psychological factors associated with obesity and physical inactivity in school children.
12. Taking advantage of non-class activities to promote physical activity and healthy eating in school students.
13. Organisation of meetings and educational programmes for parents on appropriate ways to promote physical activity and healthy eating and weight in children.



Image: Illustration.

References

- Musaiger AO, Al-Hazzaa HM. Prevalence and risk factors associated with nutrition-related non-communicable diseases in the Eastern Mediterranean region. *Int J Gen Med* 2012; 5:199-217.
- Musaiger AO. Overweight and obesity in eastern mediterranean region: prevalence and possible causes. *J Obes* 2011; 2011/407237.
- Nasereddine L, Naja F, Akl MC, Chamieh MC, Karam S, Sibai A et al. Dietary, lifestyle and socio-economic correlates of overweight, obesity and central adiposity in Lebanese children and adolescents. *Nutrients* 2014; 6:1038-1062.
- Al-Hazzaa HM, Abahussain NA, Al-Sobayle HI, Qahwji DM, Musaiger AO. Physical activity, sedentary behaviors and dietary habits among Saudi adolescents relative to age, gender and region. *Int J Behav Nutr Physical Act* 2011; 8:140.
- Allafi A, Al-Haifi A, Al-Fayez MA, Al-Aheri BI, Al-Ajmi FA, Al-Hazzaa HM et al. Physical activity, sedentary behavior and dietary habits among Kuwaiti adolescents: gender differences. *Public Health Nutr* 2014; 17:2045-2052.
- Smith KJ, Gall SL, MacNaughton SA, Blizzard L, Dwyer T, Venn AJ. Skipping breakfast: longitudinal association with cardio-metabolic risk factors in childhood determinants of adult healthy study. *Am J Clin Nutr* 2010; 92:1316-1325.
- Wang X, Ouyang Y, Liu J, Zhu M, Zhao G, Bao W et al. Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies. *BMJ* 2014; 349:g4490.
- Barba G, Troiano E, Russo P, Venezia A, Siani A. Inverse association between body mass and frequency of milk consumption in children. *Br J Nutr* 2005; 93:15-19.
- Ludwig DS, Peterson KE, Gortmaker SL. Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective observational analysis. *Lancet* 2001; 357:505-508.
- Musaiger AO, Al-Mannai M, Tayyem R, Al-Lalla O, Ali EY, Kalam F et al. Perceived barriers to healthy eating and physical activity among adolescents in seven Arab countries: a cross-cultural study. *ScientificWorldJournal* 2013; 2013:232164.
- Guthold R, Cowan MJ, Autenrieth CS, Kann L, Riley L. Physical activity and sedentary behavior among schoolchildren: a 34-country comparison. *J Pediatr* 2010; 157:43-49.
- Al-Subhi LK, Bose S, Al-Ani MF. Prevalence of physically active and sedentary adolescents in 10 Eastern Mediterranean countries and its relation with age, sex and body mass index. *J Phys Act Health*. 2015; 12:257-265.
- American Academy of Pediatrics (AAP). Children, adolescents and television. *Pediatrics* 2001; 107:423-426.
- WHO/EMRO. WHO events addressing public health priorities. Promoting physical activity: a regional call for action. *East Mediterr Health J* 2014; 20:469-471.
- Musaiger AO, Al-Hazzaa HM, Al-Qahtani A, Elab J, Ramadan J, Aboulele NA et al. Strategy to combat obesity and to promote physical activity in Arab countries: *Diabetes Metab Syndr Obes* 2011; 4:89-97.
- Al-Hazzaa HM, Musaiger AO, ATLS Research Group. Arab Teens Lifestyle Study (ATLS): objectives, design, methodology and implications. *Diabetes Metab Syndr Obes* 2011; 4:417-426.

Abdulrahman O. Musaiger Ph.D.
Head of Arab Centre for Nutrition
Manama, Bahrain
Contact: amusaiger@gmail.com