

LEBANON INTEGRATED MICRONUTRIENT, ANTHROPOMETRY AND CHILD DEVELOPMENT SURVEY

2023- 2024 (LIMA)

SUMMARY REPORT | 2024



MAIN HIGHLIGHTS

- The prevalence of stunting among children under five has doubled since 2021, rising from 7% to 13.9% in 2023, indicating a significant increase in chronic malnutrition. Rates vary from 9.2% among Lebanese to 18.7% among Syrian refugees, reaching 39.2 % in Informal Tented Settlements.

- The prevalence of wasting has remained steady at 1.3% since 2021, with younger children being more affected: 6% among those under 6 months, 3% for 6-12 months, and 2% for 12-23 months.

- Moderate or severe underweight affects 5% of young children, including 2% of Lebanese, 8% of Syrian refugees, and 4% of Palestinian refugees under five.

- Approximately half of the young children suffer from at least one form of micronutrient deficiency such as zinc, vitamin A, iron and vitamin D.

- Over two-thirds of adolescent girls and non-pregnant women experience at least one micronutrient deficiency, including vitamin D, iron, zinc, folate, and vitamin B12.

- Anemia, with a mild to moderate public health concern, is linked to poor nutrition and inadequate sanitation facilities, with iron deficiency as the primary risk factor.

- Sub-optimal vitamin D status is prevalent across all population groups, and folate and vitamin B12 deficiencies affect nearly one-fifth of adolescent girls and non-pregnant women.

- Malnutrition patterns stem from restricted access to quality diets, practices, and services. Approximately 60% of households experience food insecurity, resulting in three-quarters of children living in food poverty and nearly one-third enduring severe food poverty.

- Most indicators for infant and young child feeding (IYCF) are suboptimal, with exclusive breastfeeding decreasing by 30% since 2021.

- Developmental delays affect 30% of Lebanese children, 40% of Syrian refugee children, and over 80% of Palestinian children under the age of two. For children aged 2-5 years, the rates are 17% among Lebanese, 30% among Palestinian, and 46% among Syrian refugee children.

- Stunted children face a higher risk of developmental deficits, indicating the alarming impact of malnutrition on cognitive capital loss in Lebanon.

- Overweight and obesity pose a serious public health issue, affecting one-third of adolescent girls and half of non-pregnant women, with prevalence increasing with age, affecting almost 54% of women aged 40-49.
- Among adolescent girls, 3% have diabetes, high cholesterol, or hypertension, and 6% have metabolic syndrome. In addition, 22% have visceral obesity, 34% have elevated triglycerides, and 26% have low HDL cholesterol.
- About 15% of non-pregnant women have metabolic syndrome, with prevalence rising with age, marital status (proxy for age), and lower education levels.
- The double burden of micronutrient malnutrition and overnutrition, particularly among school-age children and adolescents, calls for comprehensive action.
- The inadequate urinary iodine status among women who are consuming non-iodized salt, highlights the need to improve Lebanon's Salt Iodization Program.

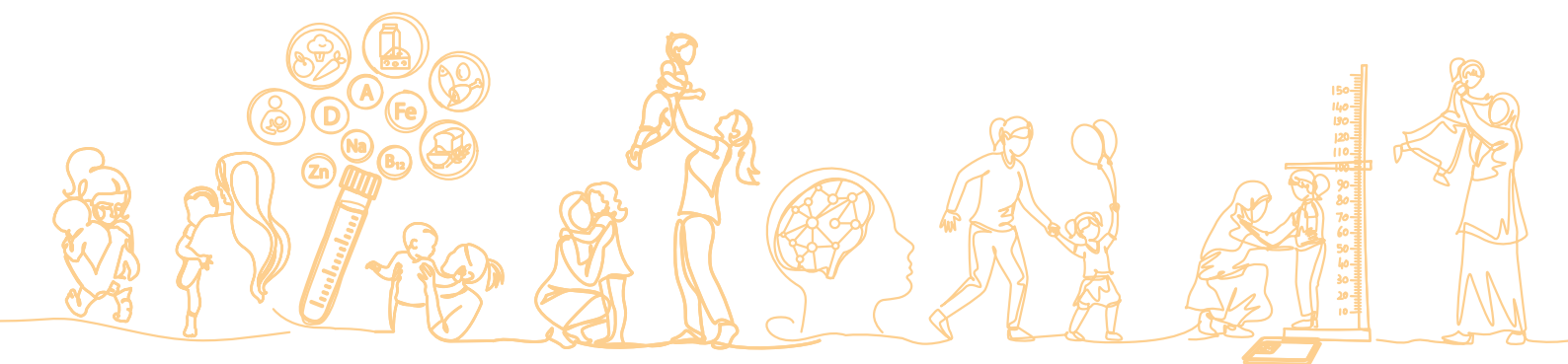


INTRODUCTION

Lebanon's Integrated Micronutrient, Anthropometry and Child Development Survey (LIMA) is a national cross-sectional survey that collected data from households and individuals in all of Lebanon's governorates, including Informal Tented Settlements (ITS) and Palestinian Camps.

LIMA is the first national survey in Lebanon that comprehensively describes the micronutrient (i.e., vitamins and minerals) and nutritional status of children under 5 years old in association with their growth and cognitive development. It also provides a wealth of knowledge on the nutritional status of adolescent girls, as well as non-pregnant and pregnant women. Specifically, the survey assessed micronutrient deficiencies and anemia, stunting, wasting, underweight and obesity, early childhood development (ECD) status, dietary patterns, the underlying causes of malnutrition and developmental deprivation, prevalence of nutrition-related non-communicable diseases risk factors (e.g., salt intake, lipid profile, diabetes, and blood pressure) and the effectiveness of the national salt iodization program. Because of the large number of indicators examined for each population group, LIMA permits a wide-ranging and in-depth understanding of the nutritional and child development deprivation among various population groups. It also enables informed decision-making and the design and modification of nutrition and child development interventions. The generated evidence is of strategic importance for several reasons:

- LIMA is the first national survey measuring micronutrient deficiencies in Lebanon.
- The first national nutrition survey in Lebanon, offering a wealth of evidence on nutritional status of adolescent girls.
- The first national survey globally to measure nutrition and ECD outcomes during the first 2 years of life, enabling the measurement of the associations between all forms of malnutrition and early childhood development.
- The first time globally that ECD outcome data was collected using the newly released Global Scales for Early Development-Household Form (GSED-HF 1.0), launched in February 2023, to monitor the holistic development of children in the critical first two years of life.



RESULTS

ANTHROPOMETRIC

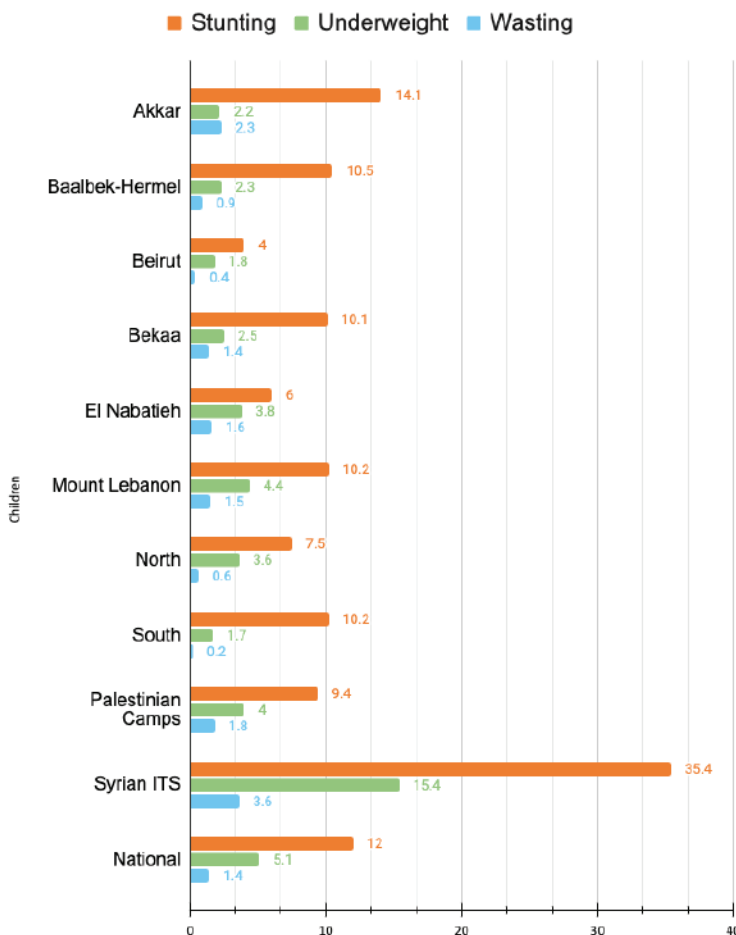
The LIMA took weight and height measurements to assess the general nutritional status of young children, adolescents and women.

The data show that the prevalence of stunting among children under 5 has doubled to 14% since 2021¹, indicating a deterioration of the nutritional situation in Lebanon. Subgroup analysis revealed a significant difference in stunting by nationality, with a prevalence of 19% among Syrian children. Alarming, 39% of children in the Syrian ITS stratum are stunted, which is considered a very high public health problem by the WHO². When looking at age groups, more than 21% of children aged 12-23 months are stunted, which is the highest among all age groups and depicts the vulnerability of children during their first 1000 days of life.

The national underweight prevalence is relatively low at about 5% but affects a larger proportion of Syrian children (8%) and children living in the ITS stratum (16%). The national wasting prevalence identified by the LIMA is low (1.3%) but reaches moderate health significance in children aged 0-5 months (6%)².



Stunting, Underweight and Wasting



Overweight and obesity in adolescent girls and women

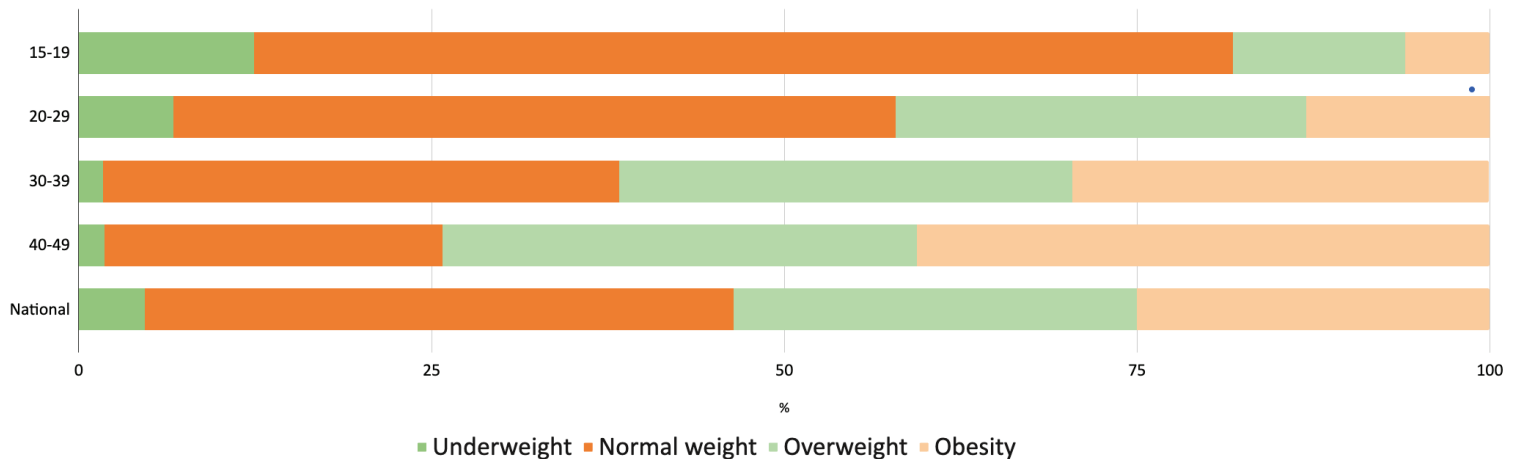
The LIMA finds high levels of overweight and obesity in adolescent girls aged 10-19 years. Nationally, 30% of adolescent girls are overweight or obese, with the highest prevalence (34%) found in girls aged 10-12 years, placing them at high risks of early formation of NCDs and poor learning outcome. High levels of overweight and obesity are also found in non-pregnant women; the combined prevalence of overweight and obesity is 54% in non-pregnant women. The prevalence increases consistently with age and is significantly associated with education level, with a higher prevalence found among those with a basic secondary education or less. Alarming, 74% of women aged 40-49 years are overweight or obese.

EARLY CHILDHOOD DEVELOPMENT

The LIMA measured the overall development of young children using standardized questionnaires. Nationally, 65% of children aged 0-23 months and 69% of children aged 24-59 months are developmentally “on track.” In both age groups, however, the proportion of children developmentally “on track” is lower among Syrian refugee children, which suggests they are at higher risk of limited learning opportunities and compromised care associated with poor child development outcomes.



Prevalence of underweight, overweight and obesity among non-pregnant women



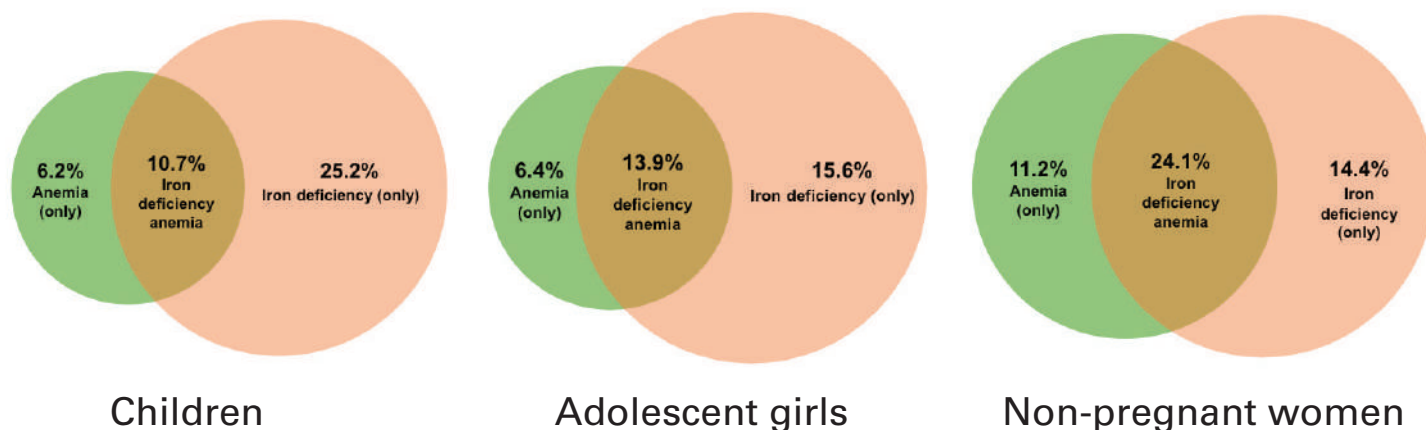
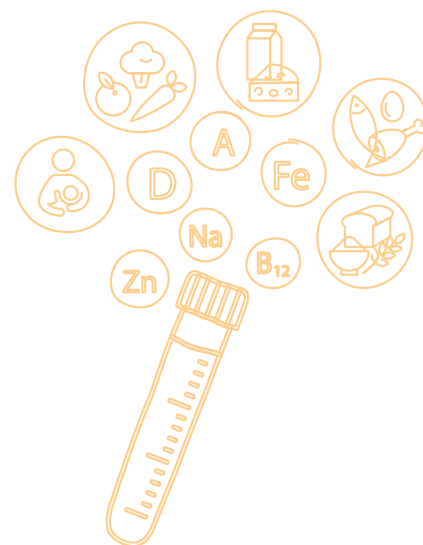
Developmental outcomes were also related to nutritional status; among children aged 0-23 months, stunted and underweight children are less likely to be developmentally “on track” compared to non-stunted and normal weight children, respectively. The results also suggest that poor nutrition in utero could contribute to poor development; among children aged 24-59 months, children born with a low birthweight (i.e., <2.5 kg) are less likely to be developmentally “on-track” compared to children born with a normal birth weight.

MICRONUTRIENT DEFICIENCIES:

Anemia and iron deficiency

At the national level, the anemia and iron deficiency prevalence is considered a “moderate” (i.e., 20-39%) public health problem in all target groups except for pre-school children, where the anemia prevalence denotes a “mild” (i.e., 5-19%) public health problem according to WHO classification³. Anemia prevalence is 17%, 20%, 35% and 25% among children, adolescent girls, non-pregnant and pregnant women, respectively. The LIMA results also indicate that nutritional deficiencies are the primary cause of anemia. Approximately 60% to 70% of anemic participants have concomitant iron deficiency, and significant associations with other micronutrient deficiencies were also observed. In adolescent girls, anemia may also be caused by chronic inflammation.

Iron deficiency is common in all population groups and affects 36% of children, 30% of adolescent girls, and 39% of non-pregnant women. Iron deficiency prevalence is more present in participants suffering from certain other micronutrient deficiencies, except for zinc, which is negatively associated with iron deficiency.



The prevalence of Iron-deficiency anemia (IDA) is significantly higher in children residing in poor households and declines with increasing household wealth. In addition, the IDA prevalence is highest among Syrian children, children in households with severe food insecurity, and children in households with inadequate sanitation.

Vitamin A deficiency

The LIMA found that vitamin A deficiency is only a public health problem in children, 6% of whom are vitamin A deficient, which denotes a mild public health problem.⁴ Higher prevalence (>10%) of vitamin A deficiency was found among children experiencing diarrhea, fever, and lower respiratory infections. These findings may indicate that vitamin A-deficient children are more prone to diseases and infections due to compromised immune function.

Folate and vitamin B12 deficiency

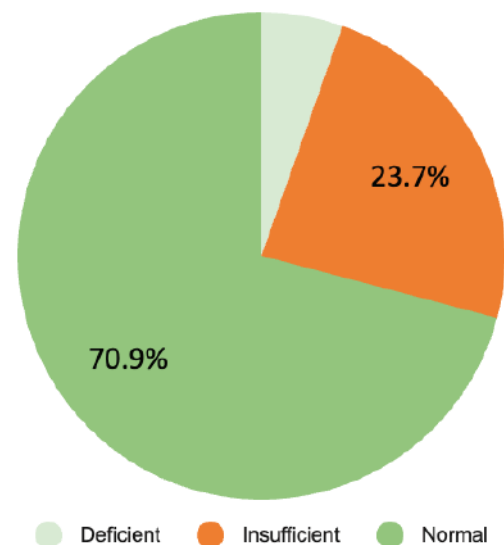
Folate and vitamin B12 deficiencies were found in 14% and 18% of adolescent girls. Adolescent girls residing in the Syrian ITS stratum have the highest prevalence (23%) of B12 deficiency. Folate deficiency is present in 18% of non-pregnant women, and nearly 21% are deficient in vitamin B12. Consistent with the adolescent girl findings, vitamin B12 deficiency in non-pregnant women is by far the highest in the Syrian ITS stratum. This notable disparity is also evident in Syrian non-pregnant women, who are the most deficient in B12.

Vitamin D deficiency

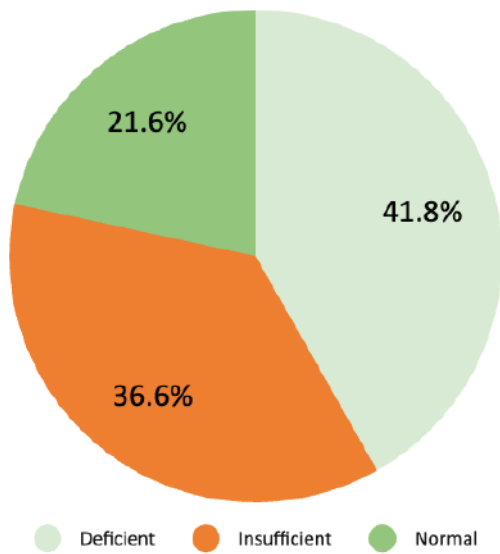
Unlike other micronutrients, poor vitamin D status is reported in two separate categories: vitamin D deficiency and insufficiency, indicating severe and moderate forms of suboptimal vitamin D status, respectively.

Among pre-school children, only a small proportion (5%) is vitamin D deficient. However, high prevalence rates are found in some strata, including the Palestinian camp stratum, where 50% of children are vitamin D deficient. In contrast, only 0.5% of children living in the Syrian ITS have vitamin D deficiency. The combined prevalence of vitamin D deficiency and insufficiency was nearly 30%, with the highest prevalence found among Palestinian children.

Vitamin D deficiency and insufficiency in children



Vitamin D deficiency and insufficiency in adolescent girls

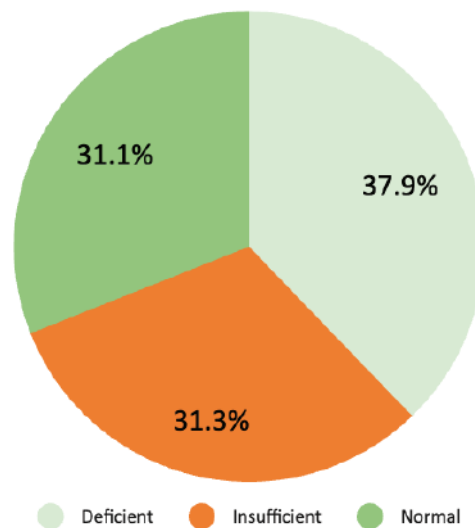


Combined vitamin D deficiency and insufficiency affected nearly 80% of adolescent girls in Lebanon, with the highest prevalence (97%) found among adolescent girls residing in Palestinian camps. Vitamin D deficiency is associated with the sun exposure index (57% in the lowest index category versus 18% and 16% in the higher index category).

The percentage of non-pregnant women with vitamin D deficiency is 38%. Similar to adolescent girls, vitamin D status in non-pregnant women is associated with sun exposure and is higher among veiled women.

Recent evidence indicates a role for vitamin D in many nutrition and health aspects including anthropometric measures and blood lipid and inflammatory profiles as a foundation of non-communicable disease risk factors. Hence, prevention of vitamin D deficiency is among the strong double duty actions for early prevention of NCDs.

Vitamin D deficiency and insufficiency in non-pregnant women



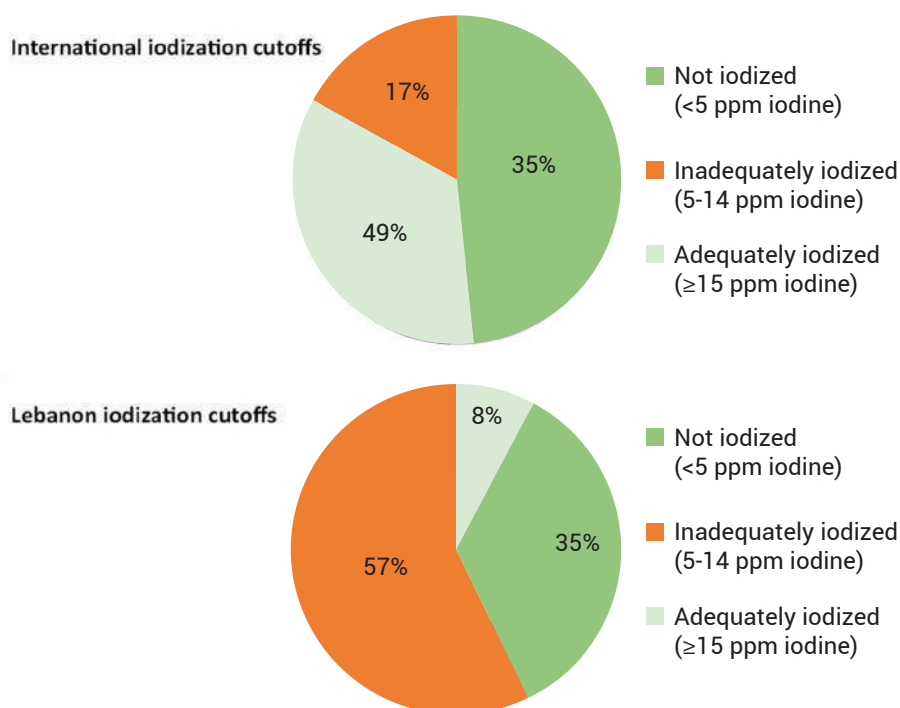
Zinc deficiency

Zinc deficiency prevalence is high in all population groups ranging from 35% in non-pregnant women to 38% in pre-school children and can be considered a public health issue in all population groups⁵.

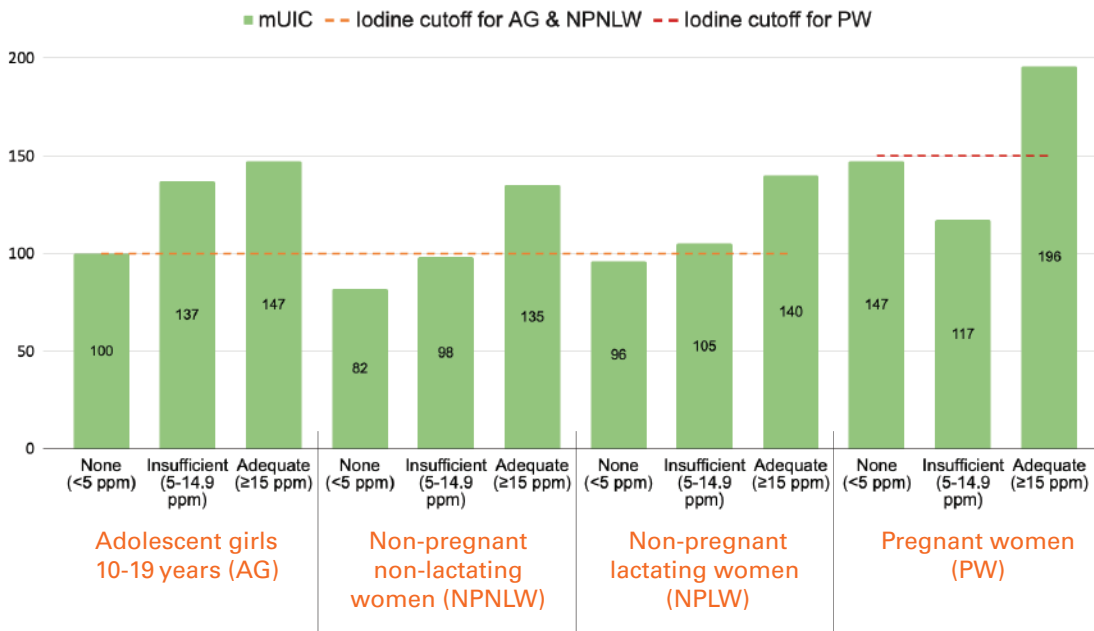
Zinc is known to play a critical role in biological processes for growth and brain development and deficiency in this micronutrient, especially during periods of rapid growth such as early years and adolescence, can jeopardize growth and decrease resistance to infections, which contribute significantly to morbidity and mortality in young children.

Salt iodization and iodine status of adolescents and women

To assess the performance of Lebanon's salt iodization program, salt samples were collected from households, and the iodine content of these samples was measured quantitatively. The results show that Lebanon's salt iodization program is poorly implemented, with only 49% of salt containing ≥ 15 ppm iodine (international cutoff) and 8% of salt containing ≥ 36 ppm iodine (national standard cutoff). Substantial differences were detected between the governorates.



At the national level, the median urinary iodine concentration indicates adequate status in adolescent girls and non-pregnant women (lactating and non-lactating). The median urinary iodine concentration for pregnant women (149 $\mu\text{g/L}$) is just below the cutoff. Iodine status was significantly associated with salt iodine content, and a dose-response relationship between levels of salt iodization and urinary iodine was found for all population groups except pregnant women, demonstrating the importance of Salt Iodization Program in maintaining healthy iodine levels in the population.

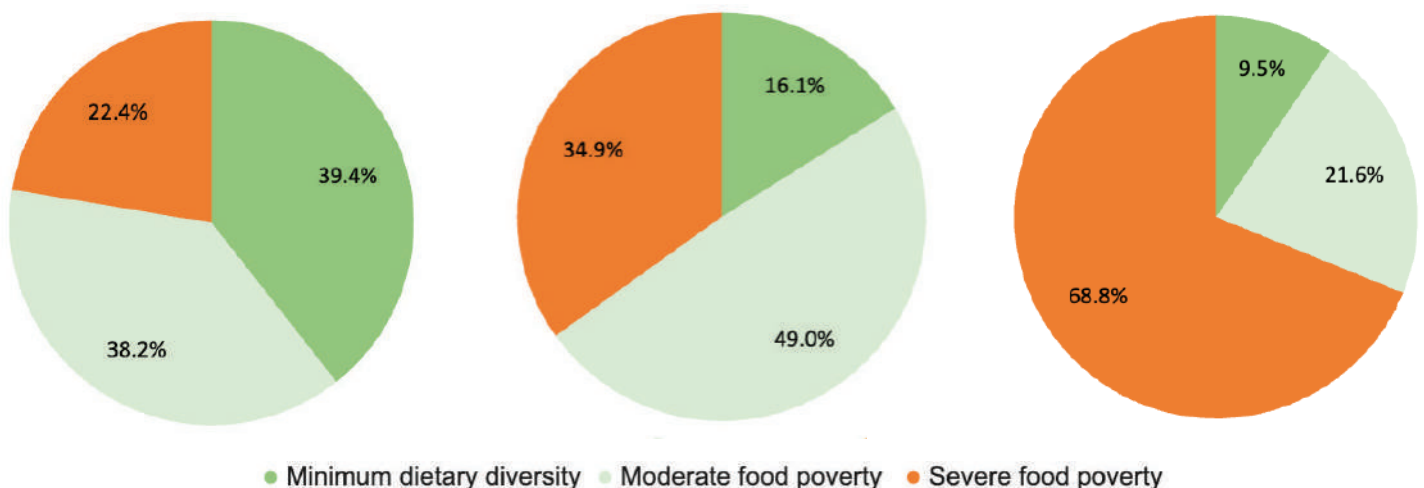


Infant and Young Child Feeding practices and Child Food Poverty

Among infants and young children, the LIMA examined multiple breastfeeding and complementary feeding indicators. While a high proportion (>80%) of children <2 years of age were ever breastfed, the proportion of other breastfeeding practices was suboptimal. To illustrate, only 60% of children were given breastmilk within 1 hour after birth, and only 23% of children < 6 months of age were exclusively breastfed. Regarding complementary feeding indicators in children 6 to 23 months of age, the LIMA found that only a small proportion achieved minimum dietary diversity (26%), minimum meal frequency (47%), and minimum acceptable diet (11%). The LIMA also found that the prevalence of all three aforementioned indicators increased with household wealth, reflecting the strong link between socio-economic status and diet quality of infants and young children.

To further analyze the adequacy of young children’s diets, children have been categorized into three groups based on the level of their dietary diversity: children with severe food poverty (i.e., 0-2 food groups), with moderate food poverty (i.e., 3-4 food groups), and with a diverse diet (i.e., ≥ 5 food groups). This analysis has shown that three-quarters of children are experiencing child food poverty and nearly one-third are living in severe food poverty, which is most common in Palestinian children.

While there are laws and legislation in place to improve IYCF practices in Lebanon, the situation needs to be improved to ensure an optimal diet for all children in Lebanon.



Minimum dietary diversity in adolescent girls and women

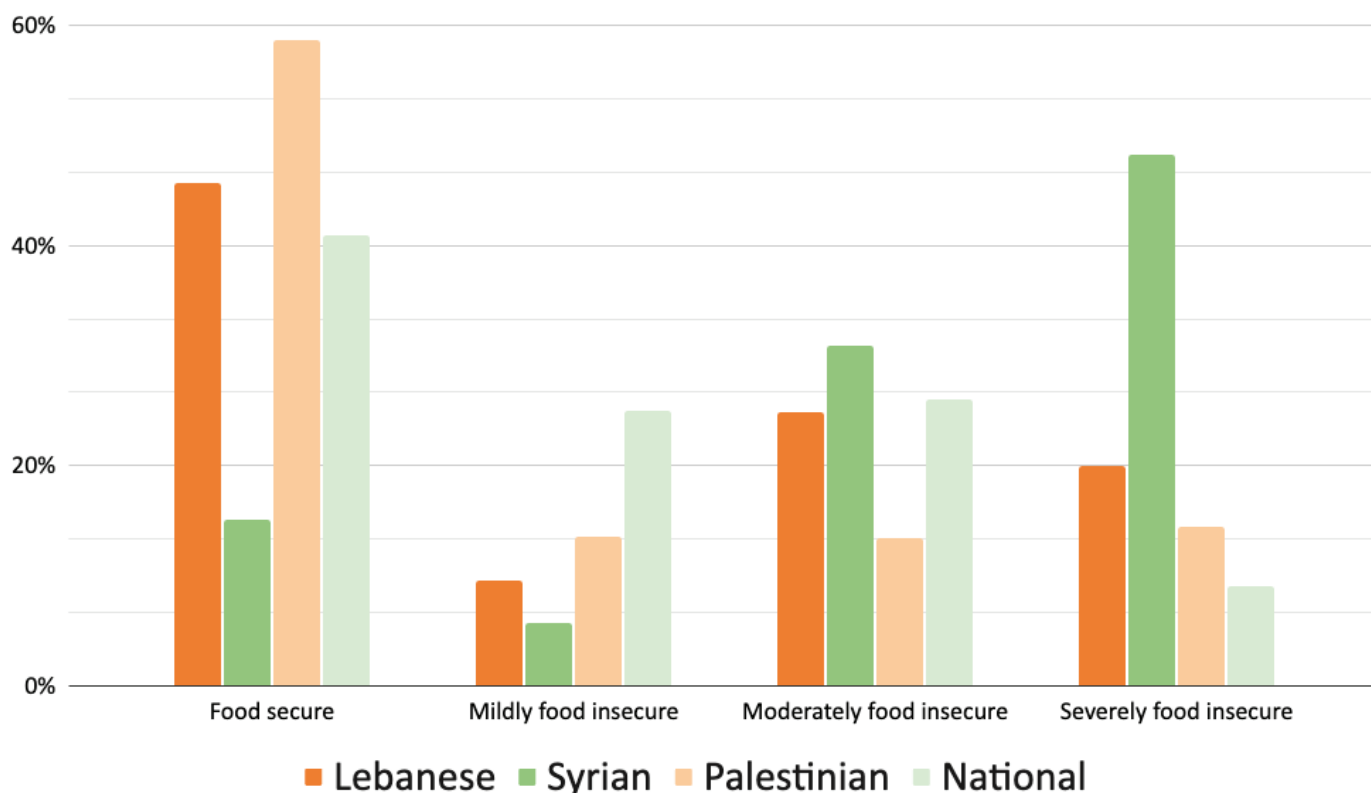
A large proportion of adolescent girls achieve minimum dietary diversity (54%), with only a relatively small proportion suffering from severe food poverty (13%). Whereas 60% of Lebanese girls have a minimum diverse diet, a diverse diet is only found in 40% of Syrian girls and 45% of Palestinian girls.

The level of dietary diversity among non-pregnant women is similar to adolescent girls; approximately 56% of women have a diverse diet and 12% have severe food poverty. In contrast to adolescent girls, the highest prevalence of dietary diversity is found in Palestinian women (65%), followed by Lebanese (60%) and Syrian (44%) women.

Household food security access

The LIMA measured food insecurity status in households to assess their access to food in the past 30 days. Household food insecurity is a major problem in Lebanon and affects households of all nationalities. Nearly 85% of Syrian households are food insecure, whereas 54% and 41% of Lebanese and Palestinian households are food insecure, respectively. The LIMA found that household food insecurity was associated with poor diet quality of household members, higher levels of stunting and underweight in children, and micronutrient deficiencies in all population groups. In addition, a higher percentage of young children living in food insecure households were off-track in their development compared with those living in food secure households.

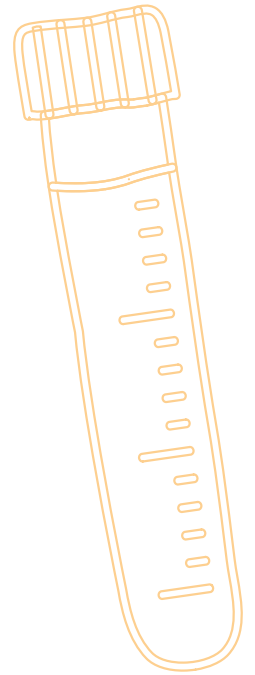
Household food security by nationality



NON-COMMUNICABLE DISEASE RISK FACTORS

The prevalence of diabetes, elevated total cholesterol and hypertension was low among adolescent girls, affecting $\leq 3\%$ of girls, while 6% of the girls nationally had metabolic syndrome. In contrast, the prevalence of visceral obesity, elevated triglycerides, and low HDL cholesterol is high, affecting 22%, 34%, and 26% of girls, respectively. Elevated triglycerides are associated with age group and menstruation status, with the highest prevalence occurring in girls 10-12 years of age and pre-menarche girls.

Approximately 15% of non-pregnant women have metabolic syndrome. Metabolic syndrome increases with age and affects more than 20% of women 40-49 years of age. Metabolic syndrome is also associated with marital status, with the highest prevalence found among divorced/separated/widowed women; however, marital status in this case serves as a proxy for age. Education level is also associated with metabolic syndrome, with a higher prevalence found in women with a basic secondary or less education.



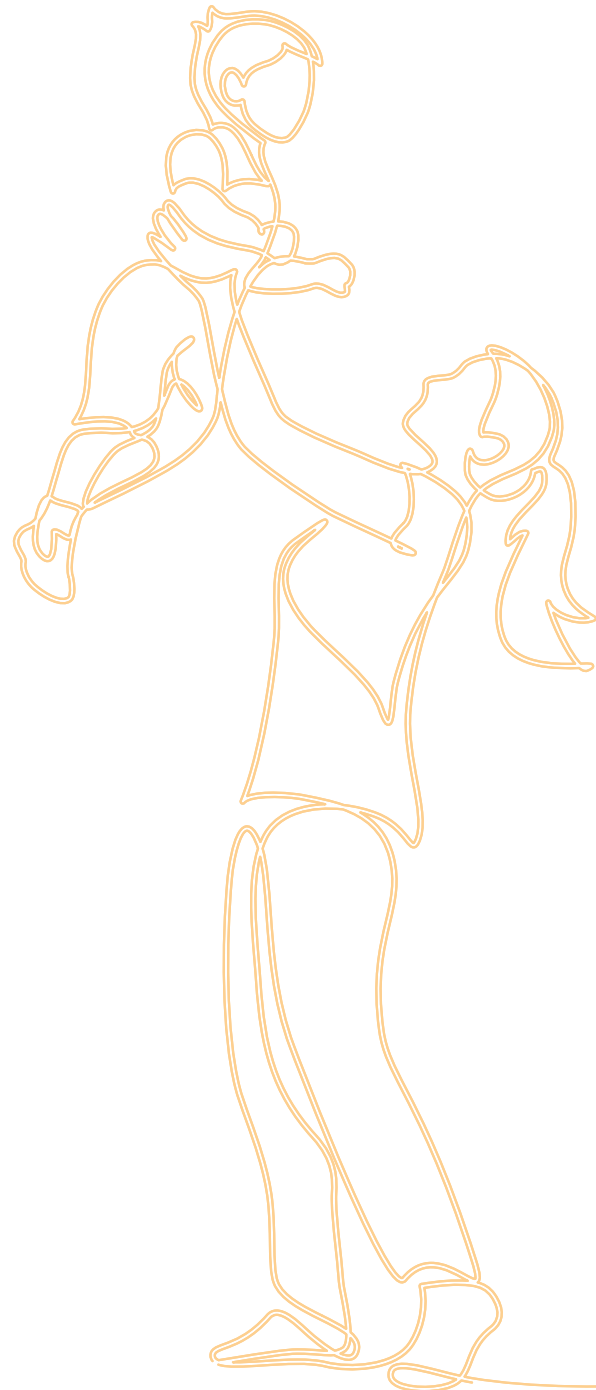
RECOMMENDATIONS

SCALING UP IMPLEMENTATION OF THE NATIONAL NUTRITION STRATEGY AND SCALING UP NUTRITION MOVEMENT

Following a rigorous multi-sectoral consultative process with key national nutrition stakeholders, Lebanon's Ministry of Public Health launched, for the first time, a National Nutrition Strategy for Lebanon (2021-2026) in 2022. This strategy comes at a critical time when the country is facing several crises that impact the health and nutrition status of Lebanon's population. The results of the LIMA survey reaffirm the need to scale up multi-sectoral nutrition programs to prevent further deterioration of the nutrition situation.

To successfully address nutrition-related issues, current and future nutrition programs should be integrated with other systems and sectors. The national government is responsible for upholding children's and women's rights to adequate nutrition, by ensuring that all children, adolescents, and women have access to nutritious, safe and affordable foods, and benefit from adequate nutrition practices and services. While responding to immediate needs is critical, long-term development assistance is needed to improve the nutrition and health status of Lebanon's population in the future.

To advance Nutrition as a national priority, it is essential to expedite collaboration across health, food, social protection, agriculture, education and WASH systems. This can be effectively addressed through the Scaling Up Nutrition movement and the establishment of a National Nutrition Council, which will drive the multi-sectoral approach outlined in Lebanon's National Nutrition Strategy. To succeed, nutrition initiatives must be integrated into both humanitarian and development agendas, with support from ministries, donors, international financial institutions, and other key partners.



SHORT-MIDTERM STRATEGIES E.G. SUPPLEMENTATION TO ADDRESS ANEMIA AND MICRONUTRIENT DEFICIENCIES

Micronutrient supplementation is a common short-to mid-term public health strategy to reduce the prevalence of micronutrient deficiencies. In Lebanon, various supplementation programs should be considered to reduce the high prevalence of certain micronutrient deficiencies.

- Due to the high prevalence of vitamin D deficiency in adolescent girls and women, it is recommended to implement a vitamin D supplementation program targeting all population groups. Vitamin D plays an important role in bone health and growth in infancy and has the potential to prevent cardiometabolic diseases. Prior to promoting supplementation, the recommended dose by national and international guidelines for each population group must be taken into consideration to guarantee optimal vitamin D status.
- Supplementation with multiple micronutrients or iron and folic acid is recommended as there is ample evidence that these types of supplements reduce maternal anemia, iron deficiency, and the risk of low birth weight in the offspring. Promoting and distributing these supplements is considered a high impact intervention among pregnant women to improve maternal survival and gestational outcomes and should therefore be strengthened in Lebanon.
- In young children 6-23 months of age, supplements may also be preferable to address micronutrient deficiencies since the limited caloric intake in this group can limit the effectiveness of fortified staple foods. As such, micronutrient powder programs for point-of-use “home fortification” should be considered to address micronutrient deficiencies in young children.
- Vitamin A deficiency in children only poses a mild public health problem, this could be partly related to the success of the current vitamin A supplementation program coupled with immunization. Therefore, it is recommended to maintain the vitamin A supplementation program and close existing coverage gaps. This can counteract the development of vitamin A deficiency, strengthen children's immune systems, and reduce the risk of mortality from measles, diarrhea, and other diseases.
- To achieve a high supplementation coverage, it is recommended that children, adolescent girls, and women be targeted during Primary Healthcare Centers (PHCs) visits and through other community platforms. Schools could also offer a good platform for supplementation programs.
- Any supplementation program must be accompanied by promotional activities and behavior change communication interventions to ensure high consumer compliance.
- To ensure successful distribution of supplements and achieve a high coverage, the appropriate infrastructure must be in place and viable distribution channels must be identified.



LONG-TERM STRATEGIES E.G. FORTIFICATION TO ADDRESS ANEMIA AND MICRONUTRIENT DEFICIENCIES THROUGH

Large scale food fortification, such as wheat flour and dairy products fortification with multiple micronutrients, is an effective long-term strategy to reduce the prevalence of anemia, iron deficiency, and other micronutrient deficiencies in Lebanon.

- Based on the findings of micronutrient deficiencies among children, adolescent girls, and women, nutrition stakeholders should consider the fortification of wheat flour with multiple micronutrients (e.g., iron, zinc, folic acid, vitamin B12). Any flour fortification program in Lebanon should also consider the inclusion of several B vitamins, such as vitamins B1, B2, B3, and B6, as these vitamins can be added to a fortification program with only modest cost increases. Given the relatively low prevalence of vitamin A deficiency, the addition of vitamin A to the premix is not recommended.
- To ensure that a flour fortification program can be successfully implemented in Lebanon, a feasibility assessment must be conducted prior to identifying relevant stakeholders, establishing the procedures for setting fortification legislation and standards, estimating program costs, and establishing monitoring and compliance procedures.
- The LIMA also found high levels of vitamin D deficiency and insufficiency, and fortifying staple foods such as milk, dairy products, margarine, and vegetable oils is an effective approach to improve vitamin D status.

REDUCE UNDERNUTRITION IN CHILDREN

The drastic increase in stunting in children < 5 years of age from 2021 to 2023 is of concern and may indicate that current programs in Lebanon do not meet the nutritional needs of children. In addition, inappropriate feeding practices of infants and young children contribute to the high prevalence of stunting. It is therefore recommended:

- Exclusive breastfeeding in the first 6 months of life should be promoted and supported to ensure adequate nutrition and protection of infants from gastrointestinal infections.
- For children aged 6-23 months, the consumption of healthy, diversified diets should also be promoted to improve the diversity and quality of the diet.
- Design social transfers – cash, food and/or vouchers – that support nutritious and safe diets in early childhood, especially among the most vulnerable groups and in response to humanitarian crises.
- Use social protection programs to improve caregivers' knowledge about young child feeding by providing education and counseling and by encouraging the use of health and nutrition services.
- Hygiene promotion initiatives and behavior change interventions should be expanded, and designed to improve child hygiene practices to prevent infections. This is key considering the high prevalence of diarrhea and its significant role in stunting.
- The national guidelines for the prevention and management of wasting should be revised to enhance the quality and coverage of the program with a focus on the first 1000 days of life.



REDUCE CHILD FOOD POVERTY

A multi-sectoral approach is needed to address food insecurity in Lebanon as poverty is dramatically increasing. Both immediate and long-term programs are needed. While many agencies are already involved in food security programs and reducing poverty initiatives, efforts are still required to target people of all nationalities in the community and camps. Moreover, the large proportion of children suffering from food poverty indicates that the current social protection and food assistance schemes are not sensitive to the needs of children during early years. To address child food poverty and reduce household food insecurity all humanitarian and development partners, including national and international civil society and non-governmental organizations, and the private sector must mobilize and utilize the health, social protection and food systems to deliver nutritious, safe and affordable foods and essential nutrition services to guarantee every child's right to food and nutrition.

- Social protection systems that respond to the nutritional needs of the most vulnerable children should be designed and activated. One effective approach to improving food access and dietary diversity is the integration of cash-based transfers into food assistance programs. In addition, social protection programs can be used to improve caregivers' knowledge about child feeding and nutrition by providing education and counselling and by encouraging the use of essential nutrition services.
- The availability and affordability of nutritious foods should be increased – including fruits, vegetables, eggs, fish, meat, and fortified foods for young children – by incentivizing their production, distribution, and retail.
- National standards and legislations to protect young children from unhealthy processed and ultra-processed foods and beverages as well as harmful marketing practices targeting caregivers must be implemented.
- Nutritional programs that include the distribution of supplementary foods and micronutrient powders to help improve nutritional status alongside improvements in food security status should be implemented.
- School feeding programs providing meals and snacks to children should also be considered as they have shown to overcome certain poverty-related obstacles and enhance food security.
- Long-term programs such as agricultural support and capacity building for farmers, kitchen gardening, and other activities that foster self-sufficiency will be required for the sustainability of the interventions.

IMPROVE INFANT AND YOUNG CHILD FEEDING PRACTICES

The LIMA found that some breastfeeding and complementary feeding practices are suboptimal. To improve these practices:

- Expansion of Lebanon's baby-friendly hospital initiative and breastfeeding counseling services are recommended to enhance the coverage of optimum breastfeeding.
- Breastfeeding promotion should be established as an integral part of ante and postnatal care to raise awareness of the importance of breastfeeding.
- Research about the breastfeeding practices should be conducted. This could include research related to barriers to optimal breastfeeding practices after birth, breastfeeding support provided at hospitals/clinics, and knowledge, attitudes and practices of breastfeeding of women who have recently given birth.
- Programs to alleviate problems with complementary feeding practices must focus on providing adequate foods to improve the children's diet, which depends on the availability, access, affordability and desirability of such foods.
- Adequate health, nutrition, WASH, and social protection services will have to be provided as they are critical for the quality of the child's diet.
- Programs are needed to improve caregivers' knowledge, which has been shown to translate into better feeding, care and hygiene practices.
- Geographic targeting of behavior change communication and social protection programs should be considered since the LIMA found that children in certain strata had poorer dietary diversity and meal frequency practices.
- Use multiple communication channels, including digital media, to reach caregivers with factual information and advice on young child feeding and increase the desirability of nutritious and safe foods.



PROMOTE EARLY CHILDHOOD DEVELOPMENT

Promoting early childhood development in Lebanon warrants public policy attention.

- Maternal, child nutrition and health services should integrate early stimulation, safety, and responsive care advice to promote early childhood development. These services should also include screening and early interventions for children at-risk of developmental delays and disabilities. Lebanon should capitalize on its experience of the rising Initiative to scale up delivery of integrated nutrition and child development services utilizing multiple platforms including Primary Health Care Centers, community platforms, home visitation, nurseries, kindergartens and digital platforms.
- Universal programs promoting care for early child development can include expansion of harmonized child centred home visitation and large-scale behavioral change campaigns (e.g., using social media) that support caregiver engagement.
- Community-based strategies in partnership with non-government organizations can enhance access to early childhood toys and learning materials (e.g., book and toy libraries) to the most vulnerable groups in the populations.
- Building on the systematic Rising Education program developed by the Ministry of Public Health and UNICEF, building the capacity of PHC staff, nursery workers and pre-school teachers on Care for Child Development is recommended to optimize stimulating, protective, and responsive care for children in Lebanon.
- Growth and Development especially during the first 1000 days of life are inter-connected; hence, interventions to address malnutrition and developmental deficits need to be integrated. Expanding the rising Initiative of the Ministry of Public Health is recommended to ensure Integrated ECD and Nutrition services are scaled up to reach more children and caregivers.
- Interventions that target the promotion of ECD, and child nutrition and health, must also pay attention to the wellbeing and support of caregivers. Integration of screening for depression in antenatal and postnatal care with intervention for at risk women should be considered. In addition, general guidance on support, self-care and caring for caregivers should be delivered in multiple contact points with families of young children.

REDUCE THE PREVALENCE OF OVERWEIGHT AND OBESITY

Overweight and obesity is a serious public health problem in Lebanon with medium to high relevance, especially among adolescent girls and women⁶.

- School-based nutrition interventions can play a major role in the prevention of obesity by promoting healthy nutrition and physical activity behaviors. These interventions could include school nutrition education and feeding programs, as well as the promotion of a healthy food environment. Serving healthy choices in the kiosks, limiting the availability and marketing of unhealthy foods and sugary drinks, and making water available to students throughout the day are some of the ways that schools can help prevent obesity.
- As retaining pregnancy weight after childbirth is a major risk factor for later overweight and obesity, it is advised to include behavioral change communications and counselling for mothers to antenatal and postnatal care services.
- Policies along the food system are needed to promote the production and purchase of healthy foods and limit the affordability and marketing of high-sugar and high-fat foods. This can be achieved through taxation measures to discourage consumption.
- At a community level, nutritional knowledge should be improved by introducing the concept of healthy eating habits and encouraging physical activities.
- Regular screening for overweight and obesity and weight management programs in primary care settings are recommended.
- Policies can be established to promote physical activity as physical activity patterns are considered to be one of the major modifiable factors underlying excessive weight gain.
- Implement national standards and legislation to protect children and adolescents from unhealthy processed and ultra-processed foods and beverages and harmful marketing practices targeting children and families.



ENFORCE THE IODIZATION LAW AND ESTABLISH REGULATORY MONITORING PROCEDURES

The results from the LIMA show that the coverage of iodized salt is low, and that this low coverage is associated with poor iodine status in certain subgroups.

- It is recommended to enforce the law 178/2011 and ministerial decrees ⁷⁻⁸ to increase the coverage of adequately iodized salt in Lebanon. Lebanon's 2016 ministerial decree requires monthly monitoring of the iodization status of all salt manufacturers, and the 2011 law stipulates the penalties for noncompliance that would be imposed by the Ministry of Public Health in collaboration with the Ministries of Industry and Economy.
- Program managers should liaise with salt manufacturers to understand iodization bottlenecks and areas where technical capacity can be improved. In order for Lebanon's salt manufacturers to conform to national standards and legislation, a clear understanding of their operational and technical challenges is required. Adequate iodization is only possible when all salt producers in Lebanon have the technical and logistical capacity to control the performance of the iodization process.
- Establish sustainable regulatory monitoring procedures via a partnership between the Ministry of Public Health and the Ministry of Economy and Trade. Consistent regulatory monitoring is needed to ensure that quality control measures are met by the salt producers in Lebanon and are applied to salt imports. Regulatory monitoring data should be routinely collected and analyzed to document the compliance of different salt producers and importers and can be collected at the level of production and distribution. This data can also be used to further interpret the results of the LIMA survey and can provide valuable insights to the program managers of Lebanon's salt iodization program.
- NCD control and prevention must focus on the reduction of modifiable behavioral and cardiometabolic risk factors, such as smoking, lack of exercise, poor diet, obesity, high blood pressure, low HDL cholesterol, and diabetes and pre-diabetes. Reducing the prevalence of these risk factors at the population level in Lebanon can help reduce morbidity and mortality from NCDs.



REFERENCES

1. Lebanon Nutrition Sector. Lebanon. National Nutrition SMART Survey Report . Beirut, Lebanon; 2021.
2. WHO. Nutrition Landscape Information System (NLIS): Country Profile Indicators- Interpretation Guide. Organization WH, editor. Geneva, Switzerland: World Health Organization; 2010.
3. World Health Organization. Guideline on haemoglobin cutoffs to define anaemia in individuals and populations. Geneva, Switzerland; 2024.
4. WHO. Serum retinol concentrations for determining the prevalence of vitamin A deficiency in populations. In: Vitamin and Mineral Nutrition Information System . Geneva; 2011.
5. IZiNCG. IZiNCG Technical Brief No 12: Comparison of laboratory instrument types for analysis of plasma or serum zinc concentration. Oakland, CA; 2020.
6. UNICEF. Landscape analysis tool on overweight and obesity in children and adolescents. New York, USA; 2022.
7. Government of Lebanon. Lebanon's 2014 National Guidelines for implementing law 178/2011. Beirut, Lebanon; 2014.
8. Ministry of Public Health (Lebanon). Resolution No. 1/1199- On the implementation of Law No. 178, dated August 29, 2011, on the addition of iodine to salt and its monitoring. National Gazette, 1/1199 Lebanon; Jun 27, 2016.



United Nations Children's Fund (UNICEF)
Lebanon Country Office
www.unicef.org/lebanon