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WHAT IS MALNUTRITION?

This piece is a brief summary of the TABLE Explainer **What is malnutrition** and aims to illuminate key elements of the three forms of malnutrition.

What is malnutrition?

Defined in a myriad of ways by **various authorities**, malnutrition can be broadly characterized as deficiencies, excesses, or imbalances in the energy (i.e. calories), macronutrients (e.g. protein, fat, carbohydrates) or micronutrients (e.g. vitamin A, iron, iodine) a person obtains. **Malnutrition** is primarily driven by three distinct conditions:

- An insufficient variety of foods (too much or too little)
- An inability to absorb nutrients properly (e.g. as a result of **intestinal worms** or **diarrhea**)
- Loss of too much of a particular nutrient (e.g. heavy menstrual bleeding can result in iron loss)

While commonly used as a synonym for hunger, malnutrition manifests in three different forms, which require different interventions, have varying geographic prevalence, and pose unique challenges for public health systems.

The three forms of malnutrition

Undernutrition – hunger & macronutrient deficiencies

Undernutrition, resulting from hunger and macronutrient deficiencies, occurs when individuals do not obtain enough energy to maintain their body weight and carry out physical activity. Hunger has severe consequences for health and human development and was estimated to affect roughly **800 million people globally in 2020**. Undernutrition is deadly; roughly **45 percent of deaths among children under five** result from undernutrition, primarily in low- and middle-income countries. People who experience hunger can experience

Included in this summary

Hunger & macronutrient deficiencies

Micronutrient deficiencies

Overnutrition

Multiple burdens of malnutrition





wasting (i.e. a person is too thin for their height) or **underweight** (i.e. a person is significantly underweight for their age). **Stunting** (i.e. when a person, typically a child, is too short for their age) can **disrupt healthy brain development** and thus have lifelong health, social, and economic consequences. Insufficient protein intake is estimated to affect roughly **12% of the global population** and can lead to **kwashiorkor** (swelling under the skin and loss of muscle mass), **marasmus** (loss of fat and muscle), and **sarcopenia** (loss of muscle mass, particularly in older people). More broadly, undernutrition in the form of hunger and macronutrient deficiencies **traps people in a cycle of poverty** by affecting their educational attainment and ability to work.

Undernutrition – micronutrient deficiencies

Undernutrition in the form of micronutrient deficiencies is extremely widespread in both the Global North and the Global South. While there is limited comprehensive data on global prevalence, estimates suggest that **over two billion people** are affected. The impacts of micronutrient deficiencies depend on which micronutrient is lacking. For example, **vitamin A deficiency** can result in night blindness and immune system impairment, **iodine deficiency** can cause a goiter, and **iron deficiency** can contribute to certain types of anemia. **Children and pregnant women in low- and middle-income countries** are at particularly high risk of micronutrient deficiencies.

Overnutrition

Overnutrition is perhaps the most contested form of malnutrition. There is largely a consensus that **excess calorie intake is a leading cause of overweight and obesity**. However, debates regarding overnutrition center on the locus of responsibility. Traditional media and health narratives point to individuals' dietary choices and sedentary lifestyles as the crux of the problem. This focus on the individual masks the larger, societal drivers such as the responsibility of the food industry and the failure of governments to effectively regulate the food environment.

Recently, alternative causal mechanisms of obesity have gained prominence, including **genetics, gut microbiota,** and **hormonal responses to the consumption of certain foods**. While there certainly is evidence that there are a number of biological factors that predispose individuals to overweight and obesity, these have existed in humans for centuries, if not longer. In contrast, the rise in overweight

and obesity is very much tied to the rise of the modern food industry and increasingly sedentary lifestyles in the 20th century.

The **prevalence of overweight and obesity globally has tripled since 1975**; the World Health Organization estimates that roughly two billion people globally are overweight or obese. **Body mass index** is **positively associated** with risk for various **non-communicable diseases** including heart disease, stroke, some cancers, type 2 diabetes, and musculoskeletal disorders. Beyond the direct health risks, **weight bias/stigma** can have severe consequences for people with overweight or obesity, including discrimination, bullying, avoidance of healthcare services, lower wages, and social isolation.

Multiple burdens of malnutrition

The 'multiple burden' of malnutrition refers to more than one form of malnutrition in the same individual, household, or population. For example, a person could be consuming excessive calories, but still have a micronutrient deficiency resulting from an inability to absorb a specific vitamin. **Malnutrition, in all its forms, is a global phenomenon** and affects every country to some extent. Among countries with available and comparable data, **87% experienced high levels of at least two forms of malnutrition in 2020**. However, **low- and middle-income countries** which have more recently undergone the **nutrition transition** are experiencing an acceleration of the coexistence of diseases associated with both obesity/overweight and undernutrition.

Conclusion

The concept of malnutrition goes far beyond hunger; it is a complex, multi-faceted global health threat affecting every country in the world. Multiple forms of malnutrition can coexist in the same person, household, or country, placing a particularly heavy public health burden on low- and middle-income countries. As our understanding of the causes of malnutrition, particularly overnutrition, continues to evolve, policymakers must not lose sight of the role of the food industry and government policy in addressing malnutrition.

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