Nutrition, Malnutrition and Food Security

Basic concepts and current Syria situation
Food and Nutrition
“The intake of food, and the interplay of biological, social, and economic processes that influence the growth, function and repair of the body.”
Nutritional Status

Nutritional status

- Nutrient intake
- Nutrient requirements
- Body’s ability to digest, absorb and use nutrients
**Nutrient Intake**

*Nutrient intake* refers to the different nutrients taken in by the body.

There are 2 main types of nutrients:

- **Macronutrients**
  - Fats
  - Protein
  - Water
  - Carbohydrates

- **Micronutrients**
  - Vitamins
  - Macrominerals
  - Microminerals ("trace elements")
Nutrient Requirements

The different nutrients needed by the body for energy, growth and repair, and protection from disease.

2’100 Kcal:
• **MACRONUTRIENTS**
  > 50% from carbohydrates
  10 - 13% from proteins
  < 20 from fat
• **MICRONUTRIENTS**: Vitamins and minerals
Nutrient Requirements

Differ according to the age, gender, level of physical activity, height, weight, stage of life, and health status of each individual.
A Balanced Diet

A diet that provides an **adequate amount and variety of food** to meet a person's energy and nutrient requirements for a healthy and active life.

It must be composed of a **variety of foods from different food groups**:

- Vegetables
- Fruits
- Staples
- Fats and Oils
- Meat, Eggs, Fish, Dairy

**Drink plenty of water**
Malnutrition
Identifying Those with Malnutrition

Below are 4 children who are the same age. Who do you think may be malnourished?
Identifying Those with Malnutrition
What is Malnutrition and What Does it Include?

The term malnutrition indicates an inadequate nutritional status:

“An abnormal physiological condition caused by deficiencies, excesses or imbalances in energy and/or nutrients necessary for an active, healthy life.

Malnutrition includes overweight and obesity, undernutrition, as well as micronutrient deficiencies.”
Overweight and obesity

“Body weight that is above normal for height as a result of an excessive accumulation of fat. It is usually a result of excessive food intake relative to dietary nutrient requirements.”
Undernutrition

“The outcome of insufficient food intake to meet dietary energy requirements, and/or poor absorption and/or poor biological use of nutrients consumed as a result of repeated infectious disease.
“Lack of vitamins, minerals and/or trace elements required in small amounts which are essential for the proper functioning, growth and metabolism of a living organism.”
Overweight & Obesity in Syria

**Pre-crisis Syria**

- 45% of deaths attributable to Cardiovascular Disease

- Half of 45-65 year old women had hypertension

- 15% of the population had type 2 Diabetes
Severe Acute Malnutrition in SYRIA

- Is characterised by **extreme weight loss**, resulting in **low weight for height**, and/or **bilateral oedema**.
- High risk of morbidity & mortality

- **Global Acute Malnutrition Rate**: 7.2%
- **Northern Syria**: Idleb 1.1%, Aleppo 1.3%, Hama 2.4%
- **Gaps in current data** - Besieged and hard to reach areas
Chronic Malnutrition (or Stunting)

- Long-term malnutrition as a result of inadequate intake or repeated infections, or both.
- Low height for age
- Can impair physical and/or mental development.

SYRIA Stunting Rate
Pre-crisis: 23%
Current: 22.3%
Hama: 26%

Two girls, both 5 years old, in Kabul. The girl on the left suffers from stunting.
Based on the symptoms described, in which micronutrient is each group deficient?

**Micronutrient Deficiencies**

**Group 1**
- Low hemoglobin
- Pale palms and inner eyelids
- Fatigue and reduced work productivity

**Group 2**
- Night blindness
- Slow bone development
- Weak immune system

**Group 3**
- Extreme fatigue
- Goiter
- Severe risk of brain impairment during fetal development and in the first few years of life

Iodine | Vitamin A | Zinc | Iron
Micronutrient Deficiencies

Based on the symptoms described, in which micronutrient is each group deficient?

**Iron**
- Group 1
  - Low hemoglobin
  - Pale palms and inner eyelids
  - Fatigue and reduced work productivity

**Vitamin A**
- Group 2
  - Night blindness
  - Slow bone development
  - Weak immune system

**Iodine**
- Group 3
  - Extreme fatigue
  - Goiter
  - Severe risk of brain impairment during fetal development and in the first few years of life
Micronutrient Deficiencies in Syria

Pre-Crisis:
- Vitamin A: 8.7%
- Iodine: 12.9%
- Iron: 29.2%

Current Situation:
- Iron deficiency Anaemia
- Syrian Refugees, children 6-59 months: 48.7%
- IDPs in Idleb & Aleppo, children 6-59 months: 37%
Triple burden of malnutrition in Syria

Malnutrition

- Overweight and obesity
  - Coronary Heart disease
  - Hypertension
  - Diabetes
  - Hypertension
  - Cancer

- Undernutrition
  - Stunting
  - Wasting

- Micronutrient deficiencies
  - Iron
  - Vitamin A
  - Iodine
Malnutrition Throughout the Life Cycle

- Woman malnourished
- Pregnancy: low weight gain
- Baby: low birth weight
- Child: wasted
- Adolescent: stunted
- Child: stunted

Inadequate fetal nutrition
Inadequate catch-up growth
The 1000 days

[Diagram showing the relationship between inadequate fetal nutrition, low birth weight, and stunting in child and adolescent development]
PHYSIOLOGICAL Vulnerabilities TO Malnutrition

• The first 1000 days of life
  → Pregnant and lactating women
  → Children below 2 years old

• Sick patients:
  → chronic (HIV/TB)
  → acute (surgery)

• Elderly
SOCIO-ECONOMICAL Vulnerabilities TO Malnutrition

• Livelihood groups facing a shock
• Cyclical insecurity
• Children in the poorest households are more than twice as likely to be stunted as children in the richest households
Nutritional status is influenced by multiple and interrelated factors.

The most important factors can be grouped under these broad categories:

• FOOD

• HEALTH AND SANITATION

• CARE AND FEEDING PRACTICES
**Nutrition-sensitive interventions**

- **Nutrition-specific interventions** address the immediate causes of malnutrition.
- **Nutrition-sensitive interventions** address the underlying causes of malnutrition.

**Immediate causes**
- Short-term consequences: Mortality, morbidity, disability

**Underlying causes**
- Basic causes
  - Financial, human, physical and social capital
- Social-cultural, economic and political context

**Intergenerational consequences**
- Long-term consequences: Adult height, cognitive ability, economic productivity, reproductive performance, metabolic and cardiovascular diseases
  - Maternal and child undernutrition
  - Overweight and obesity
Framework for actions to achieve optimum foetal and child nutrition and development, 2013 Lancet series
Take home messages

• Determinants of malnutrition are multi-sectoral: food intake, access to food, health, care, water and sanitation, gender...

• Agreeing on malnutrition causes leads to design joint actions
Food Security
The Definition of Food Security

“All people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”
The Four Pillars of Food Security

The metabolism of food by individuals
The ability of an individual or household to obtain food over time
The supply of food through production, distribution, and exchange
The affordability and allocation of food, as well as the preferences of individuals and households

Food utilization
Food stability
Food availability
Food access
“All people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health and care.”
Nutrition Security and How it Differs from Food Security

Nutrition Security

Food Security

Immediate causes
- Inadequate dietary intake

Underlying causes
- Household food insecurity
  - Household access to adequate quantity and quality of resources: land, education, employment, income, technology
- Inadequate care and feeding practices
- Unhealthy household environment and inadequate health services

Basic causes
- Financial, human, physical and social capital
- Social cultural, economic and political context

Intergenerational consequences
- Long-term consequences: Adult height, cognitive ability, economic productivity, reproductive performance, metabolic and cardiovascular diseases
- Maternal and child undernutrition
- Diseases

Short-term consequences: Mortality, morbidity, disability

Overweight and obesity
8.7 million people are unable to meet their basic food needs

Crop production impacted by high labour cost, shortages of workers, crop destruction and fragmented markets with disrupted supply chains and severe damage to mills and bakeries

Food production is 40% below pre-crisis levels

In besieged areas, tens of thousands of people subsist on grass and weeds while warring parties prevent access to food and essential medicine
Causes of Nutrition Insecurity in Syria

**HEALTH**

- June - August 2015, one healthcare facility struck by aerial attacks every two days, severely Disrupting the provision of services.
- 42 per cent of pregnant women scheduling caesarian sections to plan deliveries rather than risk going into labour amidst conflict.
- Only 45 per cent of the pre-conflict health work force is active inside Syria.
- Over 1 million children under five have not been reached by routine immunization.

**WASH**

- 70% of the population lacks access to safe drinking water.
- There has been an increase of the occurrence and spread of Water Born Diseases, especially acute bloody diarrhoea, particularly in children < 5 yrs.