WELCOME

TOPIC-malnutrition

Introduction

Nutrition

Nutrition is the biochemical and physiological process by which an organism uses food to support its life. It provides organisms with nutrients, which can be metabolized to create energy and chemical structures. Failure to obtain sufficient nutrients causes malnutrition.

Malnutrition

A condition caused by not getting enough calories or the right amount key nutrients, such as vitamins and minerals, that are needed for health. Malnutrition may occur when there is a lack of nutrients in the diet or wher the body cannot absorb nutrients fro food

Undernutrition

Undernutrition is defined as insufficient intake of energy and nutrients to meet an individual's needs to maintain good health.

Overnutrition

Overnutrition is a condition where the intake of needed nutrients is oversupplied in a particular form of diet. It is categorized as a type of malnutrition and causes health problems to the person who is affected by it much like a lack of nutrients in a particular diet. Overnutrition is caused by extreme diets or overconsumption of food. Overnutrition is also referred to as hyperalimentation

Energy

Weight loss is an obvious sign of a diet which is too low in energy.

Children who do not meet their needs for energy may stop gaining weight and stop growing.

In severe cases, a low energy intake results in starvation.

Children, especially those under 5 years of age, suffer from the effects of starvation more quickly than adults. This is because they have higher nutritional requirements in relation to their small size.

Energy

In severe situations when the diet provides too little energy and protein, a life threatening condition can develop. This is called protein energy malnutrition.

Kwashiorkor and Marasmus are the two most common forms of this condition.

In kwashiorkor, subcutaneous fat is usually preserved and muscle wasting occurs but is often masked by oedema (swelling from fluid retention).

Marasmus is a chronic condition of semi-starvation. In later stages, it is characterised by muscle wasting and an absence of subcutaneous fat and to which children adjust, to some extent, by reduced growth.

Protein and fats

The diet must provide the right combination of protein to provide all the essential amino acids, and some fat to provide the essential fatty acids.

A lack of these in the diet can cause symptoms of deficiency.

This is very rare in the UK, because people usually have an adequate energy intake.

Older people suffering from sarcopenia, the loss of skeletal muscle mass and strength as a result of ageing, or with poor appetites may benefit from consuming more protein.

Vitamins and minerals

Vitamins and minerals are only required in very small amounts, but a diet insufficient in these can cause deficiency diseases.

With the exception of iron deficiency anaemia, vitamin and mineral deficiency diseases are rare in developed countries.

However, low intakes of vitamins and minerals do occur in the UK.

Vitamins and minerals

In 2016 the National Diet and Nutrition Survey released data on the prevalence of low nutrient intakes in the UK in Years 7 and 8 (combined).

	Male					Female				
Age, years	4-10	11-18	19-64	65-74	75+	4-10	11-18	19-64	65-74	75+
Vitamin A	13	19	16	6	5	11	24	10	7	10
Riboflavin	0	13	6	1	3	1	26	14	7	13
Folate	0	3	3	0	3	1	15	6	3	8
Iron	0	12	2	0	2	3	54	27	8	12
Calcium	2	11	7	0	4	1	22	11	11	10
Magnesium	0	27	14	6	22	3	50	11	11	27
Potassium	0	18	11	4	16	0	38	23	22	34
Iodine	6	14	9	2	4	4	27	15	6	9
Selenium	1	26	25	34	39	1	45	47	57	76
Zinc	9	18	7	5	8	14	27	8	3	12

Vitamins and minerals

Vitamins and minerals each have many different functions, and as a result prolonged deficiency can affect health in many ways.

Fat soluble vitamins (A, D, E and K) and minerals are stored in the body, therefore it takes time for deficiency diseases to develop, e.g. rickets.

Water soluble vitamins (B-group and C) are not stored in the body, therefore low intakes usually lead to signs of deficiency relatively quickly, e.g. beri-beri.

Health issues and waight loss

The risk of malnutrition is increased by:

- **increased requirements**. It is more difficult to meet nutritional needs during periods of increased requirements. For example, some women have very high requirements for iron, e.g. if their menstrual losses are high, if they cannot obtain enough in their diet they may develop anaemia;

- **reduction in availability of food**. Famine is an extreme example;

- **medical conditions**. Some may affect food intake of the absorption of nutrients from food.

Health issues and waight loss

The risk of malnutrition is increased by:

- **restricted range of food**. A diet based on a narrow range of food is more likely to lack nutrients.

- **income**. Lack of money may make it difficult to purchase an adequate diet. Cultural practices may mean that not everyone in a family gets a fair share of the food available.

Health issues and waight loss

The risk of malnutrition is increased by:

- **other substances in food**. Very high intakes of some substances, for example dietary fibre, reduce absorption of some nutrients from food;

- **psychological problems**. Some may affect food intake;

- **unusual dietary habits**. These may lead to over nutrition, e.g. taking toxic amounts of vitamin/mineral supplements or under nutrition e.g. having a slimming diet that does not provide sufficient nutrients.

Factors affecting malnutrition

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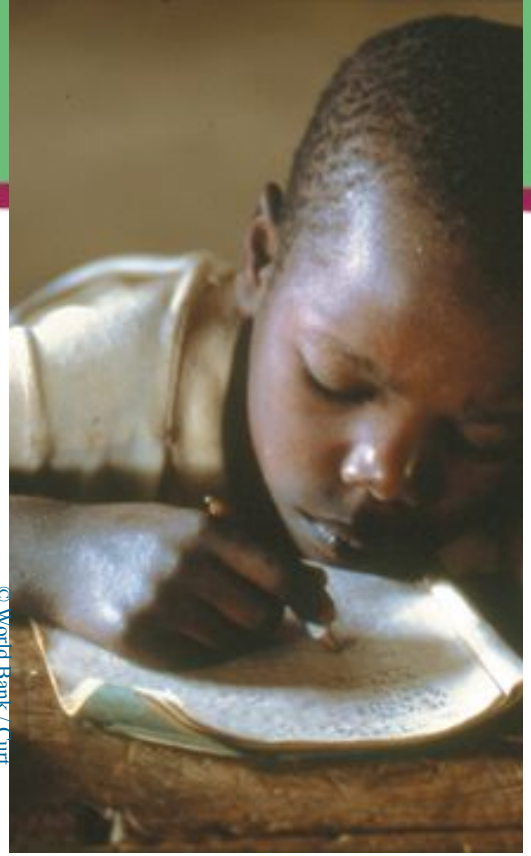

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Nutrition's impact on education

Nutrition's Impact on Education

UNDERNUTRITION AND EDUCATION
Preventable impacts

Low height for age	Reduction in mental capacity; adverse school performance
Iodine deficiency	Population IQ reduces about 13.5 points; poor cognitive performance
Low birth weight	Poor cognitive performance during infancy; poor attention span in school
Iron deficiency anemia	Reduced cognitive ability; reduction in school performance

What Can Be Done?

- Intervene early: Formation of "human capital" begins in utero.
- Most growth failure occurs between 6 and 24 months.
- Early damage can only partially be reversed.
- Successful health, family planning, and nutrition programs exist, including growth promotion, supplementation, and fortification.

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Nutrition and Population

POPULATION

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Nutrition and Population

- World population grew from 2.5 billion in 1950 to 6 billion in 2000. Average life expectancy at birth increased worldwide.
- World population will likely peak at about 8 billion in 2030 and then decline for the rest of the century.
- Nutrition and population changes are intimately linked: Nutrition influences fertility and mortality rates.

Nutrition's Impact on Population

Qualitative aspects

- Good nutrition reduces mortality and morbidity
  - Higher maternal survival rate at childbirth
  - Healthier babies born
  - Breastfeeding can reduce fertility
- Improved child survival reduces population growth
  - Better health and survival than malnourished children
  - Exclusive breastfeeding important for baby
  - Increased life span

Quantitative aspects

- Improved child survival reduces population growth
  - Increased birth intervals
  - Reduced demand for large families leads to fewer births

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Nutrition and Health

HEALTH

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Nutrition's Impact on Health

- Mortality
  - 60% of under-five child deaths in developing countries are associated with malnutrition, including effects of mild to moderate undernutrition.
- Morbidity
  - Malnutrition (under and over) increases incidence, severity, and duration of diseases.
  - Obesity hastens the development of chronic disease and can add to the burden of undernutrition.

Micronutrients' Impact on Health

- Improving vitamin-A status
  - Reduces mortality rates 23% on average.
  - Prevents 1.3–2.5 million deaths per year
  - Saves hundreds of thousands of children from irreversible blindness
- Improving iron status
  - Increases levels of national productivity by 20%
  - Reduces maternal mortality; iron-deficiency anemia contributes to 20% of all maternal deaths
- Improving iodine status prevents mental retardation and brain damage

What Can Be Done?

- Successful interventions
  - Universal salt iodization
  - High-dose vitamin-A supplementation with national immunization days
  - Vitamin-A campaigns during child health weeks

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Nutrition and The Environment

ENVIRONMENT

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Nutrition's Impact on the Environment

- Malnourished populations cannot or will not make environmental protection a priority.
- Adequate nutrition increases conservation by reducing pressure to use resources unsustainably.

What Can Be Done?

- Research on genetic improvements in crops, crop diversification, and soil management
- More research needed to identify indigenous crops that are nutritious and genetically diverse
  - Wild and indigenous foods should be screened to identify those that are high in nutrients and micronutrients, soluble fibers, or antioxidants.
- Investigate traditional lifestyles and their human/environment relationship to find sustainable solutions for the malnourished.

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Nutrition and Agriculture

AGRICULTURE

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Nutrition's Impact on Agriculture

- Most of the world's poor live in rural areas and depend on agriculture.
- Good nutritional status supports agriculture through enhanced work capacity and productivity.
- Productive agriculture depends on adequate nutrition status and vice versa.

What Can Be Done?

- Efficient, low-cost production of staple crops feeds the poor and releases income for other food expenditures.
- As farmers' incomes rise, so does demand for fruit, vegetables, and animal products rich in micronutrients.
- Technological change in agriculture can enhance the nutritional content of foods.

Nutrition and Gender

GENDER

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Nutrition's Impact on Gender Issues

- Women/girls often consume less food: Equal access and distribution benefits the entire family.
- Women's reproductive, productive, and social roles are nutritionally taxing.
- Malnutrition disproportionately increases morbidity and mortality in women and children.
- Malnourished women cannot adequately care for families.
- High investment in women's nutrition raises overall human development potential.

Women's Control Over Assets

- Raises agricultural output
- Educates more children
- Improves number of infant visits to health facilities
- Accelerates child growth and development
- Raises household food security

What Can Be Done?

	Creating level playing field	Promoting catch-up
Immediate (interventions)	Reform health services (equalize immunization rates)	Subsidize programs (subsidize daycare so women can work; provide iodized salt for expectant mothers; iron supplementation)
Underlying (programs)	Reform service delivery (equal access to water, sani-tation, extension services)	Cash transfers to women (promote access for girls to health care systems)
Basic (legislation)	Equal rights (monitor gender differences in nutritional status and reform	Target new resources to women (add nutrition component to women's credit programs)

Nutrition and Poverty

POVERTY

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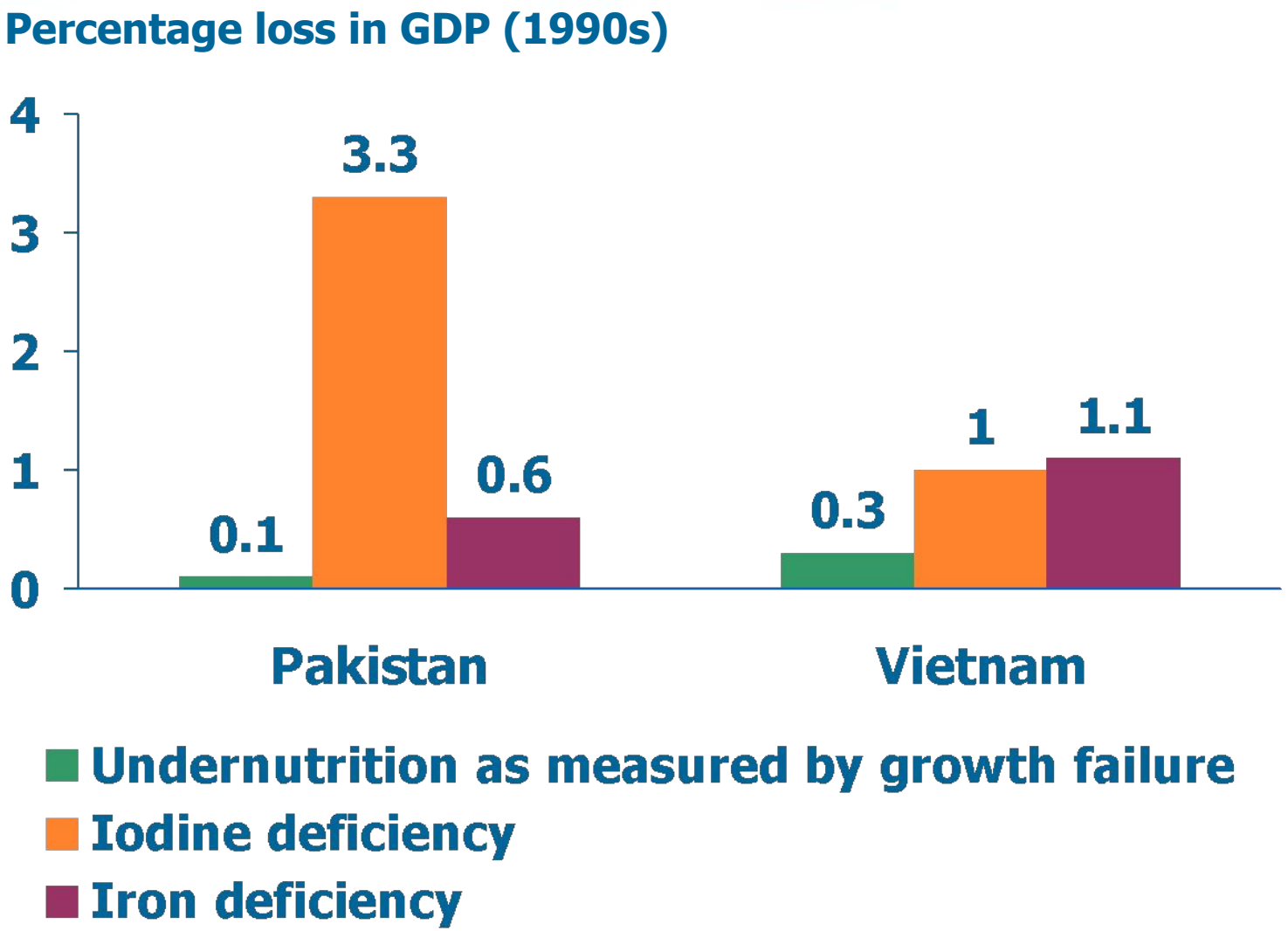
Nutrition's Impact on Poverty

- 20% of the world's deaths and disabilities are due to undernutrition.
- Loss of GDP from undernutrition can be as high as 3% (year in, year out).
- Better nutrition empowers people and communities through:
  - improved intellectual capacity
  - income generation and access to assets
  - poverty reduction; and
  - rapid development

Undernutrition and GDP



Nutrition and Crises

CRISES

Nutrition's Impact on Crises

Undernutrition

- Aggravates social unrest and violent conflicts
- Increases vulnerability that transforms shocks into humanitarian disasters
- Raises death rate and hinders timely return to equitable and durable development after crises

People in food insecure and poor countries are 4 times more likely to die in natural disasters.

What Can Be Done?

- Early warning through nutritional surveillance to pinpoint areas vulnerable to crisis
- Relief efforts that protect/re-establish food and livelihood security of affected population
- Rehabilitation to ensure sustainable development and prevent relapse

Nutrition and Human Rights

HUMAN RIGHTS

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Nutrition as a Human Right

- The Universal Declaration of Human Rights stipulates that every individual has the right to food.
- This right provides the context within which nutrition policies and programs can thrive.
- Improved human nutrition is also a moral imperative and a precondition for sustainable development.

What Can Be Done?

Data on nutrition can reveal discrimination.

- Nutritional sciences can provide objective measures of human responses to development efforts.
- Nutrition programs can empower individuals and groups.
- Nutrition can reveal how different food systems are relevant to the right to adequate food.
- Nutrition policy can help clarify state obligations to provide adequate food.

The right to adequate food requires absolute transparency regarding nutrition-relevant information and strong institutions to lodge complaints against violations.

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Nutrition and Communities

COMMUNITIES

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Nutrition's Impact on Communities

- A focus on nutrition can improve decentralization and strengthen community participation.
- Monitoring local nutritional status can
  - Reveal the causes of malnutrition and identify appropriate actions
  - Be used to evaluate the success of decentralized health services
  - Help maintain political commitment to supplying public goods

What Can Be Done?

Integrate the nutrition perspective, because it

- Links growth monitoring with community-level discussions on resource reallocation
- Addresses capacity constraints at the local level
- Knows how to work with community members, especially the poorest
- Builds sustainable participatory processes at the local level

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Nutrition and Politics

POLITICS

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Nutrition and Politics

- In general, nutrition concerns do not change policy because most nutrition practitioners do not consider political rationales and strategies.
- Policymakers often are not motivated by nutrition goals and may be threatened by them.
  - Scientific data and arguments can lose out against values, beliefs, and interests that affect decision-making.

Transforming Nutrition Arguments into Political Rationales

Nutrition world

- Goals
- Outcomes
- Policy arguments

Political world

- Actors
- Interest groups
- Institutions

What Can Be Done?

Nutrition change agents can move nutrition onto the policy agenda by

- Appreciating the policy context (e.g. social, historical)
- Understanding policy decisionmaking processes
  (e.g. problem definition, agenda setting, policy formulation)
- Recognizing social processes, values, and resources brought by policy actors
- Seizing opportunities and catalyzing problems, policies, and politics

When the Case is Successfully Made

- Malnutrition in most developing countries is rapidly declining.
- The Millennium Development Goals are being achieved.
- Nutrition is regarded as an excellent investment.
- Nutrition is recognized as the foundation for development.