

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of **ALLAH**
the most Beneficent and the most merciful

ALLAH IS THE MOST MERCIFUL
AND THE MOST BENEFICENT



NUTRITION AND HEALTH-7

NUTRITIONAL PROBLEMS IN PUBLIC HEALTH

NUTRITIONAL PROBLEMS

- There are many nutritional problems affecting vast segments of our population
- Various diseases or disorders of health can be caused by lack, insufficiency, excess or imbalance of certain nutrients in the body
- Only major problems which deserve special mention will be highlighted

NUTRITIONAL PROBLEMS

LOW BIRTH WEIGHT (LBW)

- Birth weight less than 2500 g (2.5 Kg) is abnormal and is called Low Birth Weight (LBW)
- It is a major health problem in many developing countries

LOW BIRTH WEIGHT (LBW)

- About 28% babies born in subcontinent are LBW, as compared to 4% in some of the developed countries
- LBW is usually due to:
 - i. Foetal growth retardation (in developing countries)
 - ii. Pre-mature birth (in developed countries)

LOW BIRTH WEIGHT (LBW)

➤ OTHER CAUSES OF LBW

These include anaemia, maternal malnutrition, illnesses, hard physical labour during pregnancy, infections, short maternal stature, young age, high parity, smoking, close birth intervals, multiple pregnancy etc. All these factors are interrelated

LOW BIRTH WEIGHT (LBW)

PREVENTION

- Since the problem of Low Birth Weight is multifactorial, the interventions for prevention have to be cause specific e.g. improving maternal nutrition, stopping smoking, birth spacing, treatment of anaemia etc.

NUTRITIONAL PROBLEMS

PROTEIN ENERGY MALNUTRITION (PEM)

- It is also a major health and nutrition problem
- It occurs particularly in weaklings & children in the first year of life

NUTRITIONAL PROBLEMS

PROTEIN ENERGY MALNUTRITION (PEM)

- It is important cause of childhood morbidity and mortality
- It also leads to permanent impairment of physical and probably mental growth of who survive

NUTRITIONAL PROBLEMS

PROTEIN ENERGY MALNUTRITION (PEM)

- Its clinical forms are **kwashiorkor** & **marasmus**
- Incidence of PEM in pre-school age children is 1-2 %
- First indication of PEM is under-weight for age

NUTRITIONAL PROBLEMS

PROTEIN ENERGY MALNUTRITION (PEM)

- The most practical method to detect PEM, is to maintain **'Growth Charts'**
- These charts indicate at a glance, whether the child is gaining or losing weight





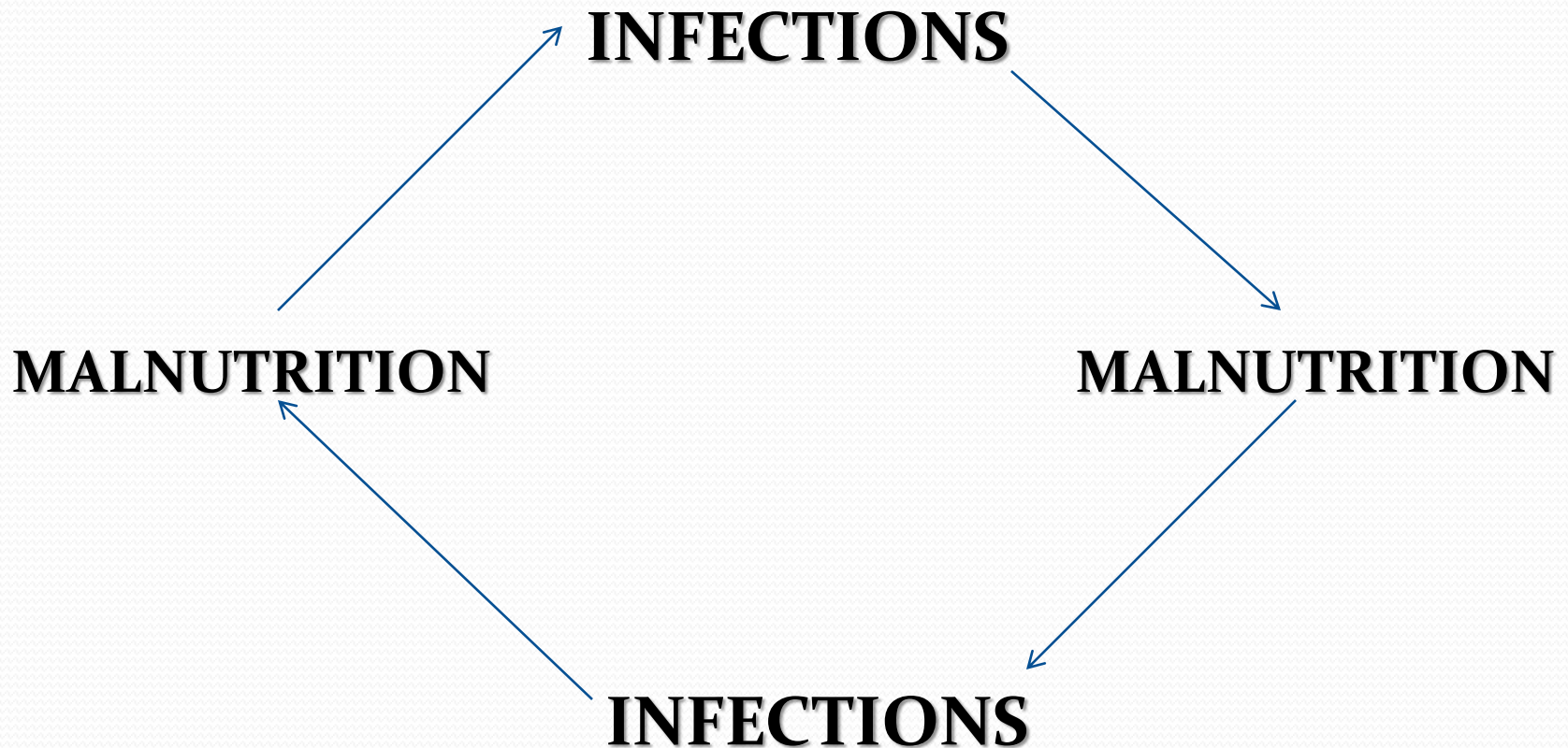
PROTEIN ENERGY MALNUTRITION (PEM)

- PEM is primarily due to:
 - a) An inadequate intake of food(food gap) both in quantity and quality
 - b) Infections notably diarrhoea, ARI, measles, intestinal worms, which increase requirement for all nutrients; while decreasing their absorption and utilization.

PROTEIN ENERGY MALNUTRITION (PEM)

(Infections) It is a vicious circle –
Infections contributing to malnutrition
and malnutrition contributing to
infections

NUTRITIONAL PROBLEMS-PEM



NUTRITIONAL PROBLEMS-PEM

- There are other numerous contributory factors in the “web of causation” like *poor environmental conditions, large family size, poor maternal health, failure of lactation, premature termination of breast feeding, delayed supplementary feeding, use of diluted milk and adverse cultural & feeding practices*

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

a) *Health promotion:*

1. Measures directed to pregnant and lactating women (nutrition education, supplements distribution)
2. Promotion of breast feeding
3. Development of low cost weaning foods

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

4. Measures to improve family diet
5. Education about correct feeding practices
6. Home economics
7. Family planning and birth spacing

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

b) Specific protection:

1. Child diet must contain proteins, fats, carbohydrates, milk, eggs, fresh fruits and vegetables
2. Immunization to prevent infections
3. Food fortification

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

c) Early diagnosis and treatment

1. Periodic surveillance/maintenance of growth charts
2. Early detection of any lag in growth

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

3. Early diagnosis & treatment of infections and diarrhoea
4. Early rehydration of children with diarrhoea
5. Deworming

NUTRITIONAL PROBLEMS-PEM

PREVENTIVE MEASURES FOR PEM

d) Rehabilitation

1. Nutritional rehabilitation
2. Hospital treatment
3. Follow-up care

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

- It refers to all the ocular manifestations of vitamin A deficiency in man
- It is most widespread and serious nutritional disorder, leading to blindness

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

- It is most common in children aged 1-3 years
- The younger the child more severe the disease
- It is often associated with PEM

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

- The victims belong to the poorest families
- Associated risk factors include ignorance, faulty feeding practices, infection like measles and diarrhoea
- Prolonged intake of skimmed milk, which is totally devoid of vitamin A, can also lead to this disorder

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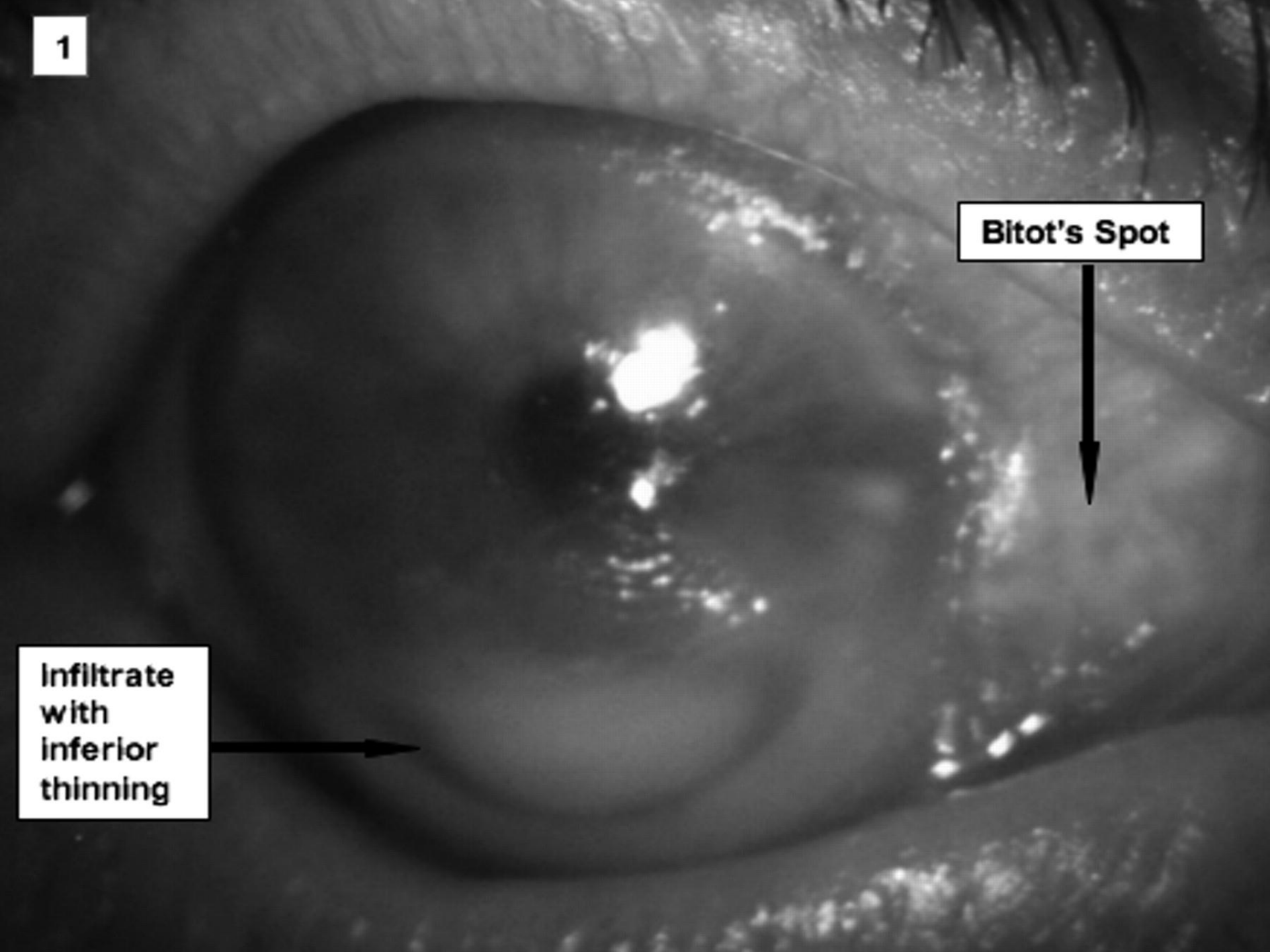




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Bitot's Spot

Infiltrate
with
inferior
thinning





NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

PREVENTION AND CONTROL:

a) Short term action; Administration of large doses of vitamin A orally in recommended doses to vulnerable groups (children and lactating mothers), on periodic basis

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

PREVENTION AND CONTROL:

b) Medium term action; Fortification of certain foods with vitamin A e.g. vanaspati, milk etc

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

PREVENTION AND CONTROL:

c) Long term action;

1. Nutrition education to persuade people to consume vitamin A rich foods
2. Promotion of breast feeding

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

PREVENTION AND CONTROL:

3. Improvement in environmental health
4. Immunization
5. Prompt treatment of infections and diarrhoea

NUTRITIONAL PROBLEMS

XEROPHTHALMIA (DRY EYE)

PREVENTION AND CONTROL:

6. Improved MCH services
7. Health education

NUTRITIONAL ANAEMIA

- It is a condition in which the haemoglobin content of blood is lower than normal as a result of a deficiency of one or more essential nutrients, regardless of the cause of such deficiency

NUTRITIONAL ANAEMIA

- Anaemia is established if the haemoglobin is below the cut-off points
- Nutritional anaemia is a worldwide problem with the highest prevalence in developing countries

NUTRITIONAL ANAEMIA

- It is found especially among women of child bearing age, young children and during pregnancy and lactation
- It is estimated to affect nearly two-third of pregnant and one-half of non-pregnant women in developing countries

NUTRITIONAL ANAEMIA

- DETRIMENTAL EFFECTS

- *Reduced work capacity:* Anaemia even when mild causes a significant impairment of maximal work capacity. The more severe the anaemia, the more the reduction in work performance and thereby productivity

NUTRITIONAL ANAEMIA

(DETRIMENTAL EFFECTS)

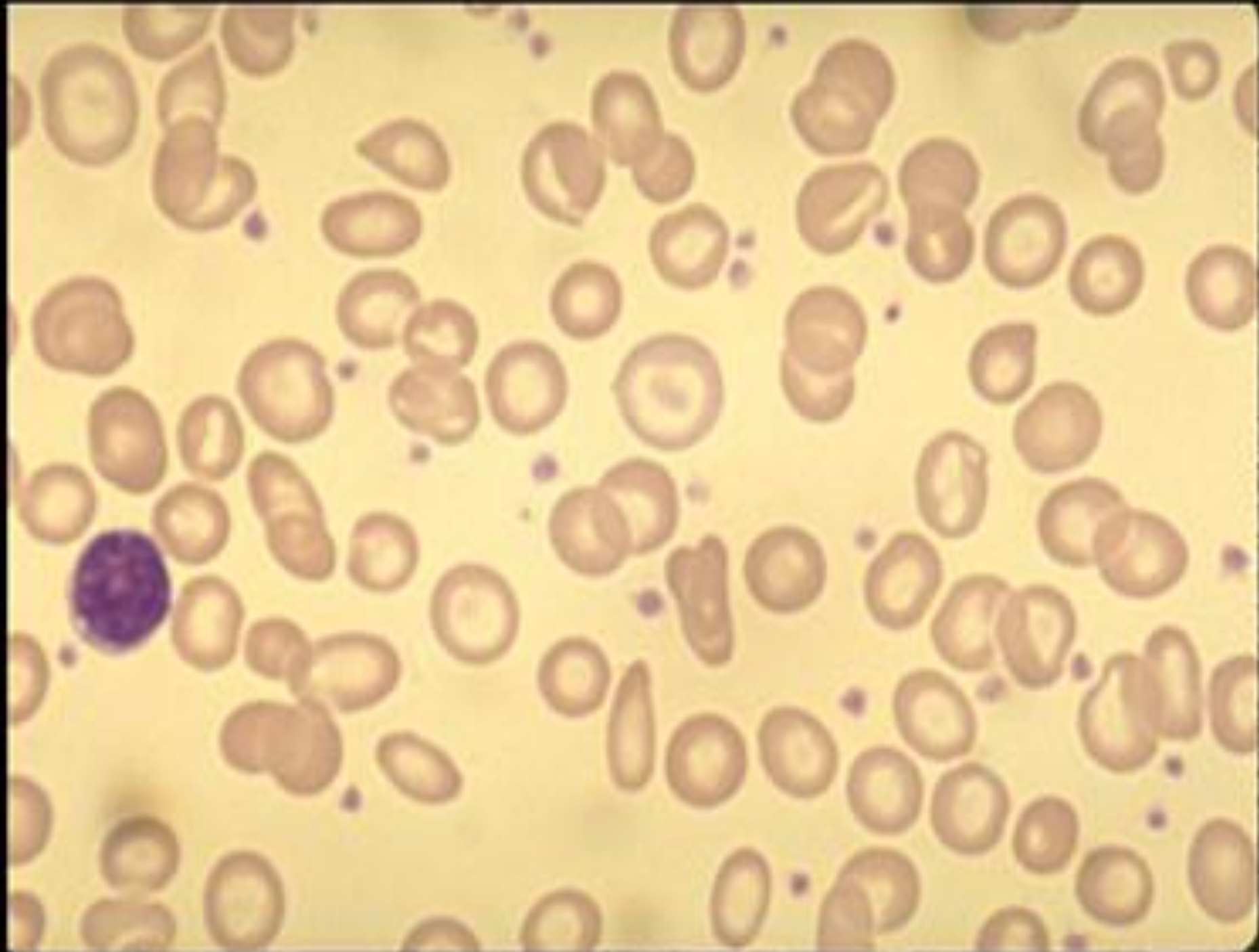
- *Infections*: Iron deficiency may impair cellular responses and immune functions and increase susceptibility to infections. Further, anaemia can be caused or aggravated by parasitic diseases e.g. *malaria, intestinal parasites*

NUTRITIONAL ANAEMIA

(DETRIMENTAL EFFECTS)

- *In Pregnancy:* Anaemia increases the risk of maternal and foetal mortality and morbidity. Conditions such as *abortions, pre-mature births, post-partum haemorrhage* and *low birth weight* are especially associated with low haemoglobin levels in pregnancy







NUTRITIONAL PROBLEMS

IODINE DEFICIENCY DISORDERS(IDD)

IODINE DEFICIENCY DISORDERS (IDD)

Consequences of iodine deficiency include:

- Goiter
- Hypothyroidism
- Retarded physical development
- Impaired mental function

IODINE DEFICIENCY DISORDERS (IDD)

- Increased rate of spontaneous abortion and stillbirth
- Cretinism (dwarfism & severe mental retardation)
- Hearing defects

IODINE DEFICIENCY DISORDERS (IDD)

- Speech defects
- Nystagmus
- Neuromuscular weakness etc.

Iodine deficiency is thus a problem with grave socioeconomic consequences



PREVENTION OF IDD

- “Appropriate technology” exists for successful prevention of Iodine Deficiency Disorders, that is **‘universal iodization of common salt’**
- Daily requirement of iodine is 150 mcg



Iodized Salt

EPIDEMIOLOGICAL ASSESSMENT OF IDD

Indicators:

1. Prevalence of goitre
2. Prevalence of cretinism
3. Prevalence of neonatal hypothyroidism
4. Urinary iodine excretion

EPIDEMIOLOGICAL ASSESSMENT OF IDD


(Indicators)

5. Measurement of T₄ and TSH
(serum T₄ level is a more sensitive indicator of thyroid insufficiency than T₃)



NUTRITIONAL PROBLEMS

ENDEMIC FLUOROSIS

- 
- ***Excess intake*** of fluorine is associated with dental and skeletal fluorosis
 - Use of fluorine is recognized as the most effective means available for the prevention of dental caries

FLUORINE

- The recommended level of fluorine in drinking water, in tropics, is accepted as 0.5-0.8 mg per liter
- In temperate countries, where the water intake is low, the optimum level of fluorine in drinking water is accepted as 1 to 2 mg per liter





Thank you

