Topic List

- Module 1 – Public health nutrition and concepts
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- Module 5 – Micronutrient deficiencies – Vitamin A, Iron and Iodine

Module 5 – Micronutrient deficiencies – vitamin A, Iron and Iodine

- Micronutrient deficiencies affect two billion people worldwide
- Copenhagen consensus – vitamin A, iron and iodine priority health micronutrient t challenges – deficiencies in these create enormous costs for communities (health, lives lost and reduced economic productivity)
- Deficiencies in developed countries – poverty, lack of adequate access to health care, low levels of maternal education, poor quality diet.
- Deficiencies in developed countries – socioeconomically disadvantaged areas. Sub clinical deficiency exists in populations where it has previously been eradicated (e.g. iodine).
- Sustainable development goals – goal 2: end hunger, achieve food security and improved nutrition and promote sustainable agriculture

Vitamin A

- Affect 190 million children and 19 million pregnant women worldwide
- Required for vision, cell differentiation and maturation, immunity and reproduction
- Leading cause of paediatric blindness in developing world - causes Xerophalmia in adolescents and adults (drying of the epithelial lining of the eyes), night blindness and affects maternal reproductive outcomes.
- Underlying cause of early childhood deaths due to measles, malaria and infections
- PHN nutrition problem in countries where food supply lacks preformed vitamin A and precursor carotids.
- Widespread through south and south east Asia and regions of Africa.
- Virtually eliminated in developed world

Iron

- Involved in oxygen carrying function of haemoglobin in blood and myoglobin muscle
- Biggest contributor to nutritional anaemia
- Anaemia – condition defined by the level of haemoglobin 2 standard deviations below the average for a normal population. State where the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiological needs
- Haemoglobin levels can be influenced by age, sex, altitude, smoking and pregnancy
- Anaemia affects 1.62 billion people world-wide – menstruating women most at risk
- Sever iron deficiency anaemia – linked morbidity and mortality in women and children
- Premature and low birth weight are linked to iron deficiency anaemia
- Risk factors – poor quality diet, rapid growth, pregnancy and menstruation

Iodine

- 31% of world's population has insufficient intake of iodine and at risk of a spectrum of disorders (iodine deficiency disorders).
- Responsible for synthesis of thyroid hormones – regulation of gene expression – cellular development and differentiation, metabolism, bone growth and development and brain development