

MALNUTRITION IN HOSPITAL



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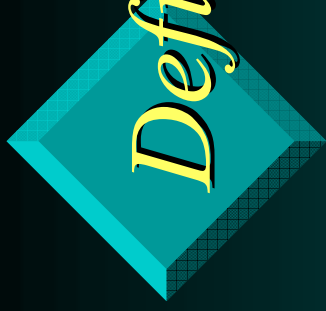
St. Luke's Hospital



Defining malnutrition - 1



- ❖ **Malnutrition** is the condition that develops when the body does not get the right amount of the vitamins, minerals and other nutrients it needs to maintain healthy tissues and organ function (Fyke, 2003).
- ❖ It occurs in people who are either **undernourished** (e.g. P.E.M.) or **over-nourished** (e.g. obesity).



Defining malnutrition - 2



- ❖ The World Health Organisation (W.H.O.) defines **malnutrition** as “the cellular imbalance between the supply of nutrients and energy and the body’s demand for them to ensure growth, maintenance and specific functions” .
- ❖ Malnutrition can encompass a wide range of **deficiencies** (e.g. protein-energy) and **excesses** (e.g. obesity). However, one area – **under-nutrition** – has emerged as a priority area (Reuben *et al.*, 1995).



Pathogenesis of malnutrition





Causes of malnutrition



- ❖ Poverty
- ❖ Inadequate food intake
- ❖ Chronic disease / illness
- ❖ Old age
- ❖ Decreased absorption
- ❖ Abnormal metabolism
- ❖ Hospitalisation



Malnutrition in hospital - 1



BBC NEWS

Wednesday, 5 December, 2001, 12:06 GMT

- ❖ On the 5th December 2001, the BBC issued front-page news: *Hospital Patients – ‘Malnourished on Arrival’*. “An incidence of one patient in every five admitted to hospital in the UK was found to be malnourished, and this [they say] may be an underestimate of the true scale of the problem” (BBC, 2000).



Malnutrition in hospital - 2

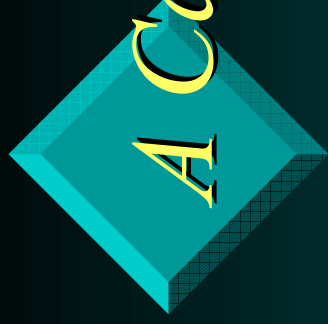


- ❖ **Malnutrition** in hospital is a well-documented and significant problem and contributes to increased recovery times, length of stays, cost to the health services and patient mortality and morbidity.
- ❖ **Surveys** show a very high incidence of malnutrition among adults in surgical wards in the UK (Hill *et al.*, 1977, cited in Lennard-Jones, 1992), Australia (Zader & Truswell, 1987, cited in Lennard-Jones, 1992) and America (Bistrian *et al.*, 1974, cited in Lennard-Jones, 1992).

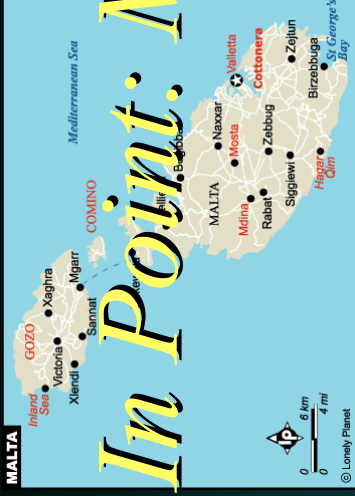
Malnutrition in hospital - 3



- ❖ P.E.M. in hospitalised patients is usually due to:
 - Difficulties with chewing, swallowing, digesting food, pain, nausea and lack of appetite.
 - Nutrient loss can be accelerated by bleeding, diarrhoea, malabsorption disorders and other factors.
 - Fever, infection, surgery, trauma, burns and some medications and benign or malignant tumours increase the amount of nutrients needed by patients.
 - Severe sepsis, inflammatory disease and surgery switch on inflammatory mediators whose job is to mobilise muscle tissue to provide amino acids for an effective acute-phase response.

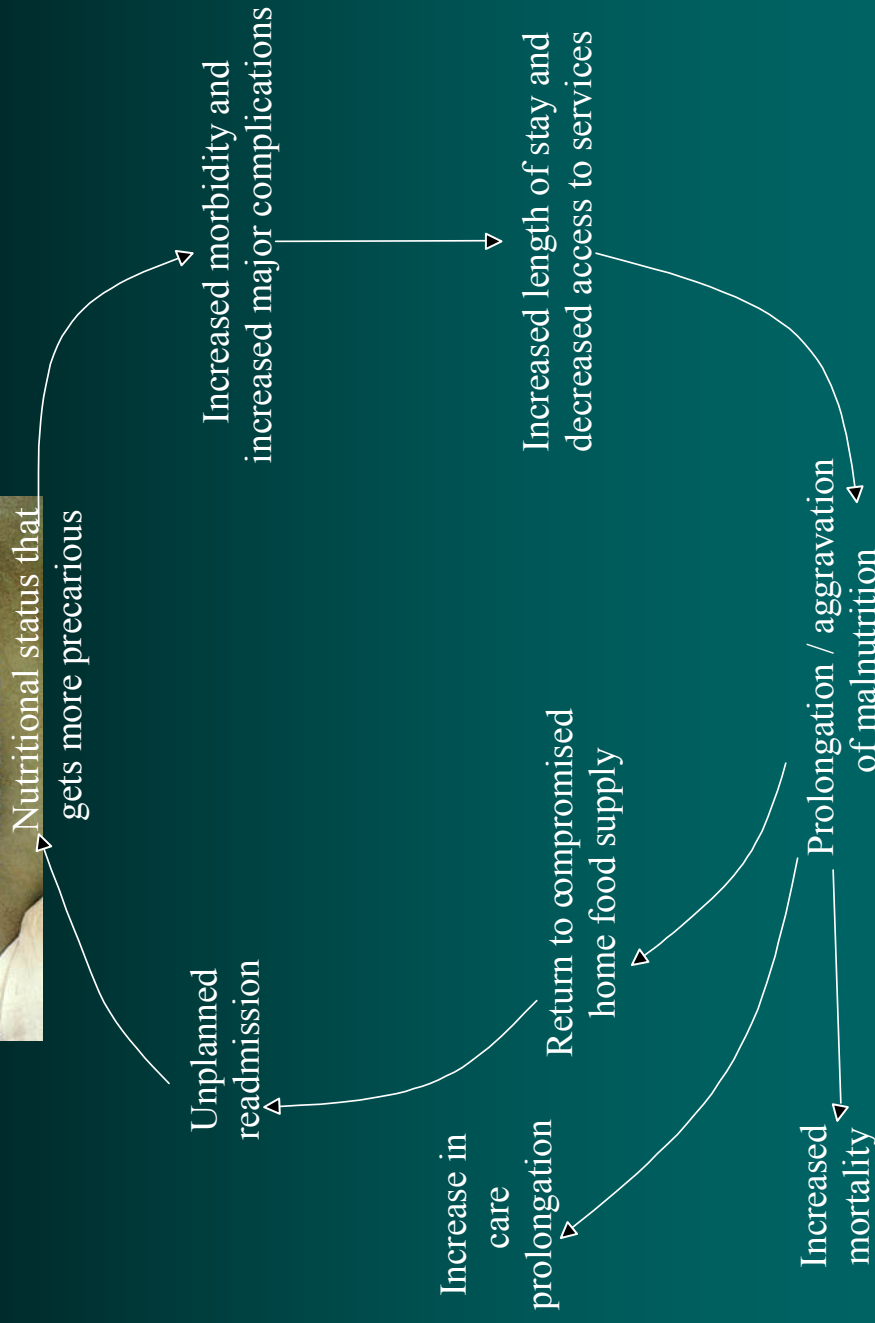
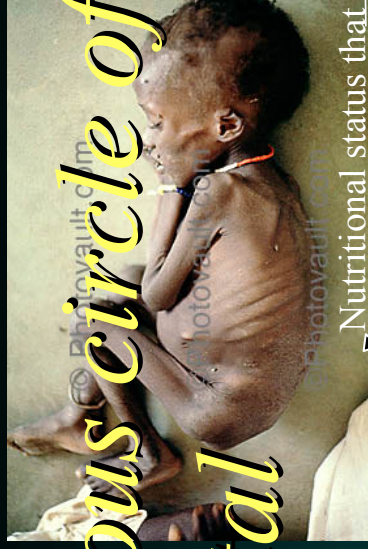


A Case *In Point: Malta*



- ❖ In Malta a **40%** incidence of malnutrition was identified in patients undergoing renal dialysis on a regular basis (HD or CAPD) (Axiak, 2003). None were referred for nutritional assessment and help.
- ❖ Only **2-3%** of ward patients are referred to the Clinical Nutrition Services (St. Luke's Hospital) for treatment of malnutrition (Clinical Nutrition Services Statistics, Malta, 2003).

The vicious circle of malnutrition in hospital



Under-recognition of malnutrition in hospitals



- ❖ Numerous research studies have documented the inability of many health care providers to identify nutritional deficit vulnerability and early and advanced malnutrition status (Ennis *et al.*, 2001). This sets chronically ill patients on a carousel of morbidity (Ward, 2001).
- ❖ Rollins (2002) mentions a frequency of 70% of malnutrition that is unrecognised in hospital outpatients.



Reasons for under-recognition of malnutrition in hospitals

- ❖ While **healthcare staff** regularly monitor patients for adverse changes in respiratory function, fluid and electrolyte balance, the effects of starvation or semi-starvation often go unrecognised.
- ❖ **Clinical nutrition** is not taught to the present generation of doctors, and it is still a cinderella subject in undergraduate medical and nursing schools (N.M.E., 1983, cited in Lennard-Jones, 1992; Judd, 1988, cited in Lennard-Jones, 1992; Plester, 1996).

Causes of malnutrition in the elderly - 1



- ❖ Restricted resources for purchasing and storing food
- ❖ Poor dental status
- ❖ Social isolation
- ❖ Depression and bereavement
- ❖ Stomach problems & indigestion, malabsorption
- ❖ Pain / immobility

Causes of malnutrition in the elderly - 2



- ❖ Medications causing anorexia
- ❖ Sensory defects
- ❖ Respiratory disease - causing hyperventilation & increased energy requirements
- ❖ Carcinoma of the oesophagus, pharynx and gut - may constitute mechanical obstructions to intake of food
- ❖ Dietary compliance problems

Pneumonic for Treatable Causes of Malnutrition (Morley & Silver, 1995) – 1



[MEALS ON WHEELS]

- ❖ Medication
- ❖ Emotional problems (depression)
- ❖ Anorexia
- ❖ Late-life paranoia
- ❖ Swallowing disorders
- ❖ Oral factors
- ❖ No money

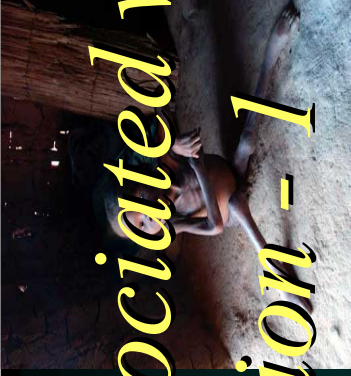
Pnemonic for Treatable Causes of Malnutrition (Morley & Silver, 1995) – 2



[MEALS ON WHEELS]

- ❖ Wandering & other dementia-related behaviour
- ❖ Hypertension, hyperthyroidism, hypoadrenalism
- ❖ Enteric problems (malabsorption)
- ❖ Eating problems (inability to feed oneself)
- ❖ Low-salt, low-cholesterol
- ❖ Social problems (ethnic food preferences, isolation)

Signs associated with malnutrition - 1



Body Area

Signs Associated With Malnutrition

Hair

Lack of natural shine; dull, dry, sparse, straight, colour changes (flag sign); easily plucked

Face

Dark skin over cheeks and under eyes (malar and supraorbital pigmentation), scaling of skin around nostrils (nasolabial seborrhea)
Oedematous face (moon face)
Colour loss (pallor)

Eyes

Pale conjunctivae
Bitot's spots, conjunctival and corneal xerosis, soft cornea
Redness and fissuring of eyelid corners

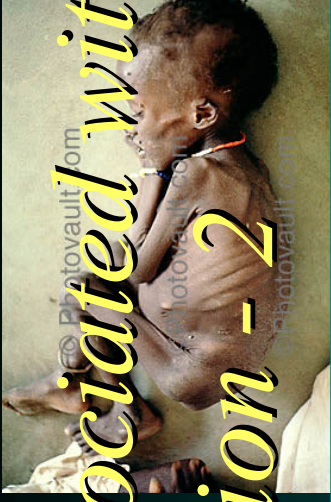
Lips

Redness and swelling of mouth or lips, angular fissure and scars

Tongue

Red, raw and fissured, swollen
Magenta colour
Pale, atrophic
Filiform papillary atrophy

Signs associated with malnutrition - 2



Teeth	Carious or missing Mottled enamel (fluorosis)
Gums	Spongy, bleeding, may be receded
Glands	Thyroid enlargement Parotid enlargement
Skin	Follicular hyperkeratosis, dryness with flaking Hyperpigmentation Petechiae Pellagrous dermatitis Scrotal and vulval dermatosis
Nails	Spoon nails, brittle or ridged

Signs associated with malnutrition - 3



Muscular and Muscle wasting

skeletal systems Frontal and parietal bossing; epiphyseal swelling; soft, thin infant skull bones, persistently open anterior fontanelle; knock-knees or bow-legs
Beading of ribs

Internal systems

Gastrointestinal Hepatomegaly

Nervous Mental confusion and irritability

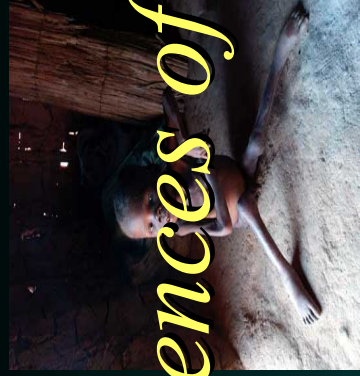
Sensory loss, motor weakness, loss of position sense, loss of vibration, loss of ankle and knee jerks, calf tenderness

Cardiac Cardiac enlargement, tachycardia

Diagnosing malnutrition



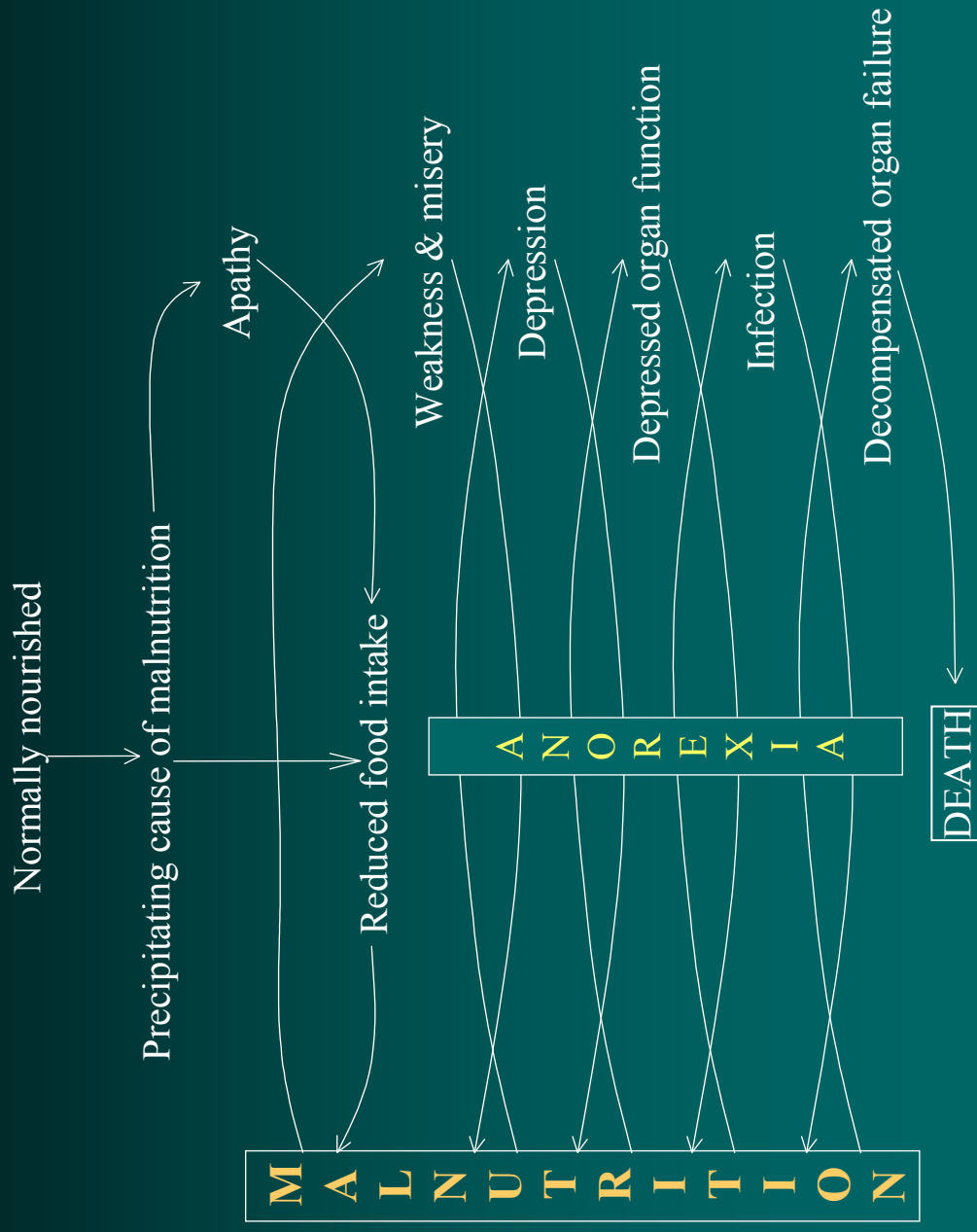
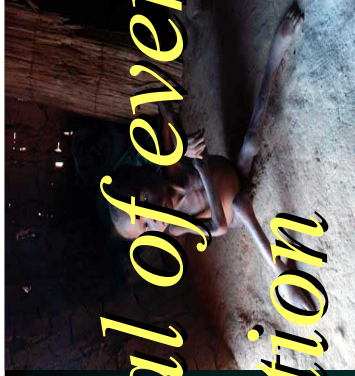
- ❖ Anthropometric measures
 - Weight, height, BMI, skinfold thickness, calf & mid-arm circumference, waist-to-hip ratio
- ❖ Dietary analysis
 - Dietary history, recall methods, food diary
- ❖ Laboratory studies
 - Se. albumin, se. transferrin, retinol-binding protein, prealbumin, ? se. potassium



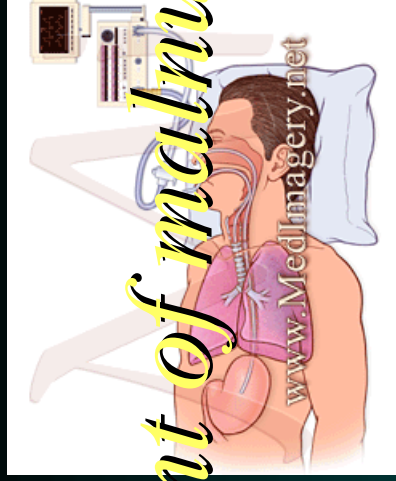
Consequences of malnutrition

- ❖ Reduced renal function
- ❖ Impaired wound healing
- ❖ Constipation, diarrhoea, pain
- ❖ Respiratory failure
- ❖ Skeletal muscle atrophy
- ❖ Increased length of stay
- ❖ Surgery stress, increased metabolic rate
- ❖ Reddish hair, atrophy of tongue papillae

The spiral of events in malnutrition



Treatment of malnutrition



- ❖ Sip feeds / bars / yoghurt-like cans
 - ❖ Enteral feeding
 - via N.G. / N.J. / P.E.G. / Gastrostomy tube
 - ❖ Parenteral feeding
 - via central line
 - ❖ Special parenteral feeding e.g. intradialytic TPN
- ✓ advantages & disadvantages exist!



Screening for malnutrition



- ❖ As Sakla (2001) states “screening identifies at-risk patients who require more thorough assessment, which involves a careful medical history and physical examination as well as anthropometric and laboratory measurements” .
- ❖ Education programmes help increase understanding about choosing food.
- ❖ Governments should develop policies.



The Situation In Malta



- ❖ No full-time dietitians available at the moment.
- ❖ No screening service is available.
- ❖ Malnutrition is treated only in 2-3% of cases.
- ❖ No teaching at Medical School about Clinical Nutrition.
- ❖ Few lectures in Nursing curricula but very little about Healthy 'Nutrition' as such. Few lectures on Clinical Nutrition, i.e. artificial feeding (e.g. nasogastric, P.E.G., gastrostomy, T.P.N.).
- ❖ Almost no research in this area.

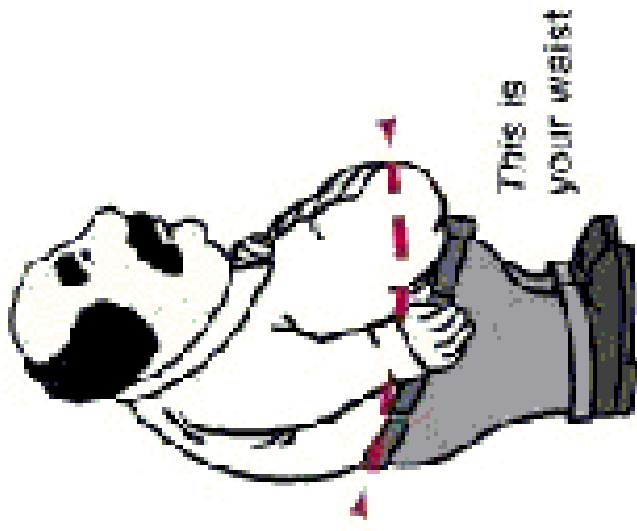
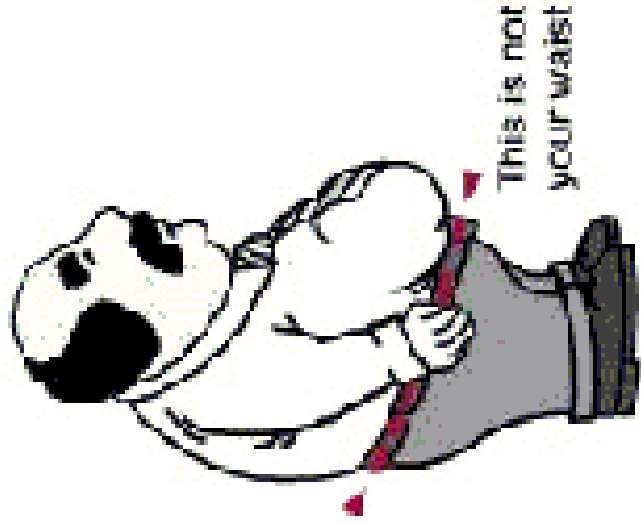
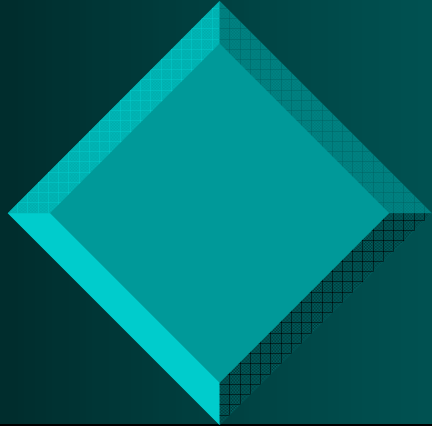
Conclusion



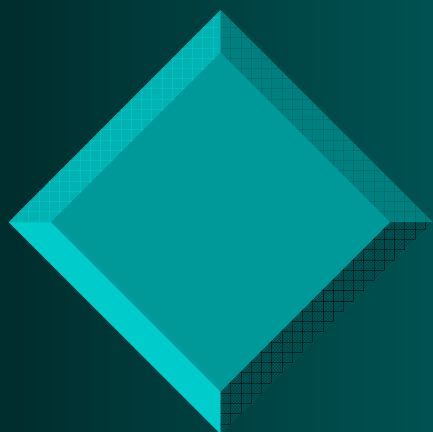
❖ Merck Manual (2003):

- *“The key to early detection is awareness that the persons in certain circumstances have a high risk of malnutrition. Prevention of malnutrition, especially via regular screening is the answer, or rather, the best way to treat malnutrition” .*





Thank you!



Weight
Height²

<18.5 = underweight
 18.5-25 = normal
 25-30 = overweight
 30-35 = obese I
 >35 = obese II

18.5-25 = normal

25-30 = overweight

30-35 = obese I

>35 = obese III

