

Workshop – Physical Nutrition Screening

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Identifying Nutrient Imbalances
Quickly and Easily in Clinical Practice



Quick visual assessment of nutritional status

Iron

B vitamins –
including B12

Fat soluble
vitamins –including
vitamin A and EFAs

Stages in the Development of a Nutrient Deficiency

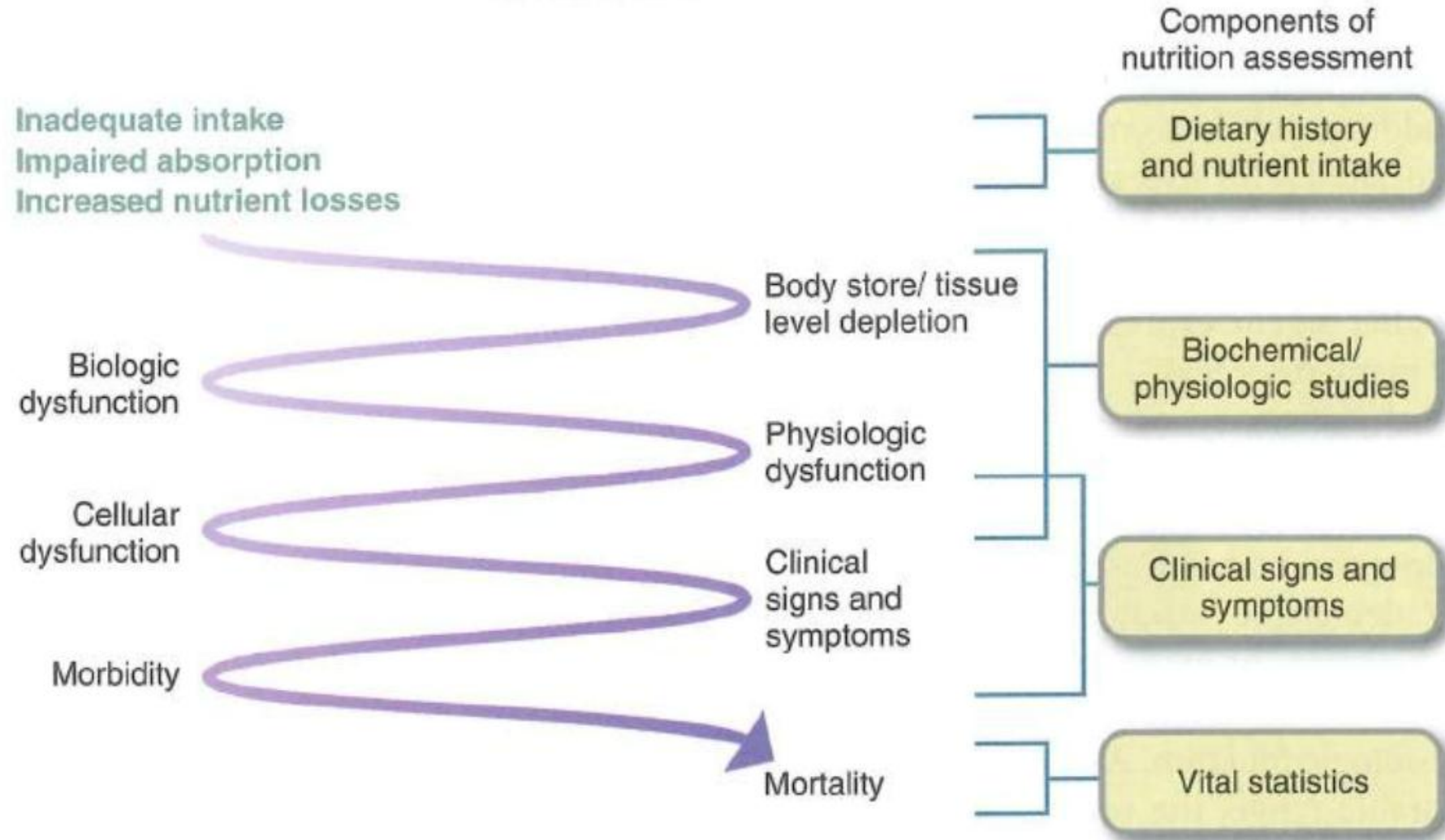
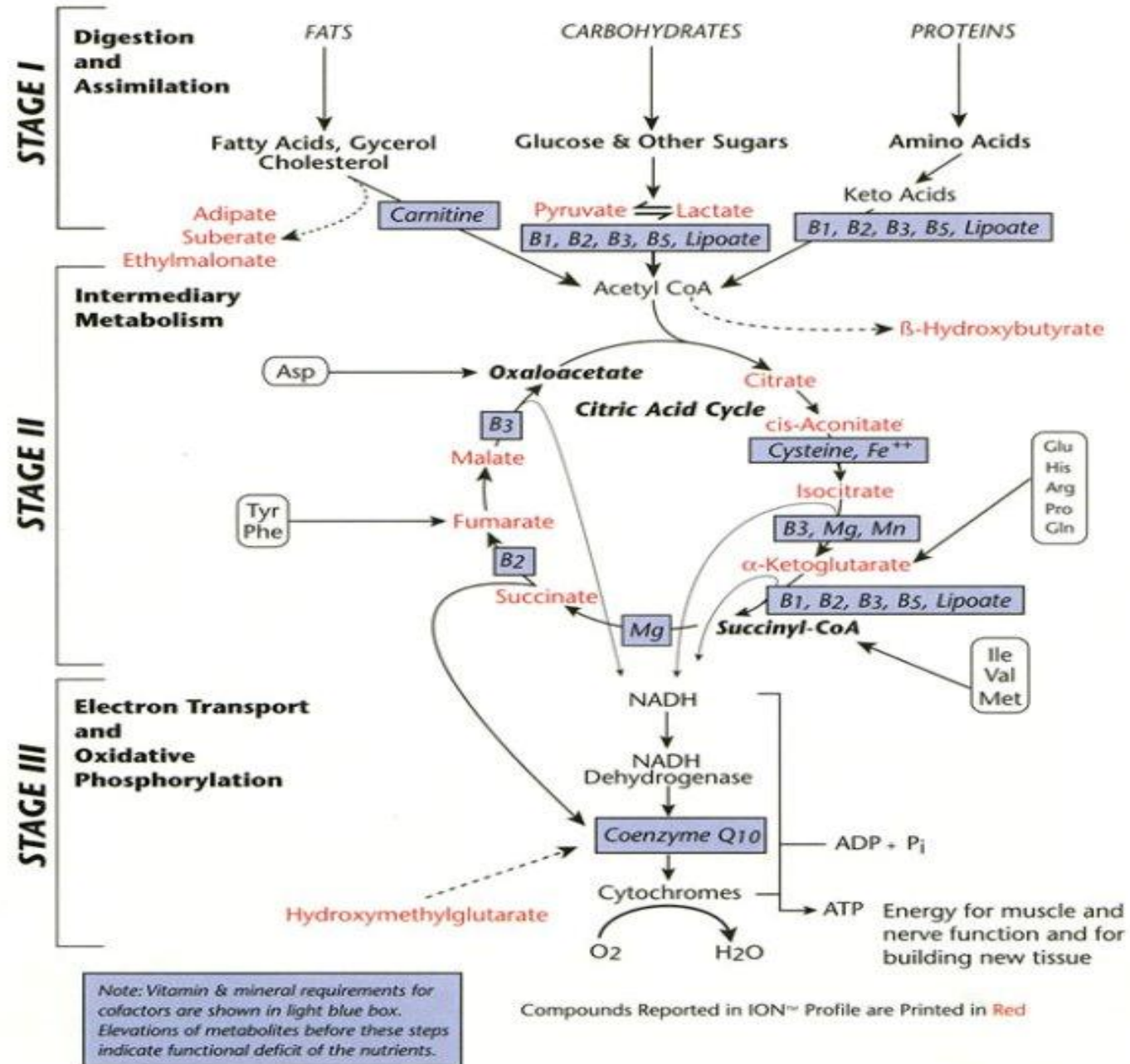


Figure 4-2 Development of clinical nutritional deficiency with corresponding dietary, biochemical and clinical evaluations. *Krause's Food and the Nutrition Care Process 13th ed.* L.Mahan, S. Escott-Stump, J. Ramond p 132.

Appearance Energy



Caution



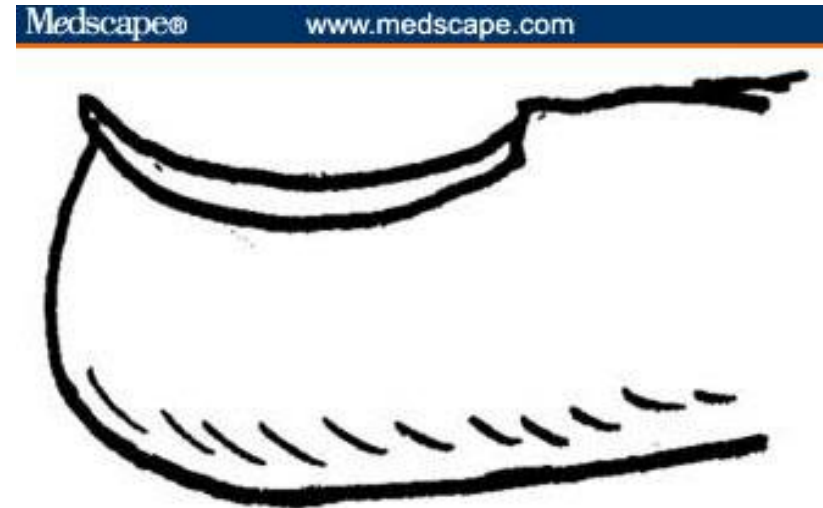
Leukonychia



Nails



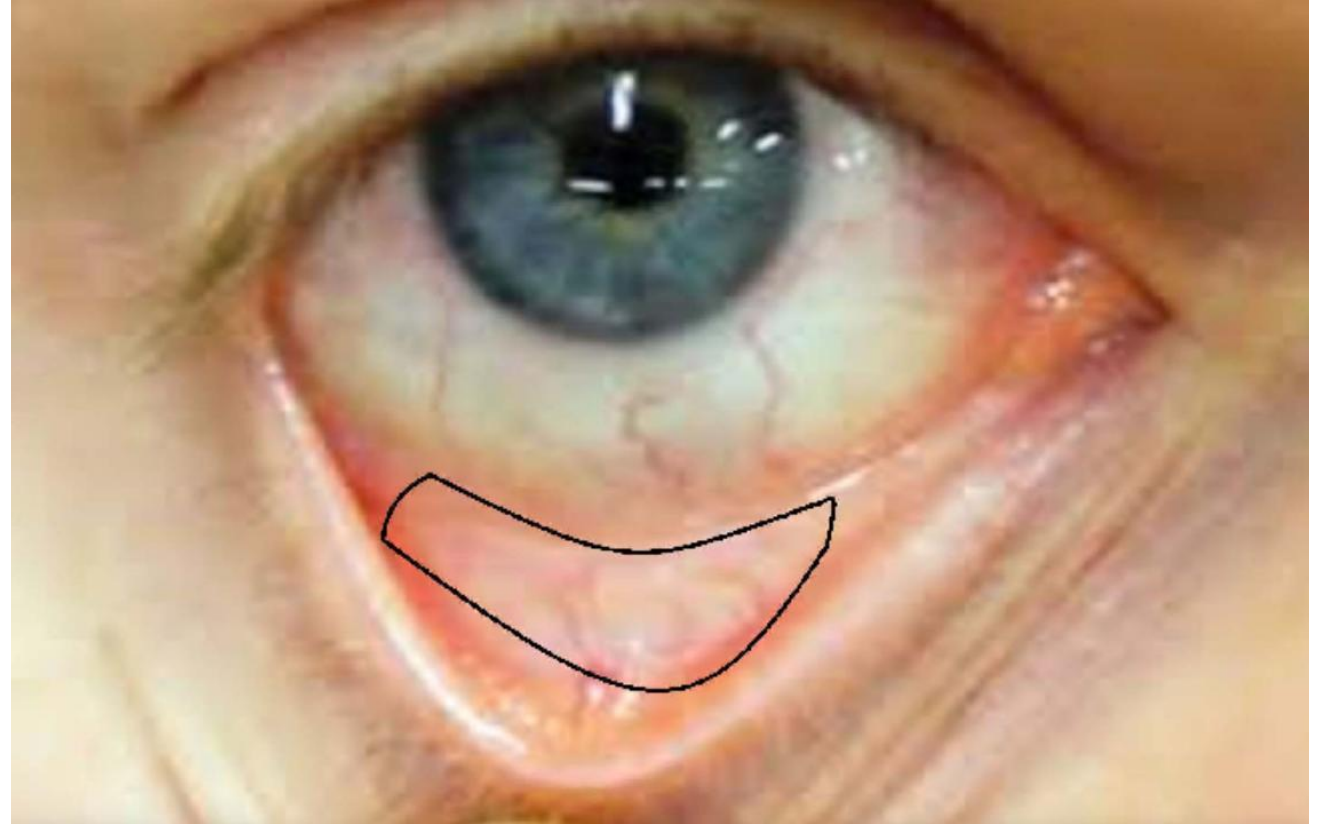
Kolionychia



Spoon nail

Eyes

Anaemia



Tongue - normal

Light red / salmon pink

Thin white moist coating.

Uniform surface - no
cracks



Tongue

Usually first tissue to show signs of sub– optimal nutrition

- glossitis with atrophy of papillae
- fissures
- burning and tingling
- ulcers
- coatings

Tongue



Geographic

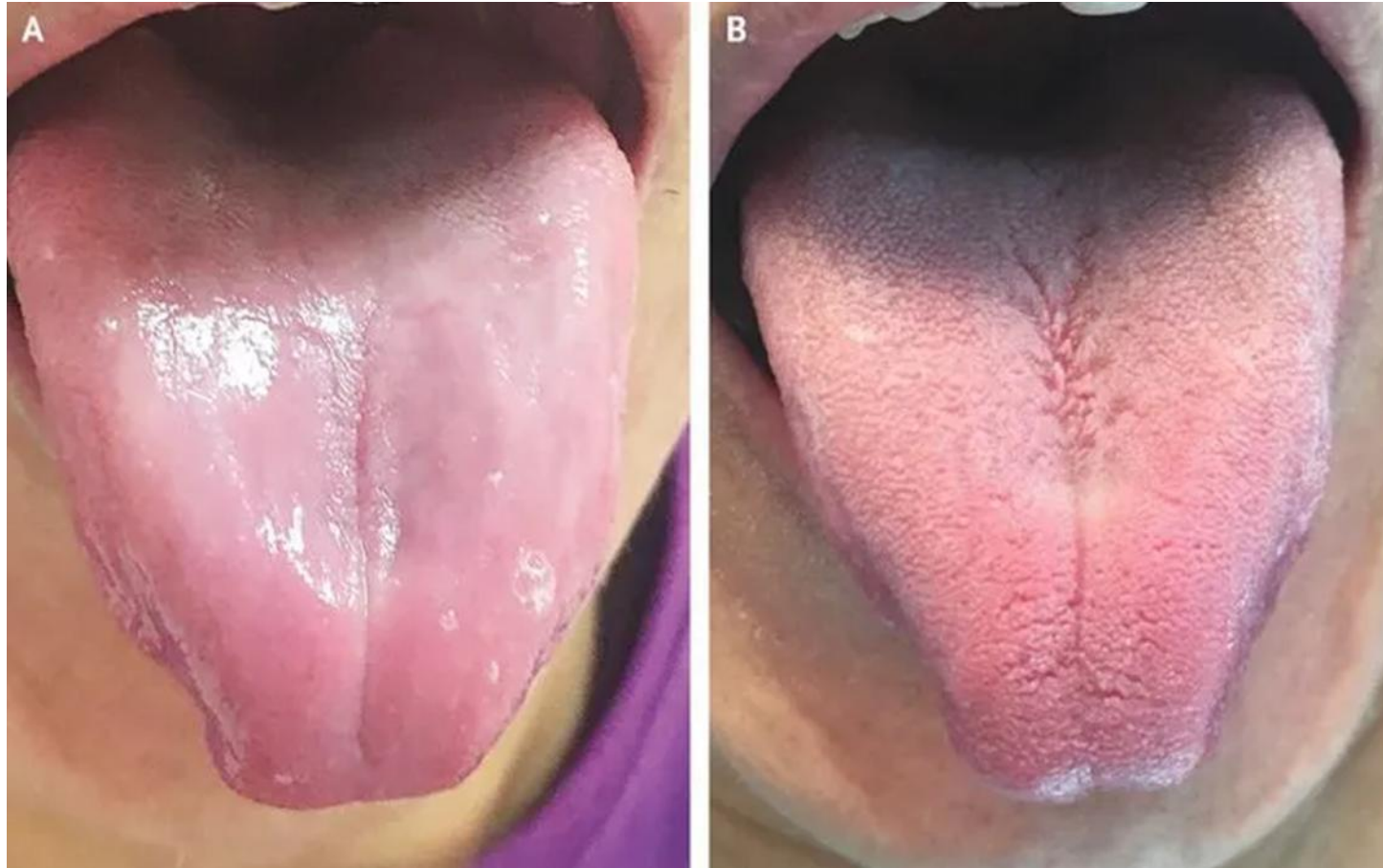


Glossitis



Crenated

Pernicious anaemia B12



Lips

Cheilosis and angular stomatitis



Mouth

Mouth	Possible deficiency	Possible other causes
Sore tongue	Iron, vitamin B12, B2, B3 and possibly other B vitamins	Excessively hot drinks and oral disease
Cracking and peeling of skin on the lips	Vitamin B2 – riboflavin	Excessive exposure to cold or windy weather
Cracking at the corners of the mouth	Iron, vitamin B2 – riboflavin possibly other B vitamins	Poorly fitting dentures, eczema infection with candida albicans
Recurrent mouth ulcers	Iron, vitamin B12, folate and possibly other B vitamins	Coeliac disease, Crohn's disease recurrent herpes and oral disease
Enlarged veins under the tongue with micro-haemorrhages	Vitamin C	Smoking and old age
Smooth, shiny and sore tongue: atrophic glossitis	Iron, vitamin B12 and folate	

Skin

Scurvy



Keratosis pilaris



Phrynoderma



Acanthosis Nigricans & Skin Tags (acrochordon / fibroepithelial polyp)



Insulin Resistance



Hyperinsulinemia



↑ IGF-1 & Growth Factors



Keratinocyte & Fibroblast Proliferation



Acanthosis Nigricans



Skin Tags



Aswell Chart

https://www.researchgate.net/publication/28474601_Charts_Based_on_Body_Mass_Index_and_Waist-to-Height_Ratio_to_Assess_the_Health_Risks_of_Obesity_A_Review/figures?lo=1

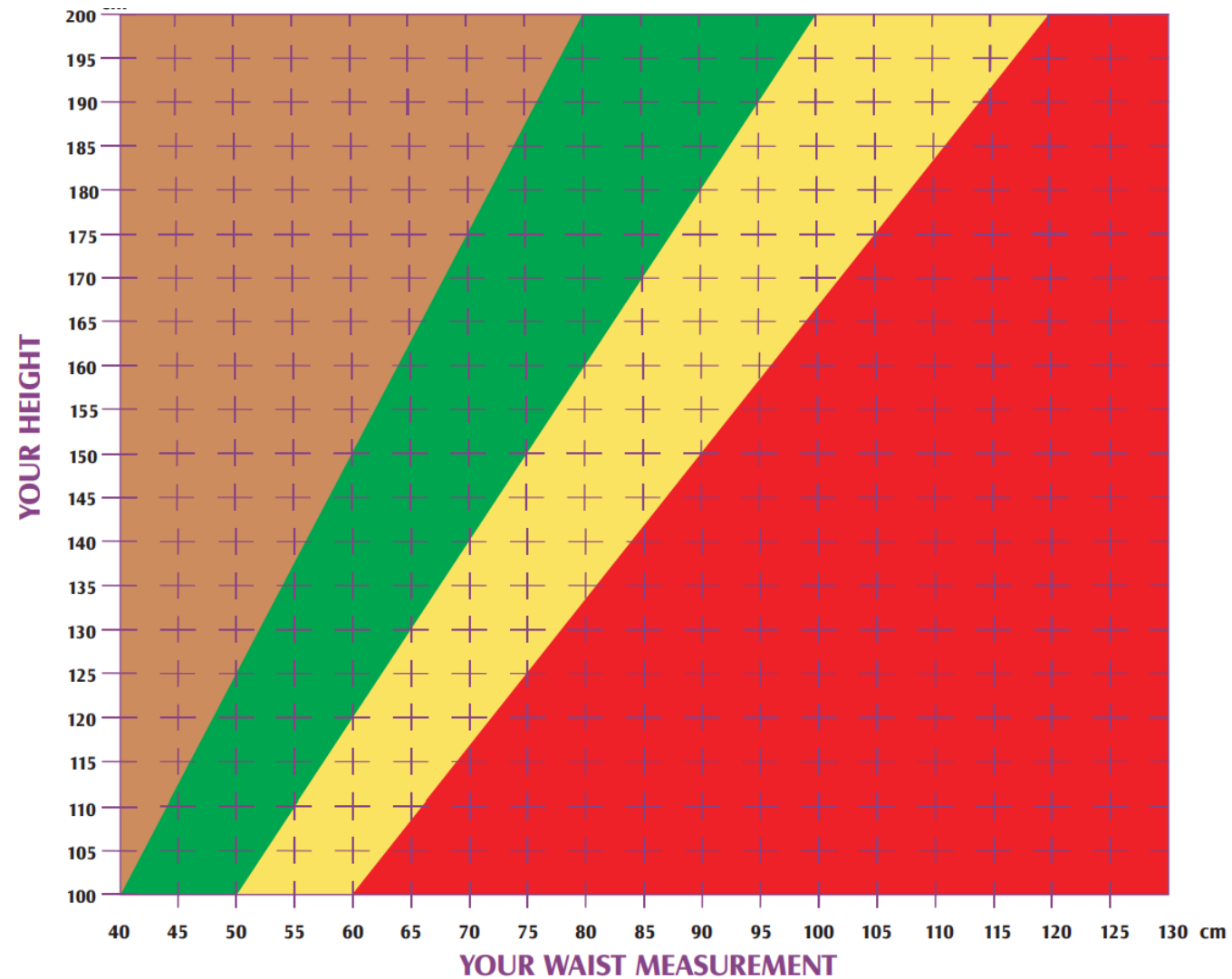


Fig. (1). The Ashwell® Shape Chart based on waist-to-height ratio. (Copyright is held by Margaret Ashwell).

The Ashwell® Shape Chart is suitable for adults (men and women) and children over 5y. It has waist circumference measurement (cm) on x axis and height (cm) on the y axis. The boundary values for waist-to-height ratio are set at WHtR 0.4 (brown to green), 0.5 (green to yellow) and 0.6 (yellow to red). The Green area indicates OK; Yellow area indicates Consider Action for adults and Take Action for children; Red area indicates Take Action. Brown area indicates Take Care – you will not need to decrease your waist circumference and might even be underweight.

References & Resources

Kopelman & Jones (2002) Nutrition and patients: a doctor's responsibility. Clinical Medicine
<https://doi.org/10.7861/clinmedicine.2-5-391>

Stewart Nutrition http://www.stewartnutrition.co.uk/nutritional_assesment/nutritional_tests.html

Kesari A; Noel JY. (2023) Nutritional Assessment. StatPearls [Internet].
<https://www.ncbi.nlm.nih.gov/books/NBK580496/>

Mind the Gap <https://www.blackandbrownskin.co.uk/mindthegap>

Nsight - <https://www.ifm.org/learning-center/nsight/> - a resource for information about how to perform clinical exams through a nutritional lens. A range of videos are available for you to view.

Linus Pauling Institute (2011) Micronutrients and Skin Health (online)

Medscape <https://www.medscape.com/dermatology>

Dermnet <https://dermnetnz.org/>

Ashwell Chart <https://www.ashwell.uk.com/shapechart.htm>

[https://www.researchgate.net/publication/228474601_Charts_Based_on_Body_Mass_Index_and_Waist-to-Height_Ratio_to_Assess_the_Health_Risks_of_Obesity_A_Review/figures?lo=1](https://www.researchgate.net/publication/228474601_Charts_Based_on_Body_Mass_Index_and_Waist-to_Height_Ratio_to_Assess_the_Health_Risks_of_Obesity_A_Review/figures?lo=1)

References & Resources cont.

Tongue fat

Fat accumulation in the tongue is associated with male gender, abnormal upper airway measures and whole-body adiposity. (2016) doi: 10.1016/j.metabol.2016.08.008

Tongue Fat and its Relationship to Obstructive Sleep Apnea. (2014) doi: 10.5665/sleep.4072

Insulin Resistance and Skin Diseases <https://onlinelibrary.wiley.com/doi/10.1155/2015/479354>

Acrochordon <https://pubmed.ncbi.nlm.nih.gov/28846244/>

Acanthosis Nigricans <https://pubmed.ncbi.nlm.nih.gov/36149039>

Test your knowledge

Dermatologic Signs of Nutritional Deficiencies. (2026) El-Shazly, K; Goebel, LJ Medscape

[https://reference.medscape.com/p11/dermatologic-signs-nutritional-deficiencies-2026a1000glw?ecd=mkm_ret_260611_mscpmrk-
OUS_DisReferences_etid8409181&uac=278379HG&impID=8409181](https://reference.medscape.com/p11/dermatologic-signs-nutritional-deficiencies-2026a1000glw?ecd=mkm_ret_260611_mscpmrk-OUS_DisReferences_etid8409181&uac=278379HG&impID=8409181)

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