The Lancet Commission:
Defining Obesity, Preclinical, Clinical Obesity and BMI Plus

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Is Obesity a Disease?

—Research News—

Obesity Declared a Disease

A consensus panel says losing weight is not just a matter of vanity—it is a matter of health

Science 1985;227:1019

A National Institutes of Health consensus panel on the health implications of obesity has concluded that obesity is a potential killer. But although the panel was definite in its statement, the data it relied on in drawing its statements were soft, to say the least. The obese are prone to a wide variety of diseases and tend to have shorter life-spans.

PERSPECTIVE

Obesity is not a disease

The misguided urge to pathologize this condition reflects society's failure to come to terms with the need for prevention, says **D. L. Katz.**

Nature 2014;580:S57

It implies that tens of millions of people must now have bodies and minds, or both, that are not working properly. Even seemingly healthy, but heavy, people – adults and children alike – are now, by definition, diseased. Like breathing air, our capacity to get fat is part of normal physiology.

Obesity is a chronic disease

WOF
World Obesity Federation

"The World Obesity Federation takes the position that obesity is a chronic, relapsing, progressive disease process and emphasizes the need for immediate action for prevention and control of this global epidemic"

OC
Obesity Canada

"Obesity is characterized by excess body fat that can threaten or affect your health. Many organizations including the Canadian Obesity Network, now consider obesity to be a chronic disease."

AMA

"American Medical Associa
medical condition (de facto
towards the recognition of

FASO
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e of body fat stores. It is a

Abnormal or excessive fat accumulation that presents a risk to health

European Commission

"Obesity is a chronic relapsing disease, which in turn acts as a gateway to a range of other non-communicable diseases, such as diabetes, cardiovascular diseases and cancer."

Royal College of Physicians (UK)

"Obesity is a chronic progressive disease caused by an imbalance between energy intake and energy expended, with a wide range of damaging effects on the body."

AOASO
Asia Oceania Association for the Study of Obesity

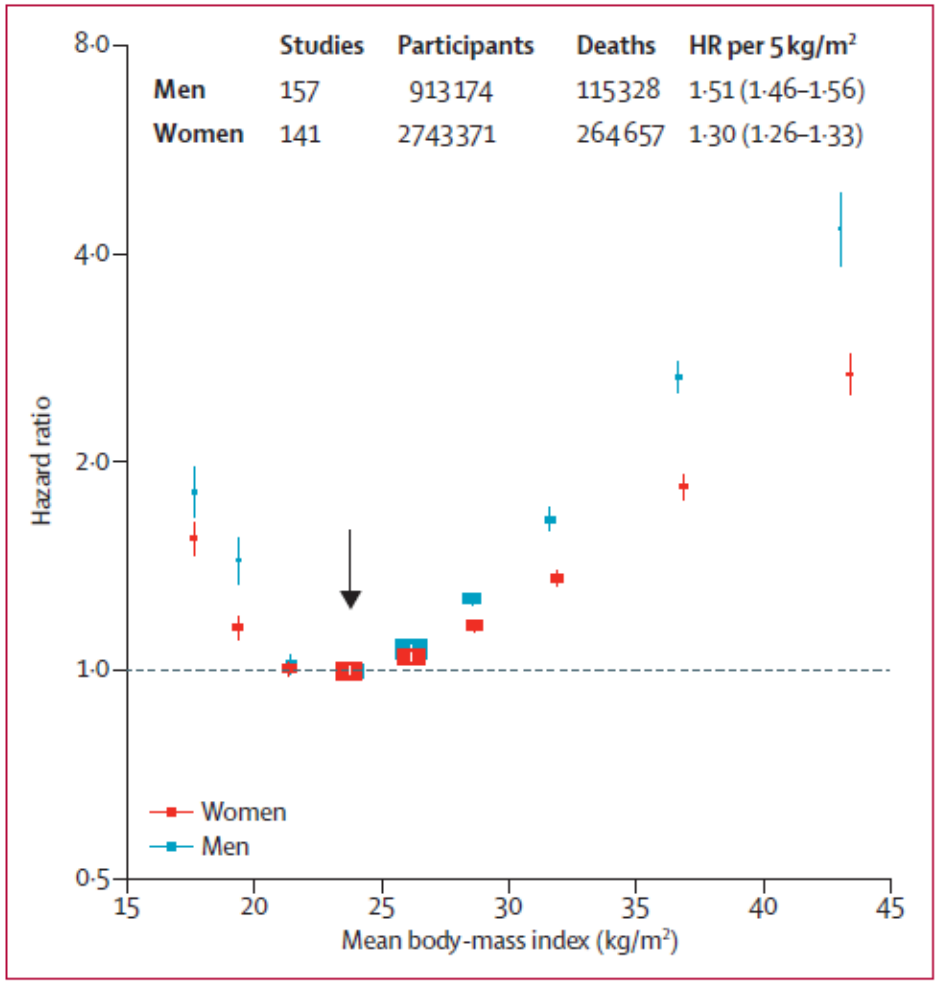
"We hereby propose a concept for international recognition of a pathological state (obesity disease) in which a person suffers health problems caused by or related to obesity thus making weight loss clinically desirable and requiring treatment as a disease entity"

OMA
Obesity Medicine Association (US)

"A chronic, relapsing, multi-factorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biomechanical, and psychosocial health consequences."

Association of BMI with all-cause mortality, by sex
230 Prospective Studies in 4 Continents

Body Mass Index (BMI) is accepted as a practical and useful determinant for increased risk of illness & death on the population level (for both high and low BMI values)



The BMI Global Mortality Collaborative. Lancet 2016;388:776-786

obesityweek

DEBATE Open Access

BMI or not to BMI? debating the value of body mass index as a measure of health in adults

Check for updates

WELLNESS RACISM HEALTH WELLNESS

The BMI Is Racist And Useless. Here's How To Measure Health Instead.

Body mass index numbers don't give a full picture of well-being, and they yield to discrimination against marginalized bodies.

By Christine Byrne

Jul 20, 2020, 04:00 PM EDT | **Updated** May 19, 2022

NEWS • HEALTH NEWS

Study: BMI Measurements Should Be Tailored To Race and Ethnicity

By Sofia Quaglia | Updated on December 01, 2022

Fact checked by Nick Blackmer

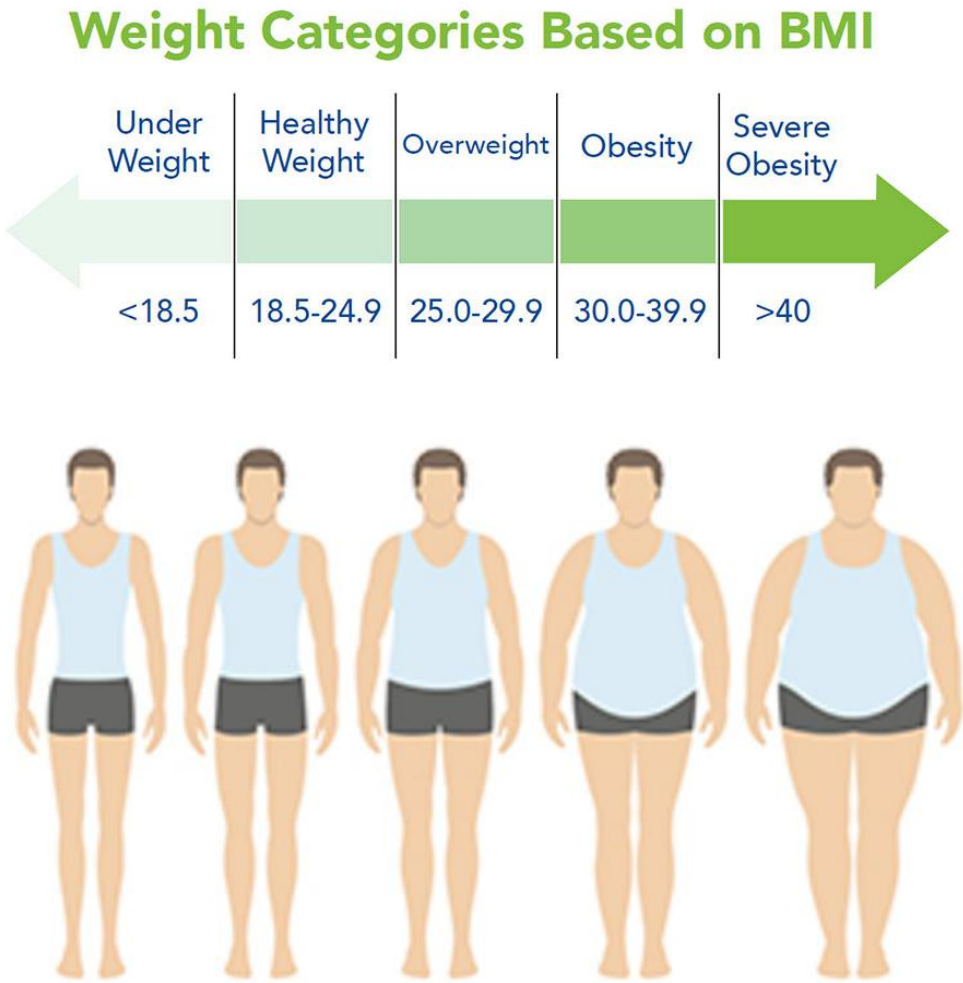
HEALTH > WELLNESS • 6 MIN READ

BMI is B-A-D, a new study suggests. Here's a better way to measure weight

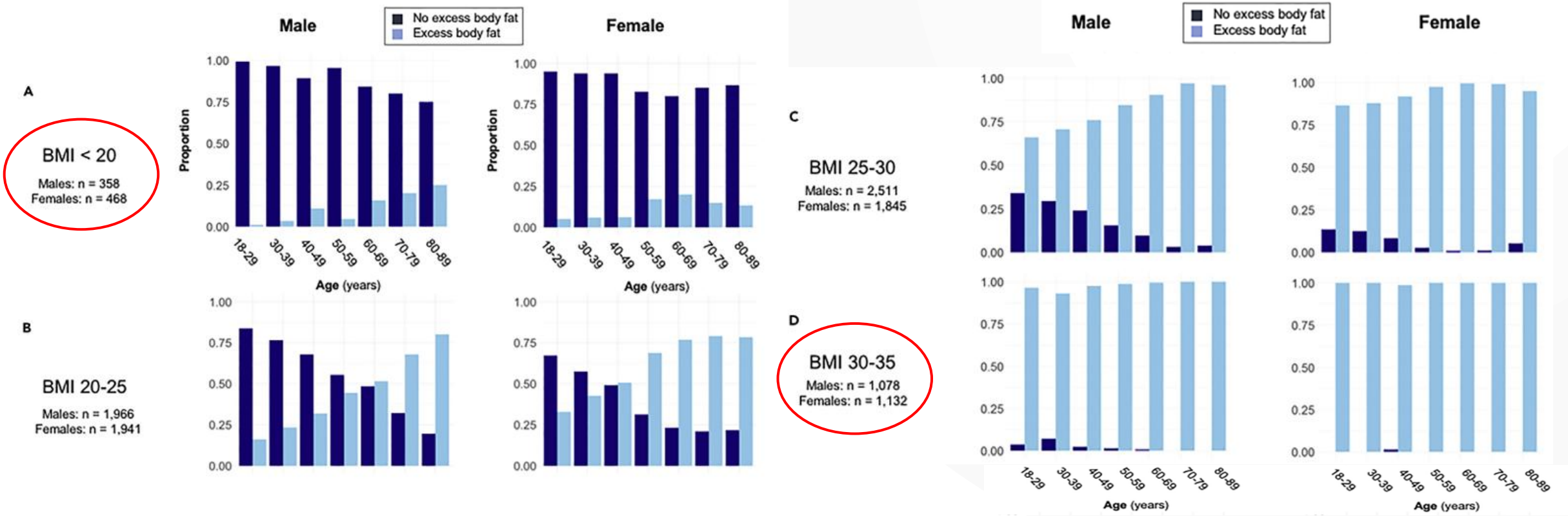
"We found body-fat percentage to be a stronger predictor of 15-year mortality risk in adults between the ages of 20 and 49 than BMI,"

Body Mass Index (BMI, kg/m^2)

- **D**efinitions of underweight, healthy weight, overweight and obesity in terms of BMI were established in 1995 by WHO
- **Problems**
- **H**eterogeneity in relative body shape and composition exists across race and ethnic groups, sexes, genders and age-span, and is essential to consider when applying BMI as a measure of adiposity
- **B**MI defines body size with no regard to an individual's health or body composition
- **P**eople are classified as having a disease without ever having received a diagnosis or undergone a medical history or examination



Proportion of Individuals with Excess fat by BMI NHANES 1999-2004



DXA measured: Excess fat = 25% for males and 35% for females

Dybala et al. iScience 2019:21:612-623

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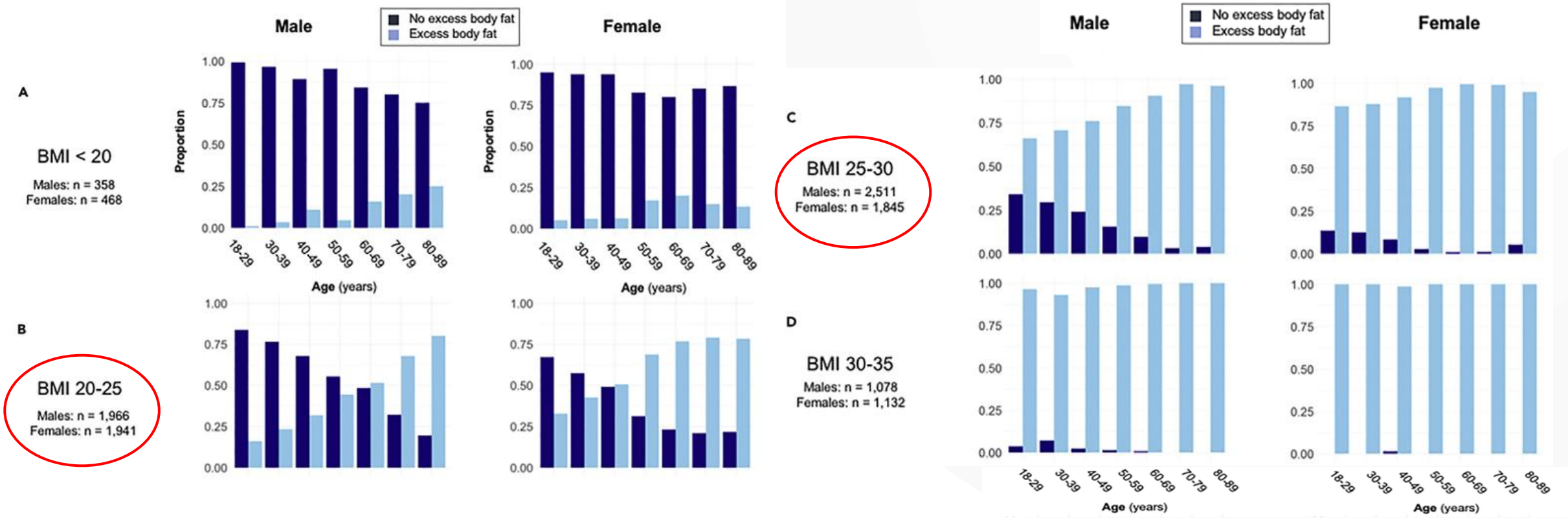

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Dybala et al. iScience 2019:21:612-623

Obesity -Abnormal or excessive fat accumulation that presents a risk to health

How do we better define excess body fat beyond BMI?

How do define harm to health (disease) by signs and symptoms?

The Lancet Diabetes & Endocrinology: Global Commission Proposes Major Overhaul of Obesity Diagnosis

How do we measure body fat?

The Challenge of more Directly Measuring Body Fat

DXA

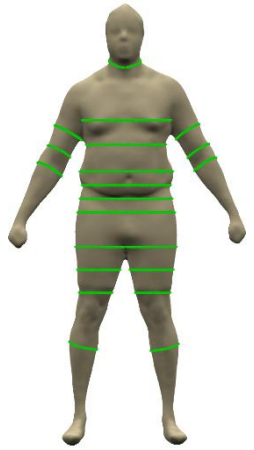
Attenuation of 2 energy level x-ray transmissions (absorbed or scattered). Measures bone and soft tissue

MF-BIA

Uses electrical properties of body to estimate TBW and from that the body fat mass. Body is modeled as 5 cylindrical compartment

ADP

Assumes two compartment model (fat and lean) with different density. Volume of displaced air determined from changes in air pressure

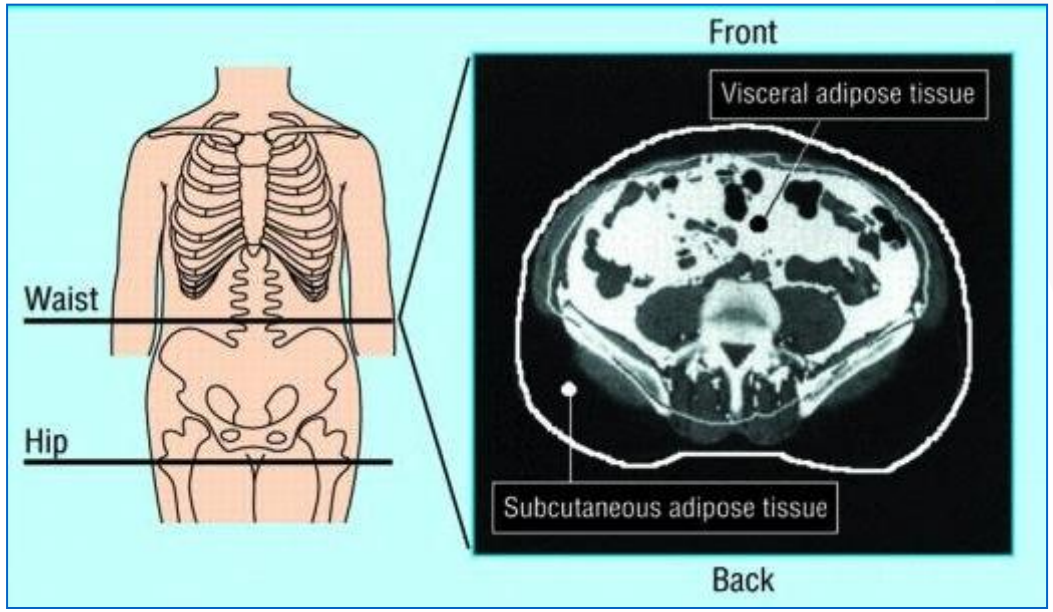


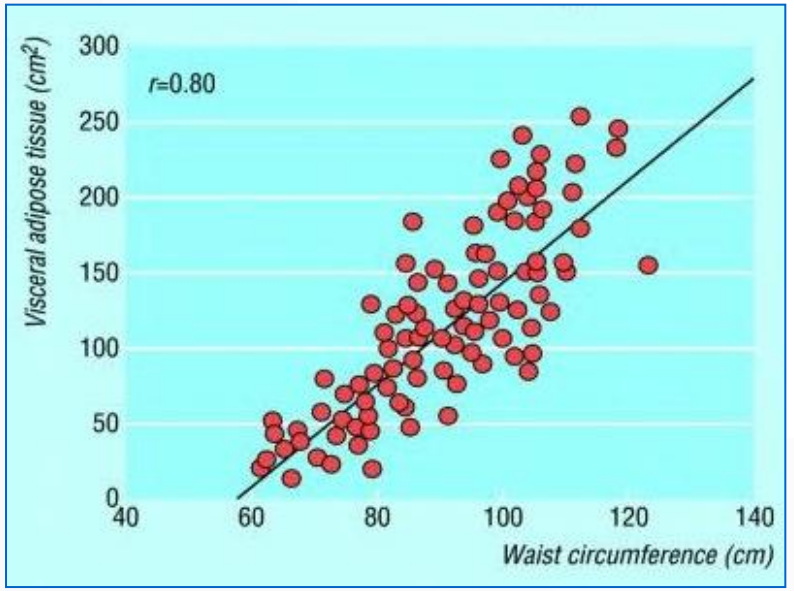
DA

Smartphone app scans and quantifies body anthropometric dimensions and volume, estimates body fat

DXA = Dual X-ray Absorptiometry; MF-BIA = Multiple Frequency Bioimpedance Analysis; ADP = Air Displacement Plethysmography; DA = Digital Anthropometry

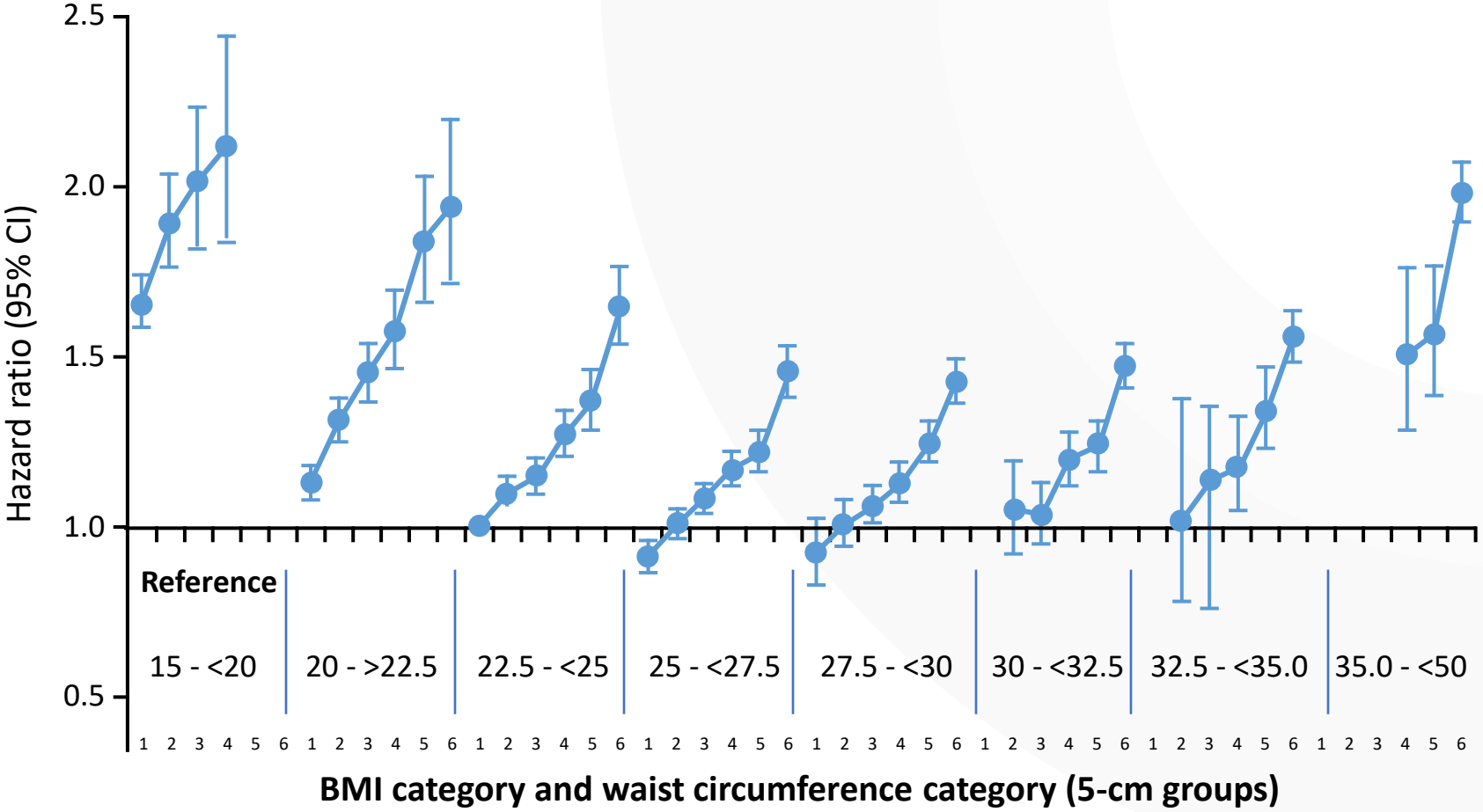
Waist Circumference Correlates With Visceral Adipose Tissue





Despres JP, et al. BMJ. 2001;322(7288):716-720.

Hazard Ratios for Waist Circumference in 5-cm Increments and All-cause Mortality By BMI Category in 650,000 Adults



Adjusted for educational level, marital status, smoking status, alcohol consumption, physical activity, and BMI.

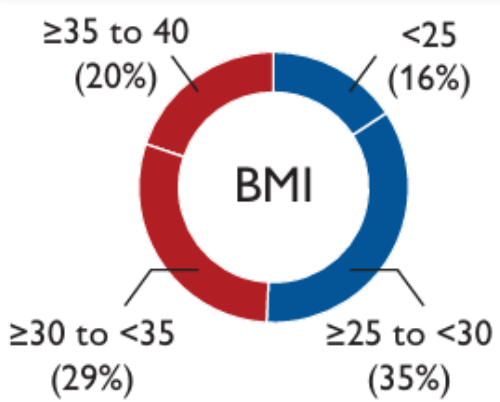
Cerhan JR, et al. *Mayo Clin Proc*. 2014: 89:335-345.

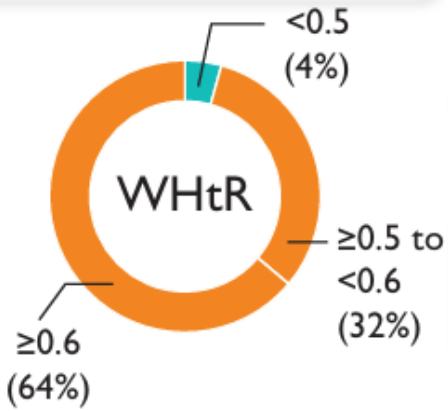
Association of BMI and WHtR with outcomes in patients with HFpEF

PARAGON-HF trial (valsartan vs sacubitril/valsartan)

N=4796

Baseline distribution obesity and central adiposity

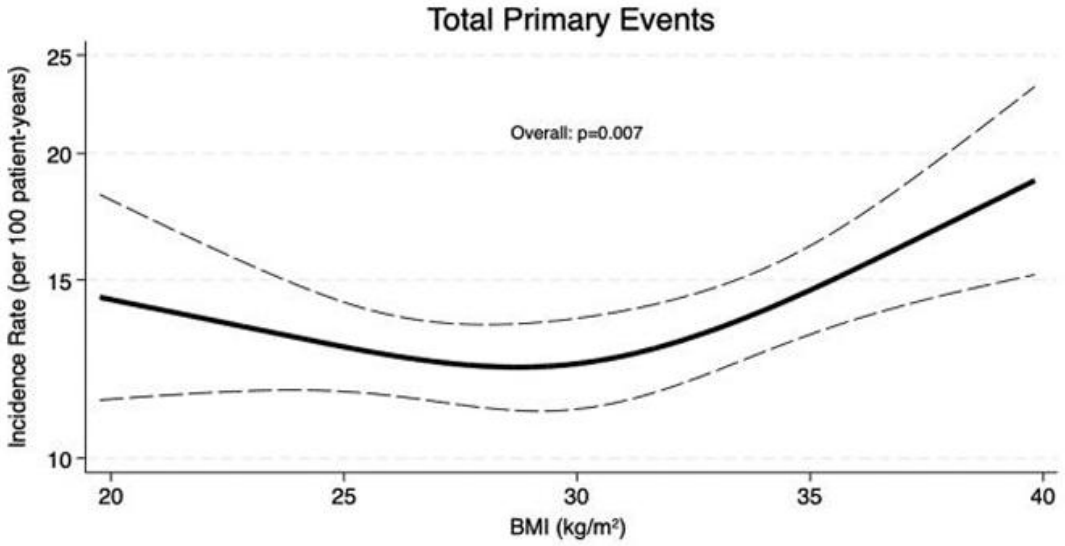


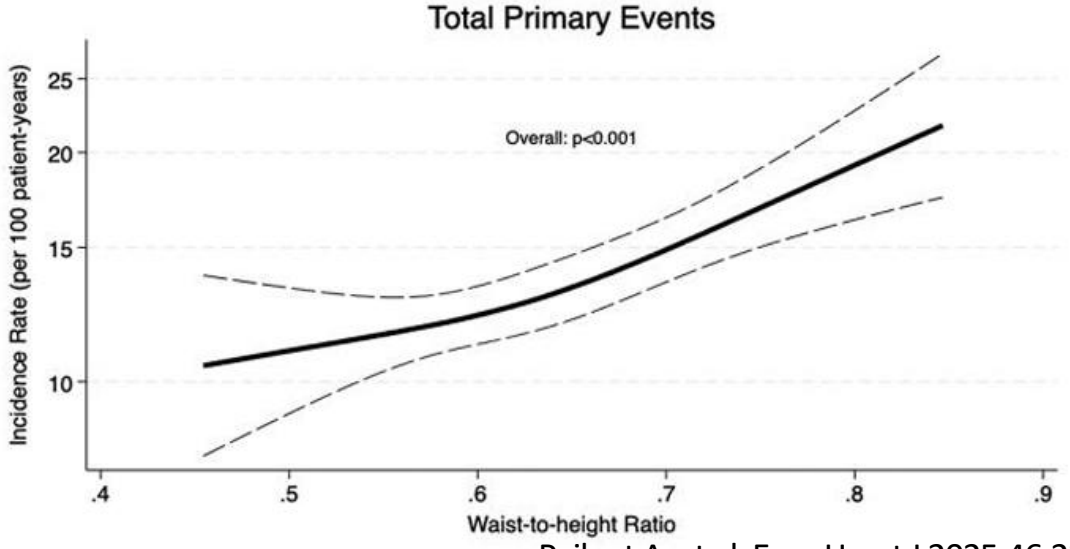


49% were obese when classified by BMI ≥30 kg/m²

96% had central adiposity as assessed by WHtR ≥0.5

Among patients who were not obese (BMI <30 kg/m²), 37% had marked central adiposity (WHtR ≥0.6)





Peikert A. et al. Euro Heart J 2025;46:2372-2390

Lancet Diabetes & Endocrinology Commission on the Definition and Diagnosis of Clinical Obesity

- Aim was to reframe the definition of obesity as a condition in which the risk to health associated with excess adiposity be objectively documented by specific signs and symptoms reflecting biological alterations of tissues and organs, which is consistent with existing illness

Rubino F, et al. *The Lancet Diabetes & Endocrinology 2025;*Vol. 13 (3):221-262

Methods and Outcomes

- 58 commissioners (experts) from around the world used a consensus to arrive at recommendations
- Met monthly from June, 2022 – Dec, 2024
- Pre-Delphi phase – sought opinions, strengths and gaps of scientific evidence, presentations, online questionnaires & open-ended questions. Draft Delphi questionnaire.
- Delphi-like phase – online survey platform using *agree* and *disagree* questions. Consensus of statements was defined as agreement by a supermajority (ie., >67%).
  - A total of 82 statements had consensus of which 49 (60%) were unanimous and 33 (40%) were near-unanimous (91-98% agreement).
  - Defined 18 criteria for the diagnosis of clinical obesity in adults and 13 criteria in children and adolscents.

Rubino F, et al. *The Lancet Diabetes & Endocrinology 2025;*Vol. 13 (3):221-262

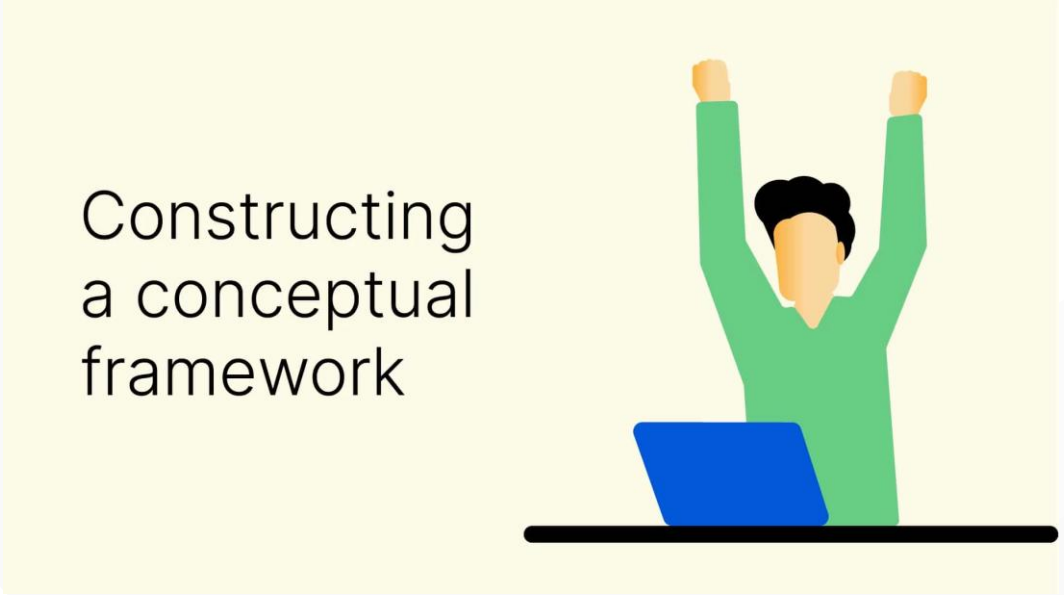
A New Framework for the Diagnosis of Illness due to Obesity

- Introduction of 2 new terms: Clinical Obesity and Pre-Clinical Obesity

The commission pragmatically distinguished clinical obesity from pre-clinical obesity, based on the presence or absence, respectively, of objective clinical manifestations (signs & symptoms) of altered organ function or impairment of an individual's ability to conduct daily activities.

Clinical assessment of obesity should be based on a 2-step process:

1. Confirmation of excess adiposity (obesity status)
2. Diagnosis of clinical or pre-clinical obesity based on objective measures of illness at the individual level

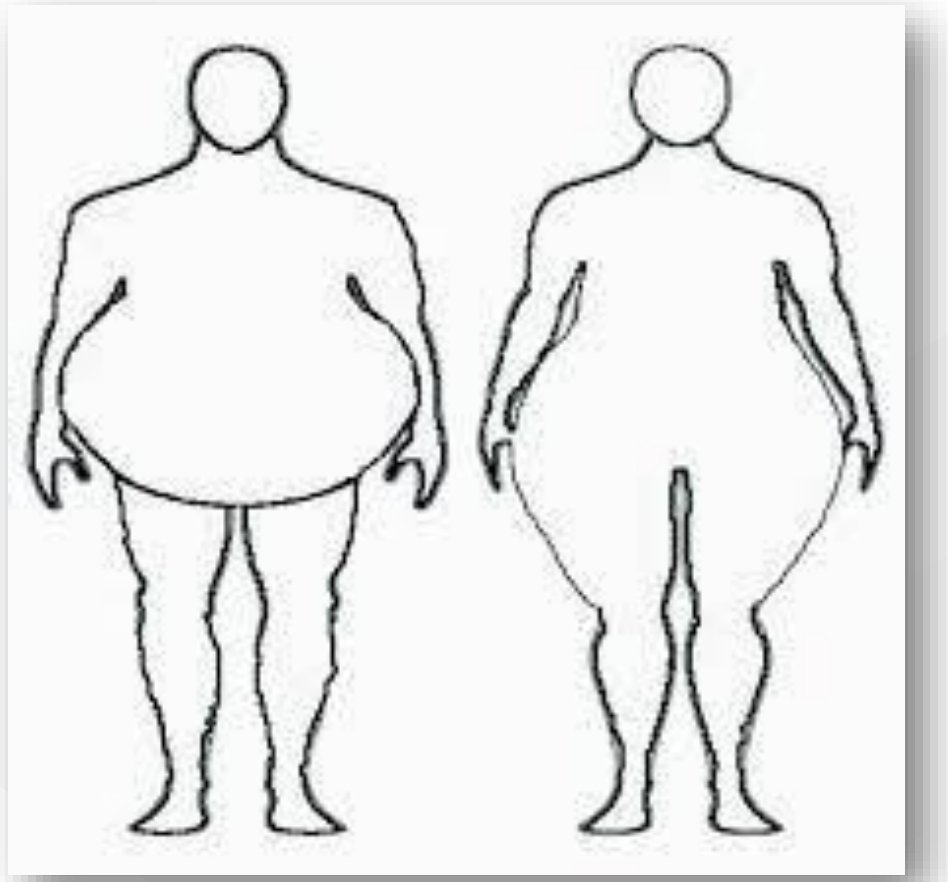


Rubino F, et al. *The Lancet Diabetes & Endocrinology 2025;*Vol. 13 (3):221-262

Defining and Diagnosing Excess Body Fat

- Confirmation of Excess Adiposity (obesity status) requires:

- At least <u>one</u> measurement of body size (waist circumference, waist-to-hip ratio or waist-to-height ratio) **in addition to** BMI
- At least <u>two</u> measurements of body size (waist circumference, waist-to-hip ratio or waist-to-height ratio) **regardless of** BMI
- Direct measurements of body fat (e.g., BIA or DEXA scan) can be used when available
- In people with very high BMI (>40 kg/m^2), however, the commission recognizes that it is pragmatically acceptable to assume confirmation of excess adiposity



Obesity is "*a condition characterized by excess adiposity, with or without abnormal distribution or function of adipose tissue*

Rubino F, et al. *The Lancet Diabetes & Endocrinology 2025;*Vol. 13 (3):221-262

Diagnosis of Clinical Obesity

Requires confirmation of obesity status (excess body fat) **Plus** evidence of one or both of the following:

Reduced organ or tissue function specifically due to obesity, including signs and/or symptoms of impaired respiratory, cardiac, renal, musculoskeletal, metabolic, reproduction, hepatic, genito-urinary functions

Trouble with mobility and day-to-day activities such as bathing, eating, continence, etc due to the impact of excess body fat

Rubino F, et al. *The Lancet Diabetes & Endocrinology 2025;*Vol. 13 (3):221-262

Diagnosis of Pre-Clinical Obesity

Requires confirmation of obesity status (excess body fat) **But**:

No signs or symptoms suggesting reduced organ or tissue function and an ability to conduct day-to-day activities unhindered

People with preclinical obesity, however, have a variable but generally increased health risk, including risk of developing clinical obesity and other obesity-related diseases such as cardiovascular disease and some cancers

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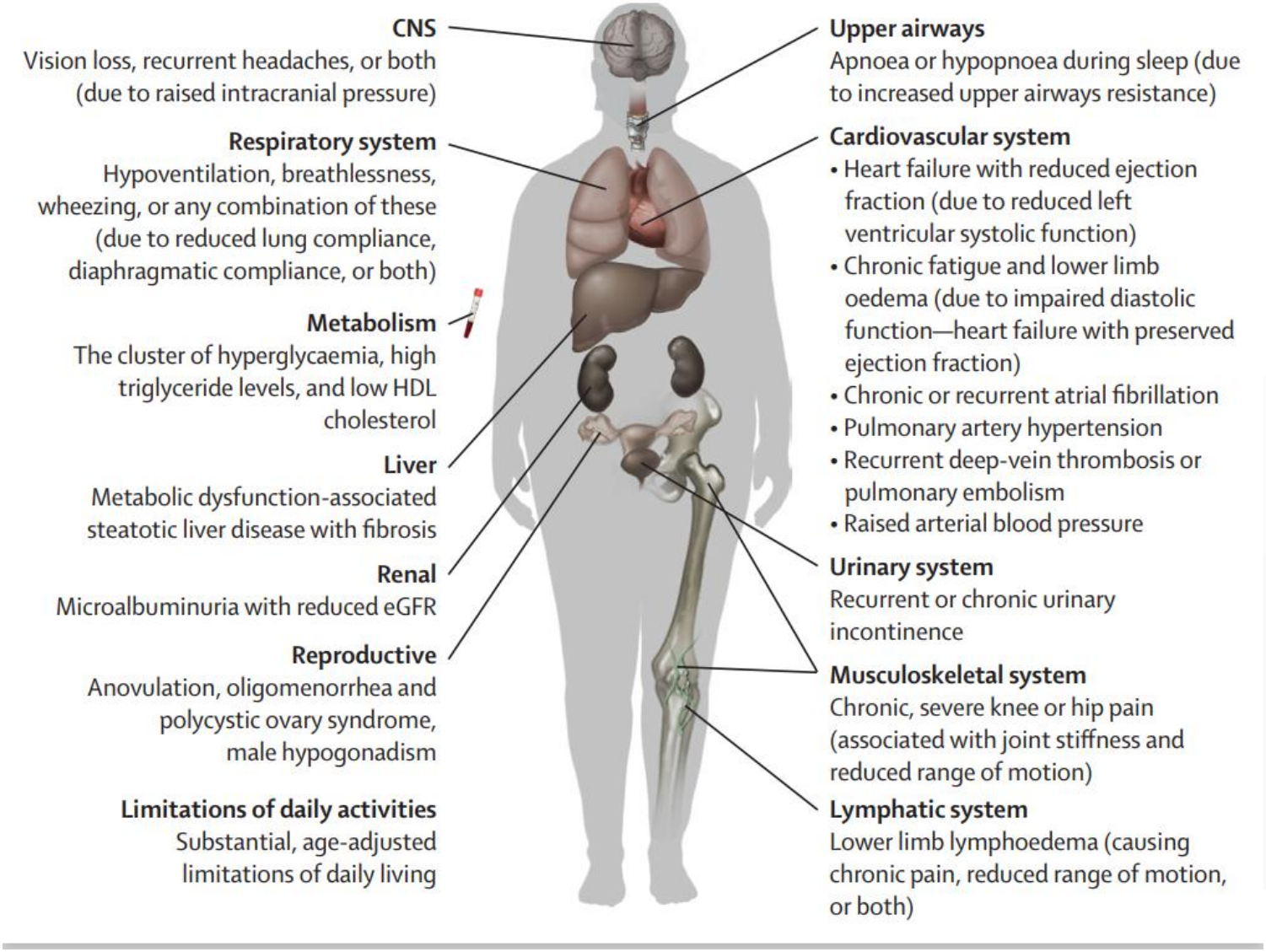
Diagnostic Criteria for Clinical Obesity in Adults



Clinical Application of the Lancet Commission Recommendations

Step 1

Meeting any of the following four criteria

1) BMI plus at least one additional anthropometric measure (waist circumference, waist to hip ratio, or waist to height ratio)
2) Two anthropometric measures in combination regardless of BMI
3) Total body fat by direct body fat measurement, such as a dual-energy X-ray absorptiometry scan
4) BMI ≥40 kg/m^2

No → **No obesity**

Yes → **Excess adiposity**

Yes → **Step 2**

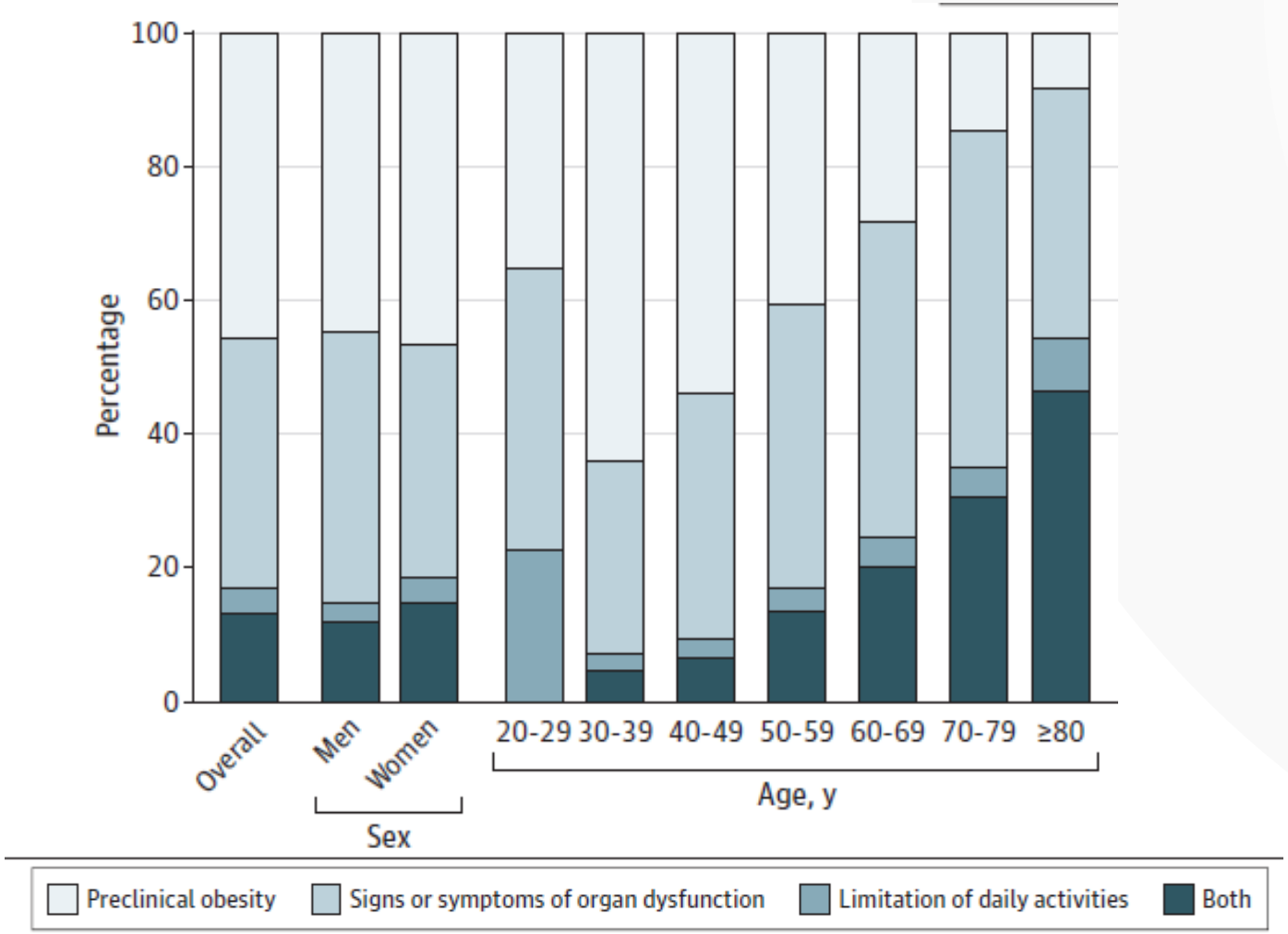
presence of organ system dysfunction or impairments in mobility and activities of daily living

Yes → **Clinical obesity**

No → **Pre-clinical obesity**

Park et al. JAMA Open 2025;8(9):e2533806

Proportion of Clinical Obesity and Preclinical obesity among Participants with Excess Adiposity: NHANES 2017-2018



- 4900 adults
- Prevalence of BMI-based obesity was 44.7%
- Among adults with excess adiposity, 46% did not have evident organ dysfunction or substantial physical limitations (preclinical obesity), and this proportion declined with age

BMI-based obesity = 27.5 for Asian and ≥30 for other adults

Park et al. JAMA Open 2025;8(9):e2533806

Management Recommendations

Clinical obesity

- Should receive comprehensive, evidence-based care that is timely and initiated with the aim to fully regain (remission) or improve the function which has been reduced by excess body fat.
- Successful treatment should be assessed by the improvement or resolution of clinical manifestations, rather than measures of weight loss alone.

Pre-clinical obesity

- The approach to care should focus on risk reduction and be based on the individual's specific level of risk.
- For some people with higher overall risk, other interventions (pharmacological or surgical) might be warranted proportional to the level of risk and presence of other considerations.

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