

THE NEW ERA PATIENT : WHO WILL WE BE OPERATING ON IN THE ASIA PACIFIC



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IFSO 2026 TORONTO

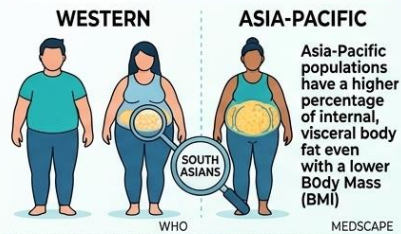
Prevalence of Obesity in
the Asia-Pacific Region
(Based on BMI ≥ 30 kg/m²)



(Lui, D.T.W., et al. 18 March 2024)

ISSUES WITH OBESITY IN ASIA PACIFIC

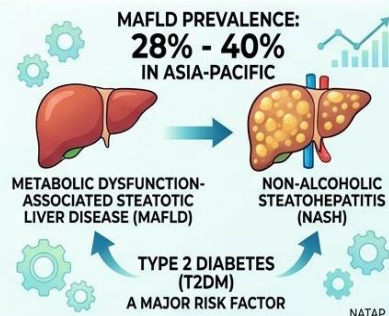
UNIQUE BODY COMPOSITION & OBESITY DEFINITION



WHO BMI THRESHOLDS



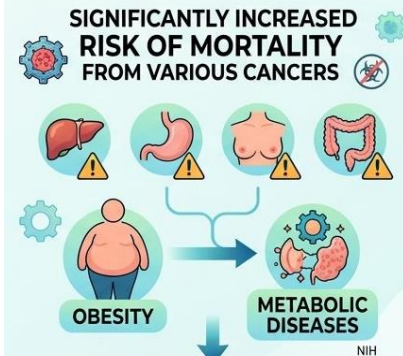
HIGH INCIDENCE OF MAFLD, NASH, & TYPE 2 DIABETES (T2DM)



CHILDREN & ADOLESCENTS OBESITY



INCREASED CANCER RISK & SYSTEMIC HEALTH IMPACT



CRITICAL NEED FOR EFFECTIVE INTERVENTIONS LIKE BARIATRIC SURGERY TO MITIGATE SEVERE HEALTH OUTCOMES

The biology entering theatre is changing.

OBESITY

**Higher
technical
complexity**

01

DIABETES

**Healing +
infection risk**

02

MASLD / MASH

**Altered liver
and metabolic
reserve**

03

SARCOPENIA

**Less resilience
despite lower
weight**

04

Risk will be defined by phenotype—not BMI alone.

CODIFYING PHENOTYPE - SPECIFIC GUIDELINES



IMPLEMENTING APAC-SPECIFIC GUIDELINES (REQUIRED)

Lowering Baseline Indicators

- ✓ Reduce thresholds to reflect early onset of severe illnesses.

UNIVERSAL ACTIONABLE BASELINES

BMI

32.5 – 35 kg/m²

BASELINE FOR SURGERY

Established criteria *without* major complications in APAC protocols.



BMI

27.5 kg/m²

INTERVENTION TRIGGER

For metabolic conditions (e.g., T2DM) poorly controlled by medical therapies.



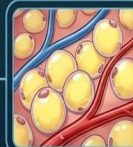
Poorly Controlled T2DM

Accounting for Metabolic Risks

Lowering baseline indicators for elevated central adiposity and severe comorbidities at lower BMIs

Incorporating Phenotype-Specific Metrics: Mandatory Waist circumference Screening, Visceral Adiposity Index Tracking and Body Composition Analysis.

Implementing Universal Early Screening Protocols: Early pancreatic β -cell evaluation



IMPROVED SCREENING:

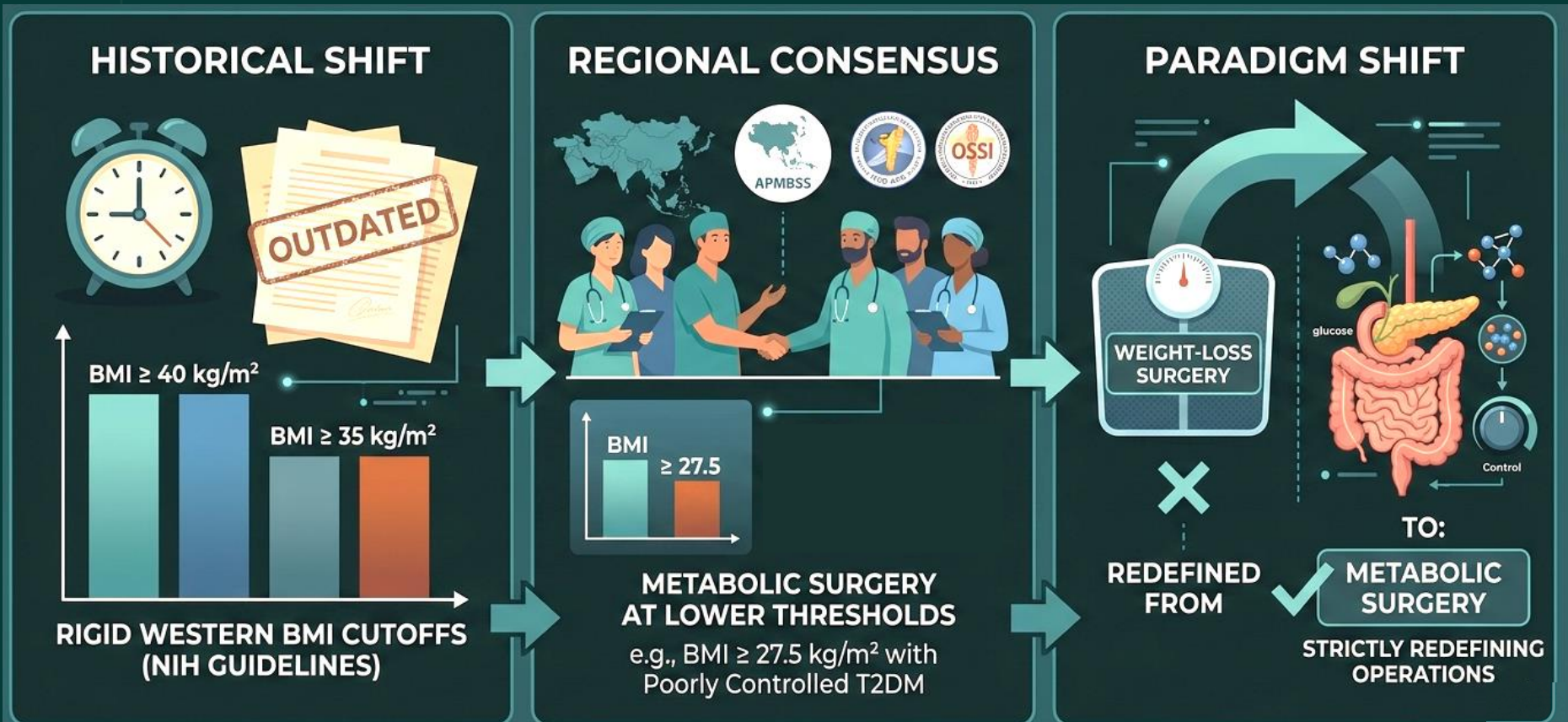
Identifies "Normal Weight Obesity"



BETTER RISK STRATIFICATION:

Links specific organ fat to insulin resistance

Evolution of Surgical Guidelines in Asia Pacific

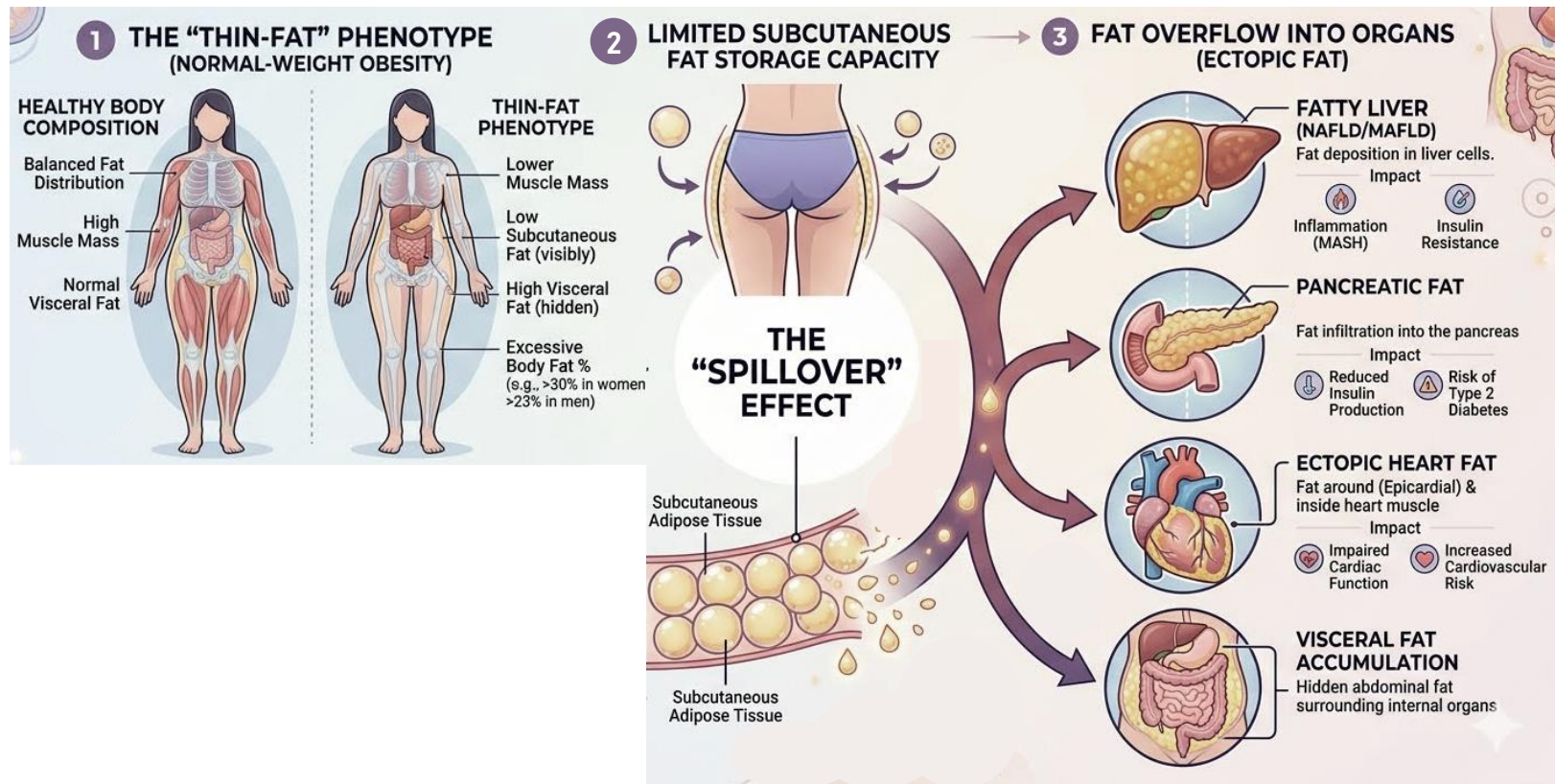


*Regional adaptations recognize the specific needs of Asian populations.

BARIATRIC SURGERY GUIDELINES - ASIA PACIFIC REGION

Country / Region	Governing Organization	BMI (No Comorbidities)	BMI (With Metabolic Comorbidities / T2DM)	Special Considerations / Lower Thresholds
Asia-Pacific (General)	IFSO-APC	$\geq 35 \text{ kg/m}^2$	$\geq 30 \text{ kg/m}^2$ (with uncontrolled T2DM)	$\geq 27.5 \text{ kg/m}^2$ can be considered as a non-primary option for poorly controlled T2DM.
Australia	ANZMOSS	$\geq 35 \text{ kg/m}^2$	30 – 34.9 kg/m^2	Adheres close to standard Western limits; recommends $\geq 27.5 \text{ kg/m}^2$ specifically for Asian ethnicity.
India	OSSI	$\geq 35 \text{ kg/m}^2$	$\geq 30 \text{ kg/m}^2$ (with 2+ conditions like T2DM, HTN, apnea)	$\geq 27.5 \text{ kg/m}^2$ for uncontrolled T2DM; factors in central obesity (waist circumference: $\geq 80\text{cm}$ W, $\geq 90\text{cm}$ M).
Japan	JSSO / Consensus	$\geq 35 \text{ kg/m}^2$	$\geq 32 \text{ kg/m}^2$ (with T2DM or multiple comorbidities)	Drops Western indicators by 2.5 units; metabolic options prioritized at $\geq 27.5 \text{ kg/m}^2$ for early T2DM.
South & Southeast Asia	Regional Consensus	$\geq 35 \text{ kg/m}^2$	$\geq 30 \text{ kg/m}^2$	Adopts regional Asian thresholds prioritizing surgery at $\geq 27.5 \text{ kg/m}^2$ for uncontrolled metabolic issues.
South Korea	KSMBS	$\geq 35 \text{ kg/m}^2$	$\geq 30 \text{ kg/m}^2$	Focuses heavily on surgical intervention at $\geq 27.5 \text{ kg/m}^2$ specifically for poorly managed T2DM.
Taiwan	TSMBS	$\geq 32.5 \text{ kg/m}^2$	$\geq 27.5 \text{ kg/m}^2$	One of the earliest nations to formally write lower regional Asian parameters into national policy.
China	CSMBS	$\geq 32.5 \text{ kg/m}^2$	$\geq 27.5 \text{ kg/m}^2$	Tailored to the East Asian demographic phenotype to mitigate rapid onset of metabolic risk.

THIN-FAT OBESITY PHENOTYPE AND ECTOPIC FAT DEPOSITION



THE APAC PARADOX: LEAN VS. OBESE MASLD / MAFLD PREVALENCE

CLINICAL PARADOX

The "Thin-Fat" Phenotype: Restrictive subcutaneous fat storage drives premature lipid spillovers into visceral compartments, generating extensive hepatic steatosis and metabolic dysfunction at a completely normal Western BMI.

LEAN MASLD / MAFLD SUBTYPE (Normal-Weight)

PREVALENCE IN APAC POPULATION: → 11.0% – 19.3% of the non-obese regional population

HISTORICAL ACCELERATION (TOTAL REGION): → Escalated from 25.3% to ~34.0%

CORE PHENOTYPIC INDICATORS:

- Restricted subcutaneous adipose tissue volume
- Hidden central visceral fat deposition
- Significant metabolic risk despite healthy scale weight

CHIEF PATHOLOGICAL DRIVERS:

- High frequency of PNPLA3 (rs738409) genetic variant
- Early childhood growth stunting + midlife urbanization
- Accelerated hepatocyte necroinflammation & ballooning

OBESE MASLD / MAFLD SUBTYPE (Classically Obese)

HIGH-RISK COHORT OVERLAP: → 65.0% – 75.6% of patients diagnosed with T2DM.

METABOLIC SYNDROME SATURATION: → Over 85% absolute overlap in urban centers.

CORE PHENOTYPIC INDICATORS:

- Generalized systemic adiposity and severe obesity
- Marked subcutaneous tissue storage capacity
- Prominent truncal and subcutaneous fat accumulation

CHIEF PATHOLOGICAL DRIVERS:

- Progressive chronic positive caloric imbalance
- Severe systemic baseline insulin resistance
- Broad lipotoxicity damaging peripheral muscle tissue

DIAGNOSTIC IMPACT

A standard Western BMI baseline (≥ 30 kg/m²) systematically under-detects the massive "Lean" MASLD cohort in the Asia-Pacific. Universal screening via waist circumference and liver ultrasonography is structurally necessary.

Current Trends and Perspectives on Obesity and Metabolic Dysfunction-Associated Steatohepatitis in East Asia

Soo Lim ^{1,†}, Hui Zhou ^{2,‡}, Wataru Ogawa ^{3,*}

Indication	Country	Prevalence	Year
MASLD	China	24% ¹²	2000
		33% ¹²	2018
	Japan	14.9% ¹⁷	2016
		15.3% ¹⁷	2030 (projected)
	South Korea	26.6% ¹⁹	2024
	Global	25% ⁷	1990–2006
		38% ⁷	2016–2019
MASH*	China	2.4%–6.1% ¹⁶	2022
	Japan	3.0% ¹⁷	2016
		3.6% ¹⁷	2030 (projected)
	South Korea	2.2% ²⁰	2017
	Global	5% ⁷	2019
Obesity	China [†]	3% ¹⁵	2004
		16% ¹⁵	2023
	Japan [‡]	< 1%–3% ¹⁸	1973
		4%–6% ¹⁸	2019
	South Korea [§]	30% ²²	2009
		36% ²²	2019
	Global	16% ¹	2022

*Prevalence of MASH is likely an underestimate because it requires liver biopsy to diagnose; [†]Defined as body mass index (BMI) ≥ 28 kg/m²; [‡]Defined as BMI ≥ 30 kg/m² in this dataset; [§]Defined as BMI ≥ 25 kg/m²; ^{||}Globally, obesity was defined as BMI ≥ 30 kg/m².

MASLD, metabolic dysfunction-associated steatotic liver disease; MASH, metabolic dysfunction-associated steatohepatitis.

Risk factors for East Asian patients developing obesity and MASH



More likely to develop central obesity/VAT



High risk for lean MASH



Higher incidence of at-risk genotypes*



Increasingly Westernized lifestyle



Rapidly aging population

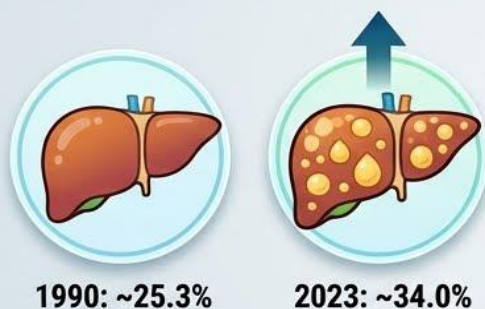


Lack of awareness resulting in lack of prevention and treatment strategies

Summary of the reported prevalence of MASLD, MASH, and obesity in China, Japan, South Korea, and worldwide

BURDEN OF MASLD IN THE ASIA-PACIFIC REGION (1990–2023): KEY FINDINGS

REGIONAL PREVALENCE TRAJECTORY



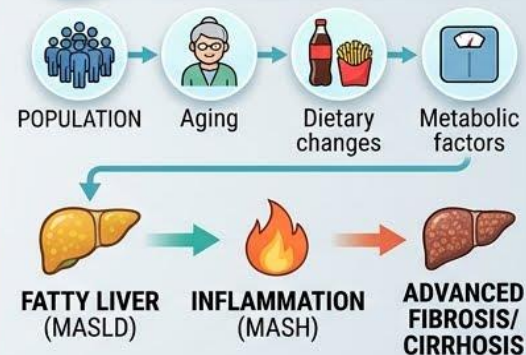
Steady rise in crude prevalence across the Asia-Pacific

SUB-REGIONAL HETEROGENEITY & CASELOADS



Absolute caseload peaks in high-population zones (South-East, East Asia).
Highest relative age-standardized burden in Pacific Islands (Oceania).

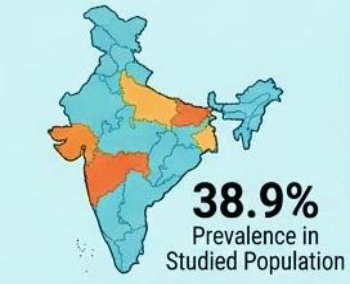
PRIMARY DRIVERS & HEALTH IMPACTS



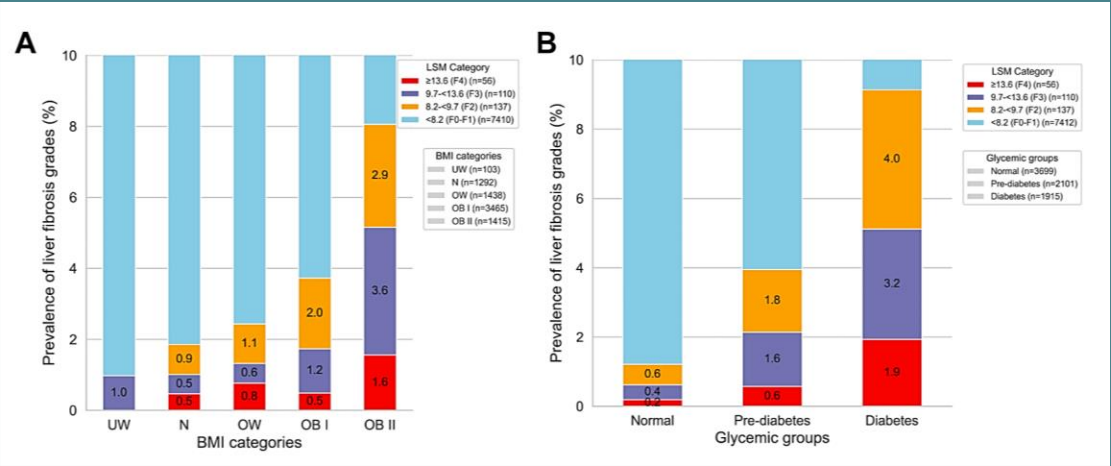
Rise driven by population growth, demographic aging, and obesity.
Leads to severe liver transitions and scarring.

Burden of MASLD and liver fibrosis: evidence from Phenome India cohort

Meghana Arvind ^{a,o}, Anshul Verma ^{a,b,o}, Sreeshma Raj K ^{a,o}, Satvartha Prakash ^{a,b}, Vignesh S Kumar ^{a,n},
 Mohammad Azhar Uddin ^a, Ayushi Narayan ^a, Mamta Rathore ^{a,b}, Nancy Rawat ^a, Ankita Sahu ^a, Yogesh Kumar ^{a,b},
 Pulkit Hasmukhbhai Leuva ^a, Monika Sharma ^{c,b}, Rajesh S ^{c,b}, Dwaiyayan Saha ^c, Ankita Mridha ^c, Ishant Jyoti
 Nath ^f, Ashique Hussain ^f, Borsha Rajkumari ^f, Mamta Thapa ^f, Neha Kumari ^g, Vishwapriya S ^h, Shilpak Chatterjee
^{d,b}, Dipjyaman Ganguly ^{d,b,m}, Ashish Awasthi ^{l,b}, Vamsi K Yenamandra ^{aj}, Ajay Pratap Singh ^{a,b}, Aastha Mishra ^{a,b},
 Swasti Raychaudhuri ^{g,b}, Karthik Bharadwaj Tallapaka ^{g,b}, Giriraj Ratan Chandak ^{g,b}, Mahesh J Kulkarni ^{c,b},
 Mahesh S Dharne ^{c,b}, Romi Wahengbam ^{g,b}, Umakanta Subudhi ^{l,b}, Sagnik Biswas ^k, Shalimar ^k, Kumardeep
 Chaudhary ^{a,b,****}, Shantanu Sengupta ^{a,b,***}, Partha Chakrabarti ^{b,c,***}, Viren Sardana ^{a,b,*}; Phenome India
 Consortium^p, on behalf of



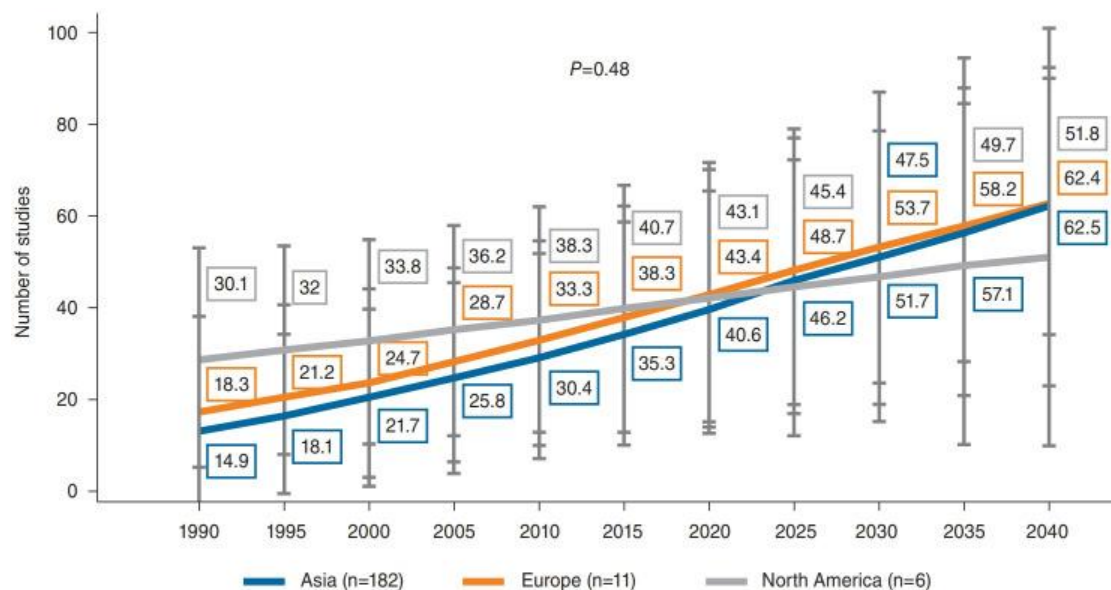
Scarring in Liver in 2.4%



Prevalence of liver fibrosis among different BMI subgroups and diabetic status. A) Fibrosis as per different BMI sub-groups (n = 7713). B) Fibrosis with diabetes and pre-diabetics (n = 7715). Abbreviations: UW, Underweight; N, Normal weight; OW, Overweight; OB I, Obese I; OB II, Obese II.

Liver disease trends in the Asia-Pacific region for the next 50 years

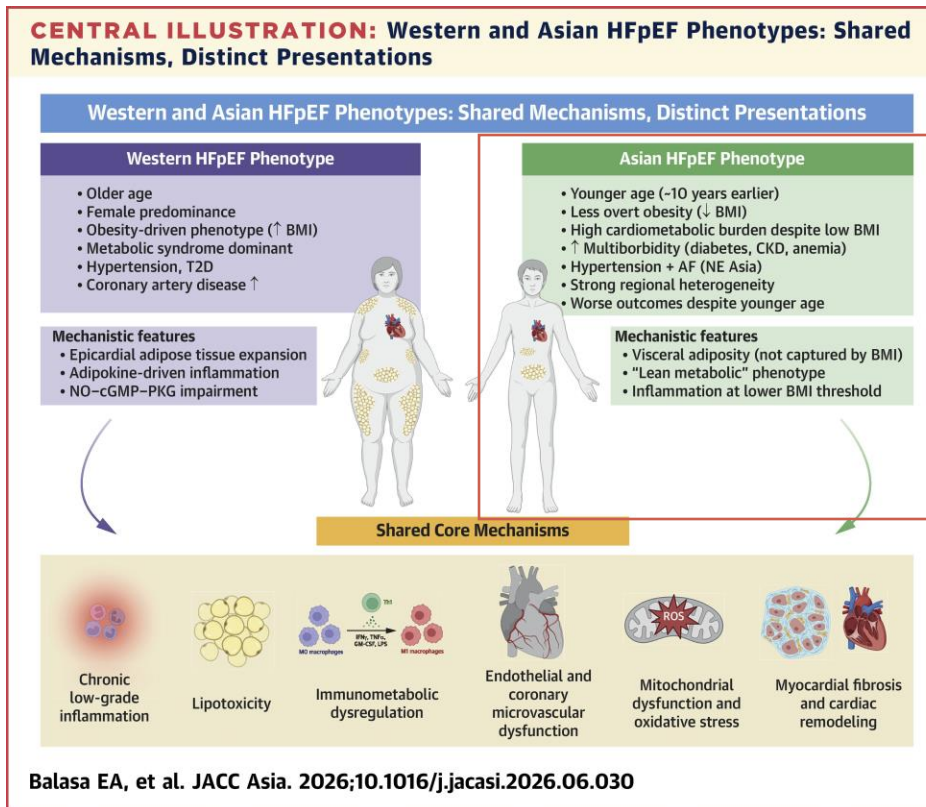
Shuichiro Shiina^{1,6}, Javkhlan Maikhuu^{1,2}, Qing Deng^{1,3}, Terguunbileg Batsaikhan^{1,4}, Lariza Marie Canseco^{1,5}, Maki Tobari¹, Hitoshi Maruyama¹, Hiroaki Nagamatsu¹, Diana Alcantara-Payawal⁶, Rino Gani⁷, Yi-Hsiang Huang⁸, Tawesak Tanwandee⁹, Giovanni Galati¹⁰, Yoon Jun Kim¹¹



Forecast of metabolic dysfunction-associated steatotic liver disease prevalence for Asia, Europe, and North America.

HFpEF in Asia: Distinct Phenotypes, Shared Mechanisms, and Emerging Insights

Elena Alina Balasa¹, Federico Capone², Antonio Vacca³, Paola Fioretto⁴, Cristiana Catena⁵, Jasper Tromp⁶, Roger S Y Foo⁷, Yibin Wang⁸, Carolyn S P Lam⁸, Gabriele G Schiattarella⁹

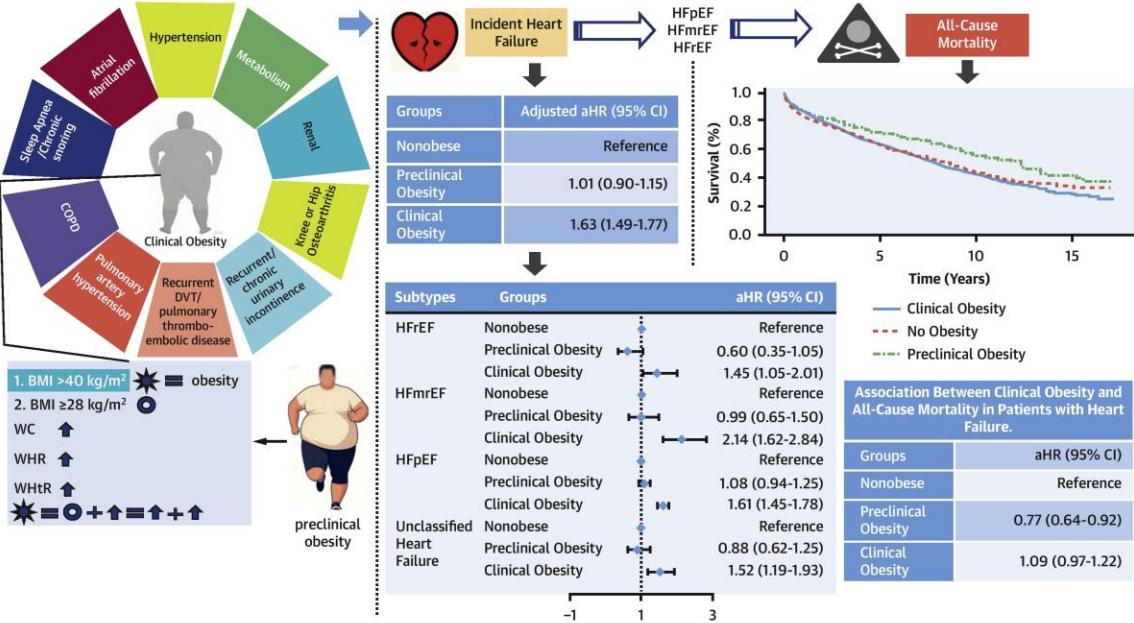


Asian patients with HFpEF exhibit a younger, leaner, and clinically distinct phenotype compared to Western cohorts, despite sharing the same core pathophysiological mechanisms

Long-Term Impact of Clinical Obesity on Heart Failure Development and Prognosis: New Insights

Hongmin Liu ¹, Tong Liu ², Yuntao Wu ¹, Haiyan Zhao ¹, Liming Lin ¹, Xiang Gao ³, Shouling Wu ⁴

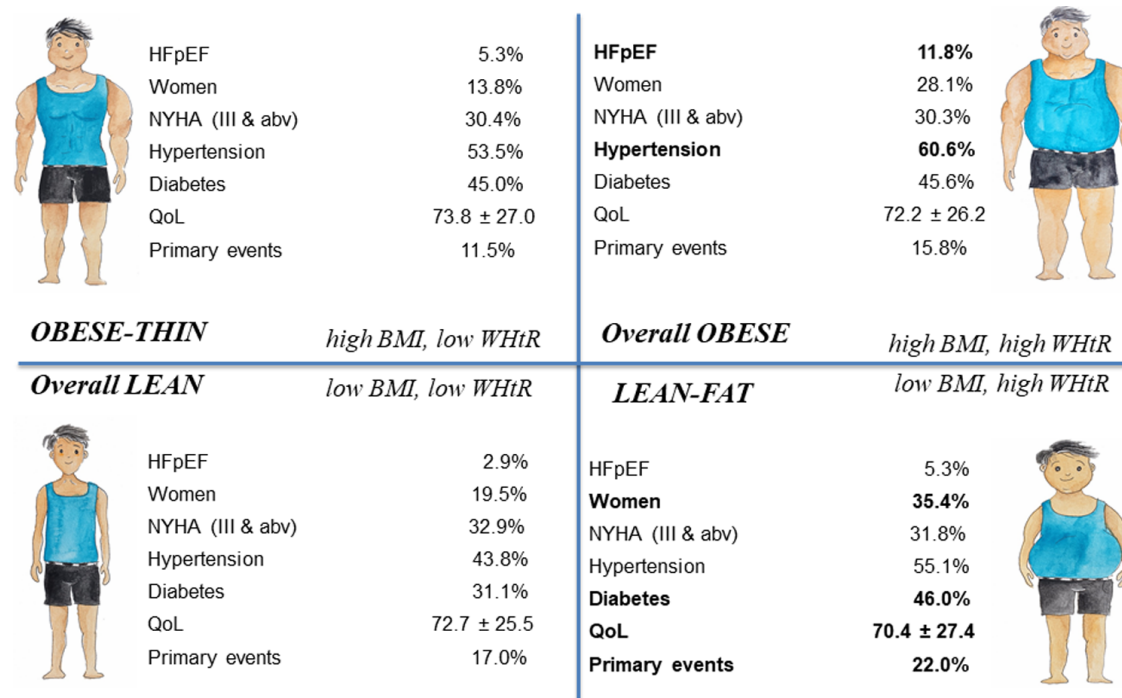
CENTRAL ILLUSTRATION: Long-Term Impact of Clinical Obesity on Heart Failure Development and Prognosis



Liu H, et al. JACC Asia. 2026;6(7):1245-1260.

Clinical obesity significantly increases the risk of new-onset heart failure proportionally with the number of co-existing metabolic complications, yet it does not independently increase all-cause mortality once heart failure has developed

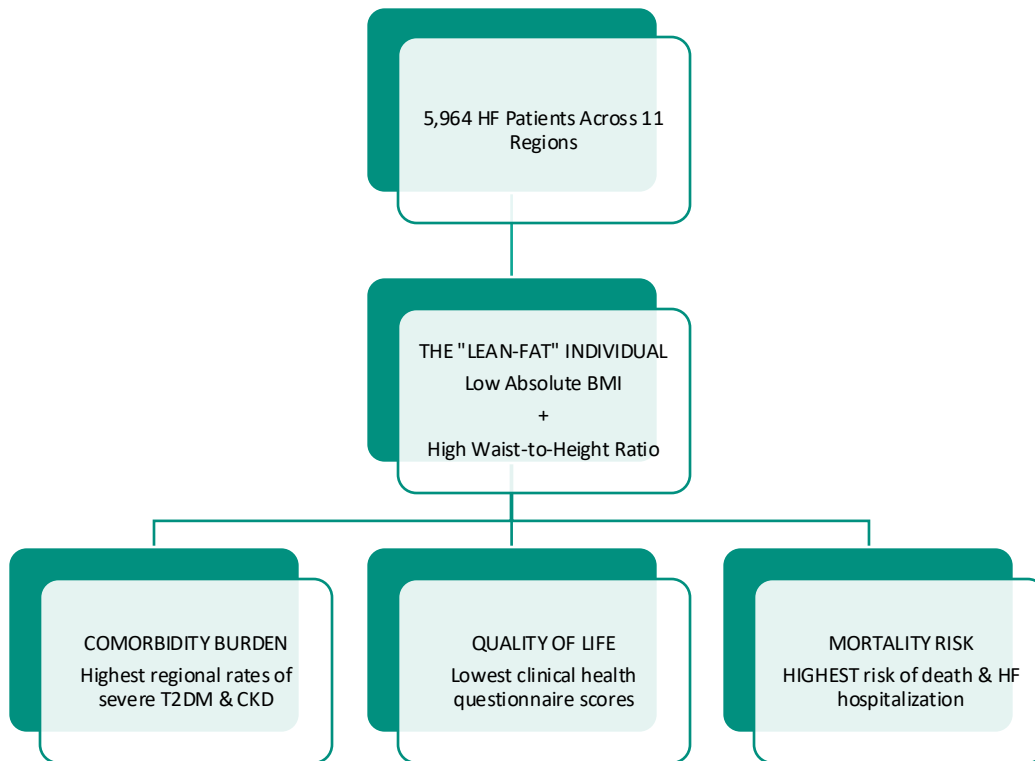
KEY FINDINGS FROM THE ASIAN-HF CORE COHORT STUDY



Central illustration of 4 combined groups of BMI (high, ≥ 24.5 kg/m² [obese], or low, < 24.5 kg/m² [lean]) and waist-to-height ratio (high, ≥ 0.55 [fat], or low, < 0.55 [thin]). QoL refers to the Kansas City Cardiomyopathy Questionnaire total symptom score. Key differences in characteristics between BMI/WHtR groups in bold. abv, above; BMI, body mass index; HFpEF, heart failure with preserved ejection fraction; NYHA, New York Heart Association; QoL, quality of life; WHtR, waist-to-height ratio.

(Chandramouli, C. et al. 2019)

KEY FINDINGS FROM THE ASIAN-HF CORE COHORT STUDY



The Core Discovery: Standard BMI parameters **hide severe cardiac risk** in Asian populations. The true driver of disease is central visceral adiposity.

The Clinical Target: The "**Lean-Fat**" **phenotype** (low overall BMI but high waist-to-height ratio) clusters heavily within **South and Southeast Asian cohorts**.

Primary Endpoints: Lean-fat individuals suffered the region's **highest risk of all-cause mortality and heart failure hospitalization** across both HFpEF and HFrEF subtypes

(Chandramouli, C. et al. 2019)

CKD IN ASIA-PACIFIC REGION

The Failure of Legacy Cutoffs ($\text{BMI} \geq 30 \text{ kg/m}^2$)

- **The Key Finding:** The conventional Western BMI threshold for obesity ($\text{BMI} \geq 30 \text{ kg/m}^2$) **fails to identify early CKD risk** in Asian populations. Non-diabetic Asian adults experience significantly shortened survival times to CKD onset at much lower weight margins.
- **The Threshold Impact:** Utilizing the specialized **Asia-Pacific BMI classification (where obesity starts at $\text{BMI} \geq 25 \text{ kg/m}^2$)**, researchers proved that Class I obesity ($\text{BMI} 25.0\text{--}29.9 \text{ kg/m}^2$) significantly accelerates nephron decline.

Pathophysiology: The "Thin-Fat" Physical Squeeze

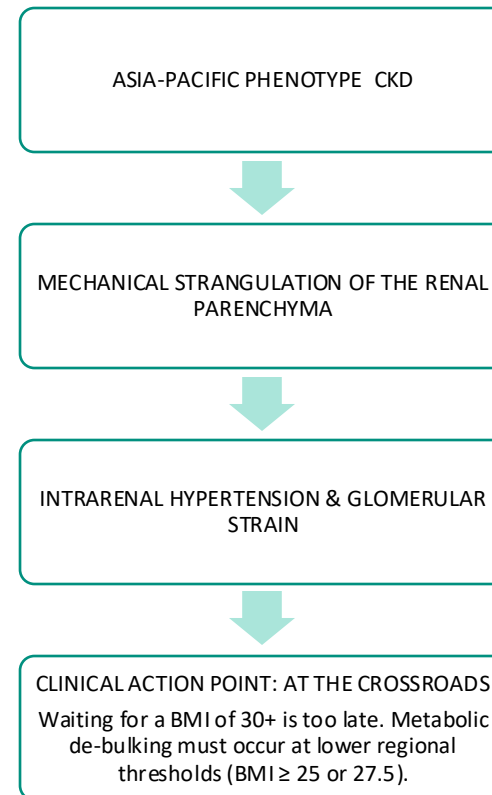
- **Retroperitoneal Encapsulation:** High retroperitoneal fat encapsulates and mechanically compresses the renal parenchyma within rigid anatomical boundaries.
- **Intrarenal Pressure:** Volumetric CT data shows this direct physical compression forces up intrarenal tissue pressure, triggering damaging **Glomerular Hyperfiltration**.
- **Surgical Reversal:** Bariatric de-bulking (Sleeve Gastrectomy) immediately reduces kidney volume, unloads retroperitoneal pressure, and resolves hyperfiltration.

(Yu, S. et al. 2016; Okawa, Y. et al. 2019; Iwasaki, T. et al. 2025; Okawa, Y. et al. 2025)

CKD IN ASIA-PACIFIC REGION

The Normal-Weight Central Obesity Trap

- **The High-Risk Subgroup:** Longitudinal cohort data reveals that the risk of incident CKD was significantly increased—up to **4.5 to 7.5 times higher**—in individuals presenting with high visceral adipose tissue metrics.
- **The Clinical Blindspot:** This extreme risk was found to be most aggressive in the **metabolically abnormal normal-weight phenotype**. Outwardly lean individuals with high abdominal fat indices suffered identical kidney damage rates to overtly obese cohorts, rendering simple BMI tracking useless on its



(Yu, S. et al. 2016; Okawa, Y. et al. 2019; Iwasaki, T. et al. 2025; Okawa, Y. et al. 2025)

Clinical and Humanistic Burden of Adult Obesity in Asia-Pacific: A Systematic Literature Review

Esther Artime, Sarah Zimmer-Rapuch, Roger Chen, Qiuhe Ji, Ichiro Tatsuno, Rachel S Newson, Tomotaka Shingaki, Si Si, Rachel Kewley, Sam Riley, Swarna Khare

Obesity continues to be an increasing global health concern. However, the burden of obesity within the Asia-Pacific (APAC) region is less well-defined relative to Western countries.

The definition of obesity differs between countries in the APAC region, ranging from a BMI of ≥ 25.0 kg/m² to ≥ 30.0 kg/m² across Australia, China, Korea, Hong Kong, Japan, and Taiwan.

METHODS

What is the burden of obesity-related complications?

What is the impact of obesity on patient-reported outcomes (PROs)?

What is the impact of obesity in the APAC region?

30 publications from the APAC region during 2018–2023 were reviewed as part of a multinational systematic review. Publications were identified from Australia, China, Korea, Hong Kong and Japan

RESULTS

CONCLUSIONS



Obesity in the APAC region is linked to a range of serious physical and mental health problems. Despite differences in how obesity is defined across countries, the negative effects are clear. There is a strong need to treat obesity as a long-term disease and treat patients early before complications occur.

APAC: Asia Pacific; HRQoL: health-related quality of life; PRO: patient-reported outcome.

RESULTS

Burden of obesity-related complications

Obesity-related complications were reported at considerably higher rates in people with obesity compared to people with a normal weight.

Diabetes, hypertension, dyslipidaemia, and cardiovascular diseases were the most frequently reported obesity-related complications. Across included studies, rates of obesity-related complications were as high as...



57% for diabetes



72% for hypertension



65% for dyslipidaemia

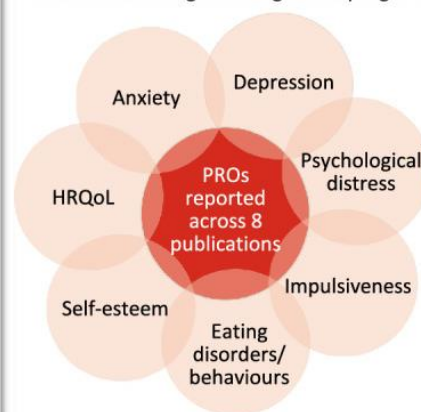


23% for cardiovascular disease

Patient-reported impact of obesity

Low scores on PRO measures indicated reduced health-related quality of life (HRQoL) among people with obesity, with **lower HRQoL in those with a higher obesity class.**

Psychological distress was elevated in people with obesity which persisted despite enrolment in weight management programs



DIABETES REMISSION

The Effects of Bariatric Surgery on Type 2 Diabetes in Asian Populations: a Meta-analysis of Randomized Controlled Trials

Original Contributions | Published: 09 December 2019
Volume 10, pages 910–923 (2020) [Cite this article](#)

[Save article](#)

Jin Hwa Kim, Jung-Seo Pys, Won Jin Cho & Sang Yong Kim 

Meta-analyses show that Asian-dominant studies achieve significantly **higher 2-year diabetes remission rates compared to non-Asian cohorts** (67.2% vs. 56.3%)

[Obes Surg.](#) 2026 Jul;36(7):3736–3744. doi: 10.1007/s11695-026-08770-7. Epub 2026 Jun 4.

Long-Term Weight Loss and Metabolic Outcomes After Bariatric Surgery in a Large Asian Cohort: A Real-World Cohort Study

Wei Lun Tan ¹, Guo Hou Loo ², Guhan Muthkumaran ¹, Nik Ritza Kosai ¹

Long-term follow-ups show a high diabetes remission rate of **64.2% at 3 years** and **51.4% at 5 years**. Over **80.9%** of diabetic patients achieve a stable HbA1c < 6.5% within 12 months post-op



Obesity Pillars
Volume 12, December 2024, 100145



“Metabolic surgery in Asian patients with type 2 diabetes mellitus and body mass index less than 30kg/m²: A systematic review”

Angel Alois Osorio Manyari ^a, Azucena Lirio Armas Alvarez ^b, Joel Davis Osorio Manyari ^c,
Francisco Gonzalez Caballero ^d, Sjoek Pouwels ^d  

In low-BMI Asian patients (BMI < 30 kg/m²), surgery induces significant long-term glycemic normalization, fundamentally altering insulin resistance profiles

IMPACT ON DYSLIPIDEMIA, HYPERTENSION, AND ORGAN FAT

Dyslipidemia



While weight loss is comparable between procedures, **RYGB achieves significantly higher remission of dyslipidemia** than Sleeve Gastrectomy in Asian cohorts due to altered proximal gut nutrient delivery and bile acid signaling

Hypertension



Significant, durable blood pressure reductions occur across all cohorts, with massive medication de-escalation observed within 12 months of surgery.

MAFLD/MASH



By clearing visceral lipid overflows, surgery triggers immediate reductions in liver volume and steatosis, effectively halting the progression of metabolic liver fibrosis

IMPACT ON HEART FAILURE

Heart Failure



Metabolic bariatric surgery yields a profound, rapid reduction in Epicardial Adipose Tissue (EAT) thickness.

This shrinkage correlates directly with the suppression of local pro-inflammatory adipokines and improvement in local microvascular function

Heart Failure



This study establishes that surgical weight reduction drives reverse cardiac remodeling, specifically improving the E/A ratio and reducing left atrial diameter. This confirms that unloading systemic inflammation mechanically reverses myocardial wall stiffness and resolves diastolic filling constraints

Heart Failure



Bariatric surgery or rapid visceral de-bulking physically relieves **external pericardial restraint** and high intra-abdominal pressure, correcting ventricular interdependence and lowering high filling pressures

IMPACT ON CHRONIC KIDNEY DISEASE

CKD



Bariatric surgery **cuts the risk of developing end-stage kidney disease in half** (5.9% vs. 11.9% in non-surgical cohorts)

Post-operative patients are **60% less likely to require dialysis.**

CKD



Removing the physical fat pack within the rigid retroperitoneal space physically decompresses the **renal parenchyma**. This structural decompression normalizes intrarenal tissue pressures, immediately reducing albuminuria and resolving harmful glomerular hyperfiltration

CKD



For patients with advanced kidney failure, metabolic surgery safely drops the baseline BMI, making them **twice as likely to successfully qualify for and receive a kidney transplant**

(Teh, J. L. et al. 2017; ASMBS; 2026; Martinez, E. C. et al. 2026)

SARCOPENIC OBESITY



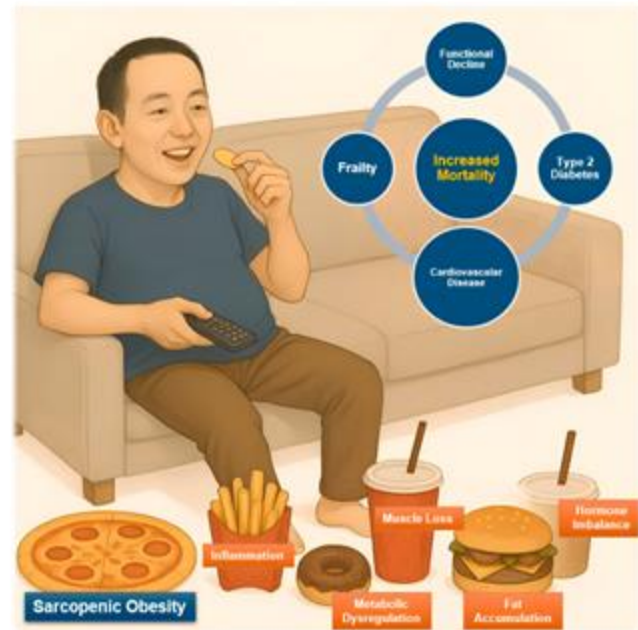
Osteoporosis and Sarcopenia
Volume 11, Issue 2, Supplement, June 2025, Pages 40-49



Review article

Sarcopenic obesity in the Asia-Pacific region: Epidemiology, risk factors, and management

Chun-Feng Huang^{a,b,c}, Chih-Hsing Wu^{d,e,f}  



Co-existence of low skeletal muscle mass/function and excess adiposity

Definition

Vicious Cycle

Visceral fat causes lipotoxicity that damages muscle, reducing metabolic rates

Sarcopenic Obesity
The Challenge

Target Tier

Rising rapidly across the APAC region, heavily concentrated in adults over 60

Asian Phenotype

Elevated cardiometabolic risks (T2DM, CVD) occur at lower BMIs.

(Huang, C.F. & Wu, C.H.; 2025)

RISK FACTORS OF SARCOPENIC OBESITY

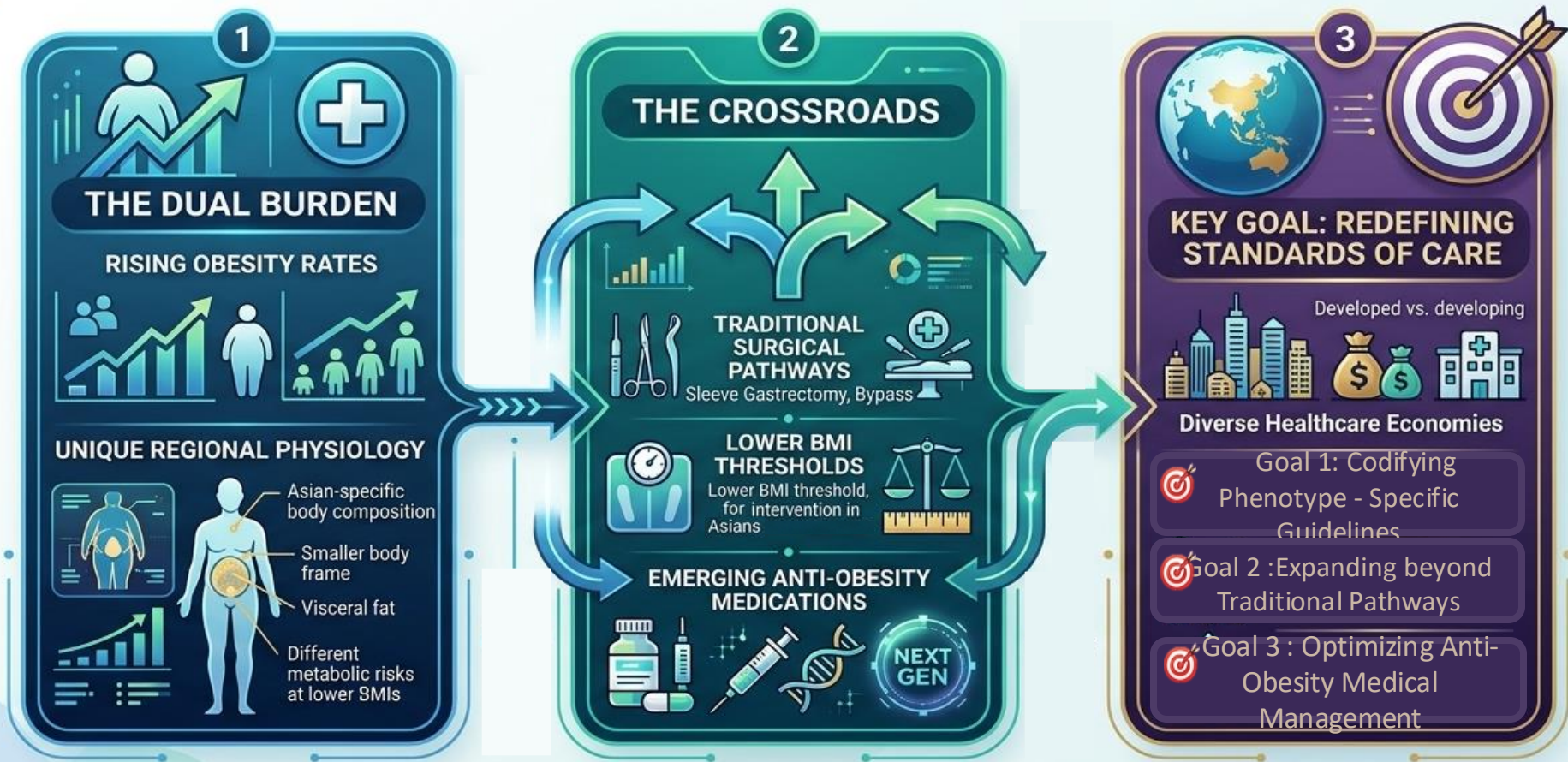
Demographics: Accelerated population aging paired with modern dietary transitions

Early-Life Stunting: Childhood malnutrition combined with midlife growth leads to low muscle mass

Sedentary Habits: Rapid urbanization causing physical inactivity and prolonged sitting

Nutritional Deficit: Insufficient high-quality protein intake among aging populations

THE ASIAN-PACIFIC (APAC) BARIATRIC SURGERY LANDSCAPE



EXPANDING BEYOND TRADITIONAL PATHWAYS



Classic and New

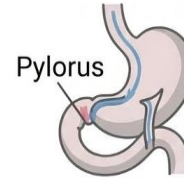
Moving past standard LSG, RYGB and OAGB



Traditional
bypass



Advanced
procedure



Adopting Foregut Advancements

Integrating SleevePlus options to preserve endoscopic surveillance and protect against dumping syndrome, steatorrhea, marginal ulcer

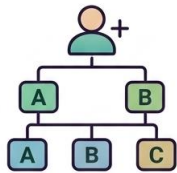


Anatomical Refinement

Tailoring with Modified variations of RYGB anatomy to match unique structural needs.

Endoscopic options

OPTIMIZING ANTI-OBESITY MEDICAL MANAGEMENT (OMM)



Candidate Stratification

Developing definitive clinical criteria for ideal patient demographics for combined pharmacotherapy profiles

Pre-Operative Optimization Strategy



Deploying advanced OMM protocols for pre-op weight loss



Optimization Outcomes

Minimizes liver volume, mitigates perioperative risks, and improves long-term success



International Federation for the Surgery of Obesity statement on metabolic bariatric surgery after pharmacotherapy-induced weight loss in clinical obesity

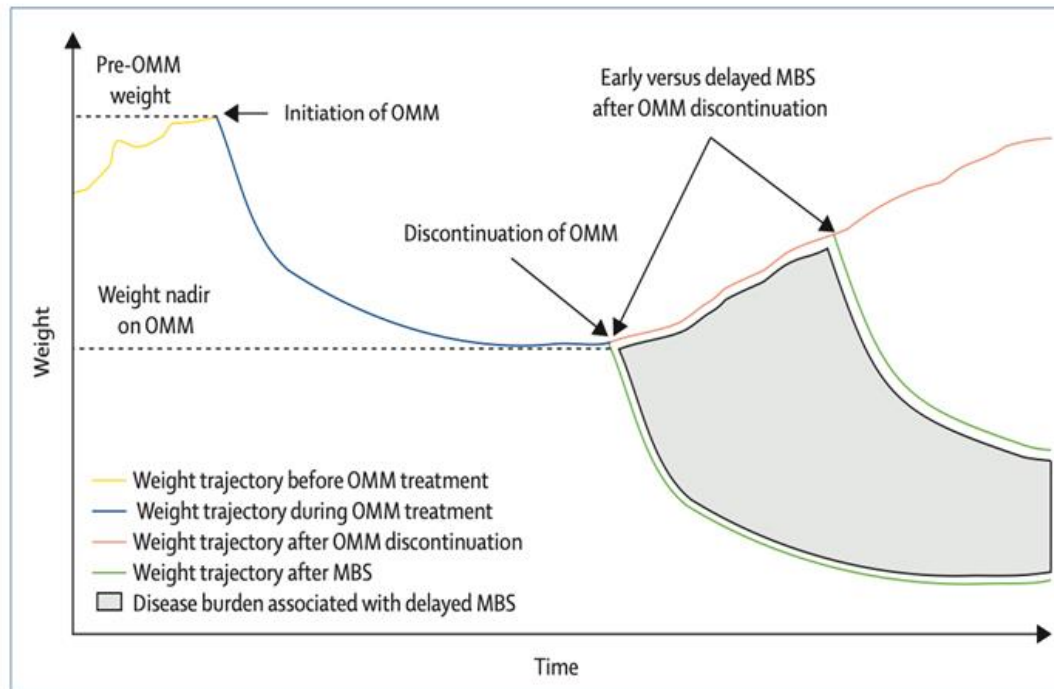


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Clinical obesity is a chronic systemic disease characterised by alterations in the function of tissues, organs, physical ability, or a combination of these due to excess adiposity, which can increase morbidity and mortality, and reduce quality of life.¹ Understanding the

sustained treatment.^{4,5} For individuals who are unable to tolerate or adhere to pharmacotherapy or prefer a single intervention, MBS offers a durable, evidence-based alternative. MBS provides sustained weight loss and metabolic improvement and mitigates biological drivers

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Significance of Preoperative Weight Loss in Bariatric Surgery

- Preoperative weight loss is required for patients with a **BMI >70 kg/m²** to **reduce** the **intra-abdominal volume** and **achieve technical operability**.¹

Reduced operating time in patients who lost **10%** of their **total body weight**.²

Preoperative weight loss is associated with:³

- **13%–18%** reduced risk of **overall postoperative complications**
- **25%–35%** reduced incidences of **anastomotic leakage** and **deep infection or abscess**
- **60%–70%** reduced risk of **conversion from laparoscopic to an open procedure**

Patients should **adapt** to **exercise** and **lifestyle modifications or before surgery**, as this will help **ensure** the necessary **commitment** to undergo the **postoperative nutritional restrictions** of the procedure.²

1. Stier CK, et al. *Diabetes*. 2015;64:A43.

2. Benalcazar DA, et al. *StatPearls*. 2019.

3. Anderin C, et al. *Ann Surg*. 2015;261(5):909–913.

OPTIMIZING ANTI-OBESITY MEDICAL MANAGEMENT (OMM)

Using pharmacotherapy as an augmentation post-surgery to prevent weight regain or address relapses.

Introducing AOMs at the first sign of a weight trajectory reversal helps suppress the biological drives (like increased ghrelin or decreased baseline satiety signals) that cause relapse, effectively "resetting" the patient's metabolic controls.

Mechanical vs. Hormonal Augmentation

Surgery provides immediate mechanical volume restriction, major initial metabolic reprogramming, and alterations in baseline gut peptides.

Pharmacotherapy provides targeted central nervous system regulation, enhancing satiety, delaying gastric emptying, and improving insulin sensitivity at a cellular level.

The Outcome:

Combining the two therapies addresses obesity as a multi-layered, chronic disease. The medication acts as a non-surgical "tightening" of the surgical alteration, optimizing the patient's hormonal environment without requiring revision surgery.

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Head-to-Head Landmark Clinical Trials:

The BARI-STEP Trial (Semaglutide 2.4 mg):

Focus: Specifically evaluated the efficacy of a weekly subcutaneous GLP-1 receptor agonist in patients facing post-surgical weight recurrence.

Outcome: Patients taking Semaglutide 2.4 mg achieved a remarkable **~18% additional weight loss** compared to the placebo arm. This trial established high-dose semaglutide as a powerful option for medical revision.

The BARI-OPTIMISE Trial (Liraglutide 3.0 mg):

Focus: Investigated using a daily GLP-1 receptor agonist for managing suboptimal or plateaued weight loss outcomes following metabolic bariatric surgery.

Outcome: Patients treated with Liraglutide 3.0 mg experienced an **additional 8.8% total body weight loss** relative to placebo, confirming that incretin-based therapies effectively overcome surgical plateaus

OPTIMIZING ANTI-OBESITY MEDICAL MANAGEMENT (OMM)

The Multi-Modal Era: Synergy vs. Pharmacotherapy Competition

The Fallacy of Competition

Early market predictions framed GLP-1 medications as a replacement for bariatric surgery.

The Reality of Synergy

Pharmacotherapy is the ultimate long-term *adjunct* to surgical intervention.

Clinical Indications for Post-Surgical AOMs:

Halting Relapse: Intervening early when patients experience post-surgical weight regain

Hormonal Catch-Net: Overcoming biological plateaus by targeting central satiety pathways that surgery alone could not fully suppress

Avoiding Revision Surgery: Minimizing the need for anatomically complex and high-risk secondary operations (revisions) by managing weight regain pharmacologically.

The New-Era Surgical Patient

The patient has changed. Has surgery?

OLDER • HEAVIER • METABOLICALLY COMPLEX • DIGITALLY INFORMED

Digitally Informed Patient
Shared Surgical Decision Making

Older does not mean inoperable.

CHRONOLOGICAL AGE

Frailty

Cognition

Functional
reserve

The new consent conversation: years of life × quality of life × speed of recovery.

A smaller intervention must deliver a larger outcome.



The question shifts from “Can we operate?” to “What is the least traumatic effective intervention?”

The operation may begin weeks before incision.

- | | | |
|----|------------------|---|
| 01 | NUTRITION | Protein, anaemia, micronutrients |
| 02 | MOVEMENT | Strength, aerobic reserve |
| 03 | METABOLIC | Glucose, BP, GLP-1 pathway |
| 04 | MINDSET | Expectation and psychological readiness |

Prehabilitation converts waiting time into treatment time.

FROM EPISODE TO CONTINUUM

The surgical pathway is being rewritten.

YESTERDAY

Disease

Diagnosis

NEW ERA

Prediction

Prevention

Prehabilitation

Precision surgery

Connected care

Success is no longer a safe operation alone—it is a durable return to health.

THE FUTURE HORIZON



Personalized Pathways: Matching patients to medical, surgical, or combined multi-modal therapies.



Beyond the Scale: Measuring success by diabetes remission, metabolic health, and cardiovascular protection.



Continuum of Care : Quality of life and Patient Expectancy for joint Decision making