

# **Communicating How Obesity is Defined and Diagnosed**

## **Adiposity-Based Chronic Disease and the Complications-Centric Approach to Disease Staging and Management**

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# Disclosures

## Consultant

Advisory boards for Boehringer Ingelheim, Eli Lilly, Novo Nordisk, Merck, Fractyl Health, Inogen, Alnylam Pharmaceuticals, and Pfizer

## Non-profits

Advisory board for the Milken Institute

## Research

Site PI for multi-centered clinical trials sponsored through his university and funded by Eli Lilly, Epitomee, Novo Nordisk, Neurovalens, and Pfizer.

## Data Monitoring Committee

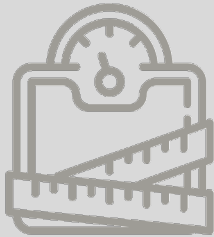
Clinical trials funded by Eli Lilly and Boehringer-Ingelheim

# AACE Designates Obesity as a Chronic Disease\* based on AMA Criteria

\*involves interactions among genetic, environmental, and behavioral factors

## Characteristic signs or symptoms

✓ **BMI**



## Results in harm or morbidity

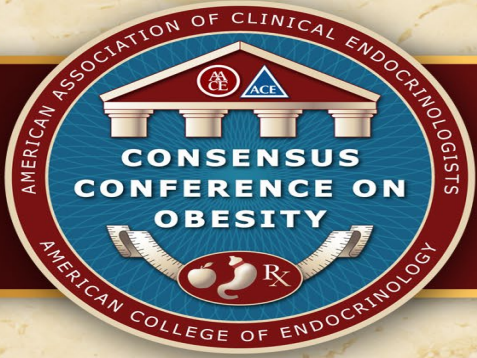
✓ Cardiometabolic and  
biomechanical  
complications



## Impairment in the normal functioning of some aspect of the body

- ✓ Satiety hormone regulation  
of energy intake
- ✓ Adipose tissue dysfunction

Criteria established by the American Medical Association (AMA), Report 4 of the Council on Scientific Affairs (A-05). Recommendations for Physician and Community Collaboration on the Management of Obesity (Resolution 421, A-04), 2005



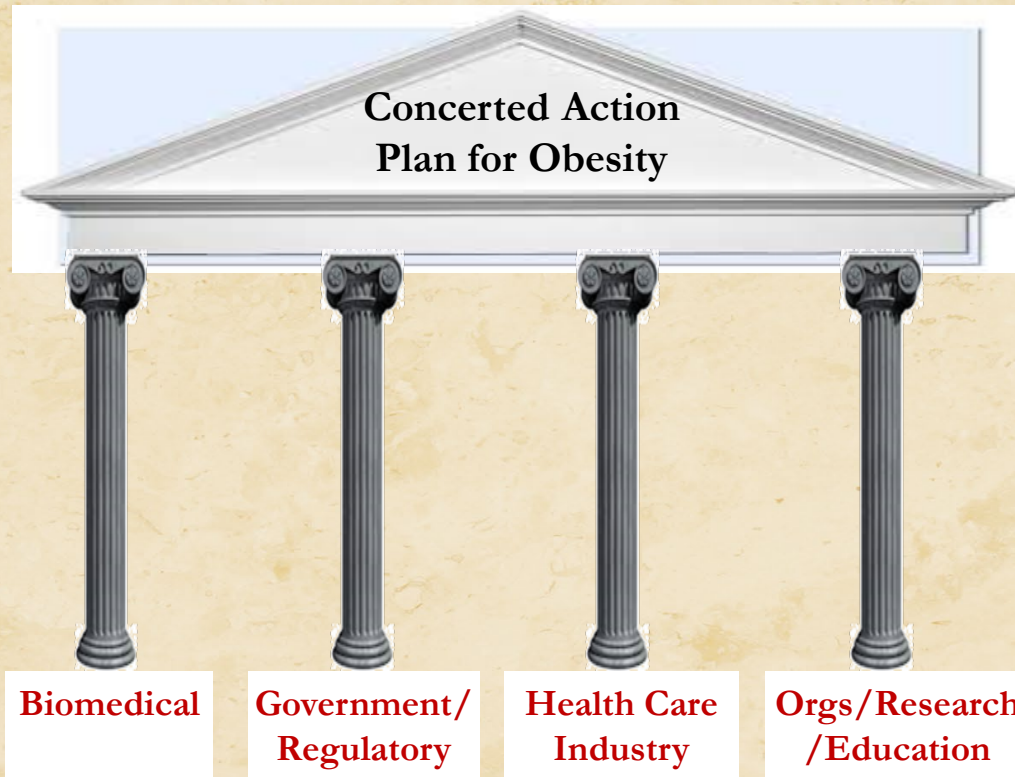
# AACE Consensus Conference On Obesity

## Building An Evidence Base For Comprehensive Action

March 23–24, 2014

Washington, DC

### Four Pillars



### Five Questions

1. What is obesity?
2. What options are available for obesity management?
3. What is the optimal use of therapeutic modalities?
4. Can the optimal framework be cost-effective?
5. What are the knowledge gaps and how can they be filled?

# Problems with the Term, Obesity

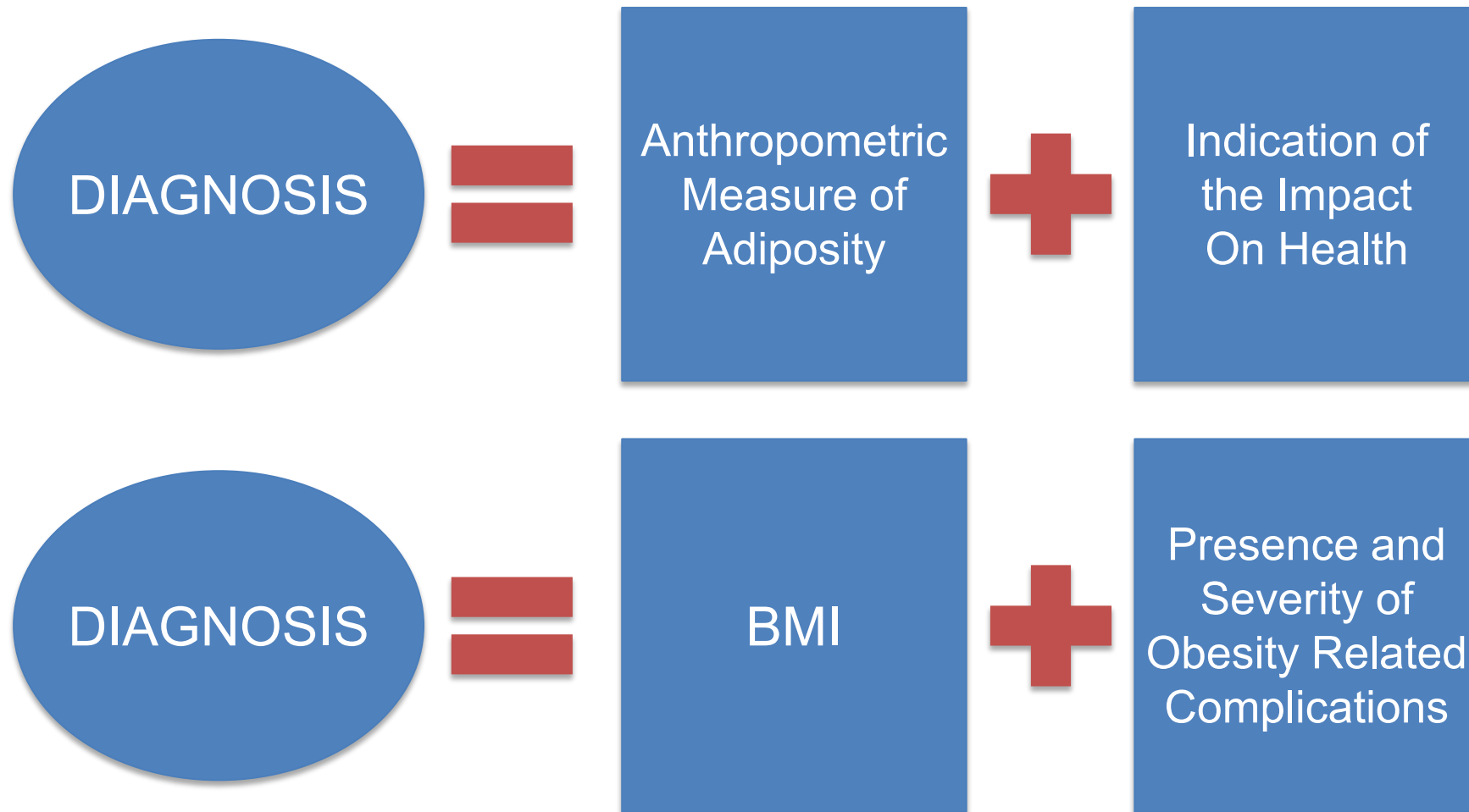
AACE First Consensus Conference on Obesity<sup>1</sup>

A medical diagnosis based solely on anthropometric measurement, BMI (height & weight):

- No indication about impact of adiposity on health
- Uncertainty in definition and health implications in various racial/ethnic groups,
- Was not an actionable term for health care policy since relationship to health is obscure
- Health benefits of care unclear to large employers
- Stigmatization in public domain; derogatory use in social media; engenders guilt and weight bias.



# AACE Consensus Conference on Obesity: Diagnosis Must Integrate Two Components



# AACE/ACE Clinical Practice Guidelines for Comprehensive Medical Care of Patients with Obesity

Garvey WT, Mechanick JI, Brett EM, Garber AJ, Hurley DL, Jastreboff AM, Nadolsky K, Pessah-Pollack R, Plodkowski R; Reviewers of the AACE/ACE Obesity Clinical Practice Guidelines. **Endocrine Practice.** 22(7):842-884, 2016.

[www.aace.com/publications/guidelines](http://www.aace.com/publications/guidelines)

# **AACE Complications-Centric Principles**

## **Treatment of Patients with ABCD**

We treat obesity to improve the health of the patient

The complications of obesity impair health

- Cardiometabolic
- Biomechanical
- Quality of Life

The prevention and treatment of complications is the goal and end-point of therapy, not the loss of a given amount of kilograms per se



# Basic Principles of the AACE Obesity Guidelines

**Diagnosis:**  
two  
components

**Anthropometric**  
BMI

**Clinical**  
Presence and Severity of Complications

**Staging  
&  
Treatment**

Complications	AACE Stage	Goal	Suggested therapy
No Complications	Stage 0	<ul style="list-style-type: none"><li>• Weight Loss or prevent further weight gain</li><li>• Prevent complications</li></ul>	Lifestyle intervention
Mild-Moderate Complications	Stage 1	Weight loss sufficient to treat complications	<ul style="list-style-type: none"><li>• Lifestyle</li><li>• Consider medication</li></ul>
Severe Complication	Stage 2		<ul style="list-style-type: none"><li>• Lifestyle</li><li>• Medication</li><li>• Consider surgery</li></ul>

**Outcome Goal**

Prevent or treat complications to target

# ***AACE/EASO Medical Diagnostic Term for the Disease of Obesity***

## **Adiposity-Based Chronic Disease**



### Abnormalities in Adipose Tissue

- Mass
- Distribution
- Function

Lifelong disease with  
complications that impair health  
and confer morbidity & mortality

# Categories of Obesity Complications

## Quality of Life

- Internalized bias
- Stigmatization
- Anxiety
- Stress
- Depression
- Disordered eating
- Pain

## Cardiometabolic

### *Metabolic*

- Prediabetes
- Metabolic Syndrome
- T2 Diabetes
- Dyslipidemia
- NAFLD/NASH
- CKD

### *Vascular*

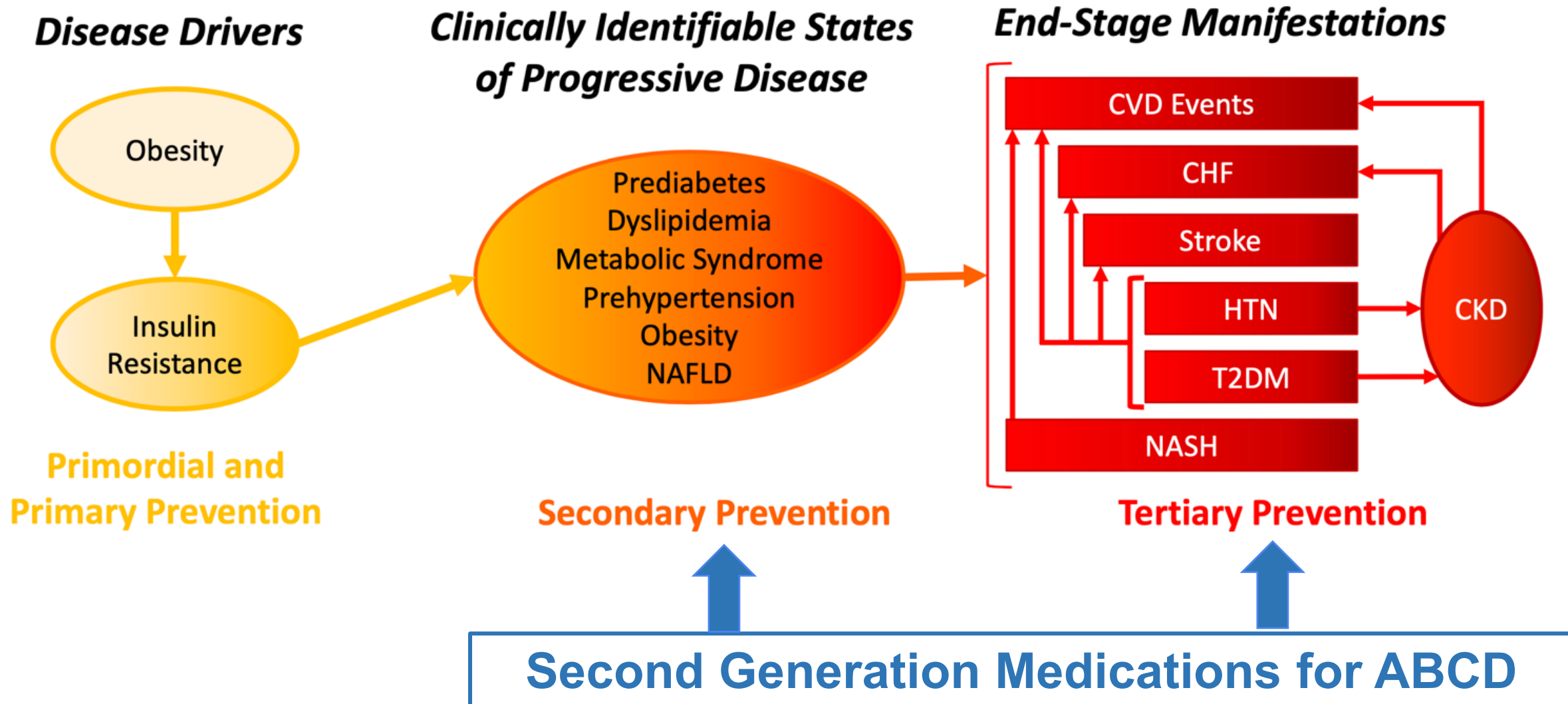
- CAD
- Stroke
- Hypertension
- CHF: HFrEF and HFpEF
- Atrial fibrillation
- Clotting diathesis

## Biomechanical

- Sleep apnea
- Asthma
- Osteoarthritis
- Immobility/Disability
- Back pain
- GERD
- Stress Incontinence

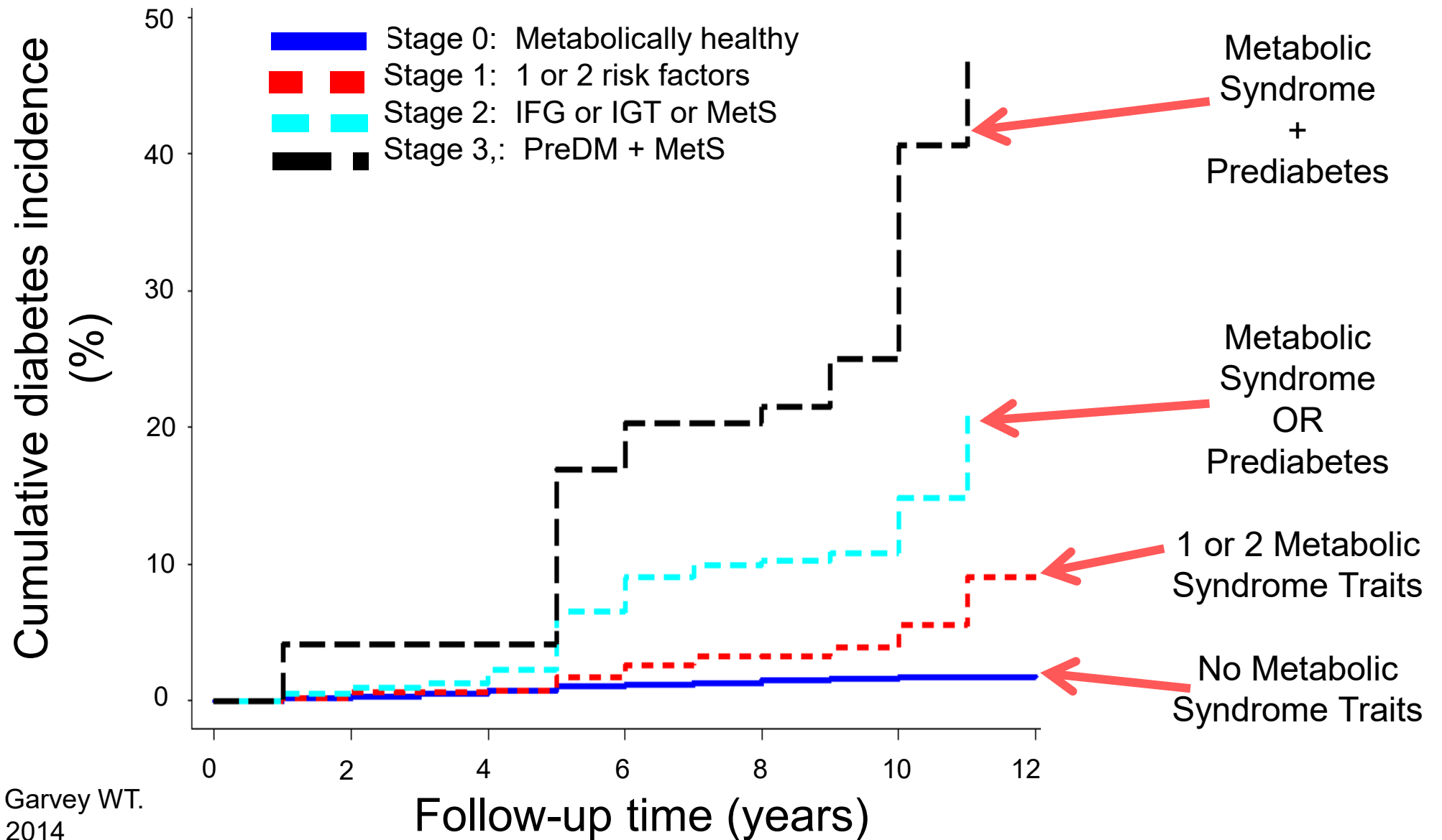
Poor COVID Outcomes

# Second Generation Obesity Medicines and the Prevention and Treatment of Cardiometabolic Disease



# Cumulative Diabetes Incidence

## Cardiometabolic Disease Staging: CARDIA Study Cohort



**Adiposity Based Chronic Disease Involves  
Disordered Regulation of Caloric Intake  
Results in High Levels of Adiposity.**

**High Levels of Adiposity Impair Health via  
Weight-Related Complications.**

Stage 0 – no complications: secondary prevention

Stage 1 – mild-moderate complications: tertiary prevention

Stage 2 – one or more severe complications: tertiary prevention



# ICD-10 Coding for Obesity

E66. Overweight and Obesity

E66.0 Obesity due to excess calories

E66.01 Morbid (severe) obesity due to excess calories

E66.09 Other obesity due to excess calories

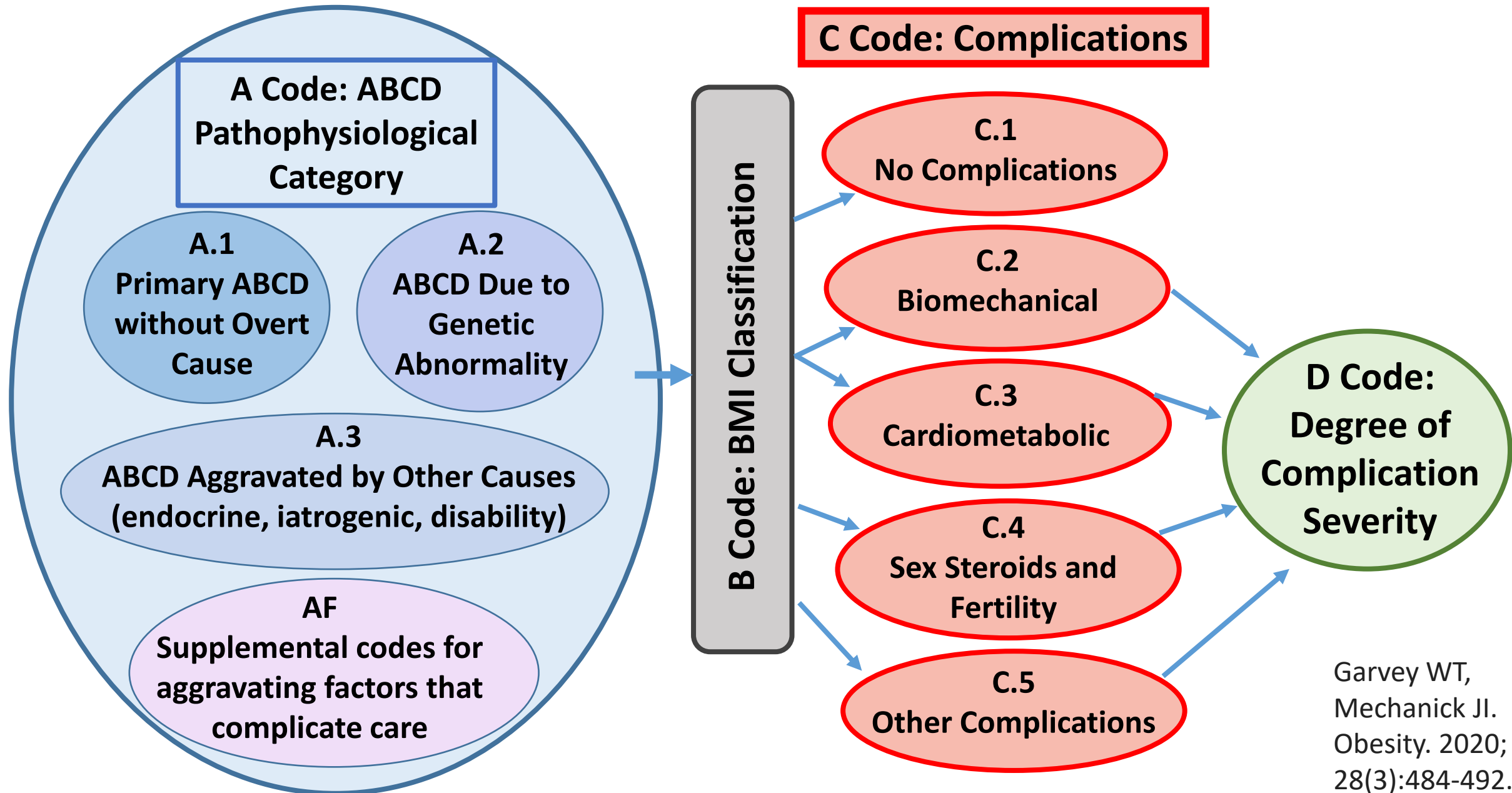
E66.1 Drug-induced obesity

E66.2 Extreme obesity with alveolar hypoventilation

E66.8 Other obesity

E66.9 Obesity, unspecified

# Proposed ICD Coding System for Adiposity Based Chronic Disease



# Staging of Adiposity Based Chronic Disease:

## *Principles*

- Based on Presence, Severity, and Risk of Obesity-Related Complications
- An aid to management decisions that is simple and clinically-intuitive
- Stage 0 (no complications), Stage 1 (mild-moderate), Stage 3 (severe)
- Use validated tools to assess risk of obesity-related complications (e.g., CMDS and T2D)
- We need a scientifically correct, medically-actionable ICD coding system

**THANK YOU!**