

## OVERWEIGHT; CLINICAL

*Includes Adult and Pediatric Overweight, Obesity, and Morbid Obesity*

### Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of clinical overweight and obesity (i.e., clinical overweight). To ensure a mission-ready force with a “military appearance,” the Department of Defense mandates that each military service implement “body composition programs,” including enforcement of weight-for-height standards required for accession and advancement.<sup>1</sup> Despite physical fitness and body fat standards, many active service members receive clinical diagnoses of overweight or obesity during routine medical examinations and other outpatient encounters.

### Clinical Description

Obesity is a state of excess adipose tissue mass. The most widely used method to gauge obesity is the body mass index (BMI), which is equal to weight/height<sup>2</sup> (in kg/m<sup>2</sup>). Based on data of substantial morbidity, a BMI of 30 is most commonly used as a threshold for obesity in both men and women. Most authorities use the term *overweight* (rather than obese) to describe individuals with BMIs between 25 and 30. A BMI between 25 and 30 should be viewed as medically significant and worthy of therapeutic intervention, especially in the presence of risk factors that are influenced by adiposity, such as hypertension and glucose intolerance.<sup>2</sup>

#### Case Definition and Incidence Rules

For surveillance purposes, a case of clinical overweight is defined as:

- *One outpatient medical encounter* with any of the case defining diagnoses of clinical overweight (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

*For the purposes of this case definition, clinical overweight is defined as a body mass index above 25 kg/m<sup>2</sup> for adults, or a pediatric body mass index above the 85<sup>th</sup> percentile for persons up to 20 years of age (see ICD9 V-code and ICD10 Z-code lists below).*

#### *Incidence rules:*

For individuals who meet the case definition:

- The incidence date is considered the date of the first outpatient medical encounter that includes a defining diagnoses of clinical overweight.
- An individual is considered an incident case only *once per surveillance period*.

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<sup>1</sup> Department of Defense Directive No. 1308.1 June 30, 2004. DoD Physical Fitness and Body Fat Program.

<sup>2</sup> Braunwald, E., Fauci, A., Longo, D. et al. 2008. *Harrison's Principles of Internal Medicine*. 17<sup>th</sup> ed. United States: McGraw-Hill Professional.



### Case Definition and Incidence Rules *(continued)*

#### Exclusions:

- None

### Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Overweight	<i>E66 (overweight and obesity)</i>	<i>278.0 (overweight and obesity)</i>
	E66.3 (overweight)	- 278.02 (overweight)
	<i>Z68.25-29 (BMI between 25-29, adult)</i>	<i>V85.2 (BMI between 25-29, adult)</i>
	- Z68.25 BMI between 25.0–25.9, adult	- V85.21 (BMI between 25.0–25.9, adult)
	- Z68.26 BMI between 26.0–26.9, adult	- V85.22 (BMI between 26.0–26.9, adult)
	- Z68.27 BMI between 27.0–27.9, adult	- V85.23 (BMI between 27.0–27.9, adult)
	- Z68.28 BMI between 28.0–28.9, adult	- V85.24 (BMI between 28.0–28.9, adult)
	- Z68.29 BMI between 29.0–29.9, adult	- V85.25 (BMI between 29.0–29.9, adult)
	<i>Z68.53 (BMI, pediatric, 85<sup>th</sup> percentile to less than 95<sup>th</sup> percentile for age)</i>	<i>V85.53 (BMI, pediatric, 85<sup>th</sup> percentile to less than 95<sup>th</sup> percentile for age)</i>
Obesity	<i>E66.0 (obesity due to excess calories)</i>	--
	- E66.09 (other obesity due to excess calories)	278.00 (obesity, unspecified)
	E66.1 (drug-induced obesity)	278.03 (obesity hypoventilation syndrome)
	E66.8 (other obesity)	278.00 (above)
	E66.9 (obesity, unspecified)	
	<i>Z68.3 (BMI between 30-39, adult)</i>	<i>V85.3 (BMI between 30-39, adult)</i>
	- Z68.30 (BMI between 30.0-30.9, adult)	- V85.30 (BMI between 30.0-30.9, adult)
	- Z68.31 (BMI between 31.0-31.9, adult)	- V85.31 (BMI between 31.0-31.9, adult)
	- Z68.32 (BMI between 32.0-32.9, adult)	- V85.32 (BMI between 32.0-32.9, adult)
	- Z68.33 (BMI between 33.0-33.9, adult)	- V85.33 (BMI between 33.0-33.9, adult)
	- Z68.34 (BMI between 34.0-34.9, adult)	- V85.34 (BMI between 34.0-34.9, adult)
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	- Z68.35 (BMI between 35.0-35.9, adult)	- V85.35 (BMI between 35.0-35.9, adult)
	- Z68.36 (BMI between 36.0-36.9, adult)	- V85.36 (BMI between 36.0-36.9, adult)
	- Z68.37 (BMI between 37.0-37.9, adult)	- V85.37 (BMI between 37.0-37.9, adult)
	- Z68.38 (BMI between 38.0-38.9, adult)	- V85.38 (BMI between 38.0-38.9, adult)
	- Z68.39 (BMI between 39.0-39.9, adult)	- V85.39 (BMI between 39.0-39.9, adult)
	Z68.54 (BMI, <i>pediatric</i> , greater than or equal to 95 <sup>th</sup> percentile for age)	V85.54 (BMI, <i>pediatric</i> , greater than or equal to 95 <sup>th</sup> percentile for age)
Morbid Obesity	- E66.01 (morbid (severe) obesity due to excess calories)	278.01 (morbid obesity)
	E66.2 (morbid (severe) obesity with alveolar hypoventilation)	278.03 (obesity hypoventilation syndrome)
	Z68.4 (BMI 40 or greater, adult)	V85.4 (BMI 40 or greater, adult)
	- Z68.41 (BMI between 40.0-44.9, adult)	- V85.41 (BMI between 40.0-44.9, adult)
	- Z68.42 (BMI between 45.0-49.9, adult)	- V85.42 (BMI between 45.0-49.9, adult)
	- Z68.43 (BMI between 50.0-59.9, adult)	- V85.43 (BMI between 50.0-59.9, adult)
	- Z68.44 (BMI between 60.0-69.9, adult)	- V85.44 (BMI between 60.0-69.9, adult)
	- Z68.45 (BMI 70 and over, adult)	- V85.45 (BMI 70 and over, adult)

### Development and Revisions

- In October of 2016 the case definition was updated to include ICD10 codes.
- The case definition was developed in 2009 by the AFHSC *Medical Surveillance Monthly Report (MSMR)* staff for a *MSMR* article on overweight and obesity.<sup>3</sup> The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

### Case Definition and Incidence Rule Rationale

- This case definition requires only one outpatient medical encounter with either ICD9 clinical diagnosis code or a Z-code for a high BMI to define a case of overweight or obesity. It is possible that some service members may have an elevated BMI (< 25) but, after further evaluation, are determined to not be overweight or obese. Such individuals would, nevertheless, meet the case defining criteria for this case definition and their inclusion would tend to produce an overestimation of the incidence of overweight or obesity. An analysis done by the Navy and Marine Corps Public Health Center for the period of fiscal years 2005–2015, using ICD9 codes only, found the following: Of 125,297 Navy and Marine Corps service members who met the case definition of clinical overweight, their health records showed that 74.7% had only a diagnostic code for clinical overweight (ICD9 278.00, 278.01, or 278.02); 7.8% had only a V-code for a high BMI; and 17.5% had both a diagnostic code for overweight and a V-code for a high BMI.

<sup>3</sup> Armed Forces Health Surveillance Center. Diagnoses of Overweight/Obesity, Active Component, U.S. Armed Forces, 1998-2010. *Medical Surveillance Monthly Report (MSMR)*. 2011 January; Vol 18(1): 7-11.



### *Code Set Determination and Rationale*

- Parent code ICD9 278.0 (overweight and obesity) was used to count cases for the 2016 MSMR article in a “Nonspecific overweight/obesity” category. The corresponding ICD10 code E66 was not used because analyses of the data showed no instances where this code was being used.

### **Reports**

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AFHSB reports on overweight and obesity in the following reports:

- Periodic *MSMR* Updates; most recent update September 2016.<sup>4</sup>

### **Review**

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Oct 2016	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
Jun 2011	Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group.
Jan 2011	Case definition developed and reviewed by the AFHSC MSMR staff.

### **Comments**

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None

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<sup>4</sup> Armed Forces Health Surveillance Branch. Update: Diagnosis of Overweight and Obesity, Active Component, U.S. Armed Forces, 2011-2015. *Medical Surveillance Monthly Report (MSMR)*. 2016 September; Vol 23(9): 9-13.

