

Sarcopenic Obesity in Louisiana  
Prevalence rates and associated factors from the Louisiana Osteoporosis Study

**Introduction**

Since 2010, three major groups (ESPEN-SIG, IWGS, and EWGSOP) have published “consensus” definitions of sarcopenia.<sup>12-15</sup> Even though these “consensus” definitions all consist of some combination of muscle mass, plus strength and/or function,<sup>12-15</sup> the majority of studies continue to clinically define sarcopenia through muscle mass alone.<sup>3</sup>

Definitions vary greatly between studies due to different methods of calculating cutoffs; Batsis et al. applied eight different sarcopenic obesity definitions to one population from NHANES 1999-2004, resulting in prevalence rates from 4.4% to 84% in men, and 3.6% to 94% in women.<sup>5</sup>

**Methods**

The final sample consisted of 7,662 subjects (2,971 males; 4,691 females) and 2,663 young reference participants (1,024 males; 1,639 females). We do acknowledge that more studies use 2 standard deviations below the young reference mean to calculate sarcopenia cutoffs;<sup>5</sup> our data distribution required the use of the more precise definition of class I sarcopenia as 1 standard deviation below the young reference mean.<sup>19-21</sup>

**Results: Prevalence Rates**

	Men						Women					
	Total n=2971	White n=1283	Black n=1351	Asian n=187	Hispanic n=65	Other n=85	Total n=4691	White n=3018	Black n=1135	Asian n=336	Hispanic n=125	Other n=77
<b><u>BMI</u></b>												
<i>Normal</i>	38.3%	32.7%	40.6%	58.8%	16.9%	55.3%	39.2%	44.4%	18.0%	66.7%	36.0%	31.2%
<i>Overweight</i>	36.8%	39.8%	33.8%	36.4%	47.7%	29.4%	28.7%	29.0%	27.4%	26.5%	37.6%	27.3%
<i>Obese</i>	<b>25.0%</b>	<b>27.4%</b>	<b>25.5%</b>	<b>4.8%</b>	<b>35.4%</b>	<b>15.3%</b>	<b>32.2%</b>	<b>26.6%</b>	<b>54.6%</b>	<b>6.9%</b>	<b>26.4%</b>	<b>41.6%</b>
<b><u>WHR</u></b>												
<i>Normal</i>	46.2%	33.9%	56.9%	52.9%	30.8%	56.5%	59.5%	65.6%	44.6%	56.9%	54.4%	61.0%
<i>Obese</i>	<b>53.9%</b>	<b>66.1%</b>	<b>43.1%</b>	<b>47.1%</b>	<b>69.2%</b>	<b>43.5%</b>	<b>40.5%</b>	<b>34.4%</b>	<b>55.4%</b>	<b>43.2%</b>	<b>45.6%</b>	<b>39.0%</b>
<b><u>Sarcopenia</u></b>												
<i>Normal</i>	82.4%	81.0%	87.1%	59.4%	89.2%	76.5%	86.3%	84.1%	96.4%	69.9%	90.4%	90.9%
<i>Sarcopenic</i>	<b>17.6%</b>	<b>19.0%</b>	<b>13.0%</b>	<b>40.6%</b>	<b>10.8%</b>	<b>23.5%</b>	<b>13.7%</b>	<b>15.9%</b>	<b>3.6%</b>	<b>30.1%</b>	<b>9.6%</b>	<b>9.1%</b>
<b><u>Sarcopenic Obesity</u></b>												
<i>Sarcopenic Obesity</i>	<b>7.0%</b>	<b>9.3%</b>	<b>3.7%</b>	<b>14.4%</b>	<b>6.2%</b>	<b>9.4%</b>	<b>2.5%</b>	<b>2.5%</b>	<b>0.9%</b>	<b>8.0%</b>	<b>1.6%</b>	<b>3.9%</b>
<i>Sarcopenia Only</i>	10.6%	9.7%	9.3%	26.2%	4.6%	14.1%	11.2%	13.4%	2.7%	22.0%	8.0%	5.2%
<i>Obesity Only</i>	46.9%	56.8%	39.4%	32.6%	63.1%	34.1%	38.0%	31.9%	54.5%	35.1%	44.0%	35.1%
<i>Normal</i>	35.6%	24.2%	47.7%	26.7%	26.2%	42.4%	48.4%	52.2%	41.9%	34.8%	46.4%	55.8%

**Discussion**

Alexandre et al. and Kuczmarski et al. found that income but not education was associated with sarcopenia in Brazil and the US, respectively;<sup>16,18</sup> Hwang et al. found that education but not income was associated with sarcopenic obesity in Korea.<sup>17</sup>

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