

Obesity: Why Is It Worth Another Look?

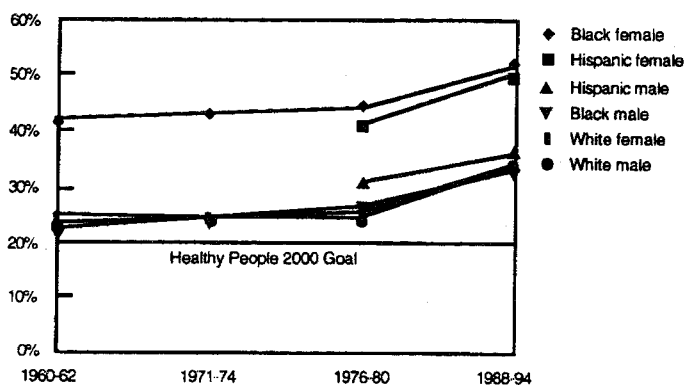
By Conference Co-Chairmen Wayne N. Burton, MD; and Robert F. Kushner, MD

This supplement to *The American Journal of Managed Care* contains proceedings from an obesity management conference titled "The Health and Economics of Obesity Management: A Managed Care Perspective." The goal of the conference was to provide insight into the changing views associated with weight management, to emphasize the increasing prevalence of obesity and the accompanying comorbid health conditions, to discuss the role of pharmacotherapy in obesity treatment, and to look at ways the managed care systems of today can help address these important issues.

The prevalence of obesity in the United States has shown an alarming increase in the past 20 years, since the late 1970s, and currently one of every three adults is considered obese (Figure 1). The increase has been particularly pronounced among minority women, and approximately half of them are considered obese. In addition, the number of adolescents who are currently overweight has risen sharply in the time between the second National Health and Nutrition Examination Surveys (NHANES II) conducted between 1976 and 1980 and the third NHANES conducted from 1988 to 1991 (Figure 2).¹

Such dramatic changes in the numbers of overweight people in such a short period of time strongly suggest that there is some environmental cause. Although we now know that genetic disposition and other biological aspects play a key role in obesity, a large part of the problem in this country today is simply that too many calories are being taken in and not enough are being burned off. This increased caloric intake and reduced energy expenditure is an unintended consequence of economic, social, and technological changes. The food supply is relatively low-cost, abundant, palatable, and high in caloric density. At the same time, labor-saving technologies that constantly continue to advance are virtually eliminating requirements for physical activity in the workplace and at home. Indeed, we are learning that reduced physical activity is as, or more

Figure 1. Prevalence of Overweight for US Adult Population



important, than the excess food consumed. Statistics on leisure-time activity are in inverse proportion to the prevalence of obesity (Figure 3).¹

Obesity and Health

The consequences of rapidly increasing obesity are vast. Morbidity and mortality are directly increased, productivity and function are decreased, and health-care costs rise. Obesity also causes both social and economic discrimination. A study of health outcomes forms comparing the obese to national norms showed that the overweight scored distinctly lower in every health domain, especially in body pain, general health, and vitality (Table 1). The study also showed that as obesity increased, health scores decreased.²

All eight organ systems are affected by obesity, and the more severely obese patients are, the more likely they will experience medical problems that ultimately bring them to the physician's office (Table 2). This constellation of potential health problems has led to an increased mortality rate as the population becomes more overweight. Among the more serious of mortality-causing comorbidities are Type 2 diabetes, cardiovascular disease, and pulmonary disease.³

Figure 2. Age-Adjusted Prevalence of Overweight, Ages 12-17 Years

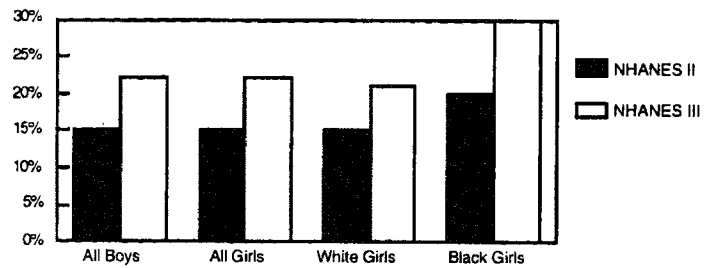
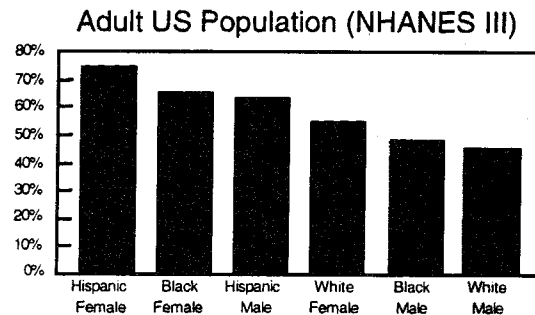


Figure 3. Age-Adjusted Prevalence of Little or No Leisure-Time Physical Activity*



*Little or no leisure-time physical activity (LTPA) is defined as participation in LTPA less than 3 times per week.

Table 1. Adjusted SF-36 Scores: Comparison of Mildly, Moderately to Severely, and Morbidly Obese Study Participants (n = 278)

SF-36 Item	SF-36 Scores (mean; SD)			F
	Mildly (n = 35)	Moderately (n = 163)	Morbidly (n = 80)	
Physical functioning	85.6* (17.5)	79.4† (21.0)	51.9 (26.8)	45.6‡
Role—physical	85.0* (26.1)	77.8† (33.1)	46.3 (37.6)	23.8‡
Bodily pain	66.4* (27.7)	54.5† (27.5)	43.2 (22.1)	9.6‡
General health	72.0* (20.5)	65.7† (20.3)	54.3 (18.0)	11.8‡
Vitality	49.5* (18.6)	48.1† (21.3)	38.0 (19.1)	6.9‡
Social functioning	84.9* (17.2)	79.3† (24.1)	67.9 (26.9)	7.3‡
Role—emotional	85.4 (32.3)	75.3 (36.6)	69.3 (40.1)	2.4
Mental health	74.3 (11.8)	68.6 (18.7)	65.6 (19.6)	2.6

*Mildly obese differed significantly ($P < 0.05$) from morbidly obese.

†Moderately to severely obese differed significantly ($P < 0.05$).

‡ $P < 0.001$, two-tailed probability.

SF-36 = Medical Outcomes Study Short Form-36 Health Survey

Source: Fontaine et al. *J Fam Pract* 1996;43:265-270.

Table 2. Health Consequences of Clinically Severe Obesity

<ul style="list-style-type: none"> ■ Cardiovascular System <ul style="list-style-type: none"> - Hypertension - Congestive heart failure - Cor pulmonale - Varicose veins - Pulmonary embolism - Coronary artery disease ■ Endocrine System <ul style="list-style-type: none"> - Reduced insulin sensitivity - Glucose intolerance - Diabetes mellitus—Type 2 - Hyperandrogenism (F) - Dyslipidemia ■ Respiratory System <ul style="list-style-type: none"> - Dyspnea and fatigue - Obstructive sleep apnea - Hypoventilation syndrome - Pickwickian syndrome ■ Musculoskeletal System <ul style="list-style-type: none"> - Immobility - Degenerative arthritis - Lower back pain 	<ul style="list-style-type: none"> ■ Integument <ul style="list-style-type: none"> - Venous status of legs - Cellulitis - Diminished hygiene - Intertrigo, carbuncles ■ Genitourinary System <ul style="list-style-type: none"> - Urinary stress incontinence - Infertility - Amenorrhea - Hypogonadism (M) - Breast and uterine cancer ■ Gastrointestinal System <ul style="list-style-type: none"> - Reflux esophagitis - Hepatic steatosis - Cholelithiasis - Hernias - Colon cancer ■ Psychosocial <ul style="list-style-type: none"> - Work disability - Social discrimination - Depression
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There are four statistics needed for determining health risk of the obese patient. These are blood pressure, which should be 140/90 mm Hg or lower, total cholesterol of less than 200 mg/dL, fasting blood glucose, and body mass index (BMI). It is important for physicians to remember that the new American Diabetes Association guidelines specify 126 mg/dL fasting glucose or below as acceptable.⁴ The concept of using BMI instead of simple height and weight charts is also crucial. BMI is defined as weight in kilograms divided by height in meters squared and more accurately evaluates weight relative to height for a better estimate of body fat. BMI correlates highly with morbidity and mortality, and health risks start to increase at a BMI of 27 (Table 3).^{5,6} Of course, distinction must be made between the extremely fit, athletic patient with a higher BMI due to muscle mass and the average sedentary patient with a high BMI.

Table 3. Body Mass Index as an Indicator of Health

		Body Mass Index																
		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
		Weight (in Pounds)																
Height	4'10"	119	124	>	129	134	138	143	148	153	158	162	167	172	177	181	186	191
	4'11"	124	128	A	133	138	143	148	153	158	163	168	173	178	183	188	193	198
	5'	128	133	T	138	143	148	153	158	164	169	174	179	184	189	194	199	204
	5'1"	132	137		143	148	153	158	164	169	174	180	185	190	195	201	206	211
	5'2"	136	142	R	147	153	158	164	169	175	180	186	191	196	202	207	213	218
	5'3"	141	146	I	152	158	163	169	175	180	186	192	197	203	208	214	220	225
	5'4"	145	151	S	157	163	169	174	180	186	192	198	203	209	215	221	227	233
	5'5"	150	156	K	162	168	174	180	186	192	198	204	210	216	222	228	234	240
	5'6"	155	161	>	167	173	179	185	192	198	204	210	216	223	229	235	241	247
	5'7"	159	166		172	178	185	191	198	204	210	217	223	229	236	242	248	255
	5'8"	164	171	>	177	184	190	197	203	210	217	223	230	236	243	249	256	263
	5'9"	169	176	A	182	189	196	203	209	216	223	230	237	243	250	257	264	270
	5'10"	174	181	T	188	195	202	209	216	223	230	236	243	250	257	264	271	278
	5'11"	179	186		193	200	207	215	222	229	236	243	250	258	265	272	279	286
	6'	184	191	R	199	206	213	221	228	235	243	250	258	265	272	280	287	294
	6'1"	189	197	I	204	212	219	227	234	242	250	257	265	272	280	287	295	303
	6'2"	194	202	S	210	218	225	233	241	249	256	264	272	280	288	295	303	311
	6'3"	200	208	K	216	224	232	240	247	255	263	271	279	287	295	303	311	319
	6'4"	205	213	>	221	230	238	246	254	262	271	279	287	295	303	312	320	328

This chart defines body mass index (BMI) for men and women. Find the appropriate height on the left-hand column. Look across that row to find the corresponding weight. BMI is the number at the very top of the column. The upper limits for normal BMI are <27.3 for women and <27.8 for men.

Source: From Knoll Pharmaceutical, with permission from George Bray, MD.

Current Concepts

Because obesity is a multifactorial disease of energy imbalance potentially affecting all organ systems and related to increased mortality, it should no longer be viewed as a lack of will power but as an insidious, chronic disease of long duration and frequent recurrences. In every other chronic disease model, we accept that the disorder will flare and remit and, if left untreated during exacerbations, will become worse with increased morbidity and mortality. Obesity is such a disease with a definite morbid process and characteristic train of symptoms. Therefore, treatment should focus on making the patient healthier, not merely leaner.

We are now emphasizing healthy body weight, weight management, weight maintenance, and overall improved health through a comprehensive program of lifestyle changes, nutritional therapy, increased physical activity, support programs, and medication or surgery when appropriate. The result of such a program is weight loss; however, an ideal weight should not be the goal. Instead, a target weight loss of only 10% can significantly decrease blood glucose, lipids, and blood pressure so that health is improved.⁷ Achieving an ideal body weight is an old concept.

Given the scope of obesity comorbidities, it seems rational that treatment should include a multidisciplinary team approach where the physician, nutritionist, support network, and patient are all striving toward the same goal, with the physician leading the team. All obese patients require this approach. Patients who have higher morbidity or who are not successful within this framework should then be considered for pharmacotherapy or surgery. Since obesity has become a national health concern, all of these treatment approaches should be available and allowable in our healthcare systems.

Managed care organizations (MCOs) are recognizing the importance of addressing and treating health risks such as hypertension, smoking, high cholesterol, and obesity, all of which are now contributing to avoidable medical costs. Similarly, employers, who are now purchasing healthcare based on value, not merely cost, are looking to MCOs to manage the health risks contributing to absenteeism, disability, and reduced employee productivity. MCOs are providing enhanced value to employers by their ability to develop partnerships in the management of employee health and disability and are likely to continue this trend in the future.

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