

The Relationship Between NHLBI Weight Guidelines and Concurrent Medical Costs in a Manufacturing Population.

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American Journal of Health Promotion. 17(3):183-189, 2003.

PURPOSE: To explore the relationship between the 1998 National Heart, Lung, and Blood Institute (NHLBI) weight guidelines and concurrent medical costs. **DESIGN:** Cross-sectional study. **SETTING:** In a nationwide manufacturing corporation (General Motors Corporation). **SUBJECTS:** A total of 177,971 employees, retirees, and their adult dependents who were enrolled in Indemnity/PPO health insurance plan during the years 1996 and 1997 and completed one health risk appraisal (HRA) in the same period. **MEASURES:** The participants were categorized into six weight groups according to the NHLBI 1998 guidelines (body mass index [BMI] < 18.5, 18.5-24.9, 25-29.9, 30-34.9, 35-39.9, > or = 40 kg/m²). The height and weight data were collected by self-reported values on an HRA or biometric screening completed during 1996 to 1997. To represent the typical medical costs in a given group, the median, instead of mean, medical charges were used in this article. The annual median medical charges (including drug charges) for years 1996 and 1997 were compared among the six weight groups by using Wilcoxon rank sum tests. The differences in median charges were also tested between the normal weight group and the other five groups for each of the 10 gender-age subgroups (five age groups: 19-44, 45-54, 55-64, 65-74, 75+). **RESULTS:** Overall median medical costs were consistent with the NHLBI weight guidelines. The normal-weight group costs the least and both underweight and overweight-obesity groups cost more. The median medical costs of the six weight groups were \$3184, \$2225, \$2388, \$2801, \$3182, and \$3753, respectively, with statistical differences existing between any two groups of the last five categories. The underweight groups, especially in females, were not consistent with the guidelines in the two young groups (ages 19-44 and 45-54). An inconsistent relationship between medical costs and BMI groups was seen in the oldest males (age 75+). **CONCLUSIONS:** The six weight groups defined by the 1998 NHLBI guidelines are consistent with concurrent medical costs. Except for the underweight group (BMI < 18.5 kg/m²), medical costs gradually increased with BMI. Given that the prevalence of obesity continues to increase in western countries, effective weight control programs would help avoid a substantial amount of medical costs associated with overweight/obesity and related diseases.