

# Resource Links

Below you will find researched and proven relationships between obesity and the benefits of weight loss as it relates the reductions in physical, chemical, and emotional stress exerted on the human body.

## Benefits of Weight Loss on Physical Stress

### Biomechanical Effects of Obesity On Balance

<https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1465&context=ijes>

**“...improvements occurred in all pain and disability assessments (Visual analogue scale for pain, Oswestry Disability Index, Roland-Morris Disability Questionnaire and the Waddell Disability Index).”**

<https://www.ncbi.nlm.nih.gov/pubmed/16652131>

**“In obese persons with chronic debilitating axial back pain the severity of back pain symptoms was reduced by 44%...”**

<https://www.ncbi.nlm.nih.gov/pubmed/19356988>

**“Uncontrolled studies have revealed that the frequency of back pain was reduced in 83% of patients and lumbar back pain symptoms were reduced in 82–90% patients”**

<https://www.ncbi.nlm.nih.gov/pubmed/2138158>

**“Average and median WOMAC pain scores for knee pain were reduced by 51%, and 66%, respectively.”**

<https://www.ncbi.nlm.nih.gov/pubmed/17658030>

**“These intriguing findings show that independent of physical activity level or muscle strength, knee pain related disability could be improved with weight loss alone. Relief from pain may facilitate re-engagement of the individual into regular exercise or activities that were previously unattainable.”**

<https://www.ncbi.nlm.nih.gov/pubmed/17658030>

## Benefits of Weight Loss on Chemical Stress

**“Inflammation is improved with interventions that induce a 5% weight loss, regardless of the type or duration of the intervention.”**

<https://www.ncbi.nlm.nih.gov/pubmed/19845868>

**“A loss of body fat attenuates systemic levels of inflammatory cytokines such as IL-6 by 25–30%.”**

<https://www.ncbi.nlm.nih.gov/pubmed/18974245>

**“Weight loss reduces the synthesis of IL-6 (pro-inflammatory cytokine) and TNF- $\alpha$  (cell signaling cytokine involved in acute systemic inflammation) and increases the production of IL-10 (anti-inflammatory cytokines) by subcutaneous adipose.”**

<https://www.ncbi.nlm.nih.gov/pubmed/18974245>

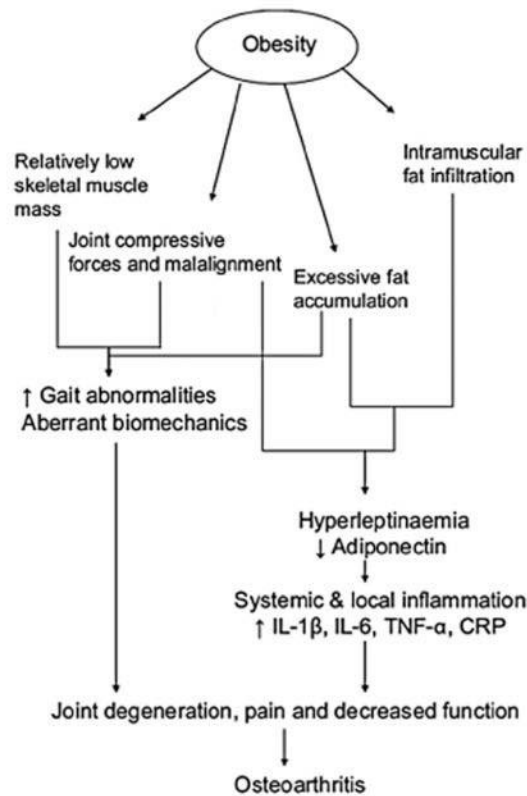
**“High-density lipoprotein cholesterol increased more in the intervention group. Serum concentrations of IL-6, IL-18, and CRP were significantly reduced in those the intervention group compared with controls, while adiponectin levels were significantly increased (Figure 2). The magnitude and significance of the weight loss–induced difference in cytokine and CRP levels were similar when a paired t test was performed on log<sub>10</sub>-transformed values or when a nonparametric Wilcoxon matched test was used.”**

<https://jamanetwork.com/journals/jama/fullarticle/196344>

**“Massive weight loss improves pain and function and decreases low-grade inflammation. Change in levels of joint biomarkers with weight loss suggests a structural effect on cartilage.”**

<https://www.ncbi.nlm.nih.gov/pubmed/20980288>

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## Benefits of Weight Loss on Emotional Stress

“Severely obese subjects, especially younger women with poor body image, are at high risk for depression. We found sustained improvement with weight loss. These findings also support the hypothesis that severe obesity causes or aggravates depression.”

<https://www.ncbi.nlm.nih.gov/pubmed/14504119>

“Neurotic predisposition (NP), a latent variable indicated by neuroticism, low self-esteem, and fear of intimacy, had an effect on weight loss that was fully mediated by EE. NP also had an effect on quality of life improvement that was fully mediated by EE and weight loss in both treatment groups.”

<https://onlinelibrary.wiley.com/doi/abs/10.1002/eat.20592>

“Several studies have brought awareness to the psychological comorbidity in obesity, and a significant improvement in quality of life after weight-loss was also documented...”

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3835351/>

## Benefits of Weight Loss on Emotional Stress (continued)

“BACKGROUND: The severely obese experience discrimination and embarrassment regarding their appearance, causing psychosocial distress. We assessed the importance of appearance, presentation and self-evaluation of appearance before and after weight loss, in severely obese subjects (BMI > 35 kg/m<sup>2</sup>).”

CONCLUSION: Major improvements in appearance evaluation occur with weight loss after surgery and this is associated with psychological benefit.”

<https://www.ncbi.nlm.nih.gov/pubmed/11868302>

