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Title: Impact of bariatric surgery on respiratory function in obese patients

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Body: Background According to the WHO 10% of men and 14% of women worldwide were obese in 2008. Obesity is often associated with both restrictive and obstructive lung disease. Bariatric surgery, is becoming more commonplace to promote weight reduction in obese patients. However, the long term changes in respiratory mechanics post-bariatric surgery are unclear. Aim To answer, 'What effect does bariatric surgery have on respiratory function in obese patients?' Methods A search of PubMed and CochraneLibrary was performed in January 2013 and 151 papers identified. Reviews and papers not meeting inclusion criteria were excluded. Results Over two thirds of the studies found an improvement in FVC at varying time intervals post surgery, with one reporting a significant improvement in FVC ($p=0.015$) and FEV1 ($p=0.021$) after 3 months in association with a reduction in waist size. Four studies reported a significant improvement in FEV1 post surgery, with the majority reaching a significant improvement after 1 year. Two studies reported a significant improvement in FRC 1 year post surgery, with one reporting a direct correlation between post-surgery reduction in body mass index and improvement in FRC ($p=0.028$). Strikingly, one study reported a 54% improvement in ERV post surgery. Overall, a reduction in both restrictive and obstructive dysfunction was observed post surgery. Conclusions The data concerning the impact of bariatric surgery on respiratory function is difficult to interpret due to the heterogenous population studies. Given the prevalence of obesity more research into the impact of bariatric surgery on long term respiratory function is required, with a particular emphasis on the role of body fat distribution.