

# HEALTH RISKS OF EXCESS FAT IN CHILDREN

## Obesity = excess fat → disease



### Lungs

**3-fold increased chance of asthma in obese girls**  
Wickers K *et al* (2005) Obesity and asthma in 11-12 year old New Zealand children in 1989 and 2000. *Thorax*; 60: 7-12.

### Head

**12 point reduction in quality-of-life (QoL) scores 5-fold more likely to report impaired health-related QoL**  
Schwimmer JB *et al* (2003) Health-related quality of life of severely obese children and adolescents. *J Am Med Assoc*; 289: 1813-9.

### Throat

**20% increased risk of sleep-related breathing disorders**  
Wing YK *et al* (2003) A controlled study of sleep related disorder breathing in obese children. *Arch Dis Child*; 88: 1043-7.

### General body

**30% moderately obese and 50% severely obese children suffer from the metabolic syndrome**  
Weiss RN *et al* (2004) Obesity and the metabolic syndrome in children and adolescents. *New Engl J Med*; 350: 2362-74.

### Pancreas

**Type-2 diabetes rapidly becoming more common than type-1**  
Pontrolli AE (2004) Type 2 diabetes mellitus is becoming the most common type of diabetes in school children. *Acta Diabetol*; 41: 85-90.

### Bones (arm)

**70% increased risk of fracture**  
Davidson P *et al* (2003) Biomechanical analysis of arm fracture in obese boys. *J Paediatr Child Health*; 39: 657-664.

### Kidney

**Increased risk of impaired renal function**  
Csernus K *et al* (2005) Effect of childhood obesity and obesity-related cardiovascular risk factors on glomerular and tubular protein excretion. *Eur J Pediatr*; 164: 44-9.

**Reproductive organs**  
**Increased risk of polycystic ovary syndrome (PCOS) in girls**  
Siffen ME *et al* (2003) Early endocrine, metabolic, and sonographic characteristics of polycystic ovary syndrome (PCOS): comparison between non-obese and obese adolescents. *J Clin Endocrinol Metab*; 88: 4682-8.

### Legs

**Reduced exercise tolerance**  
Mannov B *et al* (2002) Ventilatory efficiency and rate of perceived exertion in obese and non-obese children performing standardized exercise. *Clin Physiol Funct Imaging*; 22: 254-60.

## Children to Adults

**Childhood obesity predicts adult health risks**  
Raitakari OT *et al* (2003) Cardiovascular risk factors in childhood and carotid artery intima-media thickness in adulthood: the Cardiovascular Risk in Young Finns Study. *J Am Med Assoc*; 290: 2277-83.

**Obese children more likely to become obese adults**  
Freedman DS *et al* (2005) The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study. *Pediatrics*; 115: 22-7.

# Adults



### Lungs

**85% increased risk of asthma**  
Nystrand W *et al* (2004) Body mass index in relation to adult asthma among 135,000 Norwegian men. *Am J Epidemiol*; 160: 965-76.

### Head

**4.6-fold risk of major depression**  
O'Keefe CU *et al* (2003) The obesity-associated with major depression? Results from the Third National Health and Nutrition Examination Survey. *Am J Epidemiol*; 158: 1139-47.

### Heart

**6-fold increased risk of hypertension**  
Mokdad AH *et al* (2003) Prevalence of obesity, diabetes, and multiple risk factors among US adults. *J Am Med Assoc*; 289: 76-9.

### Liver

**76% of obese adults have non-alcoholic fatty liver disease**  
**Increased risk of cirrhosis and 4.4-fold increased risk of liver cancer**  
Festl D *et al* (2004) Hepatic steatosis in obese patients: clinical aspects and prognostic significance. *Obes Rev*; 5: 27-42.

### Uterus

**Weight loss in infertile obese women caused 90% resumption of ovulation and 78% pregnancy rate**  
Clark AM *et al* (1998) Weight loss in obese infertile women results in improvement in reproductive outcome for all forms of fertility treatment. *Hum Reprod*; 13: 1502-5.

### Ovaries

**50% of women with polycystic ovary syndrome (PCOS) are overweight or obese**  
Gambineri A *et al* (2002) Obesity and the polycystic ovary syndrome. *Int J Obes*; 26: 883-96.

### Legs

**4.4-fold increase in arthritis**  
Mokdad AH *et al* (2003) Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *J Am Med Assoc*; 289: 76-9.

### General body

**Increased risk of all cancers except lung, brain, bladder and stomach**  
Calle EE *et al* (2003) Overweight, obesity, and mortality from cancer in a prospectively studied cohort of US adults. *New Engl J Med*; 348: 1625-38.

### Throat

**Most morbidly obese develop obstructive sleep apnea**  
Alaia MS *et al* (2005) Examining the construct of depression in obstructive sleep apnea syndrome. *Sleep Med*; 6: 115-21.

### Breasts

**2-fold increase in breast cancer**  
Calle EE *et al* (2003) Overweight, obesity, and mortality from cancer in a prospectively studied cohort of US adults. *New Engl J Med*; 348: 1625-38.

### Pancreas

**7-fold increased risk of diabetes in severely obese**  
Mokdad AH *et al* (2003) Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *J Am Med Assoc*; 289: 76-9.

### Kidney

**1.5 to 2.0-fold increased risk of kidney stones**  
Taylor EN *et al* (2005) Obesity, weight gain, and the risk of kidney stones. *J Am Med Assoc*; 293: 455-62.

### Bowels

**93% increased risk of colon cancer + 65% increased risk of rectal cancer**  
Pan SY *et al* (2004) Association of obesity and cancer risk in Canada. *J Epidemiol*; 139: 259-68.

### Testes

**Reduced sperm count**  
Jensen TK *et al* (2004) Body mass index in relation to semen quality and reproductive hormones among 1,558 Danish men. *Fertil Steril*; 82: 863-70.

**TANITA**  
Measuring Your Health

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