Obesity and depression or anxiety
Clinicians should be aware that the association can occur in both directions

Obesity and common mental disorders, such as anxiety and depression, independently account for a substantial proportion of the global burden of disease and its associated economic costs, so it is important to determine the interaction between the two conditions. In the linked prospective cohort study, Kivimäki and colleagues looked for a bidirectional association between obesity and common mental disorders. Between 1985 and 1988, they recruited civil servants who were aged 35-55 years at baseline and studied them in three waves over 19 years. They found that common mental disorders were associated with an increased risk of obesity, and that the risk of obesity increased with the number of episodes of depression or anxiety. In contrast, they found weaker non-significant associations between obesity and the risk of common mental disorders.

Kivimäki and colleagues’ findings are consistent with previous cohort studies showing that baseline depression or anxiety predict obesity, but differ from those showing that baseline obesity predicts depression or anxiety. This discrepancy probably results from methodological differences—namely, testing multiple versus baseline exposures—and factors that could have favoured the association between common mental disorders and the risk of obesity. For example, the sample consisted mostly of male employees, and only 45% of the surviving cohort was retained for final analysis. People in the analysed group were significantly healthier than those who dropped out in terms of body mass index, physical activity, smoking, and other characteristics, and they had a higher socioeconomic status. Furthermore, the most recent systematic review and meta-analysis of relevant cohort studies shows that the association between obesity and depression is bidirectional, with similar point estimates for increased risk (FS Luppino, 2009, personal communication). Kivimäki and colleagues’ conclusion about the directionality of association should therefore be interpreted with caution, because it is at odds with the overall body of evidence.

A better understanding of the mechanisms for the apparent bidirectional risk between obesity and common mental disorders is needed for effective treatment and prevention. Although this topic is largely unexplored, several plausible psychosocial, lifestyle, and physiological factors may mediate the complex inter-relationship.

How does obesity cause depression or anxiety? Obese people, especially those who perceive themselves as being overweight, often experience weight related stigma and discrimination, and consequently present with symptoms of low self esteem, low self worth, and guilt. Obesity is associated with socioeconomic disadvantage and low levels of physical activity, both of which are strong predictors of depression.

Obstructive sleep apnoea is most prevalent in obese people and is a strong predictor of depression. Both obstructive sleep apnoea and depression are associated with increased activity of the sympathetic nervous system. Antidepressants suppress sympathetic nervous activity, and treatment of obstructive sleep apnoea by continuous positive airway pressure therapy alleviates depressive symptoms. Obese patients have impaired negative feedback by endogenous cortisol, which is also improved by continuous positive airway pressure therapy in those with obstructive sleep apnoea. Obesity may constitute a chronic stressful state, with dysfunction of the hypothalamic-pituitary-adrenal axis and related neuroendocrine systems. Increases in circulating concentrations of inflammatory cytokines would then predispose individuals to depressed mood and associated symptoms.

How do common mental disorders cause obesity? Reduced physical activity and overeating, particularly comfort foods rich in fats and sugars to improve mood, are “atypical features” commonly found in depressed and anxious patients. Activation of the endocannabinoid system, which increases appetite and may simultaneously alleviate depression, is likely to reinforce this eating behaviour. Socioeconomic disadvantage may further exacerbate the overconsumption of comfort foods because of their low cost.

Depression caused by socioeconomic disadvantage, chronic stress, or excessive alcohol consumption (or a combination thereof) may increase hypothalamic-pituitary-adrenal activity. In addition to the central neuroendocrine defects that occur, disruption of circadian rhythmicity or chronically raised circulating cortisol concentrations may increase visceral fat depots directly by increasing adipogenesis and indirectly by affecting central factors that increase appetite and food intake.

Clinicians should consider the possibility of depression in patients with excess body weight and comorbidities. Obstructive sleep apnoea, psychosocial risk factors, and lifestyle risk factors should be evaluated and managed to prevent the onset of depression or anxiety. Effective management of obesity requires the treatment of comorbid depression or anxiety and obstructive sleep apnoea.
Patients presenting with symptoms of common mental disorder should be assessed for obesity and related chronic diseases. The presence of psychosocial and lifestyle risk factors as well as obstructive sleep apnoea should be considered and managed, particularly given the possibility of weight gain with antidepressants. Physical activity is well established as an effective treatment for depression, obesity, and related chronic diseases including type 2 diabetes.

A multidisciplinary approach that focuses on promoting a healthy lifestyle is important. Further research on how best to deliver lifestyle interventions is needed, along with government action on taxes, tariffs, and trade laws to encourage the supply and consumption of healthy food and physical activity choices.


Should HPV vaccine be given to men?
The best investment is to vaccinate preadolescent females, not males.

On 9 September 2009, a US Food and Drug Administration (FDA) advisory panel recommended that the FDA approve Gardasil (Merck)—the quadrivalent human papillomavirus (HPV) vaccine against HPV types 6, 11, 16, and 18—for use in males aged 9-26 years to prevent genital warts (condylooma acuminata). The vaccine was 90% effective in preventing genital warts and reducing the incidence of persistent HPV 6 and HPV 11 anogenital infections—which cause about 90% of genital warts in HPV naive males—and 79% effective at reducing the incidence of persistent anogenital HPV 16 infections and 96% of HPV 18 infections. Therefore, carriage in the male population of the two HPV genotypes that cause about 90% of genital warts in HPV naive males—and 79% effective at reducing the incidence of persistent anogenital HPV 16 infections and 96% of HPV 18 infections. Furthermore, carriage in the male population of the two HPV genotypes that cause about 90% of genital warts in HPV naive males—and 79% effective at reducing the incidence of persistent anogenital HPV 16 infections and 96% of HPV 18 infections. Moreover, carriage in the male population of the two HPV genotypes that cause about 90% of genital warts in HPV naive males—and 79% effective at reducing the incidence of persistent anogenital HPV 16 infections and 96% of HPV 18 infections.

Kim and Goldie’s findings concur with those reported in Austria, although they differ substantially from an analysis conducted by Merck. This may be because Kim and Goldie’s analysis included “recent data on efficacy against vaccine type infection and diseases in males,” and because of the higher than anticipated sensitivity of cytology for detecting cervical intraepithelial neoplasia types 1-3.

As acknowledged by the authors, the models used to generate cost effectiveness projections have limitations imposed by uncertainties about the course of HPV related diseases. They also did not explicitly simulate (or include) men who have sex with men, who face a higher risk of anal cancer and may benefit more from the vaccine than other men. Conversely, some of the assumptions regarding the benefits of HPV vaccine may have been too generous. Nevertheless, the relative benefits of HPV vaccination of females compared with vaccination of both sexes is unlikely to differ greatly with fine tuning of the models, and the health economic implications are clear—good coverage of females obviates the need to vaccinate boys.

However, in the exceptional situation in which the uptake of HPV vaccination is poor in females, male HPV vaccination may become better value by improving herd immunity. Since the FDA approval of Gardasil in June 2006, HPV vaccination coverage of at least one vaccine dose in 13-17 year old girls has steadily increased from 25% in 2007 to 37% in 2008. However, only 18% of 13-17 year old girls had received all three doses in 2008; the protection and durability of receiving fewer than three doses is not yet known.
Kim and Goldie did not explore the effect of age at vaccination but focused on age 12, an age at which most adolescents in the US are not yet sexually active, so that vaccination at that age would provide the greatest protection against incident HPV infection. However, uptake of all three doses is lower in younger girls—15% in 13 year olds and 21% in 17 year olds. If coverage in females does not increase substantially, it may be reasonable to consider male HPV vaccination, provided that it is cost effective at similarly low coverage in males, which remains to be determined.

Advocacy for male HPV vaccination is also made on ethical grounds—to promote equality and social responsibility in both sexes. However, consistent use of condoms can partially protect against HPV and provide cheap protection against all sexually transmitted infections, including HIV, as well as unwanted pregnancy. Vaginally applied microbicides are another promising way of preventing HPV infections and other sexually transmitted diseases.

A far greater social inequity exists, however—more than 80% of the 500000 annual cases of cervical cancer occur in low resource settings and developing countries, which cannot afford or access HPV vaccines. Targeting young women in these populations for HPV vaccination and screening older women would have a bigger effect on reducing the burden of cervical cancer than widespread HPV vaccination of young men from resource rich areas.

In the face of skyrocketing healthcare costs in the US, any preventive intervention must be safe and cost effective. Widespread inclusion of males in any HPV vaccination programme should be weighed against other unmet health needs. Kim and Goldie found that adding male HPV vaccination to female vaccination is only borderline cost effective under the best of circumstances. Increasing coverage in males is unlikely to be more cost effective than increasing coverage in females whatever the circumstances. And, as shown, the better the coverage in females the less cost effective it becomes to add males to the vaccination programme. The best policy is to ensure that preadolescent females are vaccinated worldwide.


Risk factors for SIDS
We already know enough; the challenge is how to change behaviour

In the linked study, Blair and colleagues report on a four year case-control study of sudden infant death syndrome (SIDS) in south west England. The number of cases in the study is small, as a result of two factors. Firstly, the recommendation to avoid the prone sleeping position in the “Back to Sleep” campaign resulted in a dramatic reduction in mortality from SIDS in the early 1990s. Secondly, the change from the side to the back sleeping position led to the subsequent slower decline in mortality from SIDS. However, the study did come up with several important findings.

The study used two control groups—a random control group and a high risk group. The risk factors were similar whichever group the SIDS cases were compared with. This is important because it indicates that risk factors for SIDS apply to all sections of the community and are not just a consequence of social deprivation, because SIDS now occurs predominantly in disadvantaged communities. The prevalence of the exposure—for example, maternal smoking in pregnancy—may differ between advantaged and disadvantaged sections of the population. This is consistent with findings from New Zealand, where mortality from SIDS in Maori people is substantially higher than in non-Maori people, who are predominantly of European descent. This difference is accounted for by the higher exposure to maternal smoking and bed sharing in Maori people.

Blair and colleagues’ study highlights co-sleeping as a risk factor for SIDS. More than half of deaths from SIDS occurred while the infant was sleeping with a parent. This is in accordance with other recent studies.

Most authorities—for example, the American Academy of Pediatrics and the Ministry of Health in New Zealand—advise parents to avoid sharing a bed with their infant if they have been drinking or taking drugs. Presumably, alcohol and drugs impair the arousal of the adult co-sleeper. However, the dangers of this combination of behaviours are, for the first time, convincingly shown in this study. The box lists what we already know about SIDS and co-sleeping.
Disclosure of competing interests

A new standardised format that all journals could use

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Economic sanctions towards North Korea

A violation of the right to health and a call to action

On 12 June 2009, the United Nations Security Council approved its strictest economic sanctions to date against North Korea in response to a series of provocative acts, including the detonation of a nuclear device. The United States is also considering expanding sanctions and has appointed a high level task force to coordinate military, political, and financial strategies against North Korea. However, economic sanctions are being considered with virtually no public discussion of their potential effects on the North Korean people. Notably, even the health community has been silent.

In contrast, during the lead up to the Iraq war, health professionals contributed invaluable insights to public discourse regarding the effects of economic sanctions on health. Prominent health associations published position papers and issued statements opposing their use. In fact, economic sanctions have been shown to violate the fundamental right to health. Furthermore, they do not achieve political change—60 years of US sanctions against North Korea have failed to do so. The health community urgently needs to take the lead in opposing the use of economic sanctions against North Korea on the basis of principles of health and human rights.

Economic sanctions create social disruption and material deprivation, including dramatic declines in resources that are essential for health, such as drugs, vaccines, food, water, and energy. For example, during 10 years of UN imposed economic sanctions on Iraq in the 1990s, mortality among Iraqi children under 5 years old more than doubled (from 56 to 131 per 1000 live births). In Cuba, with the loss of Soviet Union trading partners in the early 1990s, population level measures of health declined and then worsened with the tightening of economic sanctions by the US. Shortages in drugs resulted in a 48% increase in mortality from tuberculosis and a 77% increase in mortality from pneumonia and influenza. Similarly, North Korea’s economy plummeted under the combined effects of economic sanctions and the fall of the Soviet Union. Its economic and public health systems further buckled with successive years of floods...
and droughts, leading to widespread malnutrition and up to one million excess deaths in the 1990s. Although many of the US trade sanctions against North Korea were lifted during the 1990s, the sanctions that are currently in place continue to handicap North Korea’s attempt to recover from the ongoing public health crisis. Despite their stated intent of targeting illegitimate activity, recently enacted financial sanctions and sanctions on “dual use” items have been implicated in restricting legitimate trade. Dual use refers to technology that may be used for civilian or military purposes. In North Korea, sanctions on such goods have restricted the import of items needed to build a modern economy, such as personal computers. Ultimately, North Korean civilians are harmed.

Economic sanctions violate principles established by the Universal Declaration of Human Rights and the Convention on the Rights of the Child that assert the right to “a standard of living adequate for health and well-being.” Furthermore, human rights obligations extend beyond national borders to third parties and international bodies. The UN Committee on Economic, Social and Cultural Rights asserts that “the inhabitants of a given country do not forfeit their basic economic, social and cultural rights by virtue of any determination that their leaders have violated norms relating to international peace and security.”

Economic sanctions rarely achieve their stated objectives, with perhaps 5% having any success in changing national policies. Little evidence is available that economic sanctions against North Korea have had any impact on political change, prevention of nuclear proliferation, or improvement of human rights. In fact, economic sanctions and political threats are likely to have emboldened hardliners within North Korea to militarise even further.

If military action is unacceptable because of the potential for millions of casualties, and human rights implications prohibit the use of economic sanctions, what should be done? Diplomacy is the answer. Direct negotiations by the US in the 1990s resulted in a nine year freeze of North Korea’s plutonium enrichment programme. In 2007, after direct negotiations with the Bush administration, North Korea began dismantling its Yongbyon nuclear processing plant. Despite these gains and the work of the six-party negotiators, full scale diplomacy has yet to be engaged. Such engagement might extend beyond nuclear programmes to health and science. With this “health diplomacy” perspective, the US could usher North Korea into the international community by promoting educational, scientific, cultural, health, and economic exchanges. Ending isolationist policies would be a powerful incentive for disarmament and could potentially empower proengagement elements in North Korea. Given the Obama administration’s widely publicised willingness to engage diplomatically with adversaries, such expanded possibilities are now more timely than ever.

In light of the grave implications for the health of the North Korean people, the health community must oppose the use of economic sanctions. Through purposeful health diplomacy, US and other health professionals should use their expertise and commitment to human rights to contribute to meaningful engagement. With regard to health, humanity has more in common across political divides than differences, even in North Korea; it is time to work with those commonalities in the pursuit of peace.