The Obesity Pandemic

Contrary to popular belief, the obesity problem is not limited to wealthy developed nations nor is it limited only to adults. In Asia, the Pacific nations, and the Middle East, the prevalence of obesity is increasing. Japanese researchers have reported that 20% of the population is overweight or obese. The whole world, it seems, is in the grip of an obesity pandemic.

These current figures are staggering and are just the tip of the iceberg. Although obesity has been on the increase over the past two decades, it is only recently that governments have begun to acknowledge the enormity of the problem. In a bid to counteract its effects, many governments have begun a series of activity-based public health initiatives.

How do we classify obesity?

Human beings require body fat to store energy and for insulation. Women generally have more body fat than men. When the fat-to-lean tissue ratio becomes too great (generally, greater than 25% in men and 30% in women), people are classified as overweight or obese.

There are many ways to measure weight and body fat. These include skin fold measures (the thickness of fat under the skin), waist circumference, waist to hip circumference ratios, weight for height tables, or techniques such as ultrasound, computed tomography, and magnetic resonance imaging.

One of the most widely used measures is Body Mass Index (BMI).

BMI is used to determine the approximate weight of a person in relation to their height.

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\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)}^2}
\]

It is a quick and easy indicator to determine whether a person is overweight or not (BMI does not take into consideration the muscle mass of the person).

Healthcare workers also regard a waist circumference of greater than 40 inches (102 cm) for men and 35 inches (88 cm) for women as a risk.

Body fat distribution is also important. Fat located on the hips and buttocks is generally regarded as ‘safer’ than fat located around the waist.

While much has been written about the causes, it is generally agreed that the problem is the result of an energy imbalance. Quite simply, people eat too many calories and get too little exercise.

However, the problem is more complex than this. Body weight results from the interplay of genes, metabolism, behavior, environment, culture, and socioeconomic status.

Obesity does tend to run in families, and although families also share lifestyle and dietary habits, there is evidence of a hereditary link to obesity.

In one study, adults adopted as children were found to have weights closer to their biological parents than to their adoptive parents. In this case, the person’s genetic makeup had more influence on the development of obesity than the environment of the adoptive family. However, researchers James Hill and Frederick Trowbridge point out that this does not explain the huge increase in obesity levels worldwide. They note, ‘Despite obesity having strong genetic determinants, the genetic composition of the population does not change rapidly. Therefore, the large increase in obesity must reflect major changes in non-genetic factors.’

In other words, individual behavior in terms of diet and activity builds on this genetic predisposition.

Psychological factors may also influence eating habits. Many people eat in response to negative emotions such as boredom, sadness, or anger. Up to 10% of mildly obese people (and a greater
percentage of more obese people) suffer from a binge eating disorder. However, the US Department of Health and Human Services Centers for Disease Control and Prevention points out that most overweight people do not suffer from more psychological problems than the average person.

Illnesses, such as Cushing’s disease, and drugs, such as some antidepressants and steroids, may also lead to weight gain and obesity.

The development of an obese population is not an overnight phenomenon. The obesity epidemic has been growing rapidly, particularly over the past 20 years. So what has happened in the world to cause people to change their eating and activity habits so dramatically?

The World Health Organization (WHO) takes a global view of the problem, attributing the obesity epidemic to an increase in sedentary lifestyles and high-fat, energy-dense diets, particularly as people move to cities.

This view is supported by data from the National Center for Chronic Disease Prevention and Health Promotion, which identify a number of contributing environmental factors. The Center argues that the environment has broadened food options so that there is wide access to pre-packaged foods, fast food restaurants, and soft drinks, which are all high in fat, sugar, and calories. Portion size has also increased—people are eating more during a meal, and are often unaware of it.

Technology—such as computers, cars, lifts, escalators—increases efficiency but has a negative impact on activity. The amount of physical activity people do in their daily life has significantly decreased. Twenty-four hour television, computer games, etc., have had a huge impact in making children more sedentary.

In underdeveloped countries, WHO reports that obesity is ‘the result of a series of changes in diet, physical activity, health, and nutrition.’ This is collectively known as the ‘nutrition transition.’ They note that cities offer a greater range of food choices, generally at lower prices. Urban work often demands less physical exertion than rural work. More women are working away from home, and may be too busy to shop and cook. In 1900 just 10% of the world population inhabited cities; today that figure is nearly 50%.

Other dietary changes come as a result of income growth. Following economic reforms in China in the late 1970s, the per capita income increased fourfold and the consumption of high-fat foods soared.

The most worrying aspect is the growing problem of obese children. In 1995, there were an estimated 18 million children, under five years of age, classified as overweight around the world. In Europe and the Americas, childhood overweight and obesity rates are double the global average.

In fact, in the US, 15.3% of children aged 6–11 years, and 15.5% of adolescents aged 12–19 years were overweight in 2000. Obesity rates have doubled among children and tripled among adolescents since 1980.

The health consequences of obesity are nothing short of staggering. According to the National Institutes of Health (NIH) Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults, all adults aged 18 years or over who have a BMI of 25 or more are considered at risk for premature death and disability. These health risks increase even more as the severity of an individual’s obesity increases.

This list of health risks is long. The three most serious risks are cardiovascular disease, type 2 diabetes, and obstructive sleep apnea (OSA), which are all considered to place a patient at high or absolute risk of mortality.

Other risks include hypertension, dyslipidemia, ischemic stroke, joint disease, gallstones, gynaecological irregularities, and some types of cancers. Women who gain more than 20lbs (9 kgs) after age 18 double their risk of postmenopausal breast cancer, and the risks of colon, endometrial, kidney, and gallbladder cancer have been shown to rise with weight gain.

A weight gain of as little as 10lbs (4.5 kgs) increases a person’s risk of cardiovascular disease, while hypertension, the leading risk factor for stroke, is twice as common in obese adults. Gaining 11–18 lbs (4.9–8.1 kgs) doubles a person’s risk of developing type 2 diabetes.

Children also suffer from a particular set of obesity-related problems, including asthma, hypertension, sleep apnea, poor mental health, and eventually, adult obesity. Type 2 diabetes, previously considered an adult disease, is also increasing dramatically in children and adolescents.

Health care workers are also noticing significant psychological effects that can be attributed to obesity. In societies that emphasize appearance, obese people often feel marginalized.
Clearly, urgent action is required. The National Heart, Lung and Blood Institute (NHLBI) guide to treating obesity in adults recommends weight loss treatment for patients with a BMI >30 or patients with a BMI >25 and two or more risk factors. NHLBI also suggests that health care practitioners engage the assistance of other professionals including nutritionists, dieticians, exercise physiologists, nurses, and psychologists, working as a team.

Weight loss should aim for 10% of body weight over six months, at a maximum of 2lbs (1kg) per week; greater weight loss does not achieve better long-term results. Recommended therapies include diet modification, increased physical activity, and in some cases, behavior therapy.

In their report on Preventing and Managing the Global Epidemic, WHO concludes, ‘Global epidemic projections for the next decade are so serious that public health action is urgently required. Analyses show that merely concentrating on children and adults who have high BMI and associated health problems will not stem the escalating numbers of people entering the medically defined categories of ill health. It is thus essential to develop new preventive public health strategies, which affect the entire society.’


Over the last two decades, obesity has become one of the world’s major health problems. Surprisingly, the problem is not confined to wealthy countries—it is increasing dramatically across developing nations too. As the frightening increase in obesity among children shows, the problem doesn’t just affect adults either. Clearly, it has become an issue of critical and growing importance.

This edition of ResMedica clinical newsletter tackles the concerns surrounding obesity. We discuss questions such as: What is the scale of the problem? What are the economic and health implications? Is obesity genetically or behaviorally determined? What other factors play a part? What are the options for treatment?

Three medical practitioners offer their own perspectives.

Dr Harvey Sugerman, President of the American Society for Bariatric Surgery (ASBS) and Editor-in-chief of Surgery for Obesity and Related Diseases, speaks about obesity on a global scale and his experience of dealing with the problem with bariatric surgery.

Dr Robert W Hart, one of Chicago’s leading experts in the diagnosis and treatment of sleep disorders, looks at the connections between obesity, bariatric surgery, and sleep disorders. He points out that OSA therapy must evolve with the patient’s changing condition.

Dr Mike Jones, a British-trained General Practitioner (GP or Primary Care Physician (PCP)) now practising in Perth, Western Australia, provides his perspective.

On a slightly different note, we were pleased to make contact with one of ResMed’s very first patients in Australia, Bob Bolger; who has been using CPAP therapy for more than 20 years. Bob’s interview gives a fascinating insight into ‘the way we were’ and just how far the science of sleep therapy has come in the past two decades.

As always, we welcome your feedback. You can contact us via email at clinicalnews@resmed.com.au, or find more information about ResMed on our website www.resmed.com.
Startling facts and figures from around the globe…

An overweight population!

**Worldwide**
- More than 1.1 billion people are overweight.¹
- 320 million of them are obese.¹
- Since 1995, there has been a 60% increase in the number of obese people (from 200 million to 320 million).²
- The obesity epidemic is not restricted to industrialized societies; in developing countries it is estimated that over 115 million people suffer from weight-related problems.²
- Obesity has increased by as much as 75% in parts of the developing world.²
- Obesity is related to socioeconomic groups. Figures show that adolescents from poor families are twice as likely to be overweight as adolescents from wealthier families.

**North America**
- 58 million Americans (one third of the population) are obese.⁴
- 9 million, or 4.7% of the population, are morbidly obese.⁴
- The overweight trend has been steadily rising:⁴
  - 47% of the population in 1976–80
  - 56% in 1988–1994
  - 61% in 1995.
- The obesity trend is reflected in the staggering increase in the number of surgeons specializing in bariatric surgery. In 1998, fewer than 500 surgeons attended the American Society of Bariatric Surgery annual meeting; by 2002 this had tripled.
- The increase in weight and obesity cuts across all ages, racial and ethnic groups, and both genders.⁵
- Ethnic minorities are affected disproportionately — 40% of Mexican American women and 50% of black American women have a BMI above 30.¹
- In Canada, obesity among children aged 7–13 tripled between 1981 and 1996.²

**Middle East**
- In parts of the Middle East, overweight and obesity rates have risen by 50%.¹

**Europe**
- Obesity has increased 10–15% in the past decade.¹
- In the UK, a report from a working party of the Royal College of Physicians et al, estimated that:
  - more than 50% of the adult population are either overweight or obese
  - in 2002, 70% of men and 63% of women is overweight or obese.⁶
- The UK obesity rate has tripled over the past 20 years — 21% of men and 23.5% of women are obese.¹
- 1 in 40 English women have a BMI of 40 or more.¹
- Finland and Germany have obesity rates similar to the UK. Even higher levels can be found in Greece and Eastern Europe, particularly in the older population.¹
- In Germany, obesity in boys aged 7–14 increased from 10% to 16.3% between 1975 and 1995, while the figure for girls increased from 11.7% to 20.7%.

**Asia and Pacific Nations**
- There is convincing evidence that many Asian populations are particularly prone to the health risks of central obesity (excess fat in the abdominal region) regardless of BMI.¹
- In Japan, researchers suggest a prevalence of obesity of 20%.¹
- Many Pacific Islands, such as Tonga, have overweight and obesity prevalence rates of 60–80% among men and women.¹

An interview with Dr Sugerman

Dr. Harvey J. Sugerman graduated Phi Beta Kappa from Johns Hopkins University in 1959 and AOA from Jefferson University School of Medicine in 1966. He completed an internal medical internship and surgical residency at The Hospital of the University of Pennsylvania in 1973, during which time he spent two years as a National Institutes of Health ‘Shock and Trauma’ Fellow. He spent two years in the Army in Nuremberg, Germany, and as Lieutenant Colonel at Fort Brag, North Carolina. He spent two years in private practice surgery in Allentown, Pennsylvania before going to the Medical College of Virginia at Virginia Commonwealth University (VCU) in 1978, where he was the David M. Hume Professor of Surgery, and Chief of the General Surgery and Trauma Division. He is retired from clinical practice and is Emeritus Professor of Surgery at VCU. He has published over 200 peer-reviewed manuscripts, 20 books and 55 book chapters, many dealing with the improvement in obesity comorbidity following surgically induced weight loss, as well as the first randomized trial comparing vertical banded gastroplasty to Roux-en-Y gastric bypass. He is currently President of the ASBS and Editor-in-chief of Surgery for Obesity and Related Diseases.

Is the rate of obesity growing globally?

Yes. The rate of obesity and morbid obesity are thought to be epidemic not only in the USA, but also worldwide. Even in less developed countries, where we would probably consider the main problem to be malnutrition, in fact obesity is becoming a much greater threat. In the USA, this epidemic is not confined only to adults, but children are fast becoming extremely obese.

What are some of the comorbid conditions associated with severe obesity?

Severe obesity is associated with significant cardiopulmonary disease. In its worst form it is called Pickwickian Syndrome after Joe in The Pickwick Papers by Charles Dickens, in which he had both obstructive sleep apnea (OSA) and obesity hypoventilation syndrome.

The good news is significant surgically induced weight loss can correct both of these severe and life-threatening comorbidities of obesity.

In terms of other comorbid conditions, they start at the top of the head and end up at the tips of the toes, and they affect nearly every single organ in between!
Where did the term bariatric surgery stem from?
Baros is the Greek term for weight. We use the term ‘Bariatric Surgery’ to describe weight loss with surgery.

What are the main types of bariatric surgery available to patients?
There are three basic types. First of all, there are purely ‘restrictive procedures.’ These include vertical banded gastroplasty or the laparoscopic adjustable gastric band (LAGB), which are most popular in Europe and Australia. The stomach is made much smaller and the outlet is restricted. So the patient eats much less, gets full quickly, and loses the desire to eat.

Secondly, there are the combined restrictive and malabsorption procedures, such as the Roux-en-Y gastric bypass procedure. This operation involves creating a very small stomach pouch either by stapling or more commonly by transecting the stomach and then readjusting the upper small intestine to create a Roux-en-Y limb (this limb can be longer or shorter, depending upon how obese the patient is). This type of operation bypasses the stomach, duodenum, and upper jejunum.

The third type of procedure is mainly a malabsorption operation. There are two forms of this. One is the biliopancreatic diversion (BPD), which involves the resection of greater than two-thirds of the stomach, rerouting the small intestine to the region of the ileum. The second form is the biliopancreatic diversion with a duodenal switch (BPD-DS). These types of surgeries are fairly challenging operations.

In terms of all these three types of operations, the lowest risk is the LAGB; however, it seems to be associated with the lowest amount of weight loss and correction of comorbidity, although it is still pretty successful. In comparison, the BDP-DS, which carries the most extensive weight loss, has increased postoperative risks and malabsorption issues.

What is the most popular type of surgery performed in the US?
Approximately 85% of patients undergo the Roux-en-Y gastric bypass procedure. However, there is a growing interest in the LAGB procedures.

Who would be considered a candidate for surgery?
Based on the 1991 NIH consensus criteria, patients are candidates for surgery with a BMI of 40 or greater, regardless of comorbidity, or 35 to 39 BMI with significant comorbidity. Having said that, almost everyone who has a BMI greater than 40 has significant comorbidities that warrant surgery.

This is not a universal or global classification, because European and Australian patients are undergoing surgery if they have severe diabetes with BMIs between 30 and 35. Obesity surgery induced weight loss has been documented to decrease or correct almost all of the comorbidities associated with severe obesity. 1,2,3

How do you determine what type of surgery will suit a specific patient?
That’s an excellent question and the answer is not really known. I think part of it is the surgical expertise of the surgeon, so the operation which that surgeon is most proficient at should be the operation of choice. There are a few surgeons who perform all of the operations; however, it is not really clear what criteria should be used for each patient type. I think part of it is also a risk-benefit analysis determined by both the patient and the surgeon. For example, how much of a risk are they willing to take for the weight loss. There is some evidence to suggest that the gastric bypass and BDP-DS have a greater resolution of diabetes than the LAGB procedures.

You have mentioned risks. Can you briefly describe some?
With all operations in the severely obese there is always a risk of pulmonary embolism, which can be fatal. Intermittent venous compression boots need to be worn by the patient prior to, during, and post-surgery. These patients also need to be on a blood thinner such as heparin.

With the LAGB there are risks of slippage of the band, the band eroding into the stomach, malfunction of the band, and infection of the port. Perhaps the biggest issue is that the weight loss may not be adequate enough to control the comorbidity. Mortality risk is thought to be in the range of 0.05 to 0.1%.

The primary risk with gastric bypass is anastomotic leakage and resulting peritonitis. Mortality risk is thought to be in a range of 0.5 to 1.9%.
The BPD-DS has similar risks to the gastric bypass surgeries, however; pancreatitis can be added to the list. Mortality risk is thought to be in a range of 1.0 to 2.0%. Having said that, the surgically treated patient has a lower mortality than a comparative non-surgical obese patient.4

Are there any long-term, postoperative dietary requirements?

Yes. There are very few dietary risks with the LAGB procedure. With gastric bypass there is the risk of iron deficiency anemia in menstruating women. Vitamin B12 and calcium deficiencies can also occur; however, these can be easily prevented by supplementation in most instances. So gastric bypass patients should take a multi-vitamin, two iron tablets (in menstruating women), 1mg of Vitamin B12 intramuscular injections every month or 500 micrograms orally every day, and 1000mg of calcium orally per day.

In addition to the above, patients who undergo the BPD and BPD-DS procedures, because of the malabsorption effects on fats, will also have to take fat soluble vitamin supplements, including vitamins A, D, E, and K.

Factors contributing to obesity

Diet

- Only about a quarter of US adults eat the recommended five or more servings of fruit and vegetables daily.1
- Less than 20% of young people eat the recommended five or more servings of fruit and vegetables daily.1

Inactivity

- More than 60% of US adults do not get enough physical activity to provide health benefits.2
- More than a third of young people in high school do not regularly engage in vigorous physical activity.2

Diabetes connection

- 61% of diabetes costs are attributable to obesity.3
- Diabetes prevalence:
  - India; 35.5 million people1
  - Tonga; 1.2% of men and 1.8% of women, a further 20% at risk of developing type 2 diabetes.1
  - The Middle East; 17–20%6
  - Barbados—is considered the amputation center of the world.3

OSA and bariatric surgery
by Dr Robert W. Hart

Dr. Robert W. Hart MD, AB SM, FCCP, a board-certified sleep and pulmonary specialist, is one of the Chicago area’s leading experts in the diagnosis and treatment of sleep disorders. Dr. Hart and his board-certified colleagues at Suburban Lung Associates have more than 20 years experience in the field of sleep medicine. They published many pertinent journal articles and have most recently presented clinical research data at an international conference in Helsinki, Finland.

A native to Chicago, Dr. Hart attended Northwestern University and the University of Illinois College of Medicine. Dr. Hart completed his specialty training at the University of Illinois in 1984. He has spent the majority of his career in private practice and holds multiple Medical Directorships at affiliated sleep laboratories in and around the Northwest Chicago suburbs.

Over the last three decades, America has become progressively more obese. According to the American Obesity Association, there has been a 20% increase in the number of obese Americans. Today, approximately 60 million Americans are considered obese (BMI greater than or equal to 30) and 9 million are considered morbidly obese (BMI greater than or equal to 40).1 These 9 million people form the core patient population for bariatric surgery. There is also a high prevalence of obstructive sleep apnea (OSA) in this patient population. Frequently undiagnosed, the patient undergoing bariatric surgery with OSA is at increased risk for perioperative complications.2

Research indicates that approximately 77% of all morbidly obese patients suffer from OSA, but despite this, 74% of bariatric surgery patients have unidentified OSA. This indicates the low level of identification of OSA even in patients with such a high prevalence rate and significant risk factors. The preoperative evaluation process therefore should include an evaluation for underlying OSA.

Identifying and treating bariatric patients before surgery is important for several reasons—for instance, anesthesia and narcotic analgesics worsen preexisting OSA and increase hypoxemic burden. This may lead to respiratory insufficiency or respiratory failure. Bariatric surgery patients treated with positive airway pressure may also require less intensive intervention (eg, transfer to ICU), a shorter hospital stay, and a decrease in costs.3

In addition to the surgical risks, OSA is also associated with serious long-term consequences and comorbidities, such as high blood pressure, heart disease, stroke, and diabetes. With appropriate treatment, these health risks can be dramatically reduced. To help manage these conditions, Carla Lickteig, BSN, RN, CPAN, with Colorado Springs Memorial Hospital, said that hospitals must take an active role in the OSA diagnosis.

“Establishing an OSA protocol in hospitals and educating surgeons regarding the risks associated with OSA and anesthesia can save lives,” Lickteig says. “On a daily basis, surgical patients are wheeled into operating rooms with unrecognized OSA. Diagnosed OSA patients, as well as undiagnosed patients who present with classic signs and symptoms, are at risk for significant postoperative respiratory complications after receiving a general anesthetic and postoperative opiate analgesia.

“Yet health care providers frequently fail to screen for OSA, and when it is suspected or diagnosed, often fail to incorporate this data into the perioperative plan of care. The accumulating cases of respiratory morbidity and mortality in perioperative patients served as the impetus to develop an adult perioperative OSA protocol at Memorial Hospital in Colorado Springs, Colorado.”

Treatment of underlying OSA does not end with successful weight loss surgery and recovery; however. While weight loss due to gastric bypass may eventually cure a patient of OSA and all its associated risks, it is a slow, gradual process that takes, on average, 28 months.4 It also cannot be assumed that successful weight loss surgery will cure the underlying OSA, therefore objective re-evaluation is strongly recommended. Furthermore, OSA therapy must evolve with the patient’s changing condition.

As patients lose the weight, their face shape will change, which can affect mask fit and cause uncomfortable leaks. Also, OSA may become less severe as the tissues in the throat region begin to shrink, requiring lower positive airway pressures (PAP). If they are not recognized, these phenomena can reduce compliance with positive airway pressure and make a patient with some degree of residual OSA abandon therapy.

Adaptive technologies, such as an autotitrating PAP device and an active cell mask are therefore ideal for the bariatric surgical patient. It is also important to use in-depth efficacy reporting software in order to monitor the patient’s progress and therapy changes.

In conclusion, OSA is highly prevalent and frequently undiagnosed in patients undergoing bariatric surgery. Proper diagnosis and treatment preoperatively can reduce postoperative risk and cost. Additionally, preoperative diagnosis and treatment will increase the likelihood that persistent OSA at final postoperative weight will be recognized and treated, decreasing the resultant long-term consequences of untreated or incompletely treated OSA.

The Impact of Obesity in the US

Costs

- The annual economic cost of overweight and obese individuals in the US is $122.9 billion (up from $92.2 billion in 1995) per year (a figure comparable to smoking). $64 billion of this is for direct medical costs and $58.8 billion is for indirect costs. Obesity and related ailments result in at least $63 million in doctor’s visits and $39.3 million in lost work days each year due to overweight and obesity-related comorbidities.

- 9.1% of US annual health spending ($78.5 billion) is attributable to overweight and obesity. By comparison, between 6.4% and 14.4% is spent on smoking.

- Speaking to the media, researcher Eric Finkelstein suggested this cost could be equated to a tax of US $150–$200 per year for American taxpayers.

- Obese individuals spend approximately 36% more than the general population on health services and 77% more on medications. Considering the 20-year lag time between the onset of obesity and the associated chronic health effects, this could be the tip of the iceberg of the effects on healthcare spending.

Death

- In the US, 400,000 people died from problems associated with poor diet and physical inactivity in 2000. This was an increase of 33.3% over the 300,000 people who died in 1990.

Nutrition

- Each year, over $33 billion in medical costs and $9 billion in lost productivity (due to heart disease, cancer, stroke, and diabetes) are attributed to diet.

Physical activity

- In 2000, healthcare costs associated with physical inactivity were more than $76 billion.

- If 10% of adults began a regular walking program, $5.6 billion in heart disease costs could be saved per year.

- Every dollar spent on physical activity programs for older adults with hip fractures results in a $4.50 return.

Weight loss

- A 10% weight loss will reduce an overweight person’s lifetime medical costs by $2,200–$5,300.

- The lifetime medical costs of five diseases and conditions (hypertension, diabetes, heart disease, stroke, and high cholesterol) among moderately obese people are $10,000 higher than among people at a healthy weight.

Promising Approaches for Preventing Obesity

- Regular physical activity is a key part of any weight loss effort.

- Reducing the time spent watching television appears to be effective for treating and preventing obesity.

- Increased physical activity for overweight patients reduces many of the illnesses associated with obesity, helps maintain weight loss, and helps prevent weight gain.

- A weight loss of 5–10% can do much to improve health by lowering blood pressure and cholesterol levels.

- Research has shown that a 5–7% weight loss can prevent type 2 diabetes in people who are at risk of the disease by 58% over a three-year period.

References:

Dr. Mike Jones is a British-trained (University of Birmingham) GP (or PCP) who came to Australia in 1972, and has been in practice ever since. Dr. Jones has been heavily involved in medical politics, sitting on numerous committees. He is a former state President and national Vice President of the Australian Medical Association (AMA) and has also been involved in working with the government in reviewing future directions for general practice. Dr. Jones publishes a monthly newsletter containing general advice about common illnesses and preventive care, which doctors give their patients. Dr. Jones has consulting rooms in the Hills district outside Perth in Western Australia.

Have you noticed a change in the number of patients presenting to your clinic with obese and obesity-related health issues?

It has not been a dramatic change; however, over the years there are more people who appear to be overweight. I think there is more concern among the general public and they are more interested in trying to lose weight than they used to be. So yes, there is an increase in obese and overweight people presenting, but there is also more public awareness of the problem and therefore some degree of desire to do something about it. Perhaps the biggest concern is the increasing incidence of overweight children.

So why is there an increase in the number of overweight children you are seeing in your practice?

Lack of exercise is the greatest issue, with diet obviously playing a role. In my mind, obesity is about diet and exercise. There is no question that children nowadays have access to so much junk food, and increased sedentary lifestyles, such as sitting in front of the television, watching videos or DVDs, playing video games, and interacting with the internet.

What proportion of obese/morbidly obese patients suffer from a disease or hormonal imbalance that directly causes their obesity?

The percentage is incredibly small. In fact, off the top of my head I can’t think of any cases where there has been a major medical cause or disease for obesity that I have seen recently. It’s very rare.

What percentage of patients presenting to your clinic would you classify as obese?

In the adult population that I see, I would say 30–40% are overweight with 3–4% being obese. However, significant numbers of the overweight are moving towards the obese category. So my gut feeling is that we are seeing a shift to the heavy end of the spectrum.

How do you assess a patient in regards to suitability to different treatment methods?

The first aspect is to get them to appreciate that their weight is a major factor in their problem. This can be difficult. It’s a bit like cigarette smoking; some people present knowing that they have to give up smoking or in this case, lose weight; however others need to be made aware what the problem actually is. For example, they complain of pain in the knees and hips or symptoms of hypertension, however the root cause is not the pain, it’s what is causing the presenting symptom, which can be linked back to obesity. The first task is for the doctor to persuade the patient to recognize that weight loss is critically important for their good health, and that can be quite a battle sometimes.

Unfortunately we do live in a society where we expect instant solutions to our problems. It’s so easy to seek a pharmaceutical solution to fix things. These people need a lot of education, support, and a lot of hard work.

What treatment methods do you recommend?

Treatment needs to be tailored to each individual person and a lot depends upon their motivation. I will quite often send somebody to a dietician, as you may well need someone to go through the patient’s diet with a fine-tooth comb, to see exactly what he or she is eating. However, it’s usually only the motivated patient that will agree to do this. Many patients are convinced that they don’t overeat but we know that it’s a simple equation—energy in versus energy out—and if they are taking more onboard than they are using, we know they are going to get bigger. Diet and exercise are the keys, and the patient has to want to participate in this!

With the amount of information that is readily available nowadays, many people have tried all the fad diets and when these fail, they usually see a doctor to seek further advice or treatment. There is a lot of concern in the medical community about what harm these fad diets could potentially do to people.
There are surgical procedures that offer hope for the seriously obese and these can offer a practical solution to the management of weight loss. My approach is to assess the patient and then implement treatment. I am a great advocate of exercise first and then focus on diet. After that you have to consider other options such as surgery.

**Why do diets tend to fail?**

Because diets tend to create an artificial situation, these diets are typically only for a short time; but what happens long-term? They go back to their usual routine and they regain the weight. So what I tend to promote is, “whatever program you go on, it should be for the rest of your life.” It is easier and more successful to make a small permanent change to your eating and exercise habits, than a dramatic change for a short period of time. The key is actually behavioral change.

**Is sleep apnea a major issue for obese people?**

Ten years ago I probably would never have had sleep apnea on my radar screen. Now I routinely ask people who are obese or who have hypertension about their sleep habits. One of the common presentations in the GP (PCP) world is the patient who is tired all the time. The first question I ask is “do you snore” because we now know what a common problem sleep apnea is. However, although I may be aware of sleep apnea, there are many GPs that aren’t aware. It’s a bit of a vicious circle. When you have sleep apnea you are tired all the time; the doctor says “I want you to exercise more;” but you are too tired to do it. So it is a self-compounding problem. That’s why we need to increase the awareness. There is significant evidence now to highlight sleep apnea as a cause of hypertension, and we know that the benefits of treating sleep apnea in cardiovascular disease are staggering. We need to ensure this is understood across all primary care physicians.

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**Web site of interest**

The World Health Organization (WHO) is the United Nation’s specialized agency for health. It was established on April 7, 1948. WHO’s objective, as set out in its Constitution, is “the attainment by all peoples of the highest possible level of health.” Health is defined in WHO’s Constitution as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.”

WHO is governed by 192 Member States through the World Health Assembly. The main tasks of the World Health Assembly are to approve the WHO program and the budget for the following biennium, and to decide major policy questions.

www.who.int/en/

Other interesting information under ‘topics’ at this site include:

- WHO Global Strategy on Diet, Physical Activity and Health
- Obesity and overweight fact sheet
- Global database on obesity and body mass index (BMI) in adults.
Bob Bolger is a man who embraces life, food, and wine—with a passion. At 72, he works almost full-time as President of Northside Wine and Food Society, the Sydney Malt Whisky Society, and the Sherlock Holmes Society. Bob belongs to groups including Beefsteak and Burgundy, the Cheese Society, Gilly’s Australia (a malt whisky group), and the Sydney Beer Club. In between all these mouth-watering activities, he travels whenever he can, indulging his particular interest in malt whisky distilleries around the world.

Bob has also been using CPAP therapy for more than 20 years—indeed, he is one of CPAP’s pioneering patients!

We asked Bob about some of the changes he has seen over the past 20 years.

**How was your sleep apnea diagnosed?**

Back in those days doctors didn’t know much about sleep apnea. My wife, who is a nurse, read something about it in the early eighties. I had most of the risk factors—overweight, large barrel chest, short thick neck, and snoring very, very loudly—so she thought it was worth a check-up. I went to the Sleep Clinic at Sydney’s Royal Prince Alfred (RPA) Hospital and saw Dr. Colin Sullivan. I just took myself along; I can’t recall if I even needed a referral, but this was pretty early in the piece and plenty of people just turned up.

**When you first went along to the clinic, what sort of testing did they do?**

Blood gas tests: needles in the wrist that were particularly unpleasant! Then I had two consecutive night sleepovers in the Page Chest Clinic, one night to see how I normally slept and the next night with the monitoring equipment. When I came back, they suggested CPAP.

**What was the early equipment like?**

It took a while to get used to it. My first CPAP was a big square box, and it made a heck of a noise. We’d just added a big dressing room to our bedroom so I’d put the blower out there and run some very long extension hoses through to the bedroom and then shut the door. Even then it was still extremely noisy and I’m sure the neighbors would have heard it.

I had a glue-on mask, one of the very hard ones that you had to attach to your face with silicone glue every night. It took a while and I probably cheated and didn’t seal it as well as I could have. If you had a sensitive nose or skin, it could get very sore during the night and you didn’t get a chance to recover. If it got really bad you would give up for a couple of nights and take your chances. It was awful but I kept with it because I was told if I stopped breathing at night I might not be around in the morning!

Plenty of people I met in waiting rooms at the RPA sleep clinic, cab drivers and the like, couldn’t cope with it at all, and gave up.

**You must have seen a lot of changes. What made the most difference?**

The biggest improvement has been in the masks, which are like chalk and cheese—there’s no comparison at all. I’m now using a Mirage Activa™ mask, after having tried three or four different ones. This one appears to have more flexibility, as I have to sleep on my back because of back problems—I can certainly move much more freely. The materials they make masks from now are just so much softer, retain pressure seal so much better than earlier masks, and they don’t hurt your nose.

The equipment has constantly been upgraded—I’ve probably had six or seven machines since the early eighties. The machines have become quieter in the past five to ten years, which is easier for your partner. I think they put up with a lot in life. My wife used to get very little sleep because of the noise of the old machines, but she figured it was worth it.
You’ve done some interesting traveling in your life. Did you carry your sleep apnea equipment around with you?

In the early days when it was so big and bulky you couldn’t, and later in the eighties I made a trip to Ireland but I didn’t have a machine that had flexible power. By the end of the eighties, I took the first of the machines with flexible power outlets, along with various plugs and a decent extension cord, so I could reach the plug in the hotel room. I’ve had no difficulty traveling with it since then.

What difference has CPAP therapy made to your life?

In the early days I don’t think I felt the after-effects of sleep apnea, but maybe I was conditioned to it. I remember I used to go on trips to the Hawkesbury River for fishing weekends with friends and they always used to give me a wide berth! I did often stop and have a sleep in the car. I remember on a trip to Ireland and Scotland to see malt whisky distilleries and the like, I could only drive in the mornings because I was quite tired in the afternoons.

I think it has been worth persevering. Throughout the centuries, people have died in their sleep, millions of them around the world I’m sure. You know, you’d hear someone say “Uncle Charlie died in his sleep”—well, Uncle Charlie probably had sleep apnea. I’m involved in so many things I am keen to stay around as long as I can!

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**Children and obesity**

- The percentage of overweight children in the US aged 6–11 rose from 6.5% in the 1970s to 15.3% in 2000.¹
- The percentage of overweight adolescents in the US aged 12–19 rose from 5.0% in the 1970s to 15.5% in 2000.¹
- In 1995, there were an estimated 18 million children, under the age of five, classified as overweight around the world.²

Health consequences for obese children include:³

- asthma
- sleep apnea
- high blood pressure
- Type 2 diabetes
- poor mental health—various studies report increased incidences of low self-esteem, loneliness, sadness, and nervousness—leading to smoking and consumption of alcohol in later years.

Recent research articles


**BACKGROUND:** Obesity is a well-known risk factor for obstructive sleep apnea (OSA). Medical therapy is not effective for morbid obesity. Bariatric surgery is therefore a reasonable option for weight reduction for patients with clinically severe obesity. Unrecognized OSA, especially in those patients receiving abdominal surgery, has influenced perioperative morbidity and mortality. The incidence of OSA for patients being evaluated for bariatric surgery has not been previously defined.

**METHODS:** 40 consecutive patients being evaluated for bariatric surgery were examined with a history, physical examination and laboratory data. Polysomnography (PSG) was conducted in all patients regardless of symptoms. **RESULTS:** An obstructive sleep-related breathing disorder (OSRBD) was present in 88% of the patients. OSA was present in 29 of 41 (71%) and upper airway resistance syndrome (UARS) in 7 of 41 (17%). The mean low oxygen desaturation was 84% and continuous positive airway pressure (CPAP) was 10 cm H2O pressure. The majority of the patients were women and mean BMI was 47 kg/m². Patient characteristics failed to predict the severity of OSRBD.

**CONCLUSIONS:** This population of clinically severe obese patients being evaluated for bariatric surgery had an 88% incidence of an OSRBD, 71% with OSA. Appropriate therapy with CPAP perioperatively would theoretically prevent hypoxic complications associated with OSRBD. Providers should have a low threshold for ordering a PSG as part of the preoperative evaluation for bariatric surgery. Empiric CPAP at 10 cm H2O should be considered for those patients who cannot complete a PSG before surgery.


**BACKGROUND:** Obstructive sleep apnea (OSA) is common in morbidly obese patients, with a reported prevalence from 12 to 40%. Preoperative diagnosis of OSA is important for both perioperative airway management and the prevention of postoperative pulmonary complications. BMI has been reported to be an independent risk factor, and has been used recently in scoring systems to help predict OSA. Our hypothesis was that OSA is highly prevalent in patients presenting for bariatric surgery, and that BMI alone is not a good predictor of the presence or absence of sleep apnea.

**METHODS:** A cross-sectional study was undertaken of the last 170 consecutive patients presenting for bariatric surgery in a single surgeon’s practice. Clinical and demographic data were available from our prospective database, and polysomnography results were reviewed retrospectively. Sleep apnea was noted as present or absent, and graded from mild to severe. The patient population was stratified by BMI into severely obese (BMI 35–39.9), morbidly obese (BMI 40–49.9), super-obese (BMI 50–59.9), and super-super-obese (BMI > or = 60). **RESULTS:** OSA had been diagnosed before surgical consultation in 26 of the 170 patients (15.3%). Sleep studies were not available in 7 patients (4.1%). The remaining 137 patients (80.6%) had sleep data available, and 105 (76.6%) had sleep apnea (based on American Board of Sleep Medicine criteria). There was no correlation of sleep apnea with BMI. The overall prevalence of OSA in this cohort was 77% (131/170).

**CONCLUSIONS:** In this large patient cohort, sleep apnea was prevalent (77%) independent of BMI, and most cases were not diagnosed before bariatric surgical consultation. These data support the use of routine screening polysomnography before bariatric surgery.


**BACKGROUND:** The number of weight reduction operations performed for type II and type III obesity is rapidly escalating. Risk of surgery has been infrequently stratified for patient subgroups. The purpose of this study was to identify patient characteristics that increased the odds of a prolonged hospital length of stay (LOS) following open or laparoscopic Roux-en-Y gastric bypass (RYGBP).

**METHODS:** The hospital records of 311 patients who underwent RYGBP in a 6-month period were retrospectively reviewed. Patient characteristics including the presence of significant obesity-related medical conditions were recorded. Analysis was based on intent to treat. Univariate and step-wise logistic regression analysis was used to identify the odds ratio (OR) and adjusted odds ratio (AOR) for predictors of an increased hospital LOS. **RESULTS:** Datasets for 311 patients who underwent RYGBP in a 6-month period were retrospectively reviewed. Patient characteristics including the presence of significant obesity-related medical conditions were recorded. Analysis was based on intent to treat. Univariate and step-wise logistic regression analysis was used to identify the odds ratio (OR) and adjusted odds ratio (AOR) for predictors of an increased hospital LOS. **RESULTS:** Datasets for 311 patients were complete. 159 patients underwent open vertical banded gastro-plasty-Roux-en-Y gastric bypass (VBG-RYGBP) and 152 laparoscopic RYGBP (LRYGBP).
78% of patients were female. Median age was 40 years (range 18–68). Median BMI was 49 kg/m² (range 35–82). 17% of patients had sleep apnea, 18% asthma, 19% type 2 diabetes, 13% hypercholesterolemia and 44% hypertension. Median length of surgery for open VBG-RYGBP (64 minutes) was significantly faster than for LRYGBP (105 minutes). Median length of stay was significantly shorter for LRYGBP (2 days) than open VBG-RYGBP (3 days). Univariate logistic regression analysis identified 6 predictors of increased LOS: open surgery (0.4 OR); increasing BMI (60 kg/m² 0.38 OR; BMI 70 kg/m² 0.53 OR); increasing length of surgery (120 min 0.33 OR; 180 min 0.48 OR); sleep apnea (2.25 OR); asthma (3.73 OR); and hypercholesterolemia (3.73 OR). Subset analysis identified patients with the greatest odds for a prolonged hospital stay: women with asthma (2.47 AOR) or coronary artery disease (8.65 AOR); men with sleep apnea (5.54 OR) or the metabolic syndrome (6.67–10.20 OR); and patients undergoing a laparoscopic operation with sleep apnea (11.53 AOR) or coronary artery disease (12.15 AOR).

CONCLUSIONS: Open surgery, BMI, length of surgery, sleep apnea, asthma and hypercholesterolemia all increased the odds of a prolonged LOS. Patients with the greatest odds of long LOS were women with asthma or coronary disease, men with sleep apnea or the metabolic syndrome, and patients undergoing laparoscopic surgery with sleep apnea or coronary artery disease. Patients at high risk for prolonged hospital stay can be identified before undergoing RYGBP. Surgeons may wish to avoid high risk patients early in their bariatric surgery experience.


BACKGROUND: In the 1970s and 80s it was believed that obstructive sleep apnea (OSA) was primarily a disease of men. The present study was addressed to evaluate the effect of gender and menopause on the prevalence and the characteristics of OSA and on anthropometric, clinical, respiratory, and polysomnographic data in a population of obese individuals. PATIENTS AND METHODS: A total of 230 obese subjects (BMI ≥ 30 kg m²), 148 women and 82 men, aged 16–75 years, were recruited and evaluated for general and anthropometric parameters, respiratory function, sleep-related symptoms, and sleep disorders of breathing. RESULTS: Respiratory disturbance index (RDI) and the prevalence of OSA were lower in women than in men (P < 0.001 and P < 0.001, respectively). Among subjects <55 years, neck circumference, percentage of predicted normal neck circumference (PPNC), waist-to-hip ratio (WHR), PaCO₂, RDI and the prevalence of OSA were lower in female subjects (P = 0.05, P < 0.05, P < 0.001, P < 0.01 and P < 0.01, respectively). BMI, neck circumference, PPNC, WHR, RDI and the prevalence of OSA were higher in postmenopausal compared with premenopausal women (P < 0.01, P < 0.01, P < 0.01, P < 0.01 and P < 0.01, respectively). CONCLUSIONS: Our study demonstrates that (i) the male dominance regarding the prevalence and the severity of OSA disappears in men older than 55 years, and (ii) menopause seems to play a pivotal role in modulating both the presence and the degree of sleep disorder.

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**Calendar of events**

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