

Managing the Care of the Obese Ophthalmic Patient

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OBESITY HAS BECOME A MAJOR HEALTH CONCERN that is rapidly affecting the American population regardless of age, race, gender or socioeconomic status. It has practically become an epidemic. As the average life expectancy increases, so does obesity. Unfortunately, many Americans have accepted obesity as the norm or a trend. We fail to face the reality that obesity is on the rise and we make allowances or excuses for it.

The Trust for America's Health Report states that Mississippi ranks #1 in the nation for having the highest percentage of obese adults. Alabama ranks second and Colorado has the lowest rate of obese adults. However, all states are currently failing to meet the government-mandated weight-reduction goal of 15% by the year 2010.

The lack of exercise, poor eating habits, fashionable plus-size wardrobes, convenience and an era of electronic gadgets have encouraged our acceptance of obesity. There are many factors that can cause obesity. Genetic predisposition is an example. However, there are many things that can be done to reduce the probability of one becoming obese. As health care professionals, we must realize that obesity is a serious medical problem that can lead to mortality. We should become proactive about making viable changes to improve the care of the obese patient.

Definition of Obesity

Obesity is defined as being overweight by 20–30 percent of your ideal body weight (IBW) and severe obesity as being 40 percent over one's IBW. Other factors are taken into consideration when determining IBW, such as gender, age, height and muscular build. To determine your IBW, consider this formula:

- Men with a height of 5 ft. should consider 106 pounds as a reasonable IBW. For each inch over 5 feet add 6 pounds and each inch less than 5 feet subtract 6 pounds.
- Women with a height of 5 feet should consider 100 pounds as your IBW. Add 5 pounds for every inch over 5 feet and subtract 5 pounds for every inch under.

Obesity can be determined by measuring the body mass index, which measures body fat based on the height and weight of the individual. According to the BMI scale:

- Underweight = <18.5%
- Normal weight = 18.5–24.9%
- Overweight = 25–29.9%
- Obesity = BMI of 30 or greater

It is estimated that since 1975 obesity in children ages six to eleven years has increased over 64%. It is believed that 40% of these individuals will become obese adults. America has launched a multimillion-dollar campaign to promote weight-reduction programs. Nevertheless, the overall results have made little impact on the continued increase in obesity.

Purpose of the Project

The purpose of this project is to promote awareness about medical issues and physical limitations that should be considered when providing care to the obese ophthalmic

patient. The standardized plan of care used for most patients may not necessarily be applicable for these individuals. A different treatment regimen must be established and implemented specifically addressing the special needs that they may have. For instance, during a slit-lamp examination it may be difficult to position a 300-pound patient in small or congested spaces where a 120-pound patient can sit comfortably. Most equipment, such as examination tables or chairs, is not designed to accommodate this new generation of obese patients. Some manufacturers are slowly addressing the need to design and produce equipment for the obese patient population. Designing and manufacturing some of these products continues to be a work in progress. The expected release date of specialty items, such as head and neck stretchers for the morbidly obese patient, is estimated to be at least another year away.

In preparation for surgery, the ophthalmic professional must restructure its practice to meet the special needs of the obese patient population. This mindset is reinforced daily as I observe the many obstacles that impede caring for the obese individual. For example, many obese patients are challenged with constant shortness of breath and have difficulty walking short distances or standing for very long. Their physical activity is directly limited by their weight. It is important to write standards and guidelines for the care of the obese patient similar to what has been done for the geriatric, pediatric and handicapped patient. Redesigning healthcare facilities to accommodate their needs is a step in the right direction. The new generation of obese patients is heavier than ever before, and they often have a multitude of related physical problems.

Obesity and the Body's Systems

Perceptive and proactive foresight by healthcare professionals about potential difficulties the obese patient may have throughout the ophthalmic experience will enhance managing this special population. Obesity can result in numerous problems in the body's systems. It is essential to identify and respond to these secondary findings, relative to respiratory, cardiac, gastrointestinal, genitourinary, vascular, endocrine and musculoskeletal systems. Obesity can overwork these systems and cause them to function poorly or possibly fail. There is evidence that shows a direct correlation between proliferative diabetic retinopathy, glaucoma and vitreous hemorrhage, and obesity.

In the respiratory system obesity is a major problem. The lungs are not completely oxygenated, as the airway can be partially obstructed. Excess adipose tissues around the neck and chest may crowd the space surrounding the trachea, impeding air flow. Proper head positioning such as the chin-lift/head-tilt maneuver opens the airway and improves complete inhalation and exhalation of the lungs. Asthma and sleep apnea are extremely common in these patients. Breathing treatments or assistance with increasing the oxygen saturation during procedures and treatments may be necessary.

Poor oxygenation may also affect cardiac output. Obesity can cause the heart to work harder, resulting in elevated blood pressure. One or all of these issues can lead to cardiac arrest or death. It is imperative that we closely monitor the cardiac system in all obese patients undergoing ophthalmic care and treatments.

Gastrointestinal issues such as gastroesophageal reflux disease (GERD), enlarged abdomen and increased pressure on the diaphragm can also pose problems. The patient may be uncomfortable when positioned flat, leaning/bending forward or when asked to take deep breaths. The bulging abdomen can cause crowding and prevent the patient from wanting to sit in an upright position for an extended period. Slightly reclining the chair will make them more comfortable and reduce the compression on internal organs.

Increased abdominal pressure may place excess pressure on the bladder, causing urgency or frequency. Other genitourinary conditions such as renal insufficiency may be related to obesity.

Edema, poor circulation and immobility may affect the vascular system, impeding blood flow. When vascular perfusion is inadequate, the ophthalmic nurse should assess the patient for pressure points, blanching, bruising or warm and tender areas, especially on the lower extremities. Obese patients are at greater risk of developing a pulmonary embolus attributable to poor circulation.

Obese patients are more likely to also have diabetes. Diabetes is the number one blinding disease in working-age Americans. Obesity makes control of the blood sugar level more difficult.

Obesity can cause severe damage to the musculoskeletal system. The excess weight imposed upon the joints, especially in the knees, hips, ankles and spine, can cause irreparable damage. These patients frequently experience pain in these areas and require medication to control it. The constant discomfort in the joints discourages them from exercising or even walking. The lack of exercise contributes to obesity, making this a difficult cycle to break.

The Obesity Awareness Project

In many ophthalmic practice settings the focus is on total eye care. This includes surgery, refractive, laser, clinic, optical, diagnostic testing, hospital, ambulatory surgery centers and research. Obese patients are seen in all these settings daily. Ophthalmology must address bariatrics (the science of providing health care for extremely obese patients) in their practice just as other professions have. Nationally, obesity has been a problem in most clinical areas. Difficulties vary from simple things such as not having an obese blood pressure cuff or scales to accommodate extreme weight.

For this project, we collected data primarily on the problems related to obesity in the surgical setting. Some attention was

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given to office/clinic and laser/refractive settings. The ophthalmic obese patient appears to experience the most difficulty in the operating room because of the time, position and conditions that are required of them during their stay there.

Obese patients need frequent observation for signs and symptoms of distress, such as shortness of breath or cardiac distress. Untoward events have been known to occur spontaneously. One or more body systems can be affected adversely by the demands that obesity places on them.

It is not uncommon for patients with obesity-related health concerns to have unplanned hospitalizations. Obesity-related diabetic complications—cardiac distress, elevated blood pressures and renal insufficiencies—are common and may require ongoing medical attention. Patient compliance and follow-up care are critical to achieving positive outcomes. Obesity is associated with a good deal of comorbidity that can lead to death. It can also cause financial hardship on patients, families, insurance providers and the health care industry.

Pre-Operative and Post-Operative Phases

In surgery it is not uncommon to treat patients weighing 600 pounds or more. Equipment needs for these patients are expensive. Shortages of simple equipment items like blood pressure cuffs, wheel chairs and stretchers are common.

A vast majority of obese patients require that the head be elevated to facilitate breathing and improve cardiac perfusion. They are usually uncomfortable lying for extended periods on the thin stretcher mattresses. Pressure points on the heels, buttocks, elbows and back may become red and irritated. Immobility and weight can contribute to the patient developing deep vein thrombosis (DVT). The enlarged abdomen and/or breast may exert pressure or cause overcrowding of the internal organs. Obese patients with diabetes and elevated blood pressure should be monitored closely for any signs of distress.

Intra-Operative Phase

It is crucial that the obese patient is comfortable during surgery. For patients weighing 400 pounds and above, stretchers that are designed to hold this weight capacity increase comfort. Ophthalmic surgeries are frequently performed on head-neck stretchers that are tapered at the head. It is difficult to find head-neck stretchers that are able to support a weight greater than 400–495 pounds. The shoulders often hang over the base of the stretcher. Additional provisions should be made to support the shoulders and arms.

Placing the stretcher in reverse Trendelenburg position reduces the pressure on the throat and neck. These simple positional adjustments improve the patient's breathing and will reduce intra-abdominal pressure and reflux. More importantly, this maneuver reduces intraocular pressure by shifting the body weight away from the chest, neck and eyes.

All pressure points should be adequately padded. Support should be given to body surface areas that protrude beyond the width of the stretcher (i.e., shoulder, feet, etc.). Placing a foam wedge or an ergonomic pillow under the knees reduces strain on the lumbar spine and abdomen. A gown that is loose fitting around the neck, shoulder, breast or chest enhances comfort. Loosely secured restraints will avoid restricting circulation. Intolerance to excessive heat is common; the customary extra blankets may not be necessary in this population. The need for additional air or oxygen under the drapes increases ventilation, cools, improves air exchange and reduces the buildup of carbon dioxide. It is imperative that during the surgical procedure, the surgeon or assistant refrain from leaning on or placing equipment on the patient. If general anesthesia is used, avoid accidentally displacing or disconnecting the endotracheal tube or ophthalmic infusion lines. Applying pressure to the nose and mouth of a lightly sedated patient can affect their breathing or cause them to jerk and move suddenly.

Post-Operative Care

In the post-operative phase the continuum of care is similar to that in the pre-operative phase. Monitoring vital signs and insuring that the respiratory, cardiac and gastrointestinal systems are functioning properly is critical. Physical activity is limited greatly because of the effects of the anesthetics. Additional support may be required to help them stand or ambulate. Wider space is needed for moving freely to dress or turn.

Other Ophthalmic Practice Settings

In other practice settings, such as office/clinic and laser/refractive departments, some of the same issues exist. The obese patients weighing over 300 pounds can have extreme difficulties when being seated in a standard-size exam chair with arms. The width of the chair may not be comfortable because of the snug fit. Sometimes their feet dangle or fail to rest flat on the foot props of the exam chair. The additional girth from the broad shoulders and abdomen can make it difficult for the examiner to have direct visualization of the eye. Patients have difficulty pulling up closely to the slit lamps and placing their chin securely on the chin strap. The breast or abdominal obstruction may be the number one factor that prevents proper positioning at the slit lamp.

Results and Solutions

Awareness and education are the best approaches to managing the care of the obese ophthalmic patient. Ophthalmic healthcare providers should become knowledgeable regarding necessary adjustments for quality care and optimal outcomes for these patients. An awareness campaign about obesity and the secondary effects on the eyes is in its early stage.

Educating staff about potential barriers that can impede us from properly caring for the obese patient is important. Preparing your facility to accommodate these patients can avoid many problems during exams and treatments. We must insure that nursing staff, technicians and other caregivers are aware of the physical limitations and the potential health risk that obese patients can develop during treatments, exams and surgical procedures. In review, some points to consider are:

- Obesity can be inherent; some causes include endocrine abnormalities and physical limitations that prevent needed activities to properly manage weight.
- The obese patient is entitled to receive care specific to their needs and with dignity.
- In waiting rooms, placing larger chairs and rails for pulling up are useful.
- Handicapped entrances, doors and bathrooms are needed. Facilities need to become “obesity prepared” in every aspect.
- Patients greater than 300 pounds may not be comfortable in non-oversized equipment, for example, exam chairs with arms.
- Slit lamp tables with the cut-away spaces are virtually impossible to accommodate the width of the chest and abdomen.
- Make plans to purchase equipment tables that will allow equipment to move freely and closer to the patient.
- Purchase equipment that is compatible with the obese patient.
- Construct work stations that are wider and are easily accessible.
- Always perform a physical assessment of the patient prior to proceeding with treatments.
- Be aware of breathing or respiratory strain. Position the head in an upright position whenever possible.
- Position the patient for comfort; prevent injuries. Make sure that the patient’s hips, abdomen and shoulders are not pinned against the chair or bed rails.
- Arrange for additional assistance when moving or positioning the patient to prevent injury to the patient and oneself.
- Monitor patients closely for signs and symptoms of distress, such as poor oxygenation, cardiac overload or diabetic crisis.

As ophthalmic caregivers we must consider what impact obesity can have on ocular conditions and diseases. Thorough eye examinations, treatments and surgical procedures are necessary to attain and maintain good vision. We can achieve this by performing a thorough examination and not allowing environmental issues to hamper this process. The surgeon or examiner will have an optimal view of the internal ocular structures if proper positioning is done prior to the exam. Obesity is a concern that should not be ignored, but recognized as a health issue that deprives the eye of functioning to its best potential. Ischemic vascular conditions may potentiate the negative effects of ocular conditions, as well as result in a multitude of comorbidities. Customizing our practices to provide quality ophthalmic care for the obese patient population is warranted. By becoming proactive in managing the care of the obese ophthalmic patient, we can save their eyesight or perhaps even their life.

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CNE TEST

Managing the Care of the Obese Ophthalmic Patient

Please note! The post-tests for the continuing nursing education articles are now posted on the ASORN web site in the Online Education Section. Please go to www.asorn.org to complete the post-test by the December 31, 2010 deadline.

Learning Objectives

- Define obesity.
- Name three common diseases/conditions that may be secondary in the obese patient.
- Describe three specific limitations and needs of the obese patient undergoing ophthalmic surgery and/or examination.

Continuing Education Credits

This activity is provided by ASORN, which is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

ASORN is provider approved by the California Board of Registered Nursing, provider number 11901.

Successful Completion

Successful completion of this activity includes:

- Reading the article
- Submitting the completed post-test for grading
- Achieving a passing rate of 80% or higher on the post-test
- Completing the general evaluation form

Deadline

Continuing education credits and nursing contact hours for this activity expire on December 31, 2010.

Fees

Free for ASORN members (dues must be current at the time the test is submitted) through December 31, 2010. \$20 for Non-Members

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Please allow a minimum of three weeks from date of receipt of post-test to receive your attendance verification certificate. Requests for certificates less than three weeks from the date of receipt should be accompanied by an additional \$10 fee. Replacement certificates are \$10.

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This activity is provided by ASORN, which is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

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This activity has not been submitted for JCAHPO CECs.

For this activity, read the article, submit the completed post-test and general evaluation form **by December 31, 2010**, and achieve a passing rate of 80% or higher on the post-test. Non-members, send your post-test with payment of \$20 (free for members/affiliates through December 31, 2010). This post-test expires on December 31, 2010.

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Objectives

After completing this independent study activity, the participant should be able to:

- Define obesity.
- Name three common diseases/conditions that may be secondary in the obese patient.
- Describe three specific limitations and needs of the obese patient undergoing ophthalmic surgery and/or examination.

Please allow a *minimum* of three weeks from date of receipt of post-test to receive your attendance verification certificate. Requests for certificate less than three weeks from date of receipt should be accompanied by an additional \$10 fee.

Registration Information and Evaluation Response Form

Name _____ Email _____

Address _____

City _____ State _____ Zip _____

Work Phone _____ Home Phone _____ Fax _____

RN# _____ State of Licensure _____ Exp. Date _____

I request: .75 Nursing contact hour

Payment: Check Visa Mastercard CC# _____ Exp _____

Test response: Circle the most appropriate response matching test question number and response number.

- | | | | | |
|------------|------------|------------|------------|-------------|
| 1. A B C D | 3. A B C D | 5. A B C D | 7. A B C D | 9. A B C D |
| 2. A B C D | 4. A B C D | 6. A B C D | 8. A B C D | 10. A B C D |

General Evaluation: Please use the scale below to evaluate this educational activity and objectives. Circle your response. As a result of completing this offering, I am able to:

	Very well	Moderately well	Fairly well	Not at all
1. Define obesity.	4	3	2	1
2. Name three common diseases/conditions that may be secondary in the obese patient.	4	3	2	1
3. Describe three specific limitations and needs of the obese patient undergoing ophthalmic surgery and/or examination.	4	3	2	1
4. The content matches the objectives.	4	3	2	1
5. Independent study was an effective teaching method.	4	3	2	1
6. This course helped me achieve personal objectives.	4	3	2	1
7. The time required to complete this offering (in minutes) and take the test was:	60	75	90	>90

CNE POST-TEST

Managing the Care of the Obese Ophthalmic Patient

1. Pressure points requiring additional monitoring in the obese patient undergoing ophthalmic surgical procedures include
 - A. Heels
 - B. Elbows
 - C. Back
 - D. All of the above
2. Common body parts that protrude beyond the width of the stretcher include all but the
 - A. Shoulders
 - B. Arms
 - C. Hips
 - D. Feet
3. The science of providing healthcare to the obese patient population is called
 - A. Bariatrics
 - B. Obesity Management
 - C. Ideal body weight management
 - D. Body mass index
4. Obese ophthalmic patients seem to have the most challenges during
 - A. Diagnostic testing
 - B. Surgical procedures
 - C. Indirect ophthalmoscopy
 - D. Perimetry
5. Elevating the head of the surgical table improves
 - A. Moving side to side
 - B. Breathing
 - C. Head/neck alignment
 - D. Sitting up
6. This state has the highest incidence of obese adults
 - A. Colorado
 - B. Alabama
 - C. Mississippi
 - D. Arkansas
7. Obesity is defined as being what percent heavier than ideal body weight?
 - A. 5-10
 - B. 10-15
 - C. 15-20
 - D. 20-30
8. What level on the body mass index scale constitutes a diagnosis of obesity?
 - A. 10-20
 - B. 20-25
 - C. 25-30
 - D. >30
9. Since 1975 obesity in children 6-11 years of age has increased by 65%. What percent will likely become obese adults?
 - A. 20%
 - B. 40%
 - C. 50%
 - D. 30%
10. Which body system is listed as a major problem for most obese patients?
 - A. Respiratory
 - B. Renal
 - C. Vascular
 - D. Musculoskeletal