



A PHARMACY CONTINUING EDUCATION PROGRAM

W-F Professional Associates, Inc. 400 Lake Cook Rd., Suite 207 Deerfield, IL 60015 847-945-8050

April 2008 "Men's Health Issues" 707-000-08-004-H01-P



MEN'S HEALTH ISSUES

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Diseases that we consider in this lesson are just a few of the many that impact upon male patients. We will consider others in future lessons. Our goal is to provide useful information that can be shared with patients. This lesson provides 1.25 hours (0.125 CEUs) of credit, and is intended for pharmacists in all practice settings. **The program ID # for this lesson is 707-000-08-004-H01-P. Pharmacists completing this lesson by April 30, 2011 may receive full credit.**

To obtain continuing education credit for this lesson, you must answer the questions on the quiz (70% correct required), and return the quiz. Should you score less than 70%, you will be asked to repeat the quiz. Computerized records are maintained for each participant.

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The objectives of this lesson are such that upon completion the participant will be able to:

1. List causes of obesity.
2. Relate effects of obesity on health.
3. Describe symptoms & causes of BPH.
4. Recognize the etiology & symptoms of ED.
5. Describe the MOA & side effects associated with sildenafil.

All opinions expressed by the author/authors are strictly their own and are not necessarily approved or endorsed by W-F Professional Associates, Inc. Consult full prescribing information on any drugs or devices discussed.

Diseases that we will consider in this lesson are just a few of the many that impact upon male patients. These include: obesity, prostate disease, and erectile dysfunction. Obviously, there are many more, such as: aging, Alzheimer's Disease, diabetes, heart disease, elevated blood pressure, infectious disease(s), nutrition, thyroid disease, exercise & fitness, cancer, and many others. We will save some of these for future considerations.

OBESITY

Obesity is a condition that occurs when natural energy reserve of the body is increasingly converted to excessive body fat. Even though being overweight is recognizable, medically speaking the body mass index, BMI, differentiates between underweight, healthy overweight and obese persons. The BMI is determined by dividing the weight of an individual by square of height. $BMI = \text{kilogram/meters squared (metric)}$, $BMI = \text{pounds/inches squared (U.S.)}$. The National Institute of Health established the following BMI's for adults 20 years of age and older:

- BMI less than 18.5 is underweight.
- BMI of 18.5 to 24.9 is normal weight.
- BMI of 25.0 to 29.9 is overweight.
- BMI of 30.0 to 40 is obese.
- BMI of 40 or higher is severely obese.

When determining obesity the percentage of fat and muscle should be taken into consideration. Women whose body consists of more than 30% fatty tissue and men with more than 20% body fat are considered obese. However, athletes who typically may have a higher BMI than normal are not usually obese. Likewise, the type of adipose tissue should be considered. Visceral fat or central or waist obesity may correlate with cardiovascular disease. Central obesity may be measured by absolute waist circumference which is > 102 cm in men and > 88 cm in women, or by waist hip ratio which is > 0.9 for men and < 0.85 for women. One simple method of determining percent body fat is the skin fold test, in which a pinch of skin is measured to determine the thickness of the subcutaneous fatty tissue.

Even though obesity is on the rise worldwide, the increase in the U.S. has been dramatic. From 1980 - 2000 the percentage of overweight individuals rose from 47 to 61%, and that of obese persons from 15 to 26%. Overweight and obesity is viewed in the U.S. as a serious and growing public health hazard. The National Health and Nutrition Examination Survey conducted during 1999 & 2000 indicated that 64% of American adults are either overweight or obese. Since 1994 the percentage of obese people in the U.S. has increased by 7.6% (one third of all adults). Overweight and obesity among children continues to rise at an alarming rate. Almost 9 million children and teens aged 6 to 19 are overweight. This translates to triple the number from 25 years ago. Obesity is more common among women than men.

Causes of Obesity

Obesity occurs when calorie intake exceeds that which the body uses. The required number of calories varies from one individual to another, depending upon age, physical activity, metabolic rate and presence of disease state. The following are among the main causes of obesity:

CE PRN[®] (ISSN 0199-5006) is owned and published by W-F Professional Associates, Inc. 400 Lake Cook Road, Suite 207, Deerfield, Illinois 60015.

William J. Feinberg, President *CE PRN*[®] is published eleven times per year, monthly, January through November. Subscription rate is \$99.00 per year. Second-Class Postage paid at Deerfield, Illinois 60015 and at additional mailing offices. © 2007 by W-F Professional Associates, Inc. All rights reserved. None of the contents of this publication may be reproduced in any form without the written permission of the publisher.

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April 2008

1. **Sedentary lifestyle:** Lack of physical activity contributes to obesity and increases the likelihood of being overweight as people age. Individuals who are sedentary require less calorie intake.
2. **Diet:** In recent years diet, especially in Western societies, has become high in fats. It has been shown that consumption of high-energy fast-food meals between 1971 and 1995 has tripled, and calorie intake has quadrupled. Complicating factors of meals rich in fat are:
 - a. Fats do not seem to satisfy the hunger reflex as carbohydrates or proteins, and consequently more food is consumed.
 - b. Fats have twice as many calories as carbohydrates and proteins.
3. **Alcohol consumption:** Alcohol can provide added calories during or after meals. For example, one ounce of liquor contributes 80 to 90 calories, whereas a 12 ounce bottle of beer that usually contains 8% alcohol has 150 calories. Alcohol absorption is more rapid than food and is used rapidly as energy, resulting in stored calories as fat. Moreover, alcoholic beverages can act as appetite stimulants.
4. **Genetics:** Genetic and environmental factors can lead to caloric imbalance, resulting in obesity. It is believed that in most individuals, several genes, yet to be identified, may influence weight. The precise mechanism is unclear. It has been postulated that body weight is regulated around a setting that varies from person to person. Individuals with high set point may become obese and losing weight and maintaining weight loss is difficult. One gene that has been identified is the ob gene which is responsible for the formation of leptin, a protein produced by fat cells. Once in the blood, leptin reaches the brain and interacts with the receptors of the hypothalamus, which is responsible for appetite regulation. This interaction results in a decrease in food intake and an increase in calorie utilization. It has been found that mutation of the ob gene causes cessation of leptin production, resulting in severe obesity in mice and in a small number of children. Weight reduction in these cases occurs following the administration of leptin. Obesity frequently occurs in families due to environmental and genetic factors. Likewise, obesity is more common in females of lower socioeconomic status in both the U.S. and developed countries than in women of higher socioeconomic situations.
5. **Overweight in childhood:** It appears that persons who were obese during their infancy and childhood are more likely to become overweight or obese in early adulthood and beyond. New fat cells develop during the weight gaining period of life. Thus, the number of fat cells in an adult, who experienced obesity in early childhood, will be much more than someone whose weight was normal during infancy or childhood. The number of these cells will remain consistent, and weight can only be lost by decreasing the amount of fat in these cells, a most difficult challenge.
6. **Psychological factors:** Stress can lead to over or under eating.
7. **Drug intake:** Some antidepressants, antihypertensives or corticosteroids, may promote weight gain.
8. **Cessation of smoking:** In addition to acting as an appetite suppressant, nicotine tends to accelerate metabolic rate. Once the body is deprived of nicotine, food intake increases and metabolic rate decreases. The net result is an increase in weight.
9. **Medical problems:** Medical causes such as low thyroid function or excess production of hormones by the adrenal gland (Cushing's syndrome) may lead to obesity.

Effects of Obesity on Health

Obesity has been correlated with diseases such as coronary heart disease, type II diabetes, hypertension, osteoarthritis and obstructive sleep apnea. Additionally, a number of complications may be experienced by obese patients. Osteoarthritis, especially in the hips, knees and ankles, is commonly associated with obesity because of the increased weight which may cause abnormal gait, imperfect balance and stress on joints.

Low back pain and fatigue are often encountered. Impaired body heat elimination may occur due to

the small surface area relative to weight, resulting in excessive perspiration. Moisture accumulation in skin folds may lead to skin irritation. Difficulty in breathing and shortness of breath (dyspnea) may occur due to pressure exerted on the lungs by fatty tissue below the diaphragm. Breathing during sleep may become difficult and may stop momentarily but repeatedly (sleep apnea). The increase in size of the patient may exert pressure on the heart causing its enlargement which may trigger congestive heart failure. Location of accumulated fat may increase the risk of causing other diseases. For example, in men, fat has a tendency to accumulate around the waist (apple shaped waist). Abdominal fat has been correlated with high risk of coronary disease, type II diabetes, stroke, hypertension and hyperlipidemia

Finally, obesity may contribute to low self-esteem, psychological, emotional and social problems. In a culture that advocates slimness, obese individuals often encounter prejudice and discrimination.

Treatment

Obesity mostly results from calorie intake that exceeds body needs. Thus, the main objective in obesity treatment is to reduce calorie intake and exercise more in order to burn stored energy. Significant progress has been achieved to assist in weight reduction. Behavior modification and education are often significant pieces of the process. Obesity may be treated surgically and pharmacologically. We will reserve discussion of pharmacological treatment for future lessons.

PROSTATE DISEASE

Benign Prostatic Hyperplasia (BPH) and prostate cancer primarily affect older men. Both of these diseases are rarely encountered in men 30 years of age and younger.

The prostate is a tubuloalveolar gland of the male reproductive system. It is about the size of a walnut and located below the urinary bladder and in front of the rectum. The upper part of the urethra is surrounded by the prostate and can be felt during a rectal examination. The major function of the prostate is to store and produce a clear, slightly alkaline fluid that together with spermatozoa and seminal fluid constitutes semen. The prostate contains smooth muscles that squeeze out the seminal fluid. The alkaline fluid produced by the prostate tends to neutralize the acidity of the vagina thus, prolonging the life span of the sperm.

Prostate secretions contain acid phosphates, prostate-specific antigen (PSA), and a proteolytic enzyme that tends to liquefy the gelatinous semen.

BENIGN PROSTATIC HYPERPLASIA

Benign prostatic hyperplasia (BPH) is a common sign of aging. At puberty, the prostate undergoes a growth spurt and doubles in size. However, its size remains unchanged until about age 25 when a slowly progressing enlargement takes place and continues with aging. In the early stages, men do not notice any symptoms, but by age 45, growth rate is increased. Practically all men 45 years and older experience some degree of prostate enlargement. About 50% of men in their sixties, and as many as 90% in their seventies and eighties, experience symptoms of BPH. It is estimated that treatment of all forms of BPH costs an estimated \$7 billion annually. In the year 2000 there were an approximately 4.5 million visits to physicians for BPH. As the prostate enlarges, it places pressure on the surrounding tissue including that of the urethra, resulting in a significant decrease in the diameter of the canal. Narrowing of the urethra results in preventing the bladder from properly emptying. The prostate may enlarge and constrict the urethra, thus impairing the flow of urine and in extreme cases makes urination impossible. With time, the bladder wall may become thicker and easily irritable. As a result, the urinary wall tends to contract, and the patient will experience the urge to urinate frequently, even though the bladder is only partially filled. This urge may occur at night, resulting in nocturia. In cases

where the blockage is severe, urinary retention may occur. At times the patient may experience urgency, hesitation, intermittency, dribbling, weak urinary stream, and incomplete emptying of the bladder. Because of the failure to fully empty the bladder, urine stagnation may occur, causing urinary tract infection. If the condition is not corrected, the bladder wall becomes weak and loses the ability to empty all the urine it contains. A squeezing pressure may be necessary by the patient to begin the urination process. As a result, urine may be transmitted to the kidneys via the ureter, causing kidney damage. In some instances, hematuria (blood in the urine) may occur.

Etiology

The cause of BPH has not been fully determined. A number of theories have been suggested. The fact that BPH occurs almost exclusively in older men indicates that aging plays a role in this disorder. The observation that men, whose testes were removed before puberty did not develop BPH, led to the conclusion that testosterone is a possible cause. Men produce both the male hormone testosterone and a small amount of the female hormone estrogen. With aging, testosterone secretion diminishes, leaving a higher proportion of estrogen. It has been postulated that estrogen within the prostate stimulates substances that promote cell formation. Testosterone is found in the prostate. Accumulation of DHT in the prostate may stimulate growth of the prostate cells. It appears that men who produce small amounts or no DHT do not develop BPH.

Symptoms

The major symptoms of BPH are associated with urination problems such as:

1. A hesitant, discontinuous, weak urine stream.
2. Dribbling or leaking.
3. Voiding urgency and frequency, the most troublesome of which occur during sleep.
4. Urine retention and straining the bladder can lead to urinary tract infection, bladder or kidney damage, and incontinence.

Diagnosis

In most cases, the patient would be the first to notice the symptoms which he may relate to the physician. When the symptoms are not noticeable, the physician may diagnose the condition following a routine examination.

There are several examinations that can be utilized to assist in the diagnosis of BPH.

1. **Digital Rectal Examination (DRE):** This examination is done routinely by a family physician or a urologist to detect BPH. The physician can determine the size and condition of the prostate following routine rectal exam. An irregular, hard or nodular gland indicates abnormality. This examination, however, cannot distinguish between BPH and prostate cancer.
2. **Prostate Specific Antigen (PSA) Blood Test:** A healthy prostate gland produces a small amount of protein known as prostate specific antigen. Elevated PSA in the blood may indicate the presence of cancer. However, full interpretation of this test and its ability to differentiate between prostate cancer and BPH is unknown.
3. **Rectal Ultrasound:** A probe that is inserted in the rectum emits sound waves at the prostate, which in turn sends back an echo pattern that forms an image of the prostate.
4. **Cystoscopy:** This is an examination that is performed to detect urinary tract and bladder abnormalities. This test also can assist in determining the size of the prostate and the location and magnitude of urinary obstruction.

Treatment

Early treatment of mildly enlarged prostate is often not recommended. About one-third of such cases either improve or subside without treatment. However, regular periodic examination should be conducted to detect any progression. Treatment is recommended in cases where the enlarged prostate may pose health risk or cause bothersome inconveniences. Treatment can be nonpharmacologic or pharmacologic in nature.

Non-pharmacologic Treatment:

This involves the utilization of medical procedures aimed at relieving the symptoms of BPH.

1. **Transurethral Microwave Thermotherapy** utilizes devices that tend to heat and destroy excess prostate tissue. Examples of these devices are Prostatron and the Targis System, both of which were approved by the FDA in 1996 and 1997 respectively. Prostatron is a device that sends carefully regulated microwaves via a catheter to elevate the temperature of certain parts of the prostate to at least 111 degrees. During the procedure, a cooling system is used to prevent damage to the urinary tract. The procedure, which lasts about one hour, tends to reduce frequency and hesitancy and increases the force of the urinary stream. The long-term effects of these procedures have not been fully determined, but it appears that they do not lead to erectile dysfunction or incontinence.
2. **Surgery:** Surgical procedures such as transurethral resection of the prostate, open surgery, and laser surgery aim at removal of prostate tissue that presses against the urethra. Such procedures normally relieve obstruction and other symptoms associated with it.

Pharmacologic Treatment

A number of drugs are used in treating of BPH. They belong to two different pharmacological categories, and are not effective in all cases.

The first group consists of terazosin (Hytrin®), doxazosin (Cardura®) and tamsulosin (Flomax®). These medications are alpha adrenergic blockers that tend to relax the smooth muscle of the prostate and bladder neck in patients with mild to moderate BPH. While terazosin and doxazosin may be used for hypertension, tamsulosin is a selective alpha1 adrenergic blocking agent for the alpha1 receptors in the prostate. The drug is not used for treating hypertension.

Finasteride (Proscar®) is used in BPH therapy and acts by inhibiting 5 alpha reductase, an enzyme that converts testosterone to dihydrotestosterone (DHT) in the prostate gland, thereby reducing the size of the prostate and relieving the symptoms of BPH. The drug also can stimulate hair growth and can be used in treating alopecia.

PROSTATE CANCER

Approximately one in every six encounters this disease. It is responsible for more male deaths than any other cancer except for that within the lungs. This slow growing disease can be life threatening. Its treatment has undesirable side effects such as erectile dysfunction. In the early stages, the cancer is located in the prostate. Certain types may need no or little treatment; whereas, others may spread quickly, especially to bones and lymph nodes. Early diagnosis is necessary for successful treatment. In the beginning stages, prostate cancer is usually asymptomatic, and the patient may become aware of it during routine check ups for PSA. When early symptoms occur, they usually resemble those of BPH: frequent urination, nocturia, difficulty in starting and maintaining urine flow, bloody urine and burning upon urination. Additionally, there may be ED and cause painful ejaculation. When prostate cancer metastasizes, it usually affects the bones, lymph nodes, rectum and bladder.

The precise etiology of prostate cancer is unknown. Risk factors include: age, diet, genetics and life

style among others. Aging appears to be the major risk factor as individuals 45 years old and younger rarely are affected. However, persons in this group may never realize that they are suffering from the disease. It has been reported that when autopsy was performed on males who were in their fifties and died of various causes, prostate cancer was found in 30% of these patients, and about 80% of individuals in their seventies. Certain foods such as those that contain trans fatty acids may increase the risk. The usefulness of lycopene in reducing the risk of the disease is questionable. On the other hand, estrogen found in soybean may have beneficial effects. There are correlations between prostate cancer and the use of drugs. Reports indicate that the intake of aspirin, NSAIDs, and the antilipidemic statins may decrease risk of this cancer. More definitive research, however, is needed on this. Reports revealed that frequent ejaculation may reduce risks of prostate cancer, while other reports do not support this conclusion. Reduction in the intake of red meat and increasing consumption of fiber in the diet are both recommended. It has been reported that eating cauliflower, broccoli, cabbage and mustard may reduce the risk of prostate cancer. Diagnosis of prostate can be achieved through measuring the level of PSA. In general, the higher the level of PSA, the higher the risk of prostate cancer. Recently, the PSA test has come under some scrutiny. Patients must discuss it fully with physicians. The main test that confirms the presence of cancer with almost certainty is the biopsy of the gland. Treatment of prostate cancer can range from observation to surgery and radiation therapy.

ERECTILE DYSFUNCTION

Erectile dysfunction (ED) is probably one of the most common men's health issues. A large number of men experience occasional problems, but its persistence indicates the presence ED. It is defined as the failure to achieve and maintain erection of sufficient rigidity to permit penetration. The terms impotence and ED were historically used interchangeably to denote this disorder. However, the term ED is the most currently used term. It is estimated that there are over 30 million men who experience ED in the U.S. Incidence increases with age. The disease affects about 2.5%, 25%, 55% and 65% of men 40, 65, 75 and 80 years old, respectively. ED is more prevalent in patients who suffer from concomitant diseases. Introduction of sildenafil (Viagra®) in 1998 has propelled ED into a prominent position among men's health concerns. It has prompted men to discuss the disorder more candidly with both physicians and sexual partners.

Etiology

Historically, ED was believed to be due solely to psychological issues. While emotional problems such as sexual performance, anxiety, stress, depression and marital conflicts are important contributing factors to ED, it is now recognized that ED is most often a disorder of organic causes (neurogenic, hormonal, arterial or drug-induced) which account for 70% cases. Parkinson's disease, stroke, hypertension, multiple sclerosis, chronic alcoholism, spinal injury, diabetes (diabetic neuropathy), hormonal abnormalities and the intake of certain medications also often lead to ED. Antihypertensives, antidepressants, antiarrhythmics, antihyperlipidemics, antipsychotics, anticonvulsants, antiandrogens, histamine H2 receptor antagonists, narcotics and NSAIDs are just some drugs that may contribute to ED. Smoking is also an important risk factor. Other causes of ED include: surgical treatment for prostate cancer, bladder removal, urethral stricture, urinary surgery, colon surgery and radiation and testicular damage. In many cases men can have a combination of psychological and organic factors. Although aging may contribute to ED, it is not inevitable. Some men in their 70's and 80's enjoy a healthy sex life. However, a decrease in production of male hormones, which is age related, is a risk factor. What may facilitate the likelihood of this disorder in older men is the increased intake of medications as well as the presence of medical conditions that often accompany the aging process. Persons with poor arterial blood circulation, diabetes mellitus and cardiovascular disease may experience higher incidence of ED than healthy individuals.

Diagnosis

Even though there is no specific test to diagnose ED, physical examination and laboratory tests should be conducted to determine the adequacy of the vascular, neurological and endocrine systems. Tests such as PSA, blood flow in the penis, serum chemistry profile and hormonal screening like thyroid stimulating hormone and testosterone levels may reveal a disease process that could lead to ED. Nocturnal and morning tumescence studies involving measurement of erection episodes that occur during sleep and upon awakening in the morning are helpful diagnostic measures. The presence of an organic disease process may interfere with these processes.

Physiology of Erection and Detumescence

Erection is a neurovascular process that occurs as a result of a delicate interrelationship between physiological vascular and hormonal factors. In addition to the chemical transmitters involved, neural input from the brain is as important. Causation may be from psychogenic stimulation, which originates in the mind, and by reflex, as seen in paraplegics. Following stimulation, the nerve impulses trigger the release of neurotransmitters from the nerve endings and of arterial muscular relaxant factors from penile endothelium that lines the blood vessels. Nitric oxide is a powerful vasodilator. Other released chemicals include vasoactive polypeptide, and prostaglandin E1. Nitric oxide plays an important role in the formation of cyclic guanosine (cGMP) which causes the depletion of intracellular calcium, resulting in relaxation of smooth muscle during erection. Relaxation of the smooth muscles of the arteries and arterioles increases blood flow, thereby causing erection. It has been estimated that the blood volume at this time is about 11 times greater than normal. Relaxation of the smooth muscles also results in entrapment of venous outflow. This further increases the rigidity and duration. Detumescence usually occurs as a result of discontinuation of neurotransmitters release, degradation of the second messenger (cGMP) by the enzyme phosphodiesterases type 5 (PDE-5), or sympathetic discharge during ejaculation. This is followed by contraction of the smooth muscles and reopening of venous outflow, resulting in relaxation.

The major neurotransmitter that triggers the process is nitric oxide. This neurotransmitter activates guanylyl cyclase, which elevates the intracellular concentration of cyclic guanosine monophosphate (GMP). The cyclic (cGMP) initiates a series of events that eventually lead to relaxation of the smooth muscles and to erection. The concentration of cGMP is controlled by the rate of synthesis and degradation by the enzyme PDE-5. In the flaccidity phase, cGMP is broken down to GMP by phosphodiesterase followed by reopening of venous channels, escape of trapped blood, and return of flaccidity. Inhibition of PDE-5 enhances erectile function by increasing the concentration of cGMP in corpus cavernosum.

Treatment

Treatment of ED is determined by the cause(s) responsible for the disorder, as well as age of the patient, mental and physical condition, and tolerance to therapy. In the scope of this lesson, oral therapy will be discussed using sildenafil (Viagra®) as an example.

Sildenafil is indicated for management of ED and not as an aphrodisiac or to improve sexual desire. The drug acts by inhibiting type-5 phosphodiesterase (PDE-5 inhibitor), the enzyme responsible for inactivation of cGMP. Following stimulation, nitric oxide is released from the nerve endings, triggering a rise in cGMP concentration in the glans penis, corpus cavernosum and corpus spongiosum. This rise in the level of cGMP is required for muscle relaxation. Inhibition of type -5 phosphodiesterase will further increase the cGMP level in the penile muscles, which in turn causes relaxation, and increased blood flow, improved erection and rigidity. Sildenafil is well absorbed from an empty stomach, reaching a maximum blood concentration in 30 to 120 minutes. The recommended starting dose is 50 mg taken one hour prior to sexual activity, with a maximum frequency of once daily. Depending on its effectiveness and patient tolerance to side effects, the dose may be

increased to 100 mg or reduced to 25 mg. The drug is metabolized in the liver, and has a half life of approximately four hours.

Side effects include: headache, flushing and weakness. In some rare cases patients experience sudden vision loss attributed to nonarteritic ischemic optic neuropathy. Side effects are encountered mostly in patients who suffer from heart diseases, diabetes, hypertension, cigarette smoking, eye conditions and in individuals over 50 years of age. Even though some men lost vision in one eye after using this drug, it is not clear whether the condition occurred as a result of the drug or to other related factors. The drug should be discontinued if the user experiences vision loss, and a health provider should be consulted.

SUMMARY

The health concerns for men that were discussed in this lesson are common, especially in patients 45 years of age and older. The risk factors of BPH, prostate cancer and ED can be reduced with proper care.

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LESSON EVALUATION

Please fill out this section as a means of evaluating this lesson. The information will aid us in improving future efforts. Either circle the appropriate evaluation answer, or rate the item from 1 to 7 (1 is the lowest rating; 7 is the highest).

1. Does the program meet the learning objectives?

- | | | |
|---|-----|----|
| List causes of obesity | Yes | No |
| Relate effects of obesity on health | Yes | No |
| Describe symptoms & causes of BPH | Yes | No |
| Recognize the etiology & symptoms of ED | Yes | No |
| Discuss the MOA & side effects of drugs used for management of ED | Yes | No |

2. Was the program independent & non-commercial

- | | | | | | | |
|-----------------------|------|---|---------|----|-----------|-----|
| | | | Yes | No | | |
| | Poor | | Average | | Excellent | |
| 3. Relevance of topic | 1 | 2 | 3 | 4 | 5 | 6 7 |

4. What did you like most about this lesson? _____

5. What did you like least about this lesson? _____

Please Select the Most Correct Answer

- | | |
|---|---|
| 1. A neurotransmitter that triggers erection is:
A. Nitrous oxide
B. Serotonin
C. Adrenalin
D. Nitric oxide | 6. Which of these is INCORRECT about BPH?
A. All men 45 & older experience some degree of prostate enlargement
B. Following the narrowing of the urethra as a result of BPH, the bladder wall becomes thicker & irritable
C. Men whose testes were removed before puberty developed BPH at an early age
D. It is believed that estrogen within the prostate stimulates substances that promote cell formation |
| 2. Which statement is CORRECT about diet & obesity?
A. Fats have less calories than proteins
B. Fat satisfies the eating reaction as rapidly as proteins
C. Fat does not stop the eating reaction as rapidly as carbohydrates
D. Food is absorbed faster than alcohol | 7. When prostate cancer metastasizes, it usually affects the bones & lymph nodes.
A. True
B. False |
| 3. All statements are correct about leptin, except:
A. Leptin is protein
B. Leptin is produced by fat cells
C. Reaction between leptin & hypothalamus receptors results in decreased food intake
D. Mutation in Ob gene causes an increase in production of leptin | 8. A BMI of 18.5 to 24.9 indicates:
A. Overweight
B. Normal weight
C. Underweight
D. Obese |
| 4. Nicotine:
A. Acts as an appetite suppressant
B. Acts as an appetite stimulant
C. Tends to reduce metabolic rate
D. Has no effect on metabolic rate | 9. What statement is CORRECT regarding sildenafil?
A. Improves sexual drive
B. Increases erection
C. Must be taken 3 hours before activity
D. Usual dose is 300mg daily |
| 5. Which of the following is NOT a method for diagnosing BPH?
A. DRE
B. Injection of radioactive material
C. Cystoscopy
D. Rectal ultrasound | 10. Sildenafil & other PDE-5 inhibitors may cause:
A. Sudden vision loss
B. Severe urinary retention
C. Apnea
D. Incontinence |

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Program ID #707-000-08-004-H01-P.

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