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First Things First

Millions of men find their sexual encounters less and less satisfactory as they get older due to their inability to achieve or maintain an erection. In the past, this condition was known as impotence. Today, it is more commonly known as Erectile Dysfunction or ED. So let's begin by determining if this is a problem you're having.

The following signs may be gradual or sudden, static or progressive or may not always be obvious:

- Difficulty achieving or maintaining an erection at least once in every four attempts at sexual intercourse and the problem persists for more than one month.
- Morning erections become less frequent and less rigid.
- Erections become weaker or less rigid.
- Achieving an erection takes longer than usual or becomes more difficult in certain positions.
- Maintaining an erection becomes a conscious effort or becomes more difficult.
- Climaxing becomes more rapid or occurs with an incomplete erection.

How Common Is It?

If you have any of the signs of Erectile Dysfunction listed above, you're not alone. Erectile Dysfunction is very common. Although it tends to occur more frequently in men over 40 years of age, it can affect men of all ages. In mid-1992, “The Massachusetts Male Aging Study (MMAS),” the world's largest ED study, concluded that:

- 52% of all men between the ages of 40 and 70 have some degree of ED.
- At least one in ten men cannot achieve an erection at all (complete ED).
- The majority of cases of erectile dysfunction are physical in nature.
- The prevalence of ED increases with age affecting 39% of men at age 40 and 67% of men at age 70.

Improving Sexual Performance

With the introduction of Viagra® in 1998, after years of pent up sexual frustration and disappointment, millions of men burst forth literally from the closet of impotence (also known as Erectile Dysfunction or ED). The message, widely promoted, was that impotence was not a personal failure but merely a physiological problem, not much different from high blood pressure or psoriasis. With most of the shame stripped away, men once too embarrassed to admit sexual inadequacy even to themselves, have shown that they are not only willing but eager to come forth for help. And for most, they do get the help they need – the ability to once again reclaim their manhood and restore their healthy sex life.
The “Little Blue Pill’s” Little Problems.

The “little blue pill” cannot solve all ED (erectile dysfunction) problems and many men have suffered from its side-effects. In fact, a recent research article published by the International Journal of Impotency Research concluded that “More than 50% of the 30 million men who have tried Viagra® haven't gone back.”

Contrary to what the media would lead you to believe, Viagra®, Cialis® and Levitra® aren't the only treatments available for men with ED – and these pills are not the best course of treatment for every patient.

So, if you’re looking to learn more about this condition, the following report will increase your understanding about ED and provide practical knowledge which can help you improve on your sexual health. This report is by no means exhaustive but should be considered a tool, especially for men who have failed to find an ED treatment that works for them.
Understanding Erectile Dysfunction

What is Erectile Dysfunction?

Erectile Dysfunction is defined as the inability to achieve or maintain an erection sufficient for satisfactory sexual intercourse. Statistics have shown that this condition affects at least one in two adult males between the ages of 40 and 70.

Since the successful launch of Viagra®, followed by two other ED drugs that belong to the same class, more men are willing to talk openly about their sexual difficulties. Nonetheless, the topic remains a sensitive one for many.

30-70% of men do not respond to Viagra®, Levitra® and similar drugs. Additionally, at least 15% suffer from undesirable side-effects.

The advent of Viagra®, Levitra® and Cialis® has helped many men restore their sexual function and ability. For others, their hopes have been deflated due to side-effects or lack of efficacy. These men often find it challenging to confront these problems after their initial failure.

Like any other drugs, the above referenced ED medications are not right for every man and are not without risks. It is estimated that between 30-70% of men do not respond to Viagra®, Levitra® and similar drugs. Additionally, at least 15% suffer from undesirable side-effects. For men who fall under this category, there are plenty of alternative treatment options that can be explored.
The “Mechanics” of ED

Understanding the Process of Achieving and Maintaining an Erection

The mechanism for achieving and maintaining an erection is a complex one that involves thought and desire, the higher centers of the brain, hormonal influence, neurological input and eventually a vascular event that occurs against an intact penile structure.

Essential to this vascular event is the complete relaxation of the smooth muscles that make up the penile arteries and the erectile chambers, also called the corpora cavernosa. The end results are an increase in blood flow into the erectile chambers and a complete occlusion of the venous outflow system.

As pressure builds up inside such a sealed system, the erectile chambers become increasingly stiff, resulting in an erection. When the excitement has ended or ejaculation has occurred, the smooth muscles of the penile arteries and the erectile chambers contract, emptying the additional blood, resulting in a flaccid penis.

Generally speaking, the stiffness of an erection tends to reduce with age, like any normal aging process. Additionally, erectile difficulty can be as subjective of a problem as it is a functional one. The occasional failure to achieve or maintain an erection may be acceptable to some men but may not be acceptable to others. When the problem becomes more persistent or when it compromises a healthy sexual relationship, ED is said to exist.

What Causes Erectile Dysfunction?
The causes of ED are often multi-faceted. Modern treatments tend to focus on helping men restore their sexual function and confidence while identifying and treating obvious underlying causes. The causes can be classified as either psychological, physical or both.

Psychological Erectile Dysfunction.
Contrary to popular belief, less than 10% of ED cases are psychological in nature. These are primarily the result of nervousness, lack of confidence, performance anxiety and the like. In response to these situations, the sympathetic nervous system is activated which then causes the blood vessels to constrict. Constriction of penile blood vessels causes reduction of blood flow to the penis in response to sexual stimulation, resulting in erectile difficulties. Other psychological causes may include stress, guilt, sexual boredom, depression, etc.

Psychological erectile dysfunction can be self-perpetuating: each failure reinforces the associated anxiety and frequently leads to a continued failure. Left untreated, psychological ED eventually leads to physical ED due to progressive loss of healthy penile tissue, a condition called disuse atrophy.

Physical (Organic) Erectile Dysfunction.
It is now recognized that about 90% of cases of ED are associated with physical factors, most of which are related to impaired penile circulation, a condition generally referred to as “vascular insufficiency.”
Risk Factors for Developing Physical ED
The penis requires a very healthy blood flow in order to become completely erect. Even a marginally reduced blood flow can cause erectile difficulties. Therefore, the risk factors for ED are primarily vascular risk factors.

They include:
- Diabetes
- Hypertension
- High blood cholesterol and/or triglycerides
- Cardiac diseases
- Smoking
- Arterial sclerosis (age-related thickening and hardening of the arteries)
- Poor overall circulation
- Certain medications

Other physical causes are not as common. They include:
- Hormonal disturbances caused by testicular disease, liver disease or thyroid problems
- Neurological diseases such as multiple sclerosis, stroke, Parkinson’s disease, etc.
- Trauma to the pelvic area experienced during certain types of surgery, e.g. prostate surgery, bowel operation; pelvic radiation therapy or an automobile accident that damages the pelvic structures
- Certain types of medications

Should Erectile Dysfunction Be Treated?
Yes! Like any medical problem, ED should be treated promptly.

That’s true for the following reasons:
- The underlying problem needs to be identified and corrected to prevent further damage.

The sooner ED is diagnosed and treated, the better the outcome.

How Should ED Be Treated?
A Short and Long Term Approach
For many practitioners, a pharmacological agent such as ED pills is first line of therapy. At Boston Medical Group, the therapeutic goal is two-fold:
- Short-term goal: achieve safe and reliable erections when needed using a localized form of treatment, if possible, to avoid systemic complications.
- Long-term goal: improve a man's own erectile function by improving penile circulation and elasticity.

Available treatments include:
- Oral medications
- Injection therapy (ICP)
- Intra-urethral suppositories or MUSE
- Penile prosthesis
- Vacuum suction devices
- Arterial and venous surgeries
- Hormonal replacement therapy
- Sex therapy

Note: ED can affect apparently healthy individuals as well.
Diabetes and Erectile Dysfunction

Prevalence

According to the American Diabetes Association, over 23 million people in the United States have diabetes and 1.6 million new cases are diagnosed among people over the age of 20 each year. While 23% of Americans over the age of 60 have diabetes, juvenile diabetes is also on the rise. It has long been recognized that diabetes is the single most significant risk factor in erectile dysfunction, causing at least 50% of all cases.

It’s been estimated that about 35-75% of men with diabetes will experience at least some degree of ED during their lifetime. Further, diabetic men tend to develop ED 10-15 years earlier than men without diabetes.

As men with diabetes age, ED becomes even more common. Above the age of 50, ED is likely to occur in approximately 50-60% of men with diabetes. Above the age of 70, 95%!

What Causes ED in Diabetic Men?

Diabetes can damage the blood vessels and nerves that control erection, called vasculogenic and neurogenic ED, respectively. Therefore, even if a man has normal amounts of male hormones and the desire to have sex, he still may not be able to achieve a full erection. The nerve damage of diabetes may also cause retrograde ejaculation, a condition where the semen goes into the bladder instead of out through the urethra during ejaculation.

Diabetes and Other Associated Cardiovascular Risks

Diabetic patients tend to develop other cardiovascular risks such as high cholesterol, high triglycerides, hypertension, obesity and coronary artery disease. Coronary artery disease can affect sexual function on its own, but erectile dysfunction is nine times as likely in men who suffer from both coronary artery disease (CAD) and diabetes, than men who have diabetes without the addition of CAD. Erectile dysfunction is so prevalent in men with both CAD and diabetes that it could be considered a risk factor for both. It has been said that if a man is suffering from ED, he should be screened for both CAD and diabetes.
High Blood Pressure (Hypertension) and Erectile Dysfunction

What is Hypertension?
Hypertension, or high blood pressure, is a disease that affects about one in three American adults. It is also a disease that significantly worsens with age. It is estimated that about 70% of men (and women) over the age of 70 require treatment for high blood pressure.

High blood pressure is the most common cause of strokes and heart attacks. The risks of strokes and heart attacks are substantially increased in people with high blood pressure who also have other cardiovascular risk factors such as smoking, high cholesterol and diabetes. Other risk factors include family history of strokes or heart attacks in parents or siblings before the age of 55 years.

What Causes ED in Hypertensive Patients?
Long-standing hypertension may cause endothelial cell injury resulting in the inability of the arteries, arterioles and smooth muscles of the corpora cavernosa to dilate properly. As a result, not enough blood flows into the penis to make it erect. Men with high blood pressure may also have low testosterone levels. Testosterone is the male hormone that plays a big role in sexual arousal. Additional factors such as smoking can add to the problem. Smoking increases blood pressure, damages blood vessels and reduces blood flow throughout the body. Small blood vessels, such as those in the lung and penis tend to be affected first.

Association Between Hypertension and ED
A study published in the Journal of the American Geriatrics Society found that about 49% of men ages 40 to 79 who have high blood pressure have ED.

In another study by Burchardt et al., published in the Journal of Urology in 2000, 68.3% of men (mean age 62.2 years) with high blood pressure had some degree of erectile dysfunction – mild in 7.7%, moderate in 15.4% and severe in 45.2%. Another very recent study by Giuliano et al. also confirmed that 67% hypertensive patients suffered with ED.

Conclusion: ED was more prevalent and more severe in patients with hypertension than the general male population. Another way to view this association is to determine whether men with ED are more likely to have hypertension than men without ED. Sun et al. recently reported that 41% of men with ED had hypertension (versus 19% in age-matched men without ED). Similar results were reported by Seftel et al. who examined 272,325 patients with ED.

Patients with hypertension are more likely to have ED.
Hypertension and Other Cardiovascular Risks

Giuliano et al. found that ED was present in 71% of men with diabetes and 77% of men who have both hypertension and diabetes. Seftel et al. observed that 42% of ED patients had hyperlipidemia, 20% had diabetes and 11% had depression. The authors concluded that ED shared common risk factors with cardiovascular diseases.

Sometimes the Cure is the Problem

High blood pressure by itself can lead to ED. But some drugs used for treating high blood pressure such as diuretics and beta-blockers can actually cause ED as well.

• Diuretics may decrease the force of blood flow into the penis. They may also decrease the amount of zinc in the body which is needed to make testosterone, a hormone that is integral to a man’s sexual function.

• Beta-blockers dampen the response to nerve impulses that lead to an erection. They also make it more difficult for the arteries in the penis to widen and let the blood in. They can make one feel sedated and depressed – and the mind always plays some part in sexual arousal.
Cholesterol and Erectile Dysfunction

High cholesterol is a silent health risk that can be deadly. Thanks to the success of public health education over the last 20 years, most people have learned that abnormal cholesterol levels such as high LDL cholesterol and low HDL cholesterol are a major risk factor for heart disease and stroke. Much less is known, however, about the association between high cholesterol and ED.

Prevalence
Cholesterol levels are precariously high in more than 100 million Americans. Due to its lack of overt symptoms, many men do not realize they have high cholesterol until a blood test is ordered for a general check up or to investigate certain health problems.

What is Cholesterol?
Cholesterol is a waxy, fat-like substance made primarily in the liver (75%) and found in certain foods (25%) such as animal and dairy products, eggs and meat. The body needs some cholesterol in order to function properly. Its cell walls, or membranes, need cholesterol in order to produce hormones, vitamin D, and the bile acids that help to digest fat. But the body needs only a limited amount of cholesterol to meet its needs. When too much is present health problems may develop, depending on which blood vessels are narrowed or blocked.

There are several types of cholesterol:
- “Bad” cholesterol or LDL increases the risk of clogging the arteries. A diet high in saturated fat and trans fat tends to raise the level of LDL cholesterol. For most people, an LDL score below 100 is healthy. But people with heart disease will need to aim even lower; VLDL is a precursor of LDL cholesterol and is also “bad” cholesterol.
- “Good” cholesterol or HDL helps remove bad cholesterol, preventing it from building up inside the arteries. The higher your level of HDL cholesterol, the better your health. Levels above 60 are considered optimal. People with less-than-optimal amounts of HDL cholesterol are more likely to develop heart disease. Eating healthy fats such as olive oil may help boost HDL cholesterol. “Total cholesterol” measures the combination of LDL, HDL and VLDL, a score of below 200 is considered healthy in most cases. People who score in that range have an increased risk of developing heart disease compared to those who score below 200.
- Triglycerides: The body converts excess calories, sugar and alcohol into triglycerides, a type of fat that is carried in the blood and stored in fat cells throughout the body. People who are overweight, inactive, smokers or heavy drinkers tend to have high triglyceride levels, as do those who eat a diet high in carbohydrates. A triglycerides score of 150 or higher puts you at risk for metabolic syndrome, which is linked to diabetes and heart disease.

Effects of High Cholesterol
High cholesterol itself does not cause any overt symptoms. But, over time, too much cholesterol may lead to the buildup of plaque inside the arteries. Known as atherosclerosis, this condition narrows the space available for blood flow, leading to diseases of the organs for which blood supply has been compromised.
- Cholesterol and Coronary Heart Disease. When not enough oxygen-carrying blood reaches the heart, chest pain – called angina – can result. If the blood supply to a portion of the heart is completely cut off by the total blockage of a coronary artery, the result is a heart attack. Heart attacks are usually caused by a sudden closure from a blood clot forming on top of a previous arterial narrowing.
High cholesterol is a silent health risk that can be deadly. Thanks to the success of public health education over the last 20 years, most people have learned that abnormal cholesterol levels such as high LDL cholesterol and low HDL cholesterol are a major risk factor for heart disease and stroke. Much less is known, however, about the association between high cholesterol and ED.

- **Cholesterol and Stroke.** A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain becomes blocked (or bursts). This compromises the flow of blood and oxygen to the brain.

- **Cholesterol and Peripheral Vascular Disease.** High cholesterol has also been linked to peripheral vascular disease, which refers to diseases of blood vessels outside the heart and brain. In this condition, fatty deposits build up along artery walls and affect blood circulation primarily in the arteries leading to the legs and feet.

- **Cholesterol and Diabetes.** People with diabetes tend to have high blood sugar, which attaches to LDL. Sugarcoated LDL remains in the bloodstream longer and may lead to the formation of plaque more easily. In addition, people with diabetes tend to have low HDL and high triglyceride levels, both of which boost the risks of heart and artery disease.

- **Cholesterol and High Blood Pressure.** High blood pressure (hypertension) and high cholesterol also are closely linked. When the arteries become hardened and narrowed with cholesterol plaque and calcium (atherosclerosis), the heart has to strain much harder to pump blood through them. As a result, blood pressure becomes abnormally high. High blood pressure is also an independent risk factor for heart disease.

- **Cholesterol and ED.** High cholesterol and ED are closely associated. The risk of developing ED doubles in men with cholesterol levels above 240 mg/dl compared to the men with cholesterol levels below 180mg/dl.

**Why Does High Cholesterol Cause Erectile Problems?**

- **High cholesterol increases the risk of plaque formation limiting the blood flow to the penis.** The penile arteries are end-arteries and have extremely small lumen and can be blocked easily. This makes it very easy for blood flow to the penis to be compromised, affecting its ability to become erect.

- **High cholesterol can affect the body’s ability to properly release nitric oxide into the blood stream.** This prevents the proper relaxation of penile tissues in order for them to be engorged in blood.

- **High cholesterol can also affect testosterone production.** Testosterone is the chemical that makes a man, a man. Testosterone is produced in the testicles, plays a big role in sending messages of sexual stimulation throughout the body and it also controls a man’s libido or sex drive.

The higher testosterone levels are in your body, the greater your sex drive. High cholesterol can also curb blood flow to the testicles, damaging their ability to produce testosterone.

- **Medication commonly prescribed for treatment of high blood cholesterol called “statins” can also contribute to ED.** Although these medications can lower cholesterol levels and help save lives, many men report them having a negative effect on their erectile function.
**Risk Factors**

Several factors can make it more likely to develop high cholesterol:
- A diet high in saturated fat and cholesterol
- Family history of high cholesterol
- Being overweight

**Cholesterol Busters**

If you have high cholesterol, here are some steps to make it lower:

- **Eat more fiber.** Dietary changes offer a powerful way to fight high cholesterol. The soluble fiber found in many foods helps reduce LDL: whole grain bread and cereals, oatmeal, fruits, dried fruits, vegetables and legumes such as kidney beans all have soluble fiber.

- **Know your fats.** Saturated fats from animal products and tropical oils raise LDL cholesterol. Trans fat not only raises LDL but also lowers “good” cholesterol, HDL. These two “bad” fats are found in many baked goods, fried foods (doughnuts, French fries, chips) margarine and cookies. Unsaturated fats from avocados, olive oil, peanut oil, etc. may lower LDL when combined with other healthy changes in diet. Daily cholesterol limits are 300 mg for healthy people and 200 mg for those at higher risk. One egg has 186 mg of cholesterol.

- **Discover smart proteins.** Meat and full-fat milk offer plenty of protein, but they are also major sources of cholesterol. You can reduce LDL by switching to soy protein such as tofu for some meals. Fish rich in omega-3 fatty acids can also improve cholesterol levels. The American Heart Association recommends eating fish at least twice a week.

- **Maintain a low-carb diet.** There is growing evidence that a low-carb diet may be better than low-fat diets for improving cholesterol levels, according to a two-year study funded by the National Institutes of Health.

- **Lose weight.** Losing weight can help you reduce your triglyceride levels, LDL and total cholesterol. Shedding even a few pounds can also boost your good cholesterol levels. Good cholesterol tends to go up one point for every six pounds you lose.

- **Quit smoking.** When you stop smoking, your “good” cholesterol is likely to improve by as much as 10%. You may be more successful if you combine several smoking cessation strategies. Talk to your doctor about which options are best for you.

- **Exercise.** If you are healthy but not very active, starting an aerobic exercise program could increase your good cholesterol by 5% in the first two months. Choose an activity that boosts your heart rate, such as running, swimming or walking briskly, and aim for at least 30 minutes on most days of the week. It does not have to be a continuous 30 minutes; two 15-minute walks work just fine.

**Treatments**

If high cholesterol runs in your family, diet and exercise may not be enough to get your numbers to where you want them. Your doctor may decide to offer you medications; “statins” are usually the first choice, which block the production of cholesterol in the liver. Other options include cholesterol absorption inhibitors, bile acid resins and fibrates. Certain dietary supplements may also improve cholesterol levels: flax seed oil, fish oil and plant sterols such as beta-sitosterol.

Recent studies have shown that testosterone replacement therapy is quite effective at lowering cholesterol as well. This option has grown to be a favorite because it also improves mood, sexual desire and performance, energy and stamina, muscle mass, bone strength, and reduces body fat.
Coronary Artery Disease and Erectile Dysfunction

A growing body of research has shown that coronary artery disease (CAD) and ED are intimately linked. While ED is often caused by vascular diseases such as CAD, hypertension and diabetes, it often precedes the symptoms of vascular conditions. A man could perceive decreased blood flow to the penis as simply being a weaker erection when in fact that may actually be one of the first indicators of vascular disease.

Evidence

A recent report found that men with ED had poorer scores on exercise tests and other measures of coronary heart disease. They also had evidence of significant coronary artery blockages.

A study conducted at the University of Chicago Hospitals found that the presence of ED was a potent predictor – a strong risk factor – for significant underlying heart disease. In fact, ED is a stronger risk factor than some of the traditional risk factors for CAD like high blood pressure and high cholesterol.

There have been other studies that have shown that men with ED are, in fact, more likely to develop cardiovascular disease in the future.

Another study by the Department of Urology, University Vita e Salute-San Raffaele, Via Olgettina, Milan, Italy cited “a significant proportion of patients with angiographically-documented coronary artery disease have erectile dysfunction and that this latter condition may become evident prior to angina symptoms in almost 70% of cases.” Thompson and his colleagues provided the first substantial evidence linking ED and subsequent risk for heart disease in a December 2005 report in the Journal of the American Medical Association. Yet the connection is not as well recognized among doctors and patients as cardiologists and urologists think it should be.

The Common Thread in CAD and ED: Atherosclerosis

The thickening and hardening of the arteries (Atherosclerosis) is the buildup of plaques in the arteries in different parts of the body. It causes the arteries to narrow and harden, limiting blood flow. Heart disease occurs when you have atherosclerosis in the arteries that supply your heart. Because the arteries supplying your penis are smaller than those supplying your heart, symptoms of atherosclerosis may first show up as erectile dysfunction. Atherosclerosis can also increase the risk of developing other problems, including aneurysm, stroke and peripheral artery disease.

Risk Factors

The following risk factors increase the likelihood that your erectile dysfunction could be a sign of underlying atherosclerosis and heart disease:

- Diabetes – Men who have diabetes are at especially high risk of erectile dysfunction, heart disease and other problems caused by restricted blood flow.
- Age – Younger men with ED are more likely to be at risk for heart disease. Men under age 50 are at especially high risk. In men over age 70, ED is much less likely to be a sign of heart disease.
• Being overweight – Being overweight or obese increases your risk of both heart disease and ED due to atherosclerosis and other reasons.

• High cholesterol – A high level of low-density lipoprotein (LDL, or “bad”) cholesterol can lead to atherosclerosis. Damages arterial lining and accelerates the process of atherosclerosis.

• Smoking – Smoking cigarettes raises the risk of developing atherosclerosis. It also directly affects erectile function.

• High blood pressure – Over time, high blood pressure damages arterial lining and accelerates the process of atherosclerosis.

• Family members with heart disease – Over time, high blood pressure ED is more closely linked to heart disease in men with blood relatives such as a sibling or parent who had heart disease at a young age.

• Depression – There’s some evidence that depression is associated with an increased chance of having heart problems and erectile dysfunction.

**Conclusion**

Both ED and heart disease can be caused by atherosclerosis, the buildup of plaque in the arteries, which restricts blood flow to both organs.

ED may be associated with diabetes, high blood pressure, high cholesterol, and other risk factors for a coronary event that may not have been detected. While ED has traditionally been seen as a secondary complication to heart disease, diabetes, and other vascular illnesses, key findings in various clinical research studies have shown that ED was often present prior to the diagnosis of these medical conditions. Because of this strong association, ED is now being considered an important barometer of a man’s overall cardiovascular health and an early symptom of a more generalized vascular problem. The earlier a man is evaluated for ED, the better his chances of maintaining proper erectile function and cardiovascular health.
Prostate Cancer Treatment and Erectile Dysfunction

Treatment for prostate cancer often results in erectile dysfunction (ED) and over the last two decades, more men are being diagnosed with prostate cancer at a younger age. This article discusses the sexual effects caused by two common prostate cancer treatments, radical prostatectomy and radiation therapy.

Radical Prostatectomy (RP)
Post-operative complications of radical prostatectomy may include:

- Erectile dysfunction
- Retrograde ejaculation
- Absence of orgasm or diminished overall quality
- Orgasmic pain

The causes of ED include:

- Nerve damage
- Arterial injury
- Deterioration of the erectile tissues’ structure and function

After radical prostatectomy surgery, erectile function is better in younger men, those where the cancer was confined to the prostate, and/or those who have at least one nerve preserved. Erectile function will also be better in patients that had normal erections prior to their operations.

The advent of the nerve-sparing procedure, first introduced in 1982, has not proven to substantially reduce post-operative incidences of ED. It appears that preservation of the cavernous nerves does not necessarily mean that the nerve's function will remain intact.

Radiation Therapy
Prostate radiation therapy can cause ED in three ways:

- Arterial blockage can occur due to the development of a condition called endarteritis obliterans and direct damage to the lining of the blood vessels.
- Nerve damage. It has been shown that there is a reduction in the number of erection-inducing nerves in the penis following exposure to low doses of radiation.
- Fibrotic change to the erectile tissue may occur, leading to a condition called venous leak.

The development of ED is determined by the dose of radiation (how much) and field of radiation (how wide). Doses greater than 20 Gy (2000 rads) are frequently associated with large vessel injury.

Typically, patients being treated with radiation for prostate cancer are receiving in excess of 70 Gy. The wider the field of radiation, the less likely blood vessels are to recover. Given the fact that the cavernosal artery is the one that gives rise to an erection, radiation exposure to this system may severely limit blood flow into the penis.
There is a strong body of evidence that suggests men with poor erections after radical prostatectomy should be treated with medications to induce erections early after surgery. The same concept applies to post-radiation therapy.

Radiation specialists have made great efforts over the last two decades to minimize the negative effects associated with radiation, especially with the advent of 3-D conformal x-ray therapy and brachytherapy (seeds therapy). However, some men continue to suffer from post-radiation ED.

Preventative Drug Therapy
In 1997, Dr. Montorsi from Milan, Italy completed the first study looking at early preventive drug therapy for ED. Using penile injection therapy within two months of surgery resulted in a 67% incidence in the return of erectile function compared to 20% in men who had no treatment after surgery.

This study concludes that erections induced soon after surgery can protect the erectile tissues and promote the return of natural erections.

Recommendations
• Prior to undergoing therapy, patients should be counseled regarding all possible sexual side effects.
• Patients should seek evaluation and treatment for erection problems within the first two months of prostate cancer procedures.
• If ED exists post-prostate cancer treatment, patients should begin erectile drug therapy, inducing two to three erections per week. This therapy should be continued for 18 months postoperatively to increase the chances of erectile function returning naturally.
Viagra® Doesn’t Work For Everyone… Not Even Close To Everyone

For many men, the traditional first-line treatment is Viagra® or similar drugs, and when it’s effective, it works wonders. But Viagra® may not be effective for everyone and can even be potentially dangerous, especially in men who take nitrates or have cardiovascular diseases.

A recent research article published by the International Journal of Impotency Research concluded that “More than 50% of the 30 million men who have tried Viagra® haven’t gone back.” Contrary to what the media and public perception would lead you to believe, Viagra®, Cialis® and Levitra® aren’t the only treatments available for men with erectile dysfunction (ED) – and these pills are not the best course of treatment for every patient.

According to Dr. Hossein Sadeghi-Nejad from The University of Medicine and Dentistry of New Jersey: “Viagra often works well for a man who has mild to moderate ED, provided he has no contributing vascular or nerve damage … [Viagra] might not be as helpful for men with certain medical conditions. Only about 50 percent of impotent men with Type II diabetes, which can damage blood vessels and nerves, and approximately 65 percent of impotent men who’ve had a radical prostatectomy are helped by Viagra.”
What Options Do You Have When Viagra® Doesn’t Work?

Intracavernous Pharmacotherapy (ICP)

An extremely effective treatment called Intracavernous Pharmacotherapy (ICP), also known as Intracavernous Injection (ICI), has been available at specialized ED clinics (including Boston Medical) for over 20 years. First introduced by urologists in the early 1980s, ICP is widely recognized as a highly safe and effective method to treat ED and premature ejaculation. Until the advent of popular ED pills in the late ‘90s, ICP was the most common way for men with ED to attain an erection. These days, it is still the preferred method of many physicians and is used especially by men who take nitrates or have other health conditions.

How Does ICP Work?

ICP involves a very small and painless injection of vasodilators into the spongy penile tissue. These vasodilators expand the arteries in the penis and allow for greater blood flow, creating strong and lasting erections. Physicians that use ICP such as Boston Medical Group are able to adjust the levels of vasodilators for each patient depending on their personal condition to achieve the best results possible. ICP results in healthy, natural-feeling erections that can last up to 60 minutes with each treatment application. One notable difference is that ICP-induced erections do not subside after ejaculation, but rather only after the medicine wears off.

“Currently, there are over 500 publications on Intracavernous Pharmacotherapy (ICP) and reports have been made on approximately 250,000 injections administered to more than 20,000 patients. Intracavernous administration of erection inducing agents is the most efficacious and has not yet been surpassed by any other form of therapy.”

For many patients, ICP remains the gold standard for ED treatment due to its favorable outcomes and minimal side-effects.
Important Quotes You Should Know

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- From the Textbook of Erectile Dysfunction
  Culley C. Carson, Roger S. Kirby and Irwin Goldstein

“ICP's total success rate was 94.3% in helping men with cardiovascular diseases who could not use oral medications. ICP is also very popular in elderly men between the ages of 63 and 85.”

- Study by the International Journal of Impotence

“ICP can even help bring back spontaneous erections in men who hadn't experienced them before. Long-term treatment improved the penile circulation, and most men reported an increase in return of spontaneous erections.”

- Study in Urology

“ICP is effective across the board no matter what the cause of the problem. ...Erections were achieved in 97.2% of patients with neurogenic impotence (ED brought on by nerve problems), 81.6% of those with vascular impotence (blood flow-related) and 100% of patients with psychogenic (psychological ED) and hormonal impotence.”

- Study by the World Journal of Urology

“After three years of ICP use over 10.6% of men could have sexual intercourse without an injection and an additional 13.4% [could perform] sometimes without an injection. For men who previously believed their ED was an incurable problem, ICP provides more than a glimmer of hope.”

- Study by the Institute of Urology
The Benefits of ICP

Overwhelming Success Rate
With Boston Medical Group's proprietary formula, ICP works in the majority of patients, even those who have tried this form of treatment elsewhere without success. Men who do not respond to conventional ED pills are often surprised to see how easy and effective ICP can be. ICP can be used without restriction to food, alcohol and/or other medications.

Localized Effects
The medication is applied locally; hence there are usually no systemic side effects.

Ease of Use
ICP is easy to administer, using an auto-applicator, which operates simply with the push of a button.

Reliable and Predictable Erections
The strength of the medication is individually formulated to induce a full erection that lasts approximately 30-60 minutes regardless of a patient's state of mind or the occurrence of ejaculation.

Immediate Results
ICP generally works within a few minutes of application, regardless of age or underlying medical conditions.

Potential Future Improvements of Erectile Function
Return or improvement of spontaneous erections has been reported. Future improvement varies, depending on the underlying health problems and the severity of ED.

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Words of Wisdom
Even though ICP is effective in most men, it may not be effective in men with advanced ED where most of their elastic tissue has been replaced by fibrosis, a common end-result of delayed treatment. The remaining solution would be the insertion of a penile prosthesis, a rather invasive and costly option. For this reason, it is imperative to treat ED as soon as possible to mitigate the impact of the progressive loss of healthy penile tissue.

Additional Benefit of ICP in Men with Premature Ejaculation (PE)
ICP sustains the erection for a predetermined period of time, regardless of the occurrence of ejaculation. A patient can continue with love making to completely satisfy his partner after ejaculation. With longer-lasting erections and sexual contact, men become less and less sensitive to sexual stimulation. Also, the assurance that the erection will not subside after ejaculation helps eliminate performance anxiety, thus reducing the urge to ejaculate. Through the use of ICP, new sexual habits can be formed and ejaculatory control can be improved. Note: If PE is often a symptom of ED. Proper ED treatment can improve ejaculatory control.
How Does a Course of ICP Treatment Lead to Future Erectile Improvement?

As a rule, medical professionals cannot make claims or promise a cure, so instead we focus on optimizing the treatment outcome as a balanced decision between benefits and potential side-effects. ICP on its own is not intended to cure ED, nor does it promise a cure. With proper dosing, it induces a predictable and dependable erection with an extremely high success rate. The observation that many ED patients no longer need ICP after a period of time has provoked many debates. This type of erectile improvement could be the direct result of renewed confidence, psychological progress, actual physical improvement, or a combination of all three.

Here are some ways men see improvement in their sexual function following a course of ICP.

ICP and Psychological Erectile Dysfunction

Men with recent-onset psychological ED still should have their physiological function intact. With repeated successful sexual encounters a man’s self-confidence can be restored and psychological conflicts quelled. Over time, through this course of treatment erectile function tends to improve. Left untreated, psychological ED can deteriorate to physical ED via a process called “disuse atrophy,” which is more difficult to reverse.

ICP and Physical Erectile Dysfunction

The penile tissue is a vascular organ that requires a healthy supply of oxygenated blood to stay supple and responsive to sexual stimulation. When the ability to achieve and maintain an erection is compromised for one reason or another, the supply of much-needed oxygenated blood is reduced. The penile tissue starts to atrophy, losing its normal elasticity and responsiveness to sexual stimulation and erectile function worsens. When fibrosis has predominantly replaced the normal healthy penile tissue, the condition becomes unresponsive to medical therapy and a penile prosthesis becomes the only solution.

A course of ICP that results in erections lasting 30-60 minutes each time can be greatly beneficial to the long-term improvement of erectile function. Each ICP-induced erection helps restore sexual confidence, a psychological gain and provides an opportunity to bring the much-needed oxygenated blood to the penis, a physical gain.

Similar to an exercise program intended to rehabilitate a weakened muscle, a course of successive erectile responses can increase blood flow and penile elasticity leading to overall erectile improvement. The extent of improvement can vary depending on age, adherence to treatment guidelines, severity of dysfunction, presence of concurrent illnesses and other health risk factors. Generally speaking, if a weak dose of ICP results in positive increase in blood flow and an erectile response, the condition is said to be reversible and the prognosis is more and more promising.
You can reduce the risk of developing ED and improve overall health by observing the following guidelines:

- Keep your blood glucose, blood pressure and cholesterol levels close to the target numbers recommended by your healthcare providers.

- Maintain a healthy diet, healthy weight and an active life style.

- Stop smoking. Tobacco use narrows your blood vessels, which can lead to or worsen ED. Smoking can also decrease the chemical nitric oxide which signals vasodilatation and increases blood flow to the penis. Quitting tobacco use will also lower the risks for other health problems including heart attack, stroke, kidney disease and various forms of cancer.

- Limit your drinking. Drinking too much alcohol – more than two drinks a day – can damage your blood vessels and worsen ED.

- Lower your stress levels. Stress can reduce your erectile function. To keep stress under control, evaluate and prioritize your tasks, set realistic goals and expectations for yourself and ask for help when you need it. Try relaxation techniques such as meditation or yoga.

- Get regular exercise. Regular exercise can increase blood flow, improve your mood and energy levels, and reduce stress. If you haven’t exercised for a while, start with something easy, such as a daily walk.

- Fight fatigue. If you are well rested, you’re less likely to struggle with ED. Make sure you get plenty of sleep.
Boston Medical Group is the world’s #1 network of physicians specializing in the diagnosis and treatment of common male sexual health problems including erectile dysfunction, premature ejaculation and low testosterone.

Boston Medical Group has been serving patients for over 13 years and treats an estimated 30,000 men annually. Our goal is to help restore sexual function by using all available and applicable treatment options. Whether it’s oral medications, injection therapy or hormone replacement therapy, and whether it takes one drug or multiple drugs, Boston Medical Group’s physicians tailor each treatment to address a patient’s individual needs and expectations.

Typically, men who come to Boston Medical Group report that they have tried Viagra®, Levitra® or Cialis® without success. Many others have tried multiple herbal supplements or pills touted as a “cure all” with iron-clad promises and guarantees, only to be disappointed later.

At Boston Medical Group, all patients are given a thorough health screening to determine the likely cause of their symptoms in order to determine the correct treatment option. Often, ED is the initial symptom of a more serious health problem such as high cholesterol, atherosclerosis, insulin resistance or hormonal imbalance.

More often than not, a typical patient will be offered a test dose of medication as part of the diagnostic workup which, in turn, will induce an erection within a few minutes. The best treatment option can then be explored and discussed, taking into consideration a man’s underlying health problems and personal preferences. Other health risks are further evaluated and underlying causes can be addressed.

Simply taking an ED pill without being assessed by an experienced physician who specializes in sexual health may allow a serious medical condition to go untreated and worsen.

Good sex means good health. People who have a fulfilling sex life tend to enjoy healthier and longer lives.

To book your risk-free, confidential appointment, call Boston Medical Group today at 877-658-5880 or visit us online at www.BostonMedicalGroup.com.