

# Cancer Association of South Africa (CANSA)



## Fact Sheet on Cancer Treatment and Erectile Dysfunction

### Introduction

Erectile dysfunction (ED) or impotence is sexual dysfunction characterised by the inability to develop or maintain an erection of the penis during sexual activity. A penile erection is the hydraulic effect of blood entering and being retained in the sponge-like structures within the shaft of the penis. The process is often initiated as a result of sexual arousal, when signals are transmitted from the brain to nerves in the penis.

The most important organic causes of erectile dysfunction are cardiovascular disease and diabetes, neurological problems (for example, trauma from prostatectomy surgery), hormonal insufficiencies (hypogonadism) and drug side effects.

[Picture Credit: Erectile Dysfunction]

Psychological impotence is where erection or penetration fails due to thoughts or feelings (psychological reasons) rather than physical impossibility; this is somewhat less frequent but can often be helped. Erectile dysfunction can have severe psychological consequences as it can be tied to relationship difficulties and masculine self-image generally.

Treatment for certain cancers can affect one's sexuality, causing a range of signs and symptoms that can make sex with one's partner more difficult. But that does not mean one cannot have a healthy sex life after cancer treatment. Knowing more about one's cancer treatment and how it may affect sexual function can help one find a solution if problems develop.



### Incidence of Cancer in South Africa

According to the National Cancer Registry (2014) the following number of cancer cases was histologically diagnosed in South Africa during 2014:

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Group - Males 2014	Actual No of Cases	Estimated Lifetime Risk
All males	36 800	1:7
Asian males	930	1:6
Black males	11 079	1:11
Coloured males	4 205	1:5
White males	20 586	1:3

## Erectile Dysfunction (ED)

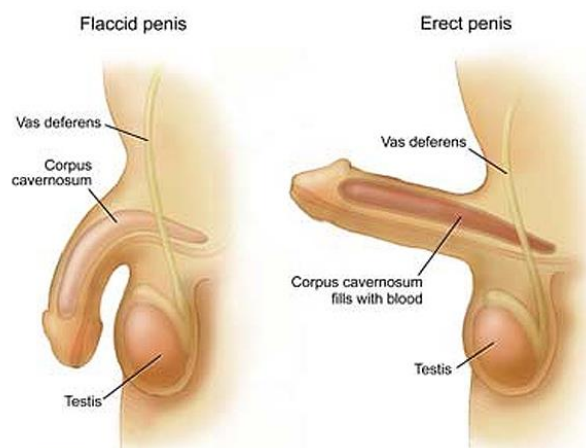
Erectile dysfunction (ED) is the frequent or consistent inability to get or sustain an erection of the penis sufficient to engage in sexual activity or intercourse. While most men occasionally fail to get an erection, or lose an erection prematurely during sexual activity, men with ED suffer from this problem regularly.

## How Erections Work

An understanding of the basic physiology of erection (that is, how an erection works) will allow men to understand not only the causes of erectile dysfunction (ED) but will also lay the foundation for the understanding of ED treatments.

[Picture Credit: Erectile Dysfunction 2]

The penis is an organ with two paired erection chambers (corpora cavernosa), which are filled with spongy erectile tissue (referred to as corporal sinusoids) composed predominantly of muscle. Erection and loss of erection are related primarily to blood flow events regulated by the relaxation and contraction, respectively, of the smooth muscle in the penile arteries and the erectile bodies themselves. Erection is a hydraulic event, regulated by hormones and nerves, which allow increased blood flow into and storage of blood within the erectile bodies leading to an increase in pressure and the development of rigidity (hardness). Penile erection is triggered by one of two main mechanisms: direct stimulation of the genitalia or through stimuli coming from the brain (fantasy, smell, etc).



Upon stimulation, chemicals are released in the brain that cause signals to pass down the spinal cord and outward through special nerves (*nervi erigentes*) into the penis. These nerves release another chemical (*Nitric Oxide*) that causes the aforementioned smooth muscle to relax and blood rushes into the erectile bodies, causing erection.

Anxiety or fear can prevent the brain signals from reaching the level required to induce erection. Medical conditions can block the erection arteries or cause scarring of the spongy erection tissue and prevent proper blood flow or trapping of blood and, therefore, limit the erection. Thus, the erection mechanism is much like a tire; a firm tire is dependent upon a hose that can deliver air in adequate amounts in a speedy fashion and a valve mechanism that holds the air in place. In the penis the hose

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is represented by the erection arteries, which rapidly carry blood into the erectile bodies and the valve mechanism, while complicated in its structure, ensures that the blood is trapped inside the erectile bodies until ejaculation occurs or the sexual stimulus has passed.

### **Erectile Dysfunction: Most Common Sexual Side Effect of Cancer Treatment in Men**

A number of sexual side effects can occur as a result of cancer treatment in men, including:

- Inability to achieve or maintain an erection (erectile dysfunction)
- Difficulty climaxing
- Orgasm without discharge of semen (dry orgasm)
- Weaker, less satisfying orgasms
- Loss of interest in sex
- Pain during sex
- Less energy for sexual activity
- Feeling less attractive

[Picture Credit: Erectile Dysfunction 3]



Not every man with cancer will experience sexual side effects. One's treating doctor can discuss the level of risk one may encounter for a specific type of cancer and treatment.

Cancer can cause sexual side effects if the cancer involves sexual organs. Cancers that do not affect the sexual organs can also affect one's sexuality by changing one's body image, making one feel less attractive, or causing fatigue or depression and decreasing interest in sex.

Sexual difficulties can also result from side effects of cancer and its treatment, such as fatigue, pain or anxiety about the cancer treatment. In addition, depressed feelings about having cancer could cause a loss of libido.

Sometimes emotional factors may have sexual side effects in addition to the physical changes one may be undergoing during treatment.

### **Erectile Dysfunction in Younger Men**

With younger men, psychological problems are the likeliest reason for erectile dysfunction. Tension and anxiety may arise from poor communication with the sexual partner or a difference in sexual preferences. The sexual difficulties may also be linked to the following factors:

- Depression
- Fatigue
- Stress
- Feelings of inadequacy
- Personal sexual fears
- Rejection by parents or peers
- Sexual abuse in childhood

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## Causes of Erectile Dysfunction or Impotence in Men Undergoing Cancer Treatment

Sexuality is a complex, multidimensional phenomenon that incorporates biologic, psychologic, interpersonal, and behavioural dimensions. It is important to recognise that a wide range of normal sexual functioning exists. Ultimately, sexuality is defined by each cancer survivor and his partner within a context of factors such as gender, age, personal attitudes, and religious and cultural values.

There are many possible causes of erectile dysfunction or impotence, including:

- Age - many men, with increased age, will develop an inability to achieve or sustain an erection
- Vascular (blood vessel) problems - because an erection is due to blood flow to the penis, men who have problems with blood flow (blood circulation), or their vascular system, may experience impotence

**Goldberg, D., Andriessen, A. & Gold, M. 2019.**

**INTRODUCTION:** Erectile dysfunction is defined as the inability to achieve and maintain an erection to satisfactorily complete intercourse. Treatment depends on the cause and includes phosphodiesterase 5 inhibitor medications, penile pumps, implants, and surgery. Low-intensity shockwave therapy has been shown to be effective and safe for the treatment of erectile dysfunction.

**OBJECTIVE:** We explored the role of low-intensity radial shockwave therapy for erectile dysfunction treatment in a dermatology and/or medical aesthetic practice setting.

**MATERIALS AND METHODS:** A literature review was conducted on radial low-intensity shockwave technology in use for erectile rejuvenation to explore its positioning, safety, efficacy, tolerability, subject satisfaction, and usability in a dermatology and/or medical aesthetic setting.

**RESULTS:** Low-intensity shockwave therapy was shown to be effective in subjects with organic erectile dysfunction, and the treatment effect was maintained for up to 2 years post-treatment. The treatment is reported to be safe and well-tolerated and have little downtime. Many dermatologists use low-intensity shockwave therapy for the treatment of cellulite and other conditions. This type of treatment is now available for erectile dysfunction and seems an attractive and safe option for subjects with organic vascular erectile dysfunction.

**CONCLUSIONS:** Studies and clinical experience suggest that male erectile rejuvenation using low-intensity radial shockwave therapy seems an attractive option. The treatment can be safely, and effectively, delivered by trained staff as part of the total package that is available to men in a dermatology and/or medical aesthetic practice.

- Other health conditions - Men with diabetes may experience a decreased sensation
- Smoking and alcohol use - in general, may lead to impotence in all populations, regardless of whether or not one is receiving chemotherapy
- Protective barriers - some people who use condoms, or other protective barriers, may experience a decreased sensation during sexual activity
- Medications - such as antidepressants, heart medications, and narcotics may decrease one's ability to have an erection.

### Impotence - Chemotherapy and Cancer Related Issues:

- Prostate cancer, or prostate surgery - whether in the early stages, or advanced, men may experience erectile dysfunction due to nerve damage from the tumour, or surgery to remove the tumour.

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**Castiglione, F., Ralph, D.J. & Muneer, A. 2017.**

**PURPOSE OF REVIEW:** Due to the increasing numbers of radical prostatectomies (RP) performed for prostate cancer, a substantial number of patients are now suffering from post-operative erectile dysfunction (ED). The aim of this study is to summarize the current literature on surgical techniques for managing post-prostatectomy erectile dysfunction.

**RECENT FINDINGS:** The PubMed database was searched for English-language articles published up to Jan 2017 using the following search terms: "prostatectomy AND erectile dysfunction", "prostatectomy AND penile prostheses", and "prostatectomy AND penile implants". All of the studies that evaluated medical treatment were excluded. In the last few decades, the understanding of the anatomy of the male pelvis and prostate has improved. This has led to significant changes in the nerve-sparing radical prostatectomy techniques, with the aim of preserving post-surgical erectile function (EF). In this scenario, the prostate vascular supply and the anatomy of the neurovascular bundles have a central role. Penile prosthesis implantation is considered the third-line treatment option for RP ED patients, and they have been reported to be a very successful treatment with the highest patient satisfaction rate. Considering the failure of penile rehabilitation, and the lack of evidence for accessory pudendal artery (APA) preservation and nerve graft, nerve-sparing surgery and penile prostheses represent, today, the only methods to permanently and definitively preserve or erectile function after RP.

- Testicular cancer - hormonal therapy that may be used to treat the cancer, or following surgery, the man may have difficulty with his sexual organs

**Tal, R., Stember, D.S., Logmanieh, N., Narus, J. & Mulhall, J.P. 2014.**

**OBJECTIVE:** To study the unique characteristics of erectile dysfunction (ED) in a population of men who developed ED after testicular cancer(TC) diagnosis and treatment.

**PATIENTS AND METHODS:** All men treated for TC who presented for sexual function evaluation were included in an institutional database. All men underwent standard evaluation including a history/physical examination, completion of the International Index of Erectile Function (IIEF) questionnaire, testosterone/gonadotropin measurement and penile duplex Doppler ultrasonography (DUS).

**RESULTS:** The study population comprised 76 men whose mean (SD) age was 29 (8) years and of whom 25% were married/had a partner. In all, 39% of the patients had seminoma and 61% had non-seminomatous germ-cell tumour (NSGCT). A total of 66% of patients with seminoma underwent radiation therapy. Of the patients with NSGCT, 79% received chemotherapy, 18% underwent primary retroperitoneal lymph node dissection (RPLND) and 20% underwent post-chemotherapy RPLND. The mean (SD) time before seeking sexual medicine consultation was 12 (7) months after treatment completion, the median (range) number of vascular risk factors was 0 (0-2) and the mean (SD) remaining testis volume was 16 (8) mL. Mean (SD) total testosterone, luteinizing hormone, follicle-stimulating hormone levels were 312 (186) ng/dL, 9 (7) IU/mL, 17 (12) IU/mL. A total of 26% of patients had total testosterone levels <300 ng/dL. In all, 84% of patients complained primarily of loss of erection-sustaining capability and 24% had episodes of transient ED before TC diagnosis. The mean (SD) IIEF erectilefunction domain score was 16 (7). All the patients (100%) had a normal DUS. Mean (SD) peak systolic and end-diastolic velocities were 48 (16) and 1.2 (2.2) cm/s, respectively. A total of 88% of patients responded to phosphodiesterase type 5 inhibitor (PDE5i) use with erections sufficient for penetration, but 12% did not (mean [SD] erectile function domain score 27 [5] vs 17 [6]). There were no differences in haemodynamics between those men with and without hypogonadism.

**CONCLUSIONS:** Men with TC presenting with ED after treatment appear uniformly to have normal erectile haemodynamics, suggesting adrenaline-mediated ED. While the majority of TC survivors with ED respond successfully to PDE5i, a significant minority do not.

- Radiation therapy - Radiation to the pelvic region may cause damage to the nerves

**Gaither, T.W., Awad, M.A., Osterberg, E.C., Murphy, G.P., Allen, I.E., Chang, A., Rosen, R.C. & Breyer, B.N.** 2017.

**BACKGROUND:** Erectile dysfunction (ED) after treatment for prostate cancer with radiotherapy (RT) is well known, and pooled estimates of ED after RT will provide more accurate patient education.

**AIM:** To systematically evaluate the natural history of ED in men with previous erectile function after prostate RT and to determine clinical factors associated with ED.

**METHODS:** We performed a review of the PubMed and Medline, Embase, Cochrane Library, and Web of Science databases in April 2016 according to the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) statement. Identified reports included a measurement of ED before and after prostate RT. Two hundred seventy-eight abstracts were screened and 105 publications met the criteria for inclusion. Only men with known erectile function before RT were included in the analysis.

**OUTCOME:** ED after RT of the prostate.

**RESULTS:** In total, 17,057 men underwent brachytherapy (65%), 8,166 men underwent external-beam RT (31%), and 1,046 men underwent both (4%). Seven common instruments were used to measure ED, including 23 different cutoffs for ED. The Sexual Health Inventory for Men (SHIM) was used in 31 studies (30%). Pooled estimates of SHIM-confirmed ED (score <10-17) suggested the prevalence of ED after RT is 34% of men (95% CI = 0.29-0.39) at 1 year and 57% (95% CI = 0.53-0.61) at 5.5 years. Compared with brachytherapy, studies of the two types of radiation increased the proportion of new-onset ED found by 12.3% of studies (95% CI = 2.3-22.4). For every 10% who were lost to follow-up, the proportion of ED reported increased by 2.3% (95% CI = 0.03-4.7).

**CLINICAL IMPLICATIONS:** ED is common regardless of RT modality and increases during each year of follow-up. Using the SHIM, ED is found in approximately 50% patients at 5 years.

**STRENGTHS AND LIMITATIONS:** The strengths of this systematic review include strict inclusion criteria of studies that measured baseline erectile function, no evidence for large effect size bias, and a large number of studies, which allow for modeling techniques. However, all data included in this analysis were observational, which leaves the possibility that residual confounding factors increase the rates of ED.

**CONCLUSION:** Definitions and measurements of ED after RT vary considerably in published series and could account for variability in the prevalence of reported ED. Loss to follow-up in studies could bias the results to overestimate ED. Gaither TW, Awad MA, Osterberg EC, et al. The Natural History of Erectile Dysfunction After Prostatic Radiotherapy: A Systematic Review and Meta-Analysis. *J Sex Med* 2017;14:1071-1078.

- Anxiety and depression - it is normal to experience anxiety or depression, due to situational factors. Since a large component of sexual health is mental, anxiety and depression may negatively affect one's self-esteem, and prevent one from being able to attain an erection

**Rajkumar, R.P. & Kumaran, A.K.** 2015.

**BACKGROUND:** Comorbid anxiety disorders and depression are commonly seen in men with sexual disorders such as erectile dysfunction(ED) and premature ejaculation (PE). However, they are often

undiagnosed and untreated, and their relationship to sexual dysfunction is complex. This study examines the frequency and correlates of comorbid anxiety and depression in men with ED or PE.

**METHODS:** The case records of 64 men with ED or PE attending a clinic for psychosexual disorders in a general hospital psychiatry unit during the period 2010-14 were reviewed. Information on comorbid anxiety disorders and depression was extracted from these records, and their clinical and demographic associations were analyzed.

**RESULTS:** Eight (12.5%) men had comorbid depressive disorders, and fifteen (23.4%) had anxiety disorders. These disorders predated the onset of sexual dysfunction in the majority of patients. Generalized anxiety disorder was the commonest anxiety disorder. Men with comorbid depression had significantly elevated rates of suicidal ideation or behavior related to their sexual dysfunction, and were more likely to report a lack of libido. Men with pre-existing anxiety disorders were more likely to experience performance anxiety related to sex, and to have PE without comorbid ED.

**CONCLUSIONS:** Depression and anxiety affect a substantial minority of men with sexual dysfunction. Men presenting for the evaluation of ED and PE should be carefully screened for these disorders. The links between anxiety disorders and sexual performance anxiety merit further investigation in this patient group.

- Chemotherapy will often slow down the amount of testosterone produced. Many chemotherapy and cancer treatment options include androgen or testosterone deprivation therapy
- Some medications used to control nausea may affect a man's hormone balance. Hypogonadism is a term used to describe what men are experiencing if they are deficient in certain male hormones, especially testosterone
- The physical side effects of chemotherapy are usually temporary and resolve within one to two weeks after stopping the chemotherapy. However, chemotherapy agents, such as Cisplatin or Vincristine, may interfere with the nerves that control erection leading to possible impotence. Make sure to discuss potential side effects of cancer chemotherapy with the treating doctor or healthcare provider.

### Diagnosing Erectile Dysfunction

Because there are a variety of causes of erectile dysfunction, there are several different tests a doctor may use to diagnose the condition and determine its cause. Only after the cause of ED is determined can it be effectively treated.

Before ordering any tests, the doctor will review the man's medical history and perform a thorough physical exam. The doctor will also "interview" the person about his personal and sexual history. Some of these questions will be very personal and may feel intrusive. However, it is important that these questions be answered honestly. The questions asked may include:

- What medications or drugs are you currently using? This includes prescription drugs, over-the-counter drugs, herbal supplements, dietary supplements, and illegal drugs or alcohol.
- Do you smoke?
- Do you snore at night or have other symptoms of sleep apnoea?
- Have you had any psychological problems such as stress, anxiety, and depression?
- When did you first notice symptoms of ED?
- What are the frequency, quality, and duration of any erections you have had?

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- What are the specifics of the circumstances under which ED first occurred?
- Do/did you experience erections at night or during the morning?
- What sexual techniques do you use?
- Are there problems in your current relationship?
- Do you have more than one sexual partner?
- If you have more than one partner, do you experience ED with one or all sexual partners?

The doctor may also wish to interview the man's sexual partner since the partner may be able to offer insight about the underlying cause(s).

After the examination and interview, which will include the measuring of blood pressure, the doctor may then order any of the following tests:

- Complete blood count (CBC): This is a set of blood tests that, among other things, can detect the presence of anaemia. Anaemia is caused by a low red blood cell count and can cause fatigue, which in turn can cause ED.
- Blood glucose (sugar): This test will help the doctor determine whether the person might have diabetes, which can contribute to ED.
- Liver and kidney function tests: These blood tests may indicate whether ED may be due to the liver or kidneys functioning improperly.
- Lipid profile: This blood test measures the level of lipids (fats), like cholesterol. High levels may indicate atherosclerosis (hardening of the arteries), which can affect blood circulation in the penis.
- Thyroid function test: An overactive thyroid (hyperthyroidism) may contribute to ED by producing an excess of thyroid hormones. Thyroid hormones help regulate the levels of sex hormones, and a deficiency in these hormones may contribute to or cause ED.
- Blood hormone studies: Testosterone levels in the blood may be measured to see if an abnormality is present. If the testosterone level is low, the doctor may recommend testing levels of prolactin, follicle-stimulating hormone, and luteinising hormone.
- Urinalysis: Analysis of urine can provide a wealth of information, including information on protein, sugar, and testosterone levels. Abnormal measurements of these substances can indicate diabetes, kidney disease, or a testosterone deficiency, all of which can contribute to ED.
- Duplex ultrasound: An ultrasound uses high-frequency sound waves to take 'pictures' of the body's tissues. For people with ED, an ultrasound may be used to evaluate blood flow and check for signs of a venous leak, atherosclerosis, or tissue scarring. This test is performed both while the penis is erect (usually induced by an injection of a drug that stimulates erection) and also while it is soft (flaccid).
- Nocturnal penile tumescence (NPT): This test measures a man's erectile function while he is sleeping. Normally, a man will have five or six erections while asleep. A lack of these erections may indicate that there is a problem with nerve function or circulation to the penis. The test can be performed using several different methods, including the snap gauge method and the strain gauge method. The snap gauge method is performed by wrapping three plastic bands of varying strength around the penis. Erectile function is then measured based on which of the three bands breaks. The strain gauge method works by placing elastic bands around the tip and base of the penis. If the penis becomes erect during the night, the bands stretch, measuring the changes in penile circumference. Another method uses a RigiScan electronic device, where loops are placed around the tip and base of the penis, providing continuous monitoring of erectile events.



- Penile biothesiometry: This test involves the use of electromagnetic vibration to determine sensitivity and nerve function. A decreased sensitivity to these vibrations may indicate nerve damage.
- Vasoactive injection: During this test, an erection is produced by injecting special solutions that cause the blood vessels to dilate (enlarge), allowing blood to enter the penis.
- Bulbocavernosus reflex: This test evaluates nerve sensation in the penis. During the test, the doctor will squeeze the head of the penis, which should immediately cause the rectum to contract. If nerve function is abnormal, there will be a delay in response time or absence of rectal contraction.
- Prostate Specific Antigen (PSA): This test may be abnormal due to prostate cancer, enlargement, or infection. These conditions and their treatments may complicate ED.

**McMahon, C.G. 2019.**

“Erectile dysfunction (ED) is a common male sexual dysfunction associated with a reduced quality of life for patients and their partners. ED is associated with increasing age, depression, obesity, lack of exercise, diabetes mellitus, hypertension, dyslipidaemia, cardiovascular disease and lower urinary tract symptoms related to benign prostatic hyperplasia. The evaluation of men with ED requires a full medical and personally and culturally sensitive sexual history, a focused clinical examination, fasting glucose levels, a fasting lipid profile and, in select cases, a total testosterone level and a prostate-specific antigen test. Treatment of ED requires lifestyle modification, reduction of comorbid vascular risk factors, and treatment of organic or psychosexual dysfunction with either pharmacotherapy alone or in combination with psychosexual therapy. Between 60% and 65% of men with ED, including those with hypertension, diabetes mellitus, spinal cord injury and other comorbid medical conditions, can successfully complete intercourse in response to the phosphodiesterase type 5 inhibitors (PDE5i) sildenafil, tadalafil, vardenafil and avanafil. Patient-administered intracorporal injection therapy using vasodilator drugs such as alprostadil is an effective treatment and is useful in men who fail to respond to oral pharmacological agents. Surgical treatment of ED with multicomponent inflatable penile implants is associated with high satisfaction rates. Penile arterial revascularisation and venous ligation surgery are associated with relatively poor outcome results in men with penile atherosclerotic disease or corporal veno-occlusive dysfunction.”

**Living With, Coping With, and Managing Erectile Dysfunction (ED)**

Coping with ED – ED takes more than a physical toll. The emotional impact the condition can have on a man and his partner can be just as difficult. It is common for men with ED to feel anger, frustration, sadness, or lack confidence. However, the condition can be treated. The first step in addressing concerns about ED is to be honest with oneself, one’s partner, and one’s doctor. Once ED has been brought out into the open, coping with it as one goes through treatment will be easier and less stressful. Communication is essential to a successful diagnosis and treatment, as well as, helping one’s partner understand one’s feelings.

While being treated for ED, it is important to be patient with progress and keep in mind that everybody is different and that a treatment that might work for one person may not work or be appropriate. It is also important to know that the chosen treatment may not work the first time or may not work every time.

For some couples, sex therapy may be necessary to help the man and his partner cope. It may also help to hear from some men who have ED and learn about their experiences.

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Erectile Dysfunction during Sex – It is good to get men talking about their sexuality. But being sexual is different than having an erection.

This focus on performance, robs men and their partners of the opportunity to deepen their relationships - and their sexuality. The sexual needs of adolescents are different than those of adults. Yet by making erections the be-all and end-all of sex, grown men are retreating to adolescent sexual values.

"Having an erection does not mean one is being sexual. Being sexual comes from inside one's sense of oneself. One can be sexual, one can feel sexual, and one can behave sexually without an erection. A penis is not the only part of a man's body that can be used sexually.

There is a distinction between genital behaviour and sexual behaviour. Mistaking one for the other leads to dishonesty and dissatisfaction. One can behave genitally whether feeling sexual or not. Women *and* men can fake it. Lots of men get an erection, penetrate, and lose the erection and pretend they have had an orgasm because they want to be perfect. They do not say, 'Hey, I didn't have an orgasm but maybe next time. Being near you is enough'.

Research has found that physical problems do not lie at the heart of most men's sexual problems. It is psychological distress associated with not measuring up rather than physiological problems that causes most sexual dissatisfaction. For many, many men - maybe most - problems with sex are due to ignorance, anxiety, and inability to communicate with their partners. Sexual dysfunction is often the inevitable result of the effort to attain perfection.

Erectile Dysfunction: Maintaining Intimacy - Dealing with ED can be difficult on a relationship, but, sexual intercourse is not the only way to be intimate with a partner. There are sexual and non-sexual ways to remain close. Here are some tips.

Talk about feelings: Sharing the way one feels about each other can make a couple to be closer. Open dialogue with a partner about each other's needs and concerns helps to overcome barriers to a healthy relationship.

Participate in common interests: Hobbies, sporting activities, or volunteer activities can bring couples closer together when they share interests.

Make time to be alone together: Try taking a bath together, sharing a candlelight dinner, taking a walk, or just holding each other in bed.

Experiment with alternative sexual techniques: Learn new sexual techniques that can bring pleasure without intercourse. Many bookstores carry books on alternative sexual practices.

Talk to a sex counsellor: If ED is straining a relationship, consider seeking care from a professional therapist.

And finally, have fun trying new and different techniques, positions, accessories, etc. There is hope for ED, and one can have a fulfilling and satisfactory sex life. Enjoy!

Depression and Erectile Dysfunction (ED) - It is not uncommon for men with (ED) to feel angry, frustrated, sad, or even unsure of themselves. Such feelings, if not dealt with, may eventually lead to depression

Depression that accompanies ED is treatable. The first step in overcoming depression is to be honest with oneself, one's partner, and one's doctor. After depression has been brought out into the open, coping with it will be easier and less stressful.

Depression is an illness marked by persistent sadness, feelings of hopelessness, and a pessimistic outlook. The most common symptoms of depression include:

- Low self-esteem
- Loss of interest in formerly pleasurable activities
- Fatigue
- Changes in appetite
- Sleep disturbances
- Apathy



[Picture Credit: Erectile Dysfunction 4]

Depression affects the way one feels about oneself and the way one thinks about life. People who are depressed cannot simply "pull themselves together" and get better. Without treatment, symptoms of depression can last indefinitely. Appropriate treatment, however, can help most people who suffer from depression get back on track.

If one has ED and thinks he may be depressed, he should not suffer in silence. Depression is not a sign of personal weakness. There is no single test that can diagnose depression; however, there are certain patterns that doctors look for in order to make the diagnosis. As a result, the doctor will ask several questions. Be honest with answers so that proper care can be provided.

Treatment for depression may include medication, psychotherapy (talk therapy), or a combination of both.

Antidepressants: Many different drugs, including Prozac, Zoloft, Elavil and Welbutrin, are used to treat depression. Some antidepressants can worsen ED, so be honest with the doctor about depression so that he or she can prescribe an appropriate treatment.

Talk therapy: During therapy, a licensed and trained care professional helps individuals identify and work through issues related to ED and depression. Types of talk therapy include couples therapy, individual therapy, and group therapy.

**Myers, C. & Smith, M. 2019.**

**BACKGROUND:** Erectile dysfunction (ED) and premature ejaculation (PE) often have underlying musculoskeletal abnormalities. Despite this, traditional management has focused on pharmaceutical prescription.

**OBJECTIVE:** To investigate the efficacy of pelvic floor muscle training in treating ED and PE.

**DATA SOURCES:** A computerized literature search of CINAHL<sup>®</sup>, Cochrane, InFormit, Ovid Medline, Pedro, and Scopus (from inception until January 2018) was conducted of type of dysfunction and

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intervention. Secondary search strategies included Medical Subject Headings expansion, hand searching of conference abstracts, key authors, reference lists and forward citation searching via Web of Science.

**STUDY SELECTION:** All studies where participants were males greater than 18 years with ED or PE, with no history of neurological injury or previous major urological surgery were included.

**STUDY APPRAISAL:** Two independent reviewers assessed methodological quality using the Crowe Critical Appraisal Tool. Disagreements between reviewers were resolved by consensus.

**RESULTS:** Ten trials were included for review. Among the measures of ED, all trials showed comparative improvement and cure rates in response to treatment. Within PE outcomes, the majority of trials showed comparative improvement rates, with a greater range in overall cure rates in response to treatment. Training protocols varied significantly in overall therapist contact, concurrent interventions, intervention length, training frequency and intensity.

**LIMITATIONS:** The included studies were of low to moderate methodological quality with discrepancies in reporting. Study heterogeneity was not conducive to data pooling.

**CONCLUSION:** Pelvic floor muscle training appears effective in treating ED and PE; however, no optimal training protocol has been identified.

### Non-Surgical Treatment of Erectile Dysfunction (ED)

The first line of therapy for uncomplicated ED is use of oral medications known as phosphodiesterase-5 inhibitors (PDE-5):

- sildenafil citrate (Viagra®),
- vardenafil HCl (Levitra®),
- tadalafil (Cialis®)

Men with ED take these pills before beginning sexual activity and the drugs boost the natural signals that are generated during sex, thereby improving and prolonging the erection itself. The medication works by relaxing the muscle cells in the penis allowing for better blood flow and production of a rigid erection. These medications are often effective, and nearly 80% of men show improvement once they begin use. The drugs are effective regardless of race and age. Although studies have shown these medications can be used by heart patients, men taking nitrates should speak with their physician before use to understand the possible drug interactions or effects on their other health conditions. The side effects of PDE-5 inhibitors are mild and usually transient, decreasing in intensity with continued use. The most common side effects are headache, stuffy nose, flushing and muscle aches. In rare cases, sildenafil can cause temporary blue-green shading of vision. There is no long-term risk and decreases as the amount of the drug in the body decreases. It is important to follow the medication's instructions in order to get the best results. Tests have shown 40 percent of men who do not respond to sildenafil will respond when they receive proper instruction on the medications use.

[Picture Credit: Erectile Dysfunction 5]

For men who do not respond to oral medications another drug, alprostadil, is approved for use in men with ED. This drug comes in two forms: injections that the patient places directly into the side of the penis and an intraurethral suppository.



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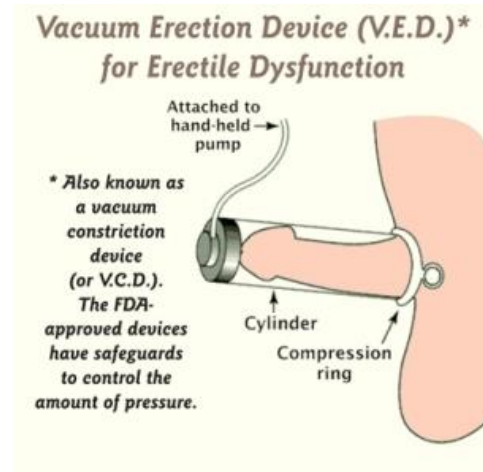
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Success rates in achieving a firm erection useful for sexual intercourse with self-injection can reach 85 percent. Modifying alprostadil to allow intraurethral delivery avoids the need for a shot, but reduces the likelihood of successful treatment. The most common adverse effects of alprostadil use are a burning sensation in the penis and a prolonged erection lasting over four hours, sometimes requiring medical intervention to reverse the erection.

For men who cannot, or do not wish to use drug therapy, an external vacuum device may be acceptable. This device combines a plastic cylinder or tube that slips over the penis, making a seal with the skin of the body. A pump on the opposite end of the cylinder creates a low-pressure vacuum around the erectile tissue, which results in an erection. To keep the erection once the plastic cylinder is removed a rubber constriction band goes around the base of the penis, which maintains the erection. With proper instruction, 75 percent of men can achieve a functional erection using a vacuum erection device.

[Picture Credit: Vacuum Erection Device]



Some men who have severe penis tissue degeneration do not respond to any of the treatments listed above. While this is a small number of men, they usually have the most severe forms of ED. Patients most likely to fall into this group are men with advanced diabetes, men who suffered from ED before undergoing surgical or radiation treatment for prostate or bladder cancer and men with deformities of the penis called Peyronie's disease. For these patients

reconstructive prosthetic surgery (placement of a penile prosthesis or 'implant') will create an erection, with patient satisfaction rates approaching 90 percent. Surgical prosthetic placement normally can be performed in an outpatient setting or with one night of hospital observation. Possible adverse effects include infection of the prosthesis or mechanical failure of the device.

**Trost, L.W., Munarriz, R., Wang, R., Morey, A. & Levine, L. 2016.**

**INTRODUCTION:** The field of sexual medicine is continuously advancing, with novel outcomes reported on a regular basis. Given the rapid evolution, updated guidelines are essential to inform practicing clinicians on best practices.

**AIM:** To summarize the current literature and provide clinical guidelines on penile traction therapy, vacuum erection devices, and penile revascularization.

**METHODS:** A consensus panel was held with leading sexual medicine experts during the 2015 International Consultation on Sexual Medicine (ICSM). Relevant literature was reviewed and graded based on Oxford criteria to develop evidence-based guideline and consensus statements.

**MAIN OUTCOME MEASURES:** The development of clinically relevant guidelines.

**RESULTS:** Penile traction therapy is a viable therapy to modestly improve penile length as a primary therapy, before penile prosthesis placement in men with decreased penile length or after surgery for Peyronie's disease. It also might have a role in the acute phase of Peyronie's disease but has inconsistent outcomes in the long-term phase. Vacuum erection devices are effective in creating an erection satisfactory for intercourse, even in difficult-to-treat populations. They also might be used in the post-prostatectomy setting to maintain penile length but have insufficient evidence as a penile rehabilitation therapy. For vasculogenic erectile dysfunction, men with suspected arterial insufficiency can be evaluated with penile Duplex Doppler ultrasonography and confirmatory

angiography. Penile revascularization procedures have consistently demonstrated benefits in very select patient populations; however, inadequate data exists to suggest the superiority of one technique. Men with vascular risk factors are likely poor candidates for penile revascularization, although veno-occlusive dysfunction and age are less significant. Therapies for treating primary veno-occlusive dysfunction are not recommended and should be reserved for clinical trials.

**CONCLUSIONS:** Since the prior ICSM meeting, multiple developments have occurred in external mechanical devices and penile revascularization for the treatment of erectile and sexual dysfunction. Sexual medicine clinicians are encouraged to review and incorporate recommendations as applicable to their scope of practice.

### In Summary

Chemotherapy does not often cause erectile dysfunction, though it may affect desire for sexual activity. One's desire may fluctuate over the course of treatment. Hormone therapy, a common treatment for prostate cancer, can lead to a loss of desire for sex, erectile dysfunction and difficulty achieving orgasm, which tends to develop slowly over the first few months of hormone therapy.

Since this is a common concern after cancer treatment, remember that one's healthcare provider has most probably seen many patients with similar problems. One should not hesitate to discuss these concerns with one's healthcare provider. There are treatments to help individuals restore and maintain erections. One's healthcare provider can determine if the treatment is appropriate, and the likelihood whether one will benefit from a specific treatment.

These treatments may include the following:

- **Vacuum Constrictive Devices (VCDs):** This is a pump that one places over the penis. As air is pumped out of the cylinder, blood is drawn into the penis to produce an erection. A ring slides over the base of the penis to keep the blood in the tissues to maintain an erection for up to half an hour.
- **Oral Medications:** A number of oral medications are now available to help men attain and maintain an erection. These medications include Viagra®, Cialis®, and Levitra®.
- **Penile Injections:** Medications may be injected into the side of the penis, which promote blood flow. The most common drug used for injection is Prostaglandin E1 (Caverject®). The medication typically needs to be adjusted to the correct dose based on how long the erection is maintained.
- **Muse System:** This system also utilises Prostaglandin E1. Instead of an injection, a small suppository is placed into the urethra (opening in the penis where urine & semen exit) using a specialised applicator.
- **Penile Prosthesis (Implants):** There are various types of penile prostheses, which a man can consider. Some are malleable rods that are placed in the penis. Most men now utilise a type of inflatable prostheses, which can be inflated and deflated as needed.
- **Sex Therapy:** This is recommended for patients with anxiety based erection problems. Typically the patient and his partner are both involved in the therapy sessions.

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- **Lifestyle interventions:** such as weight loss, exercise, and smoking cessation, may also help.

Each type of treatment has its own advantages, disadvantages and side effects. If one is experiencing erectile dysfunction, one should discuss the pros and cons of each treatment option with one's healthcare provider. If one is experiencing ED, one may want to see an urologist (a doctor trained in the care of 'male' genitals), who can offer treatments for erectile dysfunction and other sexual concerns.

### **Erectile Dysfunction Supplements, Devices, Pornography Use, and Experimental Therapies**

There are quite a variety of erectile dysfunction supplements, devices, and experimental therapies with associated claims. Individuals should discuss these with their treating physicians prior to making use of any of them.

#### ***Erectile Dysfunction Supplements***

**Balasubramanian, A., Thirumavalavan, N., Srivatsav, A., Yu, J., Hotaling, J.M., Lipshultz, L.I. & Pastuszak, A.W.** 2019.

**INTRODUCTION:** Erectile dysfunction supplements (ED-Ss) are featured on online marketplaces like Amazon.com, with dedicated pages and claims that they naturally treat ED. However, their efficacy and safety are largely unknown, limiting the ability to counsel patients regarding their use.

**AIM:** To evaluate the highest rated and most frequently reviewed ED-Ss on Amazon.com to facilitate patient counseling regarding marketing myths, ingredient profiles, and evidence for product efficacy and safety.

**METHODS:** The Amazon marketplace was queried using the key term "erectile dysfunction" with default search settings and ranking items based on relevance. The top 6 ED-S products identified on September 29, 2018, were reviewed based on price, ratings, reviews, manufacturer, and ingredients. Consumer reviews were categorized using subtopics within the International Index of Erectile Function (IIEF) questionnaire to better understand ED-S efficacy and then reanalyzed following filtration of untrustworthy comments using ReviewMeta.com, a proprietary Amazon review analysis software.

**OUTCOMES:** Quantitative and qualitative evaluation of ED-S products sold on Amazon.com.

**RESULTS:** The top 6 ED-Ss had an average of  $2,121 \pm 1,282$  reviews and a mean rating of  $3.92 \pm 0.42$  stars. A total of 21 ingredients were identified in these ED-Ss. Ginseng, horny goat weed, L-arginine, and tongkat ali were the most popular ingredients included in the analyzed products. Our literature review identified 413 studies involving the 21 identified ingredients, of which 59 (16%) involved human subjects. Among these 69 human studies, only 12 (17%) investigated supplement ingredients individually and reported improvement in ED. Analysis of top-ranked customer reviews from the first 2 pages of reviews for each supplement revealed differences in IIEF scores before and after ReviewMeta.com filtration. After filtration, we observed a 77% decrease in reviews reporting improved erection strength, an 83% decrease in reviews reporting improved ability to maintain erection, a 90% decrease in reviews reporting increased sexual satisfaction, an 88% decrease in reviews reporting increased enjoyment with intercourse, and an 89% decrease in reviews reporting increased erection confidence.

**STRENGTHS & LIMITATIONS:** Study strengths include a novel approach to ascertaining consumers' perceptions and satisfaction with ED-Ss and practical summary information that clinicians can provide

to patients. Limitations include selection bias, the small number of supplements analyzed, and the proprietary nature of the Amazon review analysis software.

**CONCLUSIONS:** Our investigation revealed that human studies evaluating the efficacy of ED-S ingredients are limited and have yielded no definitive findings of the effects on ED. Patients considering ED-S use should receive appropriate counseling, given the prevalence of disingenuous reviews and the ready availability of Food and Drug Administration-approved drug therapies. Balasubramanian A, Thirumavalavan N, Srivatsav A, et al. An Analysis of Popular Online Erectile Dysfunction Supplements. *J Sex Med* 2019;16:843-852.

### Sex Aids

**Miranda, E.P., Taniguchi, H., Cao, D.L., Haid, G.M., Jannini, E.A. & Mulhall, J.P.** 2019.

**BACKGROUND:** Although sex aids have been used in clinical practice for ages, the scientific literature assessing their application in men with sexual dysfunction is limited.

**AIM:** To summarize medical literature regarding scientific uses of the most common sex aids in men with sexual dysfunction and assess their clinical applicability.

**METHODS:** An extensive literature review was performed with regard to the use of sex aids in sexual medicine. Our search included journal articles, books, and guidelines in different databases: Embase, PubMed, and Cochrane. The key words were "sex aids," "sex toys," "pornography," "lubricants," "constriction bands," "dildos," "vibrators," "vacuum devices," "external penile devices," and "sex swings" were searched. Date of last search was December 4, 2018.

**MAIN OUTCOME MEASURES:** We assessed the utility of sex aids in men with sexual dysfunction and formulated recommendations for clinicians.

**RESULTS:** Various sex aids are available for men with sexual dysfunction. We present a comprehensive review of the most common sex aids currently available: pornography, lubricants, constriction bands, dildos, vibrators, vacuum devices, external erectile support devices, and aids to positioning. We discuss their indications, outcomes, precautions, and complications.

**CLINICAL IMPLICATIONS:** This review is intended to provide sexual medicine practitioners and academics an overview of sex aids for men with sexual dysfunction for use in both clinical practice and research.

**STRENGTHS & LIMITATIONS:** This is a compilation of scientific data for a topic that has broad application in sexual medicine and yet has been poorly addressed in the scientific literature. Because of the lack of sufficient data and the heterogeneous nature of different sex aids, a systematic review could not be performed.

**CONCLUSION:** Having a comprehensive understanding of the sexual dynamics of individuals and couples combined with the appropriate integration of sex aids may have a positive effect in the treatment of male sexual dysfunctions. Miranda EP, Taniguchi H, Cao DL, et al. Application of Sex Aids in Men With Sexual Dysfunction: A Review. *J Sex Med* 2019;16:767-780.

### Pornography

**Grubbs, J.B. & Gola, M.** 2019.

#### **INTRODUCTION:**

Despite evidence to the contrary, a number of advocacy and self-help groups persist in claiming that internet pornography use is driving an epidemic of erectile dysfunction (ED).

#### **AIM:**

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The present work sought to explore whether mere pornography use itself and self-reported problematic use of pornography are related to ED, both cross-sectionally and longitudinally.

**METHODS:**

A series of 3 samples of sexually active men who also used pornography were collected: a cross-sectional sample of undergraduate men in the United States (n = 147), an online sample of men derived from a larger sample that was matched to U.S. nationally representative norms (n = 297), and a 1-year, 4-wave longitudinal sample of adult men derived from an online convenience sample (Mechanical Turk: time 1, n = 433; time 2, n = 223; time 3, n = 202; time 4, n = 196). Pearson correlations and cross-sectional structural equation models were conducted in each sample. Latent growth curve analyses were conducted in the longitudinal sample.

**MAIN OUTCOME MEASURE:**

The primary outcomes of interest were cross-sectional and longitudinal reports of erectile functioning as measured by the International Index of Erectile Functioning 5.

**RESULTS:**

Across all 3 samples, there was evidence of a positive, cross-sectional association between self-reported problematic use and ED, but no consistent association between mere use itself and ED. In our longitudinal sample, there were correlations among baseline pornography use, baseline self-reported problematic use, and prospective ED at times 2-4; however, latent growth curve analyses demonstrated no significant relationships between any pornography-related variables and trajectories of ED.

**CLINICAL IMPLICATIONS:**

These results suggest that among non-treatment-seeking pornography users, self-reported problematic use likely is associated with concurrent reports of ED, but that the links between these variables are not directional or causal in nature.

**STRENGTH & LIMITATIONS:**

This work is the first work to systematically examine the links between self-reported problematic use of pornography and ED, and it did so in a variety of samples, using both cross-sectional and longitudinal methods. Even so, the work relied exclusively on self-report methods, and did not control for medical covariates that may be related to the experience of ED.

**CONCLUSION:**

In conjunction with prior literature, we conclude that there is little or no evidence of an association between mere pornography use and ED, consistent evidence of an association between self-reported problematic use and ED cross-sectionally, and no evidence of causal links between any pornography variables and ED. Grubbs JB, Gola M. Is Pornography Use Related to Erectile Functioning? Results From Cross-Sectional and Latent Growth Curve Analyses. *J Sex Med* 2019;16:111-125.

**Medical Disclaimer**

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#### Erectile Dysfunction

<http://www.fpnotebook.com/legacy/Uro/Impotence/ErctIDysfnctn.htm>

#### Erectile Dysfunction 2

<http://www.menstoolkit.com/erection-101/>

#### Erectile Dysfunction 3

<http://www.fpnotebook.com/legacy/Uro/Impotence/ErctIDysfnctn.htm>

#### Erectile Dysfunction 4

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<http://www.cancer.gov/cancertopics/pdq/supportivecare/sexuality/HealthProfessional/page1>

#### **OncoLink**

<https://www.oncolink.org/support/sexuality-fertility/sexuality/erectile-dysfunction-after-cancer-treatment>

#### **Prostate Cancer Foundation**

[http://www.pcf.org/site/c.leJRIRORepH/b.5836625/k.75D7/Erectile\\_Dysfunction.htm](http://www.pcf.org/site/c.leJRIRORepH/b.5836625/k.75D7/Erectile_Dysfunction.htm)

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<http://www.menscosmo.com/causes-and-treatment-options-for-sexual-dysfunction-in-men/>

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