

Erectile dysfunction



Author: Dr Murali M R
*Dept of Psychiatry, JSSMC,
 JSSAHER, Mysuru, Karnataka*

“Erectile dysfunction(ED) can be defined as the inability to attain and or maintain penile erection sufficient for satisfactory sexual performance. Prevalence of ED increases with age, ranging from 10% in men below 40 and >50% in men above 70. Most common cause for ED in young population is mainly due to psychological factors like depression, anxiety, stress and relationship problems. Most cases of ED in older population have organic aetiology like cardiovascular disease, hypertension, diabetes, metabolic syndrome, hypogonadism and other medical comorbidities. Many drugs were prone to cause ED including antihypertensive drugs, psychotropic drugs and others. Difference between organic ED and psychogenic ED

Characteristics	Organic ED	Psychogenic ED
Onset	Gradual	Acute
Course	Constant	Varying
Non coital erection	Poor	Good
Circumstances	Global	Situational

After an individual got aroused by sexual desire, paraventricular and medial preoptic nuclei of the hypothalamus sends signal to the S2-S4 sacral plexus of spinal cord. From sacral plexus through parasympathetic parasympathetic nerves signal reaches cavernosal nerves and then to penis. Cavernosal nerve terminals releases Nitric oxide which stimulates the production of cyclic guanosine mono phosphate(cGMP) when it enters the smooth muscles. cGMP activates protein kinase G, which opens potassium channels and closes calcium channels. Low intracellular calcium causes the intracavernosal smooth muscle tissue to relax, increasing arterial flow with simultaneous veno-occlusive activity. This results in a rigid erection with minimal blood flow into or out of the corpora once the erection is established. When penile phosphodiesterase degrades cyclic GMP, the corporal smooth muscle contracts again, and the process reverses. Pathology from any of the above processes can result in erectile dysfunction.

Evaluation of patient with ED

1. There are no specific tests required for the initial evaluation of ED. Routinely prescribed investigations are
2. Complete blood count
3. Liver and renal function tests
4. Lipid profile
5. HbA1C to rule out diabetes
6. Testosterone levels if features of hypogonadism are present
7. Thyroid function tests

Other optional testing includes

1. Nocturnal penile tumescence test – which measures the frequency, tumescence (circumference changes), duration, and maximal rigidity of nocturnal erections. Men with purely psychogenic ED will typically demonstrate normal NPT tracings, while those with organic problems will show abnormal nocturnal erectile activity

2. Penile duplex Doppler ultrasound measures arterial vascular flow and checks for cavernous veno-occlusive dysfunction (venous leak)

Management

- Lifestyle modifications
- Increased physical activity
- Switching to a Mediterranean diet or nutritional counseling
- Stopping smoking, drugs, and alcohol
- Gaining reasonable control of diabetes, lipids, and cholesterol

L-arginine is an amino acid. Supplemental L-arginine increases nitric oxide synthase levels, theoretically improving erection function

Oral phosphodiesterase-5 inhibitors (PDE-5 inhibitors), such as sildenafil and tadalafil, are usually the first-line treatment of ED. PDE-5 inhibitors act by decreasing the degradation of cyclic GMP via phosphodiesterase inhibition, which increases the relaxation of cavernosal smooth muscle and intracavernosal arterial blood flow.

Other treatment includes

- External vacuum devices
- Intraurethral prostaglandin E1 (alprostadil)
- Intracavernosal Injections with prostaglandin E1
- Penile prostheses are a surgically invasive treatment typically offered when all other, less intrusive measures fail or are otherwise unacceptable