



# What is varicocele?

Varicocele is a condition in which the veins in the spermatic cord of the scrotum become dilated. This leads to blood reflux into the testicles and an increase in the scrotal temperature, resulting in the production of free radicals.

### What are the possible problems with varicocele?

Varicocele can cause infertility by affecting both the quantity and quality of sperm. It may also lead to a reduction in testicular size and cause hypogonadism, a condition characterized by low testosterone levels.

### How common is varicocele and what are the risk factors?

Varicocele is a congenital condition that typically manifests in adolescence or adulthood. It affects approximately one in six adult men and is more common in first-degree relatives, suggesting a hereditary link. In men with trouble fathering a child, varicocele is present in about 35% of cases. In men who have fathered a child but are struggling to have more, it is present in 80% of cases. Intense physical activity or weight-lifting do not cause varicocele but may exacerbate it.

### What are the symptoms of varicocele?

Varicocele can cause scrotal pain or discomfort, but it is often a silent condition. Some patients may feel or see something abnormal in the scrotum, like a “bag of worms,” which refers to the dilated veins.

### How is varicocele diagnosed?

The classic method for diagnosing varicocele is a physical examination of the scrotum. During this examination, the doctor can feel the dilation of the veins. If present, the varicocele is ranked in grades I, II, or III based on its size. The doctor may ask the patient to perform a Valsalva maneuver (forceful exhalation of air) to assess the size of the varicocele. Other tests, such as scrotum ultrasound, can also aid in diagnosing blood reflux in the veins. Varicocele can occur on the left side only, right side only, or both sides, with most cases being bilateral or left-sided.

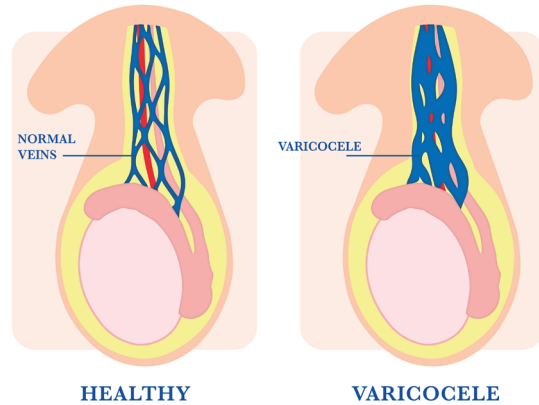
### What are the treatments for varicocele?

Treatment is usually indicated for men with palpable varicocele and infertility. Treatment options include surgical and radiological intervention. Surgery involves removing or tying off the dilated veins and can be done with or without microsurgery. Radiological treatment consists in blocking the blood vessels using embolization or sclerotherapy agents. The goal of surgical and radiological treatment is to stop blood reflux in the spermatic veins. Both treatments are generally safe with few complications, with microsurgical varicocele repair being considered the best

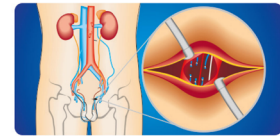
Varicocele is a condition characterized by dilated veins in the spermatic cord causing increased scrotal temperature and blood reflux to the testicles, leading to the production of free radicals.

Varicocele is common in men with infertility, affecting sperm quantity and quality; there is also a link between varicocele and hypogonadism, a condition characterized by low levels of testosterone. Varicocele is diagnosed or ruled out with a physical examination of the scrotum by the urologist. Scrotum ultrasound can also aid in diagnosing blood reflux in the veins.

### ENLARGEMENT OF THE VEINS IN THE SCROTUM



Treatment is usually indicated for men with palpable varicocele and infertility. The treatment options include surgical and radiological intervention. Surgery is the most common treatment method and involves removing or tying off the dilated veins with or without the use of microsurgery.

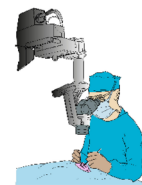


### The benefits of varicocele treatment may include:

- Increase the probability of natural conception
- Improve the success of assisted reproduction techniques
- Improve the chances of retrieving testicular sperm in azoospermia cases
- Eliminate/alleviate testicular pain
- Improve testosterone production



The earlier the treatment, the better, as varicocele can worsen over time. Microsurgical varicocele repair is the best treatment option for men with infertility due to its accuracy and lower risk of complications.



option due to its accuracy and lower risk of complications. Stopping venous reflux often lead to an improvement in semen parameters and fertility. The earlier the treatment, the better, as varicocele can worsen over time and reduce the man’s fertility. If left untreated, varicocele can also decrease testosterone levels, affecting quality of life and sexual function.

**CONFLICT OF INTEREST**

Esteves SC reported personal fees from Merck KGa, Medea, and Event Planet outside the submitted work.

 **Esteves, SC**

<https://orcid.org/0000-0002-1313-9680>

**Int Braz J Urol. 2023; 49: 525-6**

**REFERENCES**

1. Hamada A, Esteves SC, Agarwal A. Varicocele and Male Infertility - Current Concepts, Controversies and Consensus. Springer Briefs in Reproductive Biology. 2015; XV-107.
2. Esteves SC, Cho CL, Majzoub A, Agarwal A (Eds). Varicocele and Male Infertility: A Complete Guide. 1st ed., Springer Cham 2019.
- 3.

---

Submitted for publication:  
April 09, 2023

---

Accepted after revision:  
May 03, 2023

---

Published as Ahead of Print:  
May 30, 2023

**Sandro C. Esteves, MD, PhD**  
Av. Dr. Heitor Penteadó 1464,  
Campinas, SP, 13075-460, Brazil  
E-mail: s.esteves@androfert.com.br

---

*The IBJU Patient Page is a public service of IBJU. The information and recommendations on this page are appropriate in most instances. Still, they are not a substitute for medical diagnosis. For specific information concerning your medical condition, IBJU suggests you consult your urologist. This page can be downloaded and photocopied noncommercially by physicians and other health care professionals to share with patients.*