

## How useful is a physical exam in diagnosing testicular torsion?

### Evidence-based answer

It's useful, but imperfect, in ruling out testicular torsion (strength of recommendation [SOR]: **C**, expert opinion). The cremasteric reflex or a nontender testicle usually excludes testicular torsion, but case reports have noted the opposite to be true (SOR: **C**, case series). An abnormal testicular lie can help establish the

diagnosis, but occurs in fewer than 50% of cases (SOR: **C**, case series). Other findings are less reliable (SOR: **C**, case series).

The standard of care for diagnosing testicular torsion relies on studies beyond the physical examination (SOR: **C**, expert opinion).

### Evidence summary

Several studies have contrasted physical examination findings associated with testicular torsion with findings related to epididymitis and torsion appendix testis. Neither the presence nor absence of any particular physical examination sign excludes the diagnosis of testicular torsion.

#### The cremasteric reflex often rules out testicular torsion

A consecutive case series evaluated 245 boys, newborn to 18 years of age, with acute scrotal swelling. None of the 125 subjects who had an intact cremasteric reflex had ipsilateral testicular torsion. The cremasteric reflex was absent in all 56 subjects with testicular torsion.<sup>1</sup> An absent cremasteric reflex in boys with acute scrotal swelling had a sensitivity of 100% (95% confidence interval [CI], 91%-100%), a specificity of 66% (95% CI, 59%-72%), and a likelihood ratio of a negative test (presence of a cremasteric reflex) of 0.01 (95% CI, 0.001-0.21).

A retrospective study reviewed the records of 90 hospitalized patients, 18 years or younger, who were discharged with a diagnosis of testicular torsion, epididymitis, or torsion appendix testis. The cremasteric reflex was absent, and testicular tenderness present, in all 13 patients with testicular torsion. The presence or absence of other physical exam findings—such as abnormal testicular lie, tender epididymis, and scrotal erythema or edema—didn't exclude testicular torsion (**TABLE**).<sup>2</sup>

#### But cremasteric reflex and testicular torsion can coexist

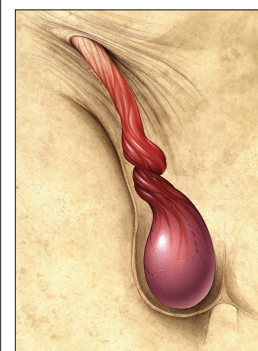
Isolated case reports have demonstrated the presence of the cremasteric reflex with an eventual diagnosis of testicular torsion.<sup>3,4</sup> All of these studies were limited by a small number of patients and their retrospective nature.

#### Recommendations

When evaluating patients suspected to have testicular torsion, the European

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### FAST TRACK

**Neither the presence nor absence of any particular physical examination sign conclusively rules out testicular torsion.**

TABLE

**The patients all had testicular torsion,  
but how helpful were the exam findings?**

PHYSICAL FINDING	SENSITIVITY (95% CI)	SPECIFICITY (95% CI)	LR+ (95% CI)	LR- (95% CI)
Absent cremasteric reflex	96% (73%-100%)	88% (79%-93%)	7.9 (4.3-14.5)	0.04 (0.003-0.62)
Tender testicle	96% (73%-100%)	38% (28%-49%)	1.6 (1.3-1.9)	0.09 (0.006-1.46)
Abnormal testicular lie	46% (24%-70%)	99% (94%-100%)	72 (4-1215)	0.54 (0.33-0.88)
Tender epididymitis	23% (1%-50%)	20% (12%-30%)	0.29 (0.11-0.78)	3.95 (2.29-6.8)
Isolated tenderness (superior pole of testis)	4% (0%-27%)	83% (73%-90%)	0.21 (0.01-3.28)	1.17 (1.01-1.35)

CI, confidence interval; LR+, likelihood ratio of testicular torsion if the physical finding was present; LR-, likelihood ratio of testicular torsion if the physical finding was absent.

Adapted from: Kadish HA, et al. *Pediatrics*. 1998.<sup>2</sup>

## FAST TRACK

**Radiologic evaluation should be undertaken if the diagnosis is in question and the performance of imaging studies will not significantly delay treatment.**

Society for Pediatric Urology (ESPU) recommends looking for absence of a cremasteric reflex and abnormal testicular position.<sup>5</sup> The ESPU notes that “in many cases it is not easy to determine the cause of acute scrotum based on history and physical examination alone.”<sup>5</sup> The society recommends using Doppler ultrasound as an adjunct to the history and physical.

*UpToDate* notes that “the diagnosis of testicular torsion can be made clinically,” but states that “radiologic evaluation (a color Doppler ultrasound or nuclear scan of the scrotum) should be undertaken if the certainty of the diagnosis is in question and the performance of imaging studies will not significantly delay treatment.”<sup>6</sup>

The American College of Radiology recommends color Doppler ultrasound (CDU) or radionuclide scrotal imaging (RNSI) to evaluate testicular perfusion. The group notes that “although some authors still suggest immediate surgical exploration in patients with a strong clinical impression of testicular ischemia, if either CDU or RNSI is readily available and can be performed within 30 to 60 minutes of the request to simultane-

ously prepare an operating room, there is ample evidence that fewer patients with infection will be operated on.”<sup>7</sup> ■

## References

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