

# What is the Ureteral Course and Anatomy?

## Worksheet

The ureter runs retroperitoneally from the renal pelvis, down the posterior abdominal wall over psoas major, crosses the pelvic brim at the common iliac vessel bifurcation, and enters the bladder obliquely at the trigone, narrowing at the ureteropelvic junction, the pelvic brim, and the ureterovesical junction.

## Questions

1. Which of these is NOT one of the three ureteral constrictions?

- A) Ureteropelvic junction
- B) Pelvic brim
- C) Renal papilla
- D) Ureterovesical junction

2. The ureter crosses which vessels at the pelvic brim?

- A) Renal vessels
- B) External iliac vessels
- C) Common iliac vessels
- D) Femoral vessels

3. In females, the ureter passes \_\_\_\_\_ the uterine artery.

- A) superior to
- B) inferior to
- C) anterior to
- D) lateral to

4. Why does the ureter enter the bladder obliquely?

- A) To speed up urine flow
- B) To prevent vesicoureteral reflux
- C) To reduce its length
- D) To connect with the urethra directly

5. A patient has severe flank pain radiating to the groin, and imaging shows a stone lodged at the pelvic brim. Why does this site commonly trap stones?

6. During a hysterectomy, the surgeon must identify the ureter near the uterine artery. Where exactly does it run relative to the artery?

7. A stone passes from the kidney and becomes stuck just before entering the bladder. Which constriction is this?

8. Define: What are the three constrictions of the ureter?

9. Define: Which constriction is the narrowest?

10. Define: What muscle does the abdominal ureter run along?

## Answer Key

1. C) Renal papilla - The renal papilla is part of the kidney's collecting system, not a ureteral constriction.
2. C) Common iliac vessels - The ureter crosses the bifurcation of the common iliac vessels as it enters the pelvis.
3. B) inferior to - 'Water under the bridge' - the ureter runs inferior to the uterine artery.
4. B) To prevent vesicoureteral reflux - The oblique tunnel through the bladder wall acts as a one-way valve, preventing urine reflux into the ureter.
5. The ureter has three natural narrowings: UPJ, pelvic brim, UVJ The pelvic brim is where the ureter crosses the common iliac vessels, a physiological narrowing Stones frequently lodge here because the lumen is narrower than elsewhere
6. In the female pelvis, the ureter passes inferior to the uterine artery This relationship is remembered as 'water (ureter) under the bridge (uterine artery)' Surgeons must identify and protect the ureter before ligating the uterine artery
7. The three constrictions in order are UPJ, pelvic brim, UVJ The site just before bladder entry is the ureterovesical junction (UVJ) UVJ is also the narrowest of the three constrictions
8. Ureteropelvic junction (UPJ), pelvic brim (crossing the common iliac vessels), and ureterovesical junction (UVJ).
9. The ureterovesical junction (UVJ), the most common site for stone impaction.
10. Psoas major, on the posterior abdominal wall.

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