



# Intrarenal pressure during urological procedures

## The need for intrarenal pressure (IRP) measurement

Fluid irrigation during flexible ureteroscopy is necessary to improve visibility and distention of the upper urinary tract. This can lead to elevated IRP with potential post-operative complications.<sup>1,2</sup> Yet, there is currently no reliable way to measure IRP.

“IRP increase remains a neglected predictor of upper tract endourology complications and its intraoperative monitoring should be taken into consideration. Further research is necessary, to quantify pressures generated during upper tract endourology, and introduce means of controlling them.”

**Tokas T, Herrmann TRW, Skolarikos A, et al.**  
*World Journal of Urology*<sup>2</sup>

“Finding a simple, efficient, and precise way to monitor intra pelvic pressure seems essential. The high pressures are worrisome, and they are difficult to estimate by visual recognition alone.”

**Doizi S, Letendre J, Cloutier J, et al.**  
*World Journal of Urology*<sup>3</sup>

## Complications of elevated IRP may include:

**PAIN**<sup>4,5</sup>

**RENAL DAMAGE**  
and pathological changes<sup>2,4,6</sup>

**SYSTEMIC INFLAMMATORY RESPONSE SYNDROME**<sup>2,7</sup>

**FLUID ABSORPTION**<sup>2,4,8-10</sup>

**FEVER**<sup>2,7</sup>

**INFECTION**<sup>2,4,7,11</sup>

**SEPSIS**<sup>2,4,7,11</sup>

**PYELOVENOUS BACKFLOW**<sup>2,4,8-10</sup>

## Considerations for reducing high IRP:

- Ureteral access sheaths may improve irrigation flow and visualization while decreasing IRP.<sup>12</sup>
- IRP cannot be reliably measured today. The current recommendation discussed in literature is to maintain IRP as low as possible while maintaining good visibility to prevent complications such as pyelovenous backflow and sepsis.<sup>2,11</sup>

For more information about IRP or stone management in general, visit [StoneSmart.com](https://www.stonesmart.com) and join the discussions on social media today.



**#StoneSmart**

Bench test and pre-clinical results may not necessarily be indicative of clinical outcomes. Results from clinical studies are not predictive of results in other studies. Results in other studies may vary.

### REFERENCES

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