

Hydronephrosis Market to Reach \$6.9B by 2031, Driven by AI & Minimally Invasive Tech | DataM Intelligence

Analyze hydronephrosis market drivers, including AI diagnostics, aging populations, and innovations like 4D printing and smart urinary catheters.

AUSTIN, TX, UNITED STATES, May 27, 2025 /EINPresswire.com/ --

[Hydronephrosis market](#) is valued at approximately USD 3.5 billion and is expected to reach nearly USD 6.9 billion by 2031, reflecting a strong CAGR of 9.5% during the forecast period. The increase is fueled by growing patient awareness, improved healthcare access, and a surge in kidney-related conditions, particularly among aging populations in developed and developing regions.



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By 2031, the hydronephrosis market will reach \$6.9B, fueled by aging populations, smart catheters, and a 9.5% CAGR in early detection and minimally invasive care.”

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Hydronephrosis is a condition characterized by the swelling of the kidney caused by the accumulation of urine. This condition often results from blockages or obstructions in the urinary tract, which can occur due to kidney stones, congenital abnormalities, tumors, or an enlarged prostate. While hydronephrosis itself is not a disease, it is a symptom of an underlying issue requiring prompt medical attention.

The global market for hydronephrosis treatment and diagnostics is undergoing rapid expansion. This growth is being driven by rising cases of urological disorders, increasing awareness of

kidney health, technological advancements in imaging techniques, and the global shift towards early diagnosis and minimally invasive treatments.

Market Segmentation

By Type: Unilateral Hydronephrosis, Bilateral Hydronephrosis.

By Diagnosis: Blood tests, Urine tests, Ultrasound, CT scan, MRI, Others.

By Treatment: Surgery, Shock wave lithotripsy, Ureteroscopy, Laparoscopy, Bladder catheterization, Steroid therapy, Medications, Others.

By Distribution Channel: Hospital Pharmacy, Retail Pharmacy, Online Pharmacy, Others.

By End-User: Hospitals, Clinics, Diagnostic Centers, Ambulatory Surgical Center, Others.

By Region: North America, Latin America, Europe, Asia Pacific, Middle East, and Africa.

Regional Outlook

North America

North America leads the global hydronephrosis market due to high awareness levels, advanced diagnostic infrastructure, and a large pool of skilled urologists. The U.S. dominates the regional market owing to a high rate of kidney stone cases and widespread adoption of minimally invasive treatments.

Europe

The European market is expanding steadily, supported by well-established healthcare systems, increasing geriatric population, and government initiatives promoting early diagnosis.

Asia-Pacific

This region is set to witness the highest growth during the forecast period, thanks to rapidly improving healthcare infrastructure, large patient population, and growing investments in medical technology in countries like China, India, and Japan.

Latin America, Middle East, and Africa

These regions are in the emerging phase but show strong potential due to rising healthcare access, awareness campaigns, and international collaborations improving urological care.

Key Players in the Market

Several key players dominate the hydronephrosis market, offering innovative solutions and expanding their presence globally. These include:

Lupin Pharmaceuticals Inc
Pfizer Inc
Bayer HealthCare Pharmaceuticals Inc
GlaxoSmithKline plc
Mallinckrodt Pharmaceuticals
Johnson & Johnson Consumer Inc.
Roche Laboratories Inc
Teva Pharmaceuticals USA Inc.

Latest News – USA

In the U.S., a significant advancement was made recently with the introduction of a 4D-printed biodegradable net bag used in a novel technique for treating hydronephrosis. This innovative method allows the kidney to be safely compressed and reshaped without invasive incisions. The approach has already demonstrated positive early outcomes in trials and is gaining attention as a possible alternative to nephrectomy in selected patients. Additionally, major U.S. hospitals are now incorporating AI-assisted imaging to enhance early diagnosis and reduce the burden on radiologists.

Furthermore, the American Urological Association (AUA) announced new guidelines to streamline early detection pathways and reduce diagnostic delays in pediatric cases, which often go undetected until significant kidney damage occurs.

Latest News – Japan

Japan continues to be a global leader in kidney disease treatment outcomes, especially in pediatric and transplant care. According to recent health ministry data, the country has achieved over 97% five-year survival rates in living donor kidney transplants, outperforming global averages.

In a collaborative initiative launched in early 2025, several Japanese universities have teamed up with biotech firms to develop smart urinary catheters designed to monitor flow rates and alert for early signs of hydronephrosis via mobile apps. This innovation is set to revolutionize post-operative care and home monitoring in elderly populations, a demographic Japan is heavily focused on given its aging society.

Conclusion

The hydronephrosis market is on a robust growth trajectory, driven by increased awareness, technological innovation, and rising cases of kidney-related diseases worldwide. With countries like the U.S. leading in innovation and Japan setting standards in patient outcomes and post-treatment care, the market is poised for continued evolution. Moving forward, increased investment in AI-based diagnostics, smart monitoring tools, and non-invasive treatment

methods will shape the next phase of hydronephrosis care globally.

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