

## New Study Shows AI-Driven Diagnostic Significantly Improves Certainty, Reduces Costs in Detecting Joint Replacement Infections

*SynTuition™ Matched Expert Diagnoses 96% of the Time and Saved an Average of \$4,000 per Patient Through Reduced Misdiagnoses*

(WARSAW, Ind.) Feb. 23, 2026 — Zimmer Biomet Holdings, Inc. (NYSE and SIX: ZBH), a global medical technology leader, today announced [a new study published in the peer-reviewed journal, \*Diagnostics\*](#), that shows SynTuition™, the company's machine learning-based diagnostic tool, significantly improves the accuracy and confidence of diagnosing periprosthetic joint infection (PJI) — a serious complication that can occur after hip or knee replacement surgery.

PJI is estimated to occur in 1% to 2% of primary joint replacement procedures<sup>1</sup> and can have serious consequences. In fact, the mortality rate associated with PJI approaches the five-year mortality observed in breast cancer (11%) and far exceeds that of prostate cancer (1%).<sup>2</sup> Diagnosing these infections can be extremely difficult, especially when lab results are mixed or bacteria do not grow in culture. When diagnosis is unclear, patients may undergo unnecessary revision surgeries or, conversely, fail to receive the treatment they need.

The newly published study shows that SynTuition can help solve this longstanding challenge by giving surgeons and infectious disease specialists a clearer, more reliable picture earlier in the diagnostic process. The study compared SynTuition's performance with diagnoses made by 12 experienced physicians who evaluated 274 real world clinical cases. SynTuition uses patterns in synovial (joint) fluid biomarkers to calculate a probability score indicating the likelihood of infection.

Key findings include:

- **Higher overall accuracy:** SynTuition achieved an overall agreement on diagnoses from experts 96% of the time — better than the pooled physician group, which achieved 90.8% accuracy.
- **More certainty in difficult cases:** When cases were labeled *inconclusive* under current diagnostic criteria, physicians remained uncertain 38% to 48% of the time. SynTuition provided a definitive answer for all cases and correctly classified 86.7% of them.

<sup>1</sup> Izakovicova, P., Borens, O., & Trampuz, A. (2019). Periprosthetic joint infection: current concepts and outlook. *EFORT open reviews*, 4(7), 482–494. <https://doi.org/10.1302/2058-5241.4.180092>.

<sup>2</sup> Ramos MS, Benyamini B, Kompala V, et al. Periprosthetic joint infection mortality after total hip arthroplasty is comparable to 5-year rates of common cancers: a meta-analysis. *J Arthroplasty*. 2025;1-7. <https://doi.org/10.1016/j.arth.2025.04.036>.

- **Addresses risk of unnecessary surgery:** By improving diagnostic clarity, SynTuition could reduce unnecessary revision procedures by four to 11 surgeries per 100 patients.

“This study shows that SynTuition can meaningfully support clinicians, especially when cases fall into a gray area where traditional tests offer conflicting or unclear results,” said Dr. James Baker, orthopedic surgeon and a study co-author. “We feel it is a valuable addition to the clinical pathway to improve patient safety, with the added benefit of reducing the cost of potentially unnecessary care.”

Misdiagnosis of PJI can be expensive for patients, hospitals and payers. A missed infection can ultimately require more complex surgeries, while diagnosing an infection that isn't present may expose patients to unnecessary treatments and higher costs. Using economic modeling, the study found that:

- Physicians using current approaches would be expected to generate \$6.9 million in misdiagnosis-related costs per 1,000 suspected PJI cases.
- SynTuition would reduce that total to \$2.9 million, a savings of \$4 million per 1,000 suspected PJI cases.
- On average, that is an estimated \$4,000 in potential savings per patient evaluated for suspected infection.

“The Synovasure® Comprehensive PJI Test Panel with SynTuition is a smart and reliable support for PJI diagnosis that also provides significant potential cost savings for the health care system,” said Lou Galrao, president of Reconstruction – Knees and Hips for Zimmer Biomet. “SynTuition improves safety, efficiency and outcomes in joint replacement surgery by simplifying PJI diagnosis<sup>3</sup> and giving surgeons a clear, actionable answer — even in the hardest cases.”

In January, a new Proprietary Laboratory Analysis (PLA) code for SynTuition was added to the CPT code set, marking the first code of its kind for AI-driven joint infection analysis. The code is now active, with reimbursement rates expected to be finalized by the Centers for Medicare & Medicaid Services in the near future.

The Synovasure Comprehensive PJI Test Panel measures 11 synovial fluid biomarkers from a single sample to aid in the diagnosis of PJI. SynTuition is an AI-generated PJI score that integrates results from the Synovasure Comprehensive PJI Test Panel to produce a single probability of infection. The algorithm does not rely on culture results, enabling faster, data-driven insights to support clinical decision making. Launched in June 2025, SynTuition has been used to aid in the testing of more than 20,000 joint implant patients.

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<sup>3</sup> Final patient diagnosis responsibility lies with the medical professional.

SynTuition is available as a laboratory-developed test (LDT). Synovasure Microbial Identification and Synovasure Comprehensive NSA Panel are not available in New York state.

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### **About Zimmer Biomet**

Zimmer Biomet is a global medical technology leader with a comprehensive portfolio designed to maximize mobility and improve health. We seamlessly transform the patient experience through our innovative products and suite of integrated digital and robotic technologies that leverage data, data analytics and artificial intelligence.

With 90+ years of trusted leadership and proven expertise, Zimmer Biomet is positioned to deliver the highest quality solutions to patients and providers. Our legacy continues to come to life today through our progressive culture of evolution and innovation.

For more information about our product portfolio, our operations in 25+ countries and sales in 100+ countries or about joining our team, visit [www.zimmerbiomet.com](http://www.zimmerbiomet.com) or follow on LinkedIn at [www.linkedin.com/company/zimmerbiomet](http://www.linkedin.com/company/zimmerbiomet) or X at [www.x.com/zimmerbiomet](http://www.x.com/zimmerbiomet).

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This news release contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include, but are not limited to, statements concerning Zimmer Biomet's expectations, plans, prospects, and product and service offerings, including new product launches and potential clinical successes. Such statements are based upon the current beliefs and expectations of management and are subject to significant risks, uncertainties and changes in circumstances that could cause actual outcomes and results to differ materially. For a list and description of some of such risks and uncertainties, see Zimmer Biomet's periodic reports filed with the U.S. Securities and Exchange Commission (SEC). These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included in Zimmer Biomet's filings with the SEC. Forward-looking statements speak only as of the date they are made, and Zimmer Biomet disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Readers of this news release are cautioned not to rely on these forward-looking statements, since there can be no assurance that these forward-looking statements will prove to be accurate. This cautionary statement is applicable to all forward-looking statements contained in this news release.

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