
VELYS™
Robotic-Assisted Solution
DePuy Synthes
THE ORTHOPAEDICS COMPANY OF Johnson & Johnson
SIMPLICITY
THE NEXT CHAPTER IN ROBOTICS

VELYS™
Robotic-Assisted Solution

Current robotics in TKA are complex

Robotics in total knee arthroplasty (TKA) have shown to be cumbersome, costly, and often complicated solutions. Traditional methods such as standard cut guides and limited technologies—like burring or boundary control, add more time and complexity to the procedure.

Innovative technologies, like robotics, are critical to help meet the evolving needs in orthopaedics, but it is essential that this technology complements the surgeon's current workflow, is adaptable, and is designed for how surgeons plan, execute, and perform surgery.

VELYS™
Robotic-Assisted Solution

The solution is simple

The VELYS™ Robotic-Assisted Solution was born from the desire to create a new chapter in robotic TKA. This system not only performs with accuracy and consistency, but it also has a streamlined, efficient design that integrates into any OR.[1]

When purposeful design meets performance, even advanced workflows are made **simple**.[2]

VELYS™
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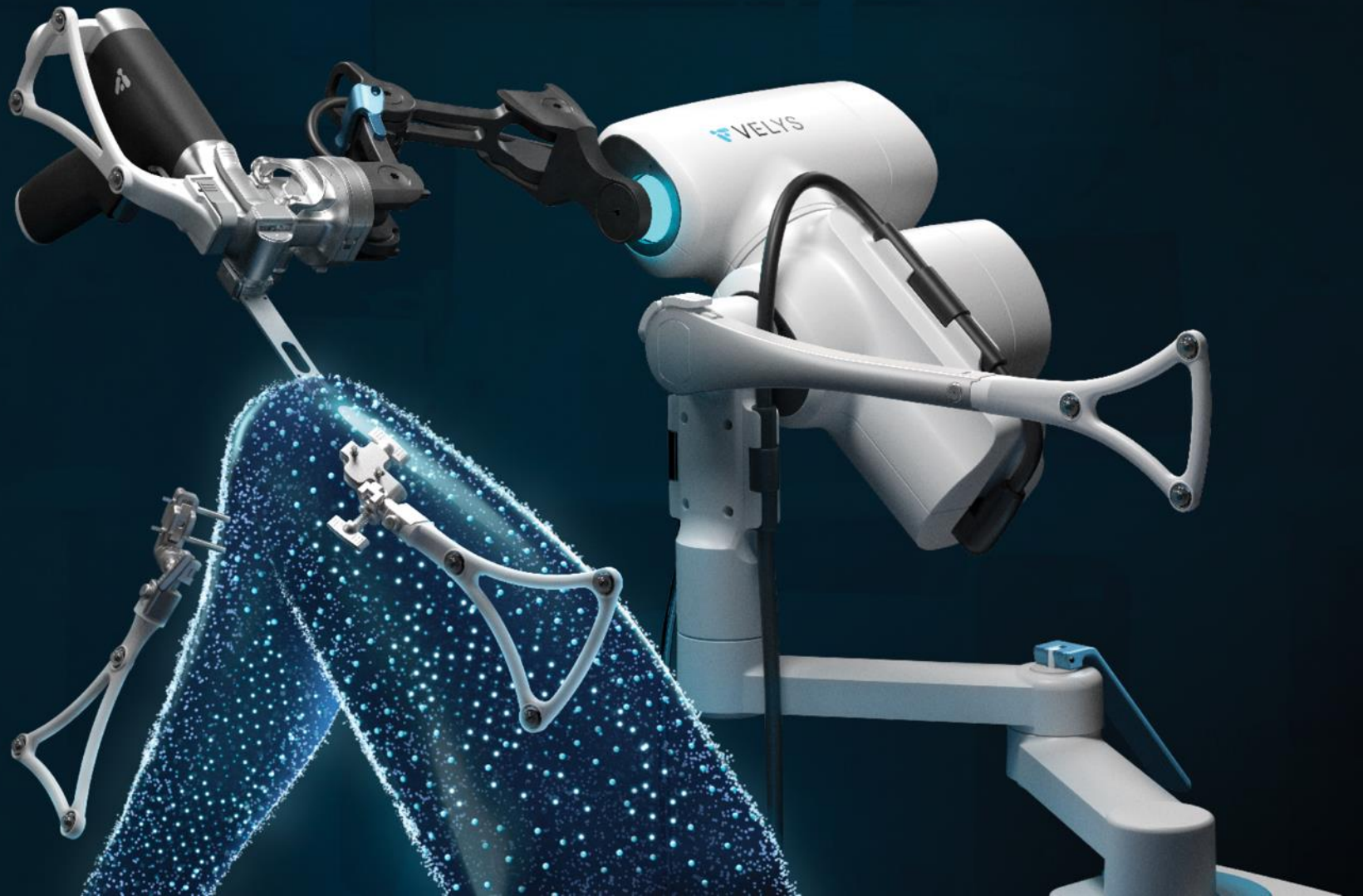
The next chapter in robotics is here

DePuy Synthes is redefining robotics in TKA—delivering a first-of-its-kind table-mounted, imageless solution designed with simplicity in mind.



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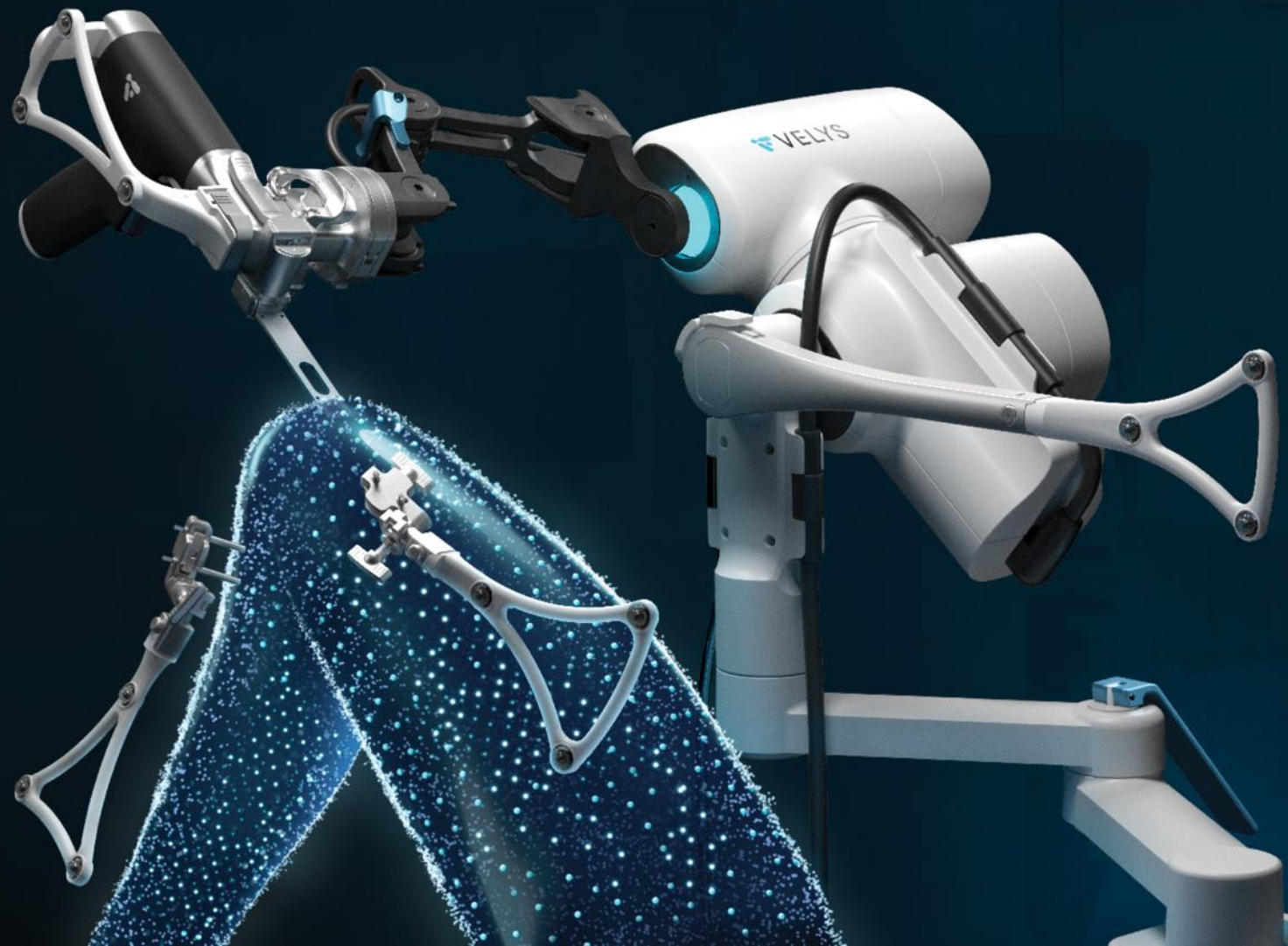


Simplifying knee replacement surgery

The VELYS™ Robotic-Assisted Solution provides **valuable insights, versatile execution,** and **verified performance** designed to deliver efficiency and optimise patient outcomes.[1,2]

VELYS™
Robotic-Assisted Solution

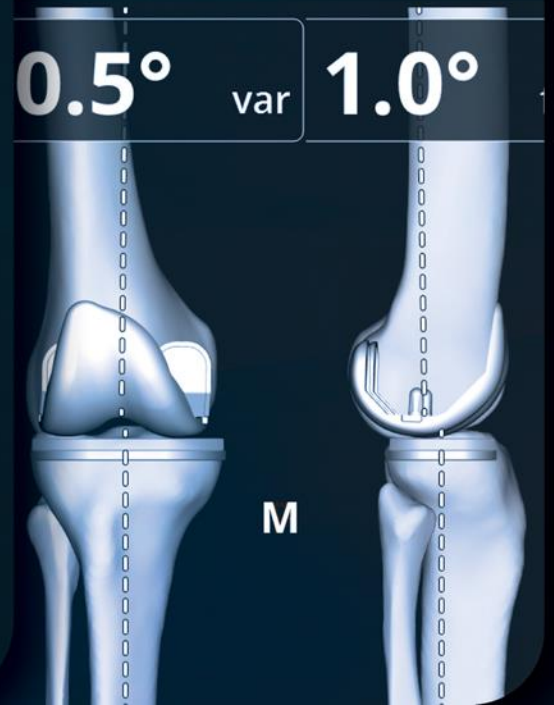
Valuable insights

Gap balance data to help surgeons visualise and predict joint stability

As a complement to the ATTUNE® Knee System, the VELYS™ Robotic-Assisted Solution aims to help surgeons improve the quality of life for patients.

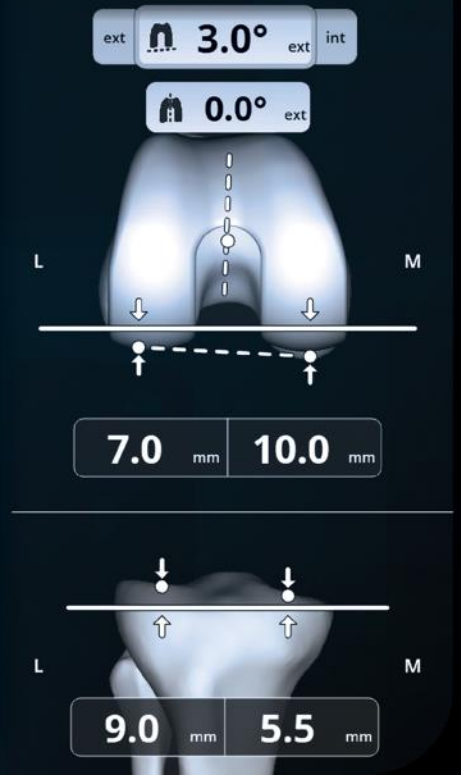
Natural Joint Assessment

Pre-resection assessment of alignment and predicted gap balance to help surgeons plan for **optimal ATTUNE® Knee System implant position.**



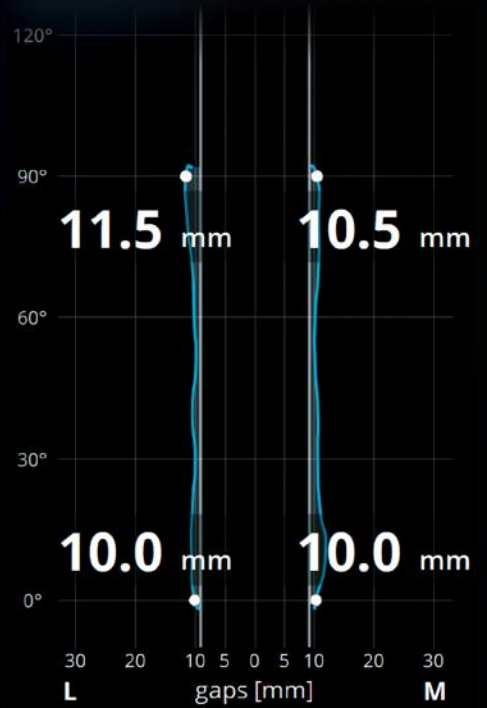
PROADJUST™ Planning

Single-page planning to easily adjust parameters helping surgeons **personalise alignment and balance relative to soft tissues.**



ACCUBALANCE™ Graph

Soft tissue stability graph provides balancing data throughout the full range of motion prior to execution of bony cuts to help surgeons **visualise and predict joint stability.**



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Versatile execution

Instinctive, integrated design to optimise daily OR flow[2]

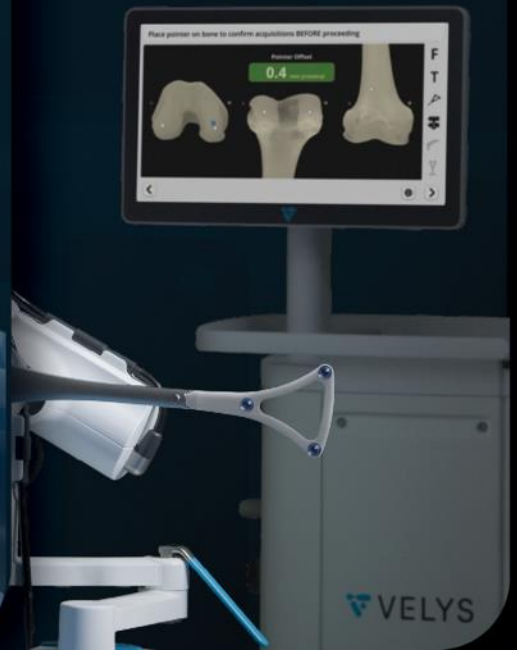
The VELYS™ Robotic-Assisted Solution gives surgeons the control they are used to, adapts to their workflow, and reduces procedural steps without the increased risk of damage to the soft tissue envelope.[1]

NATURAL CONTROL™ Technology

A proprietary technology that maintains the saw cut plane to help **execute precise, reproducible surgeon-controlled cuts** without the need for a cutting block.[1]

Instinctive User Interface

Clear interface, streamlined clinical application, adaptable workflow, and fast registration process **aim to improve procedural efficiency.**[2]



Integrated Operating Platform

ATTUNE® Knee INTUITION® Instrumentation and an easily maneuverable robotic design **help to streamline OR integration and improve daily OR flow.**[2]

VELYS™
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Verified performance

Accurate, consistent plan execution supporting the ATTUNE® Knee System[1]

Maintaining cut plane position as the bone is resected and eliminating system interruption are key to helping maintain accuracy of the cut without the use of cut blocks. The VELYS™ Robotic-Assisted Solution tracks bone position at a high frequency while repositioning the saw at the resection plane.

ADAPTIVE TRACKING™ Technology

High-speed camera, triple-drive motion technology, and PURESIGHT™ Hydrophobic Optical Reflectors work together to **adjust and control the resection plane for accurate, consistent execution to plan**.[1]

Procedural Joint Verification

Post-resection assessment to help surgeons verify final gap balance and overall leg alignment for **intra-operative confirmation of ATTUNE® Knee System implant position**.

ATTUNE® Knee System Performance

Works exclusively with the ATTUNE® Knee System, which has been shown to **improve patient-reported outcomes** by working in harmony with the patient's anatomy to deliver both stability and motion.[3-6]

Attune®
Knee System

VELYS™
Digital Surgery

Going beyond robotics

There’s an opportunity to improve the overall orthopaedic experience beyond the OR for healthcare professionals and patients. That’s why DePuy Synthes created VELYS™ Digital Surgery, a platform of connected technologies powered by data insights and designed to elevate the orthopaedic experience before, during, and after TKA.

Over time, VELYS™ Digital Surgery will add new technology solutions across DePuy Synthes platforms, including:

- **PATIENT SOLUTIONS AND OPTIMISATION**
- **SURGICAL PLANNING**
- **SURGICAL IMPLEMENTATION**
- **Post-Op Monitoring**

VELYS™
Robotic-Assisted Solution

The next generation in education and training to accompany the next chapter in robotics

Next Generation Education and Training

First-of-its-kind in Australia Mobile Lab

DePuy Synthes is bringing a comprehensive hands-on training experience directly to hospitals and healthcare providers. Our next generation mobile training experience consists of a semi-trailer mounted self-contained mobile lab with meeting, training, and lab spaces for the VELYS™ Robotic-Assisted Solution.

This mobile training environment is enabled with Wi-Fi, video screens and cameras to connect surgeons and R&D teams around the world, whilst facilitating a team-based training experience on the VELYS™ Robotic-Assisted Solution that extends the standardisation of care across the hospital.

Next Generation Technology – Virtual Reality

Virtual Reality (VR) takes surgical training to the next level. Our VELYS™ Robotic-Assisted Solution surgical modules are designed to support and guide surgical teams through a VR enabled three-dimensional operating environment that mirrors the OR experience for both surgeons and OR teams.

It also provides opportunities for world-wide collaboration for surgeons in different locations. The VELYS™ Robotic-Assisted Solution has been developed to support training for surgeons as well as the whole OR team.

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Next Generation Education and Training

Novel Surgical Simulation Technologies

Embracing the latest in 3D printing technology, DePuy Synthes is utilising realistic anatomical surgical simulation models that simulate specific pathologies without the inherent risks and limitations associated with cadaveric specimens.

Personalised Education Journey within Central Portal

Throughout the journey—from independent learning to peer-to-peer engagements to virtual reality and hands-on training opportunities—we are committed to delivering interactive educational content and experiences that will prepare your teams for the OR.

A personalised learning plan tracks all educational activities in a central portal, allowing easy visibility and access to training activities and progress monitoring.

VELYS™
Robotic-Assisted Solution

Ongoing commitment to excellence in service, performance and patient education

Full-Service Maintenance

Customers rely on advanced technology. The service and maintenance offerings for the VELYS™ Robotic-Assisted Solution provide comprehensive coverage that enable procedures to stay on schedule.

Patient Education Resources

Public perception is that robotic assisted surgery is more accurate, less painful and/or delivers better outcomes than manual instrumentation[7]. In a global survey, more than half of respondents considered hospitals which have a robot to be better hospitals[7].

A comprehensive suite of patient education materials are available to support the VELYS™ Robotic-Assisted Solution including digital assets for use on Surgeon & Hospital websites. DePuy Synthes is committed to working closely with Hospitals purchasing the VELYS™ Robotic-Assisted Solution to meet patient education needs.

VELYS™
Robotic-Assisted Solution

Begin the next chapter with simplicity[2]

Valuable insights

Gap balance data to help surgeons visualise and predict joint stability.

Versatile execution

Instinctive, integrated design to give surgeons the control they're used to while optimising daily OR flow.[2]

Verified performance

Accurate, consistent plan execution supporting ATTUNE® Knee System in providing better patient outcomes.[3-6]

References: 1. Doan et al. Resection Accuracy Improved Using A Novel Concept For Robotic-assisted Total Knee Arthroplasty; ORS 2021 Annual Meeting Paper No. 0333. **2.** User experience evaluation of the VELYS Robotic-Assisted Solution for total knee (July 2020). Internal Report 103744839. **3.** Hamilton WG, Brenkel I, Clatworthy M, et al. Comparison of existing and new total knee arthroplasty implant systems from the same manufacturer: a prospective, multicenter study, 2019. Poster presented at: American Academy of Orthopaedic Surgeons 2019 Annual Meeting; March 12–16, 2019; Las Vegas, NV. Poster PO614. **4.** Fisher D, Parkin D. Optimizing the value of your patients' TKA: how to leverage data from patient reported outcomes. Becker's Hospital Review webinar. October 3, 2019. Accessed October 18, 2019. www.ATTUNEevidence.com/clinical-evidence. **5.** Ranawat CS, White PB, West S, Ranawat AS. Clinical and radiographic results of ATTUNE and PFC SIGMA knee designs at 2-year follow-up: a prospective matched-pair analysis. *J Arthroplasty*. 2017;32:431-436. **6.** Indelli PF, Pipino G, Johnson P, Graceffa A, Marcucci M. Posterior-stabilized total knee arthroplasty: a matched pair analysis of a classic and its evolutional design. *Arthroplasty Today*. 2016;2:193-198. **7.** Boys JA, Alicuben ET, DeMeester MJ, et al. Public perceptions on robotic surgery, hospitals with robots, and surgeons that use them. Surg Endosc. 2016;30(4):1310-1316.

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Please refer to the instructions for use for a complete list of indications, contraindications, warnings, and precautions.

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