Accurate and reproducible patient setups can potentially reduce harm to critical organs during radiation treatment. Patient set-up accuracy is especially critical for high-intensity treatments, such as intensity-modulated radiation therapy (IMRT), stereotactic radiosurgery (SRS) and stereotactic body radiotherapy (SBRT)\(^1\)\(^-\)\(^3\). Increasing clinical evidence suggests that a robotic couch with 6 degrees of freedom used in conjunction with cone-beam computed tomography (CBCT) may reduce patient set-up errors and improve target positioning for high-dose stereotactic treatments and IMRT\(^4\)\(^-\)\(^6\).

The Varian PerfectPitch™ 6 degrees of freedom (6DoF) couch is designed to deliver advanced radiation therapy techniques with a high level of accuracy and reproducibility. Allowing for two additional axes of rotation, pitch and roll, the 6DoF couch adjusts seamlessly on six axes, facilitating isocenter-focused shifts. With the 6DoF couch, CBCT image-guided target location, isocenter correction, treatment review, treatment delivery, and axes recording can all be accomplished without re-entering the treatment room or changing the control console. As a result, it may be possible to treat more patients with a higher degree of accuracy and reduce treatment margins in selected clinical cases.

**Full system integration and easy workflow**

When the PerfectPitch 6DoF couch is used with the Varian TrueBeam™ system, the TrueBeam STx™ system, or the Varian Edge™ radiosurgery system, couch operation and verification are fully integrated into the system user interface, enabling a seamless workflow. The patient shift can be calculated based on a CBCT or on two planar radiographs. Remote patient re-positioning can be performed in all six degrees. All shifts are saved and automatically recorded in the ARIA® oncology information system.

For Healthcare Professionals Only
User-friendly design for both clinician and patient

The Varian 6DoF couch is designed with both clinicians and patients in mind. The isocenter-focused couch movement reduces position correction and streamlines setup, which may contribute to increased treatment throughput. More importantly, with fast positioning, patients may spend less time on the treatment couch.

References


SPECIFICATIONS

- **Travel range:** pitch and roll ± 3 degrees
- **Velocity:** up to 1.0 degrees/second
- **6DoF positioning accuracy:** ≤ 0.5 mm (within precision load range) and ≤ 0.7 mm (full load range)
- **Longitudinal and lateral couch range:** same as standard TrueBeam couch
- **Safe working load** (using the integrated image-guided radiation therapy (IGRT) couchtop): 200 kg/440 lbs.
- **Couchtop compatibility:** Integrated IGRT, kVue™ IGRT couchtop and kVue™ Calypso® couchtop, including Pivotal™ treatment solution for prone breast care.

The 6DoF couch adjusts seamlessly on six axes, facilitating isocenter-focused shifts.