

A series of overlapping, wavy red lines that sweep across the lower half of the slide, starting from the left edge and moving towards the right. The lines vary in opacity and thickness, creating a sense of motion and depth.

ExacTrac[®]

IGRT for tumor motion management

 **BrainLAB**
oncology solutions



EXACTRAC® IGRT

ExacTrac® is a clinically proven, highly precise automated IGRT system that gives you the confidence of daily millimeter targeting accuracy for unlimited treatment possibilities.

- Precise patient setup in a quick, automated two-minute process
- High resolution stereo x-ray imaging targets tumors and corrects patient positioning with sub-millimeter precision
- Room-based design enables continuous tracking of patient and tumor movement, including IGRT verification throughout treatment

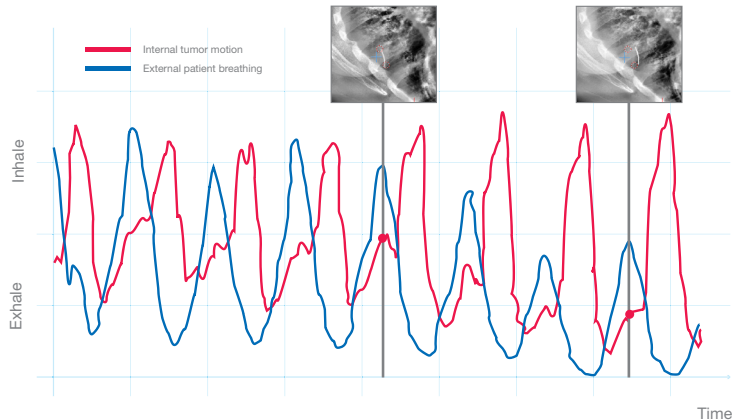


ADAPTIVE GATING

Respiration Motion Management

ExacTrac® Adaptive Gating addresses daily respiration pattern changes and intra-fraction variation, such as breathing baseline shifts, with continuous optical infrared patient tracking and IGRT x-ray verification of internal tumor position during gated treatment.

- Millimeter accurate patient setup before gated delivery¹
- Continuous real-time tracking of patient breathing patterns
- Gating of Linac beam controlled by ExacTrac*
- X-ray verification of internal tumor motion during delivery
- Enables higher dose delivery²



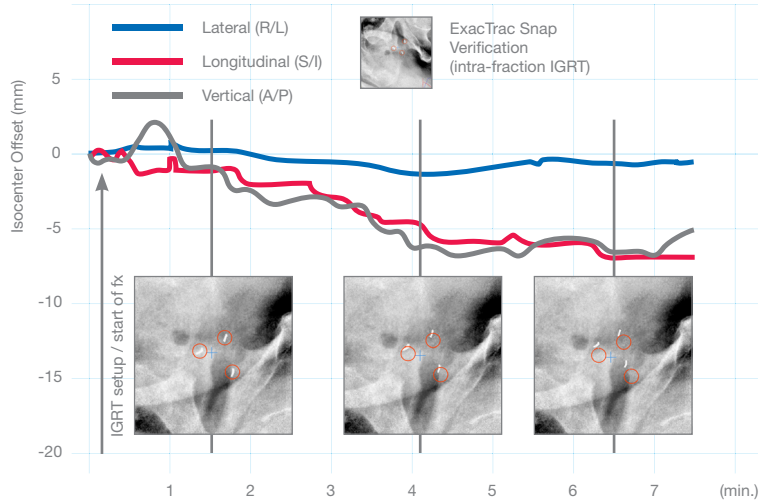
Internal and external breathing cycles do not correlate during treatment thus limiting external-only observation tracking capabilities. ExacTrac IGRT tracks tumor movement internally and externally, for consistent highly precise targeted treatment delivery.



SNAP VERIFICATION Tumor Motion Management

ExacTrac® Snap Verification uses x-ray images acquired during treatment delivery or between fields to instantly detect and visualize internal tumor displacement. A threshold-based margin analysis algorithm indicates whether patient setup correction is recommended or not. ExacTrac automatic couch control can then be used to realign the patient remotely.

- Accurate targeting from beginning to end of each fraction
- Software-integrated instant imaging and verification
- Immediate detection and visualization of intra-fraction tumor motion



Graph represents possible drift of prostate from isocenter in 3D over a 8 min. treatment fraction³. Motion occurs randomly and can change daily. Snap Verification images can be taken prior to each new treatment field.

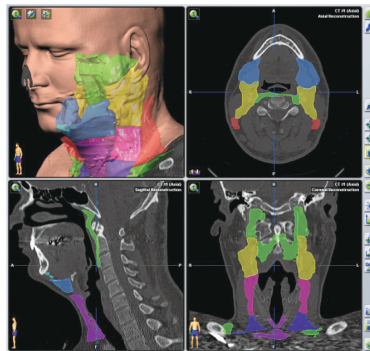


ADAPTIVE RT

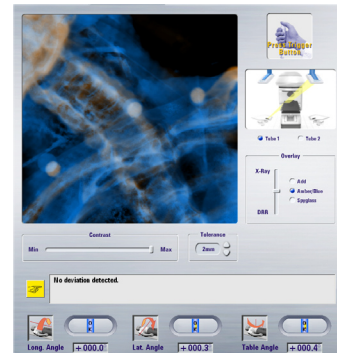
Addressing Changes in Tumor Shape

iPlan® RT treatment planning software makes periodic plan adaptations clinically and financially feasible, and automatically facilitates efficient, intuitive plan updates based on periodic CT scans prompted by ExacTrac®.

- Automatic Organ at Risk definition with iPlan RT Atlas Segmentation
- Fast PTV adaptation with iPlan RT Smartbrush 3D object optimization
- iPlan Dose template plan update of DICOM RT exports of adapted objects to dose engine
- Delivery of adapted plan with IGRT precision using ExacTrac



iPlan Automatic Segmentation



ExacTrac IGRT



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