

# SeeTreat | ART.1

It's About Time.

Find out more:



Efficient and automated adaptive evaluations for every structure, every fraction, and every patient.

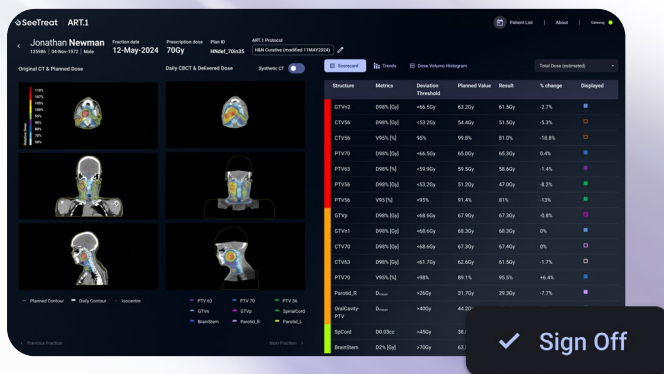
Generating a synthetic CT from your daily CBCT, ART.1 calculates the daily dose and contours to provide an objective and quantified comparison to the planned values giving you decision support if a replan may be warranted.

ART.1 automates the most difficult steps in the adaptive workflow, from detection to decision support.



## Objective Decision Support

ART.1 puts objective and actionable evidence of treatment deviations at the fingertips of all clinicians. Dosimetric and volumetric analytics for every structure with comparisons to the planned values are analyzed in the background for every fraction and available with one-click. Alerts are sent if deviations are detected.

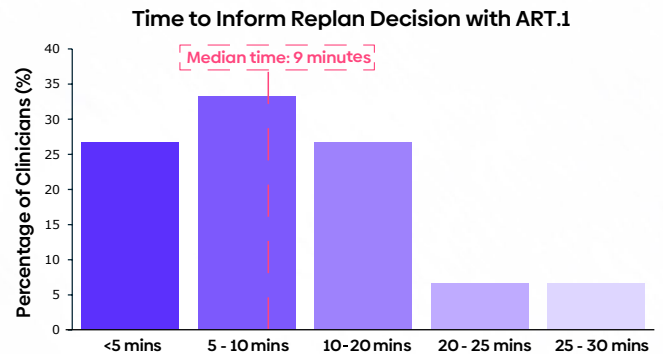


# Evidence to replan in 95+ seconds

## Accelerated Adaptive Workflow

ART.1 automates the most resource intensive steps in the adaptation process from detection to decision support, providing daily dose and daily contours measured against the treatment plan.

In an evaluation with 15 clinicians, the median time taken to review results in ART.1 to inform a replan decision or recommendation was **9 minutes 4 seconds**. The shortest time for a radiation oncologist being **1 minute**!



## Automatic Prioritization

ART.1 performs background analyses to prioritize and indicate your results to optimize your replan reviews with automated prioritization. The action threshold is configurable in ART.1 to suit your department and patient-specific practices.

Running silently in the background, ART.1 flags only those results needing attention, while allowing clinical care teams to focus their time where it matters most in prioritizing results for review and signing off results as reviewed. ART.1 automatically adds adaptive capabilities to any standard linac - without requiring hardware upgrades or disruptions to your workflows.



**ART.1** automates the most difficult steps in the offline adaptive workflow, analyzing every structure for every fraction for every patient and prioritizing every result for review.

### Every Structure

**ART.1** analyzes every structure, allowing configurable, personalized protocols to analyze any structure with any metric.

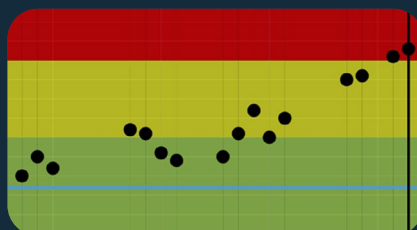
Your department workflow, your protocols, your results.

Structure	Metric	Deviation Threshold	Planned Value	Result	% Change
SpinalCord	Dmean(D)	+50.0	45.3	55.1	10.60%
CTV_700y	D2.00%(D)	+75.0	75.3	75.8	0.66%
CTV_560y	V0.01%(cc)	+126.33	135.4	120.9	-10.71%
PTV_700y	D2.00%(D)	+75.0	75.0	75.5	0.67%
PTV_560y	D95.00%(N)	+65.0	65.1	64.2	-0.95%
Larinx	Dmean(D)	+50.0	52.7	54.5	3.42%
Cavity_Oral	Dmean(D)	+50.0	56.4	58.5	3.72%
Parotid_L	Dmean(D)	+31.0	30.5	33.6	10.16%
Brainstem	Dmax(D)	+54.0	44.7	42.6	-4.70%
CTV_700y	D95.00%(N)	+99.0	99.1	99.6	0.50%

### Every Fraction

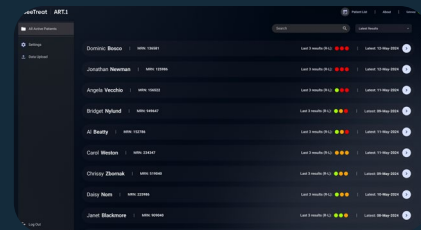
**ART.1**'s fraction-by-fraction deviation analysis provides a history of results, boosting confidence in replan decisions.

Your patient's treatment story is unique.



### Every Patient

**ART.1** automatically evaluates all patients in the background, prioritizing those who need attention the most, allowing for adaptive decision-making in minutes.



**ART.1** is comprised of purpose-built image registration and dose calculation algorithms developed to specifically overcome the challenges present in adaptive radiotherapy workflows.

### Image Registration and Contours

**ART.1** had a median Target Registration Error (TRE) (Mean  $\pm$  STD) of 2.0 mm (2.5  $\pm$  2.0 mm), 3.2 mm (3.9  $\pm$  2.5 mm) and 2.7 mm (3.3  $\pm$  2.4 mm) for HNC, breast and prostate cancer, respectively, with a combined TRE of 2.4 mm (3.1  $\pm$  2.3 mm).<sup>2</sup>

**ART.1**'s daily contours were reviewed by radiation oncologists for acceptability and treatment volume contours were reported as 96% accurate, and **ART.1**'s organs at risk contours were deemed 93% accurate.<sup>2</sup>

**ART.1** accounts for IGRT Shift in its analysis, allowing clinical care teams to review the images at the same time they are reviewing the dose.

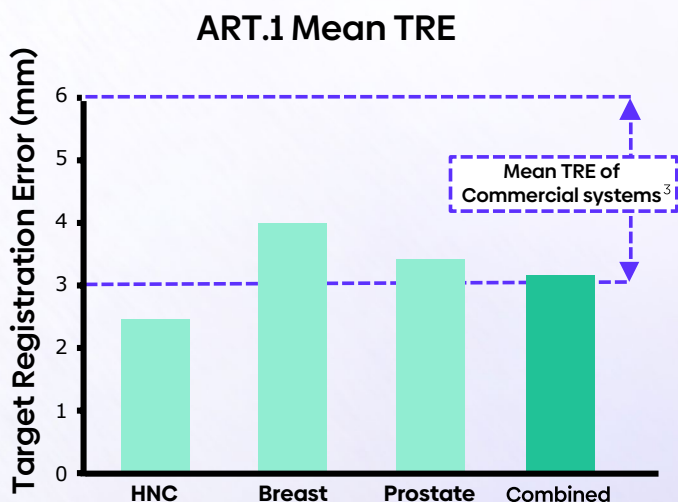
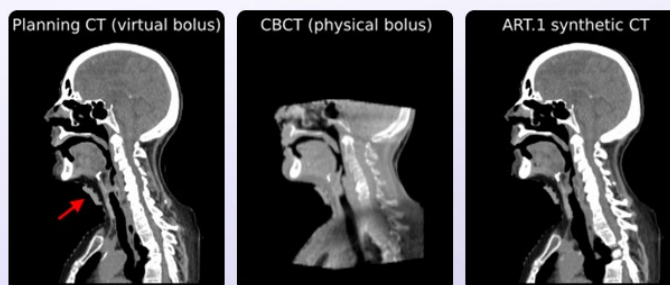


### Dose Calculation

The accuracy of dose calculations, assessed relative to TPS calculated doses, and the median 3%/2mm gamma pass rate was 94.4% with a mean  $\pm$  standard deviation of 93.5%  $\pm$  4.6%.<sup>2</sup> **ART.1** passes AAPM Task Groups' recommendation (TG-218 and TG-219) of  $\geq 90\%$  using 3%/2mm. Thus, **ART.1** algorithm is robust, with high accuracy, thereby producing quality evidence for patient replanning decisions without manual inputs.

### Challenging Case

**ART.1** maintains robust image registration and dose calculation performance with challenging cases including the presence of bolus, implants, bite blocks, and artifacts.



## References:

<sup>1</sup>Pollock, et al. "Resource Optimisation in Adaptive Radiotherapy: Introducing ART.1 To Accelerate and Optimise Workflows." *White Paper* (2025)

<sup>2</sup>Mylonas, et al. "Enabling offline adaptive radiotherapy with standard Cone Beam CT and robust algorithms." *White Paper* (2025)

<sup>3</sup>Rong, Yi, et al. "Rigid and deformable image registration for radiation therapy: a self-study evaluation guide for NRG oncology clinical trial participation." *Practical radiation oncology* 11.4 (2021): 282-298.

# SeeTreat | ART.1

## About SeeTreat

Founded by **Dr Trang Nguyen** and **Prof Paul Keall** in 2023, SeeTreat is led by award-winning researchers, engineers, and clinicians with a combined experience in radiation oncology of over 300 years.

SeeTreat is committed to its vision of reducing the burden of cancer by creating globally accessible integrated personalized cancer therapies.

## Transforming Treatment Without Hardware Barriers

SeeTreat was founded with the goal of improving efficiency and care for patients without adding additional costly hardware upgrades or a new machine. The first solution from SeeTreat was Kilovoltage Intra-fraction Monitoring (KIM), an advanced software that transforms standard cancer radiation therapy systems from static systems into real-time cancer targeting systems. KIM is an integrated real-time 6-degree of freedom motion management system, delivering superior cancer radiation therapy treatment with enhanced accuracy and efficacy. SeeTreat signed an exclusive agreement with a large OEM to bring KIM to all their new and existing linacs.

ART.1 is the second solution from SeeTreat to address the need for automating adaptive evaluations and decision support for every structure, every fraction, and every patient as a software enhancement to any standard linac.

## People-First Innovation

At the heart of SeeTreat is a passion for solving real-world problems in cancer treatment. We are committed to improving the experiences of both patients and clinicians. Our workplace culture is built on **innovation, collaboration, and inclusivity**, where diverse perspectives are valued, and bold ideas are encouraged.



ARTG:  
521207

FDA Clearance  
Pending

info@seetreatmedical.com

seetreat-medical

seetreatmedical.com