THE 2026 US SGRT COMMUNITY MEETING

A WHOLE NEW WORLD OF SGRT

SURFACE GUIDED RADIATION THERAPY
SGRT COMMUNITY

Patient Experience with Tattoo-Less Setup and Open-Face Masks

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Topics

- Why tattoos/marks and closed masks matter to patients
- Tattoo-less setup with AlignRT: accuracy + experience
- Postural Video: added efficiency and patient benefit
- Open-face masks: anxiety, preference, accuracy with SGRT
- Implementation essentials + take-homes

Patient Experience is Not Just “Soft” — It’s Clinical

Patient experience – “Soft”

- Identity & body image (visible reminders)
- Loss of control, distress, anxiety
- Dignity + comfort (exposure, immobilization)
- Treatment burden: time in position

User experience – “Clinical”, i.e. treatment quality & treatment efficiency

- Motion, compliance, and Setup accuracy
- Re-positioning / Re-image rates
- Workflow disruption (Setup time & wait time)
- Staff workload & throughput
- Patient safety

Tattoos & Marks: Measurable Psychological Burden

- Permanent marks can become a visible, long-term reminder of cancer and treatment
- Breast RT patients report stress around bathing, clothing, skincare, and “protecting the marks”
- Many patients prefer a skin mark-free option and some will trade time/cost for it

Moser et al., Breast J 2020 (10.1111/tbj.13591)
Yamauchi et al., J Med Imaging Radiat Sci 2024 (10.1016/j.jmir.2024.03.049)

Tattoo-less Setup with AlignRT: Benefits for the Patient

- No permanent marks: fewer visible reminders
- No day-to-day “marker care”
- Non-contact positioning supports dignity and reduces manual handling
- Confidence in FB and DIBH with real-time surface guidance
- Intra-fraction monitoring + beam hold protects delivery if motion occurs

Rigley et al., Radiography 2020 (10.1016/j.radi.2020.02.008)
Rudat et al., Sci Rep 2023 (10.1038/s41598-023-44320-2)

Tattoo-less/Marker-free Positioning Can Match or Improve Setup Accuracy

Breast — tattoo-less SGRT vs tattoos

Right breast FB:

- mean shift 0.47 cm (SGRT) vs 0.52 cm (tattoos)

Left breast DIBH:

- 0.45 cm (SGRT) vs 0.76 cm (tattoos)

Conclusion: comparable FB, improved DIBH setup

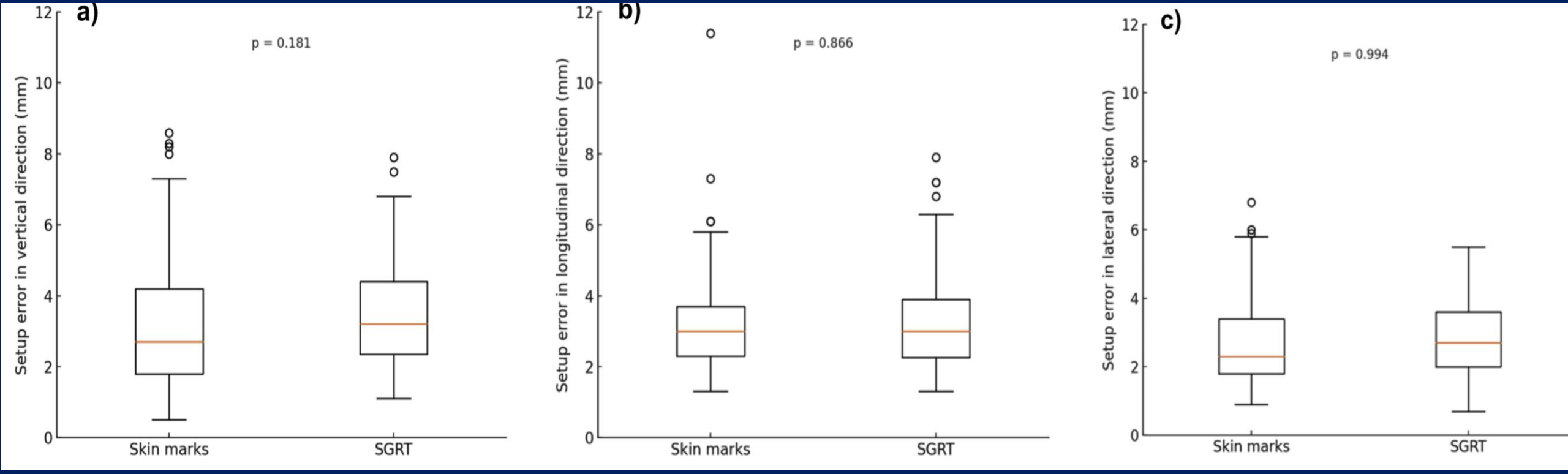
Marker-free implementation (pilot rollout)

Tangents FB: SGRT improved lateral/vertical/vector displacements vs markers alone

Supported a stepwise move to permanent-marker-free technique

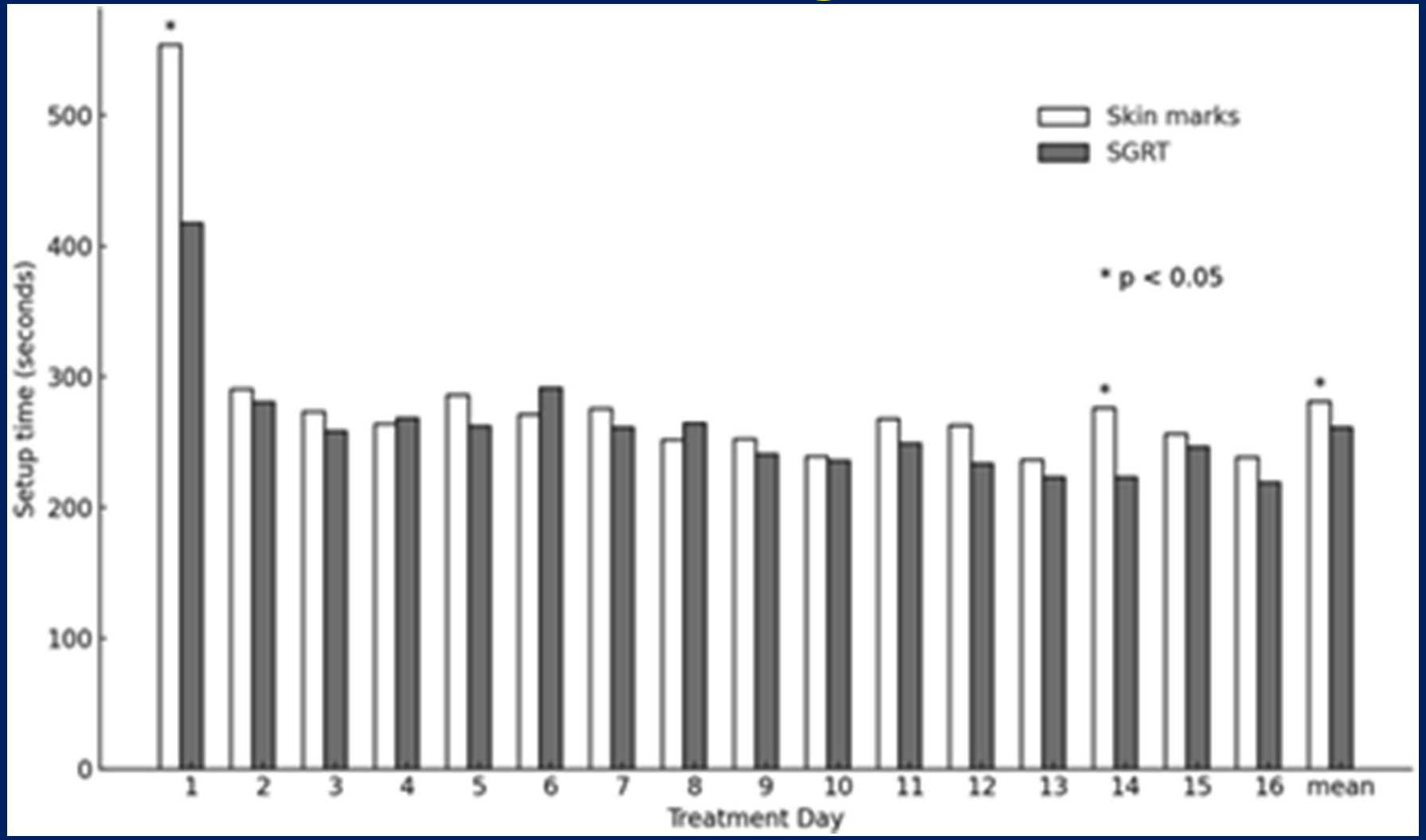
Rigley et al., Radiography 2020 (10.1016/j.radi.2020.02.008);
Goldsmith et al., Cancer Res 2021 PS15-02 (10.1158/1538-7445.SABCS20-PS15-02)

Tattoo-less SGRT has Comparable Setup Accuracy as Traditional Skin Tattoos



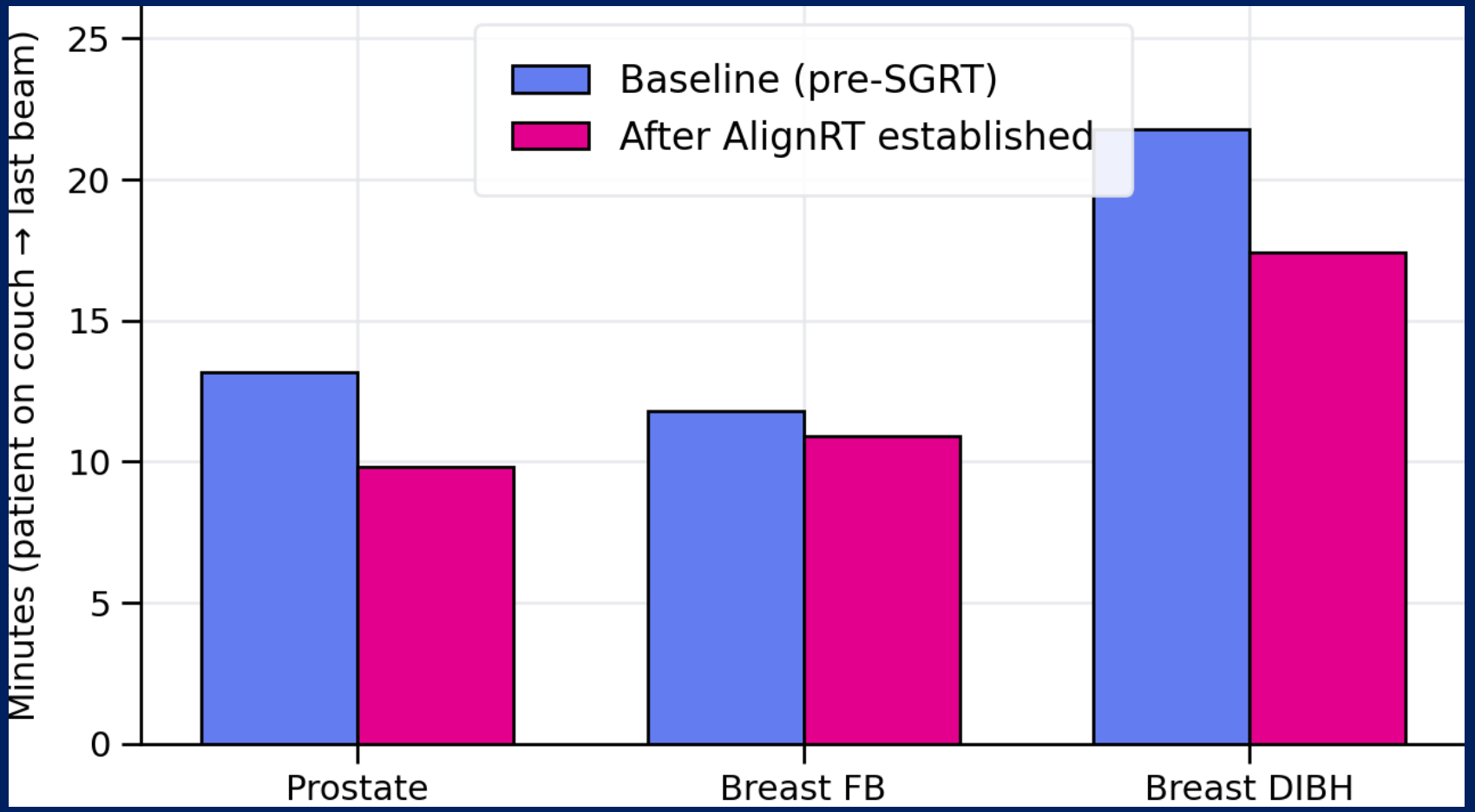
Jeong et al., Journal of Rad Res & Applied Science 2025

Tattoo-less SGRT Significantly Reduces Time from Initial Positioning to Treatment



Jeong et al., Journal of Rad Res & Applied Science 2025

Clinical Efficiency: AlignRT Reduces "On Couch → Last Beam" Time

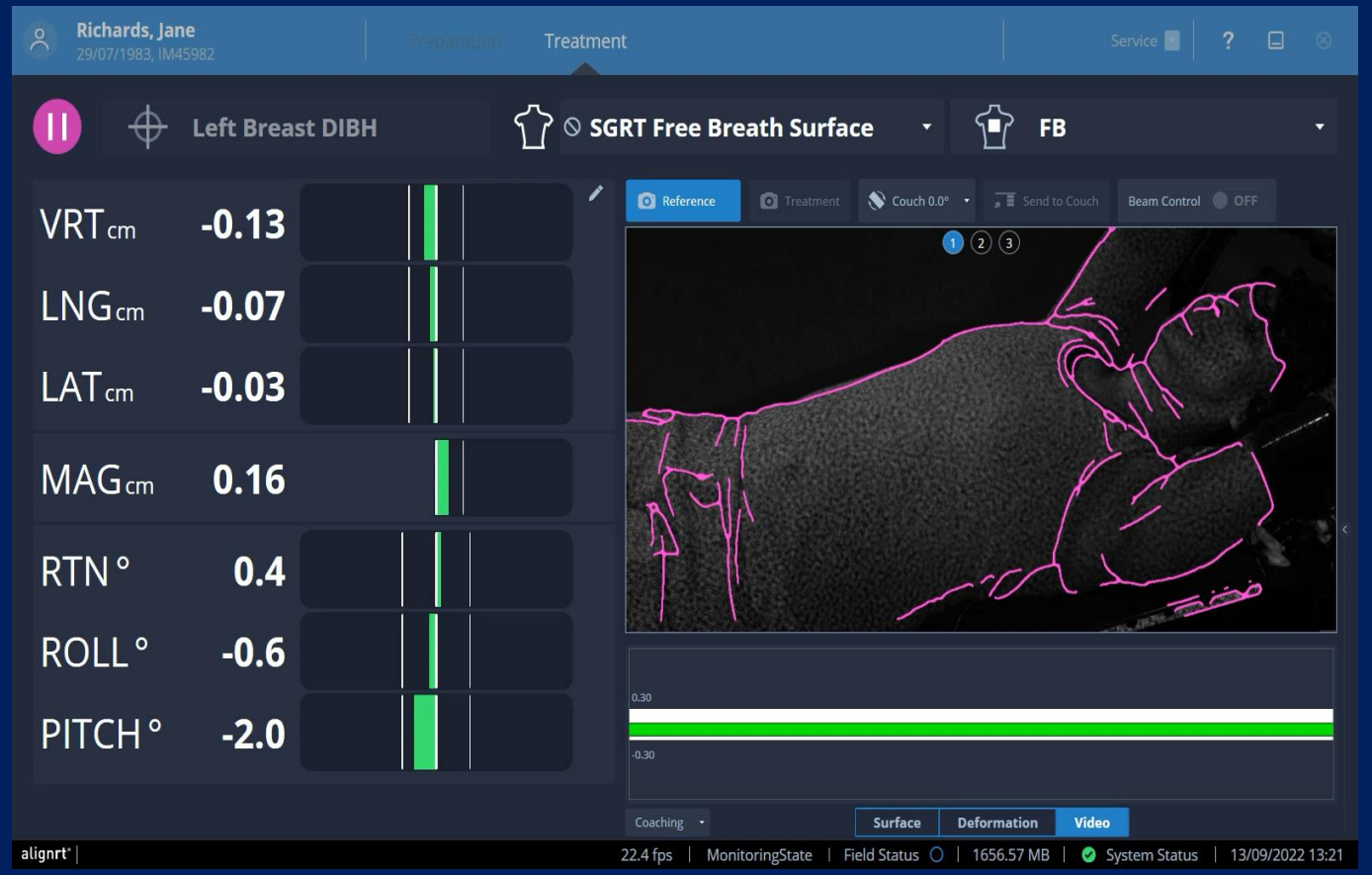


Service data show clinically meaningful reductions in time in position — a comfort + throughput win

Service evaluation (baseline 2020 vs 2024): Akhtar & Shaw deck (UHS)

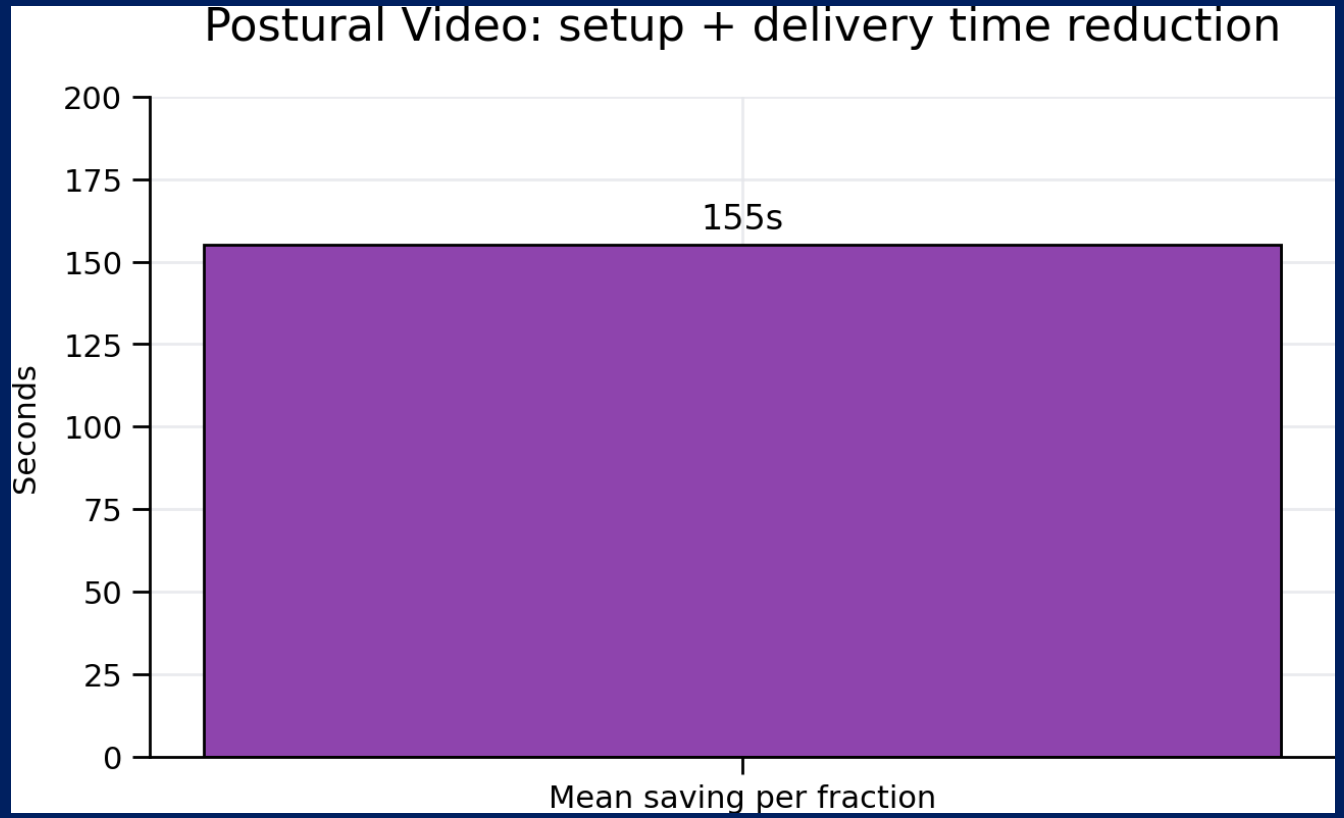
Postural Video™: Why We Love it

- PV overlays a traced reference outline onto a live video view during setup & monitoring
- Therapists can correct posture quickly without multiple static captures
- Helps visualize neck/shoulder alignment and supports confidence during occlusion
- Reduce time in uncomfortable patient position without compromising accuracy
- It has been a “game changer” for our clinic



Oliver et al., RPOR 2024 (10.5603/rpor.104011)
Holt PV service evaluation (Christie NHS, 2024)

Postural Video™: Measured Efficiency Gains (and What Patients Feel)



Shorter setup = less time in uncomfortable positions (arms abducted, hard surfaces, breath-hold repetition)

Holt PV evaluation (Christie NHS, 2024)
Oliver et al., RPOR 2024 (10.5603/rpor.104011)

Postural Video™ Reduced Average Setup Time & Re-Image Rate

Table 1. Setup timing data for site A (AlignRT without PV), and Site B (AlignRT with PV)

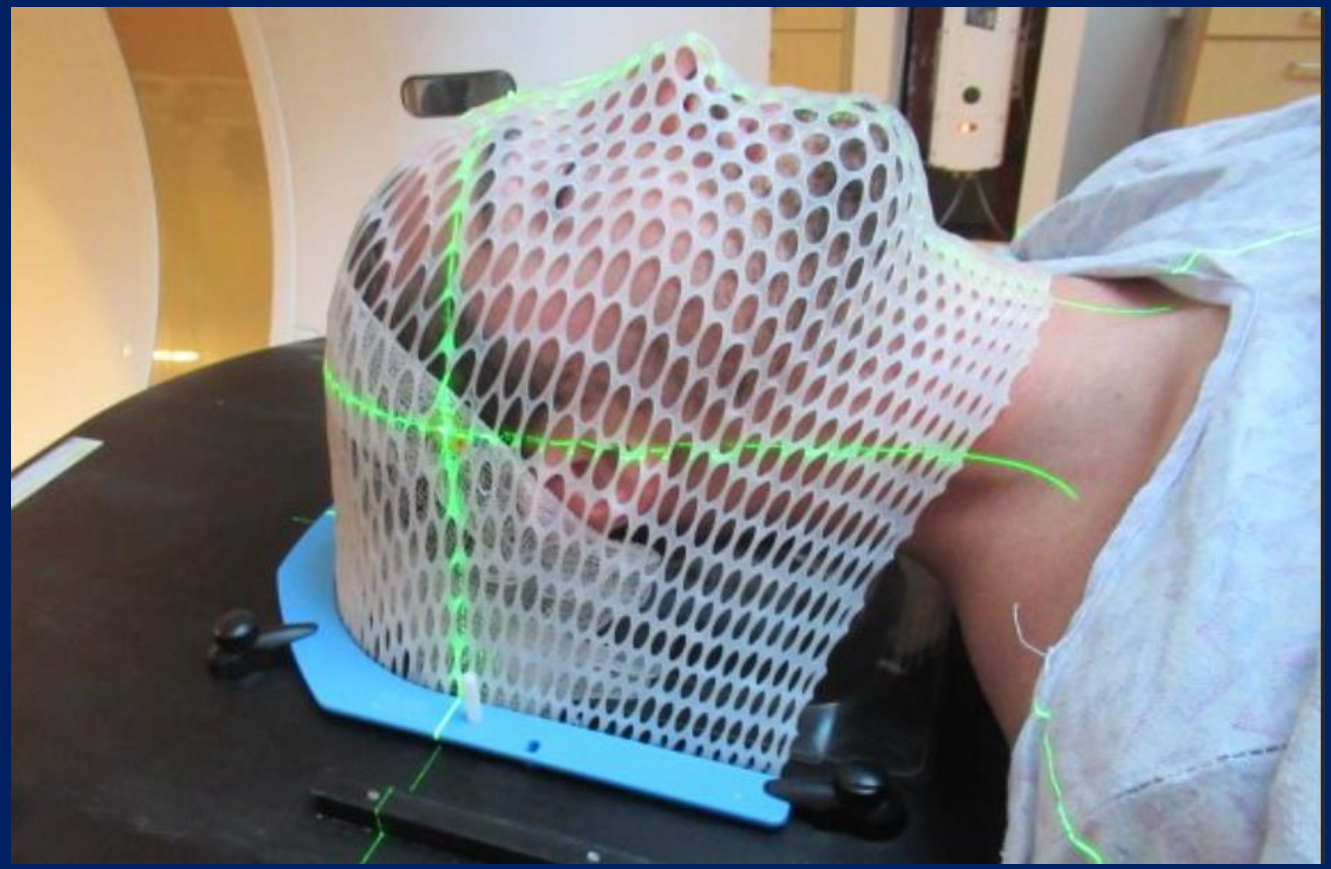
Treatment area	Fraction No. Site A	Fraction No. Site B	Setup time, Site A [sec (1 std)]	Setup time, Site B [sec (1 std)]	Setup time Reduction by PV [sec (%)]
Prostate/Pelvis	135	146	72.6 (33.4)	48.9 (49.7)	23.7 (32.6%)
Lt Breast (all DIBH)	14	12	96.0 (7.9)	62.1 (17.2)	33.9 (35.3%)
Rt Breast	20	20	92.4 (12.9)	56.3 (28.0)	36.1 (39.1%)
Lung	38	39	72.5 (17.7)	56.2 (27.9)	16.3 (22.5%)
Abdomen*	20	17	178.1 (19.8)	161.8 (157.4)	16.3 (9.1%)
Other entities	22	16	106.1 (76.5)	77.2 (40.2)	28.9 (27.2%)
All data	249	250	85.5 (40.0)	60.9 (64.3)	24.6 (28.8%)

DIBH — deep inspiration breath hold radiotherapy; *including liver, pancreas, and other abdominal tumor sites

Oliver et al., RPOR 2024 (10.5603/rpor.104011)

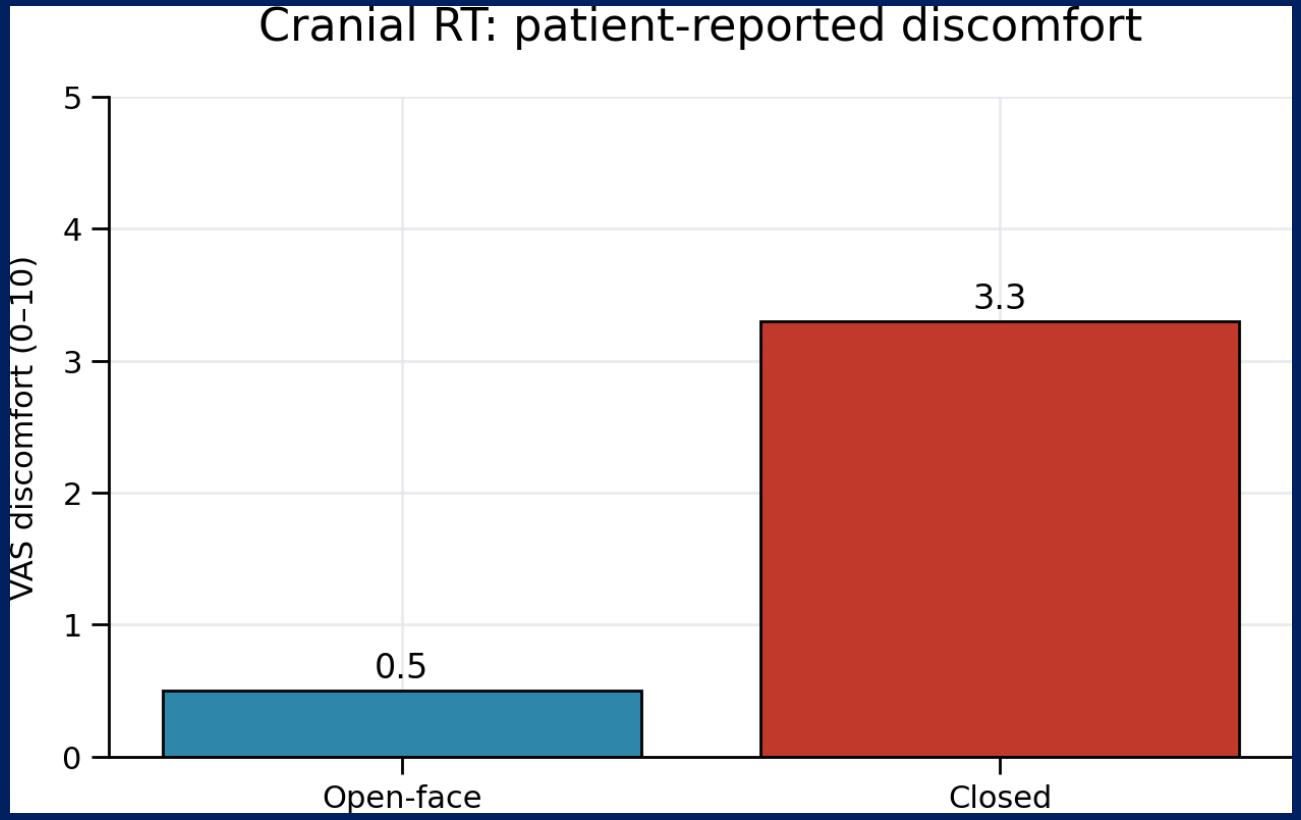
Closed-face Masks: Patient Anxiety and Treatment Disruption

- >20% of H&N patients report anxiety specifically related to immobilization masks
- Qualitative triggers: being “clamped down”, fear of not coping, loss of control
- Better preparation and more tolerable immobilization can improve patient experience



Forbes et al., J Med Radiat Sci 2023 (10.1002/jmrs.658)

Patients Strongly Prefer Open-face Masks



- Discomfort measured by Visual Analog Scale (0-10): 0.5 open-face vs 3.3 closed ($p<0.0001$)
- 27/29 patients preferred open-face masks vs closed masks in a randomized crossover trial

Keane et al., Radiother Oncol 2024 (10.1016/j.radonc.2024.110314)

Accuracy & Safety: Open-face + SGRT is Stable During Treatment

OPEN phase III (interim): intrafraction motion

- Mean CBCT deviations <0.4 mm and <0.2°
- SGRT 95th percentile ~0.4 mm and ~0.8°
- Bayesian analysis: no clinically significant differences between mask types

What SGRT adds

- Continuous monitoring detects transient deviations missed by pre/post CBCT
- Supports safe adoption of more comfortable immobilization options
- Maintains confidence in reduced immobilization

Malone et al., Radiother Oncol 2025 (10.1016/j.radonc.2025.110941)
Rudat et al., Sci Rep 2023 (10.1038/s41598-023-44320-2)

Service Example: "Faceless" Masks Monitored with AlignRT

- Palliative H&N trials comparing imaging shifts show similar setup performance
- Example results:
  - LTT vertical 0.08 cm (full-face)
  - 0.11 cm (faceless), p=0.07
- DSPS lateral shift favored faceless: 0.17 cm vs 0.11 cm, p=0.03
- Patient quote: "...without a mask, it's been a revelation."

Local service presentation: Dyer (Raigmore Hospital), SGRT Annual European Meeting

Impact at Texas Oncology

How SGRT advances our patient-first mission:

OUR MISSION	EFFICIENCY	PATIENT EXPERIENCE
To provide excellent, evidence-based care for each patient we serve, while advancing cancer care for tomorrow.	TXO needed technology that could integrate quickly and scale efficiently (reducing time during simulation and setup) without compromising accuracy and patient safety.	TXO wanted patients to avoid permanent skin marks. TXO wanted patients to have the option of using open-face masks

Implementation essentials (what Physicists + RTTs need)

Tattoo-less workflow

Reference strategy (CT surface / capture policy)
Setup vs monitoring tolerances + action levels
IGRT integration: what stays daily vs reduced frequency
Training + competency + documentation

Open-face + PV workflow

ROI strategy (setup ROI vs monitoring ROI)
Anatomical change triggers (weight loss, swelling) → ROI edits / rescan
Occlusion & immobilization device considerations
Beam-hold criteria + end-to-end QA

Rudat et al., Sci Rep 2023 (10.1038/s41598-023-44320-2)
Malone et al., 2025 (10.1016/j.radonc.2025.110941)
Oliver et al., 2025 (10.5603/rpor.104011)

Summary

- Tattoo-less setup removes a real psychological burden while maintaining accuracy
- Postural Video is a core enabler: reduces time in position and improves setup efficiency
- Open-face masks improve patient experience and are preferred; SGRT supports safe stability and enhances accuracy
- Success depends on workflow design: ROI strategy, thresholds, training, QA

Moser 2020 (10.1111/tbj.13591); Yamauchi 2024 (10.1016/j.jmir.2024.03.049); Oliver 2025 (10.5603/rpor.104011); Keane 2024 (10 .1016/j.radonc.2024.110314); Malone 2025 (10.1016/j.radonc.2025.110941)

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Questions?