Pelvic prehabilitation: *pelvic exercises assist in minimizing inter-fraction sacral slope variability during radiation therapy*

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INTRODUCTION

- Prehabilitation is well-established for surgery
- Could it work for radiation therapy?

METHOD

- N=28 (8 subjects did exercise intervention, 20 were historical controls)
- Intervention group performed two daily exercises pre-radiation therapy
- Daily sacral slope angle (SSA) was measured for each subject using pre-radiation imaging films
- Angle measurements were compared to initial simulation CT SSA to determine daily positioning variability
- Overall variation in SSA between retrospective, non-exercising patients and prospective, exercising patients was compared via a linear mixed model fitting SSA variability as dependent variable, independent variables included: time, group, and their interaction as fixed effect, and subject ID as a random effect.

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Prehabilitation may offer benefit during pelvic radiation therapy.

We demonstrated a **significant decrease in the variability of SSA** by implementing a simple **pre-treatment exercise program**.

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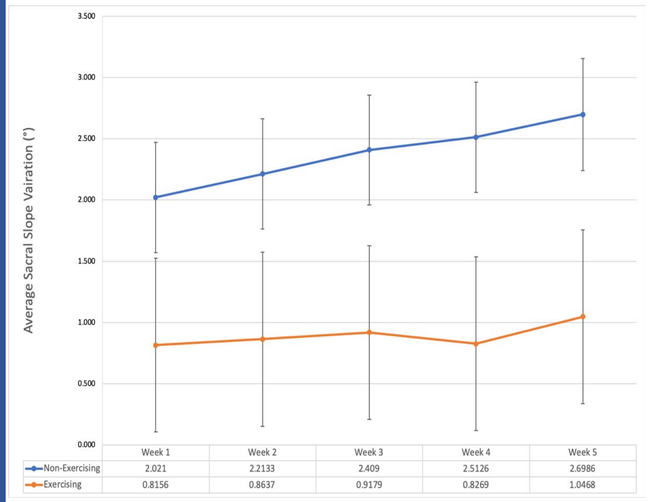
RESULTS

There was a statistically significant difference in SSA variability from baseline CT SIM at each weekly time point between the exercising cohort and retrospective control group, with significantly lower SSA variability in the exercising cohort.



	Week 1	Week 2	Week 3	Week 4	Week 5
Non-Exercising	2.021	2.2133	2.409	2.5126	2.6986
Exercising	0.8156	0.8637	0.9179	0.8269	1.0468

DISCUSSION

Control subjects demonstrated increased variability compared to the exercising cohort. We conclude that there is a potential benefit for prehabilitation during pelvic RT. We recommend a larger randomized control trial to confirm these findings.