

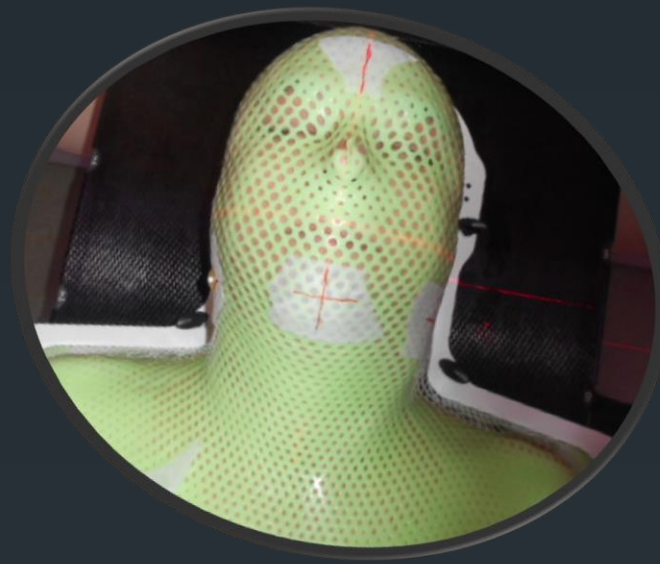


# Open Face Head and Neck Treatment: Same Accuracy, More Comfort?

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# Head and Neck Radiotherapy

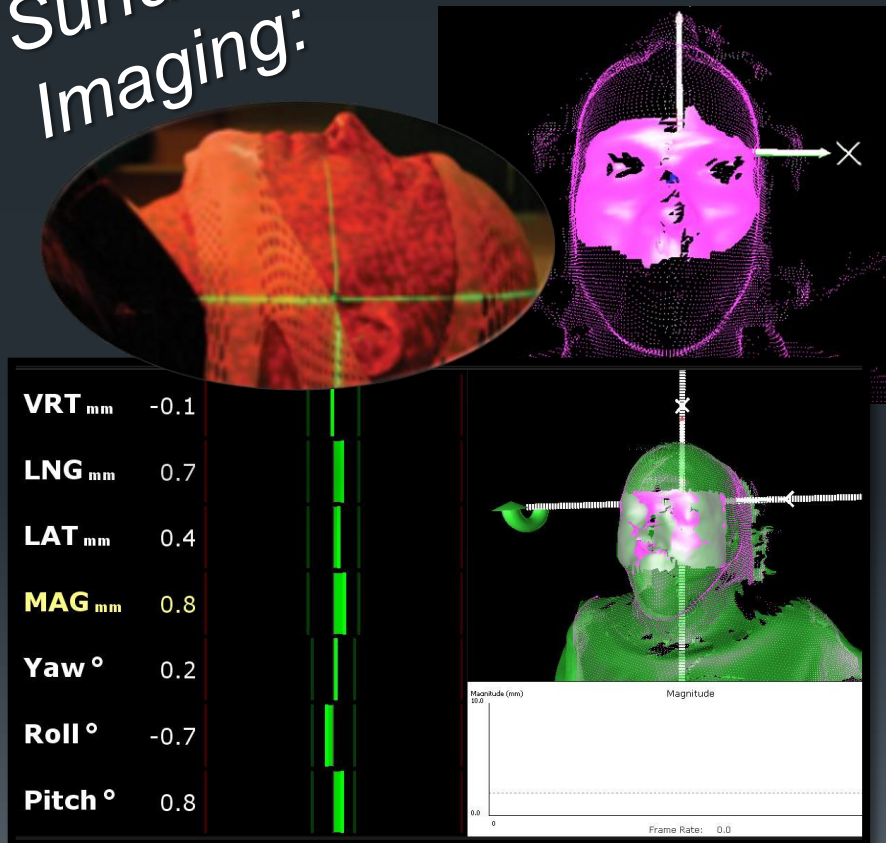


## *Limitations:*

1. Comfort
2. Monitoring
3. Daily CBCT

# Ideas / Solutions:

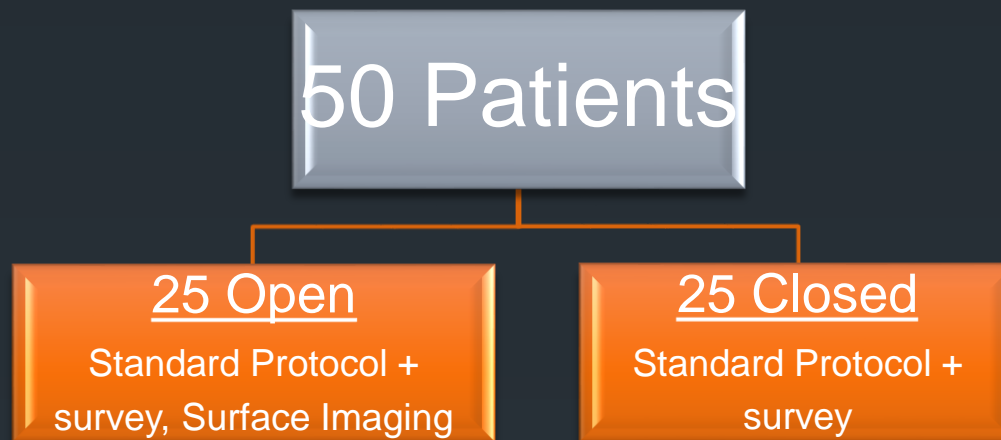
Surface  
Imaging:



Open Masks:



# How do we answer the questions?



- Currently all 50 patients enrolled
- 42 completed treatment
- 36 considered in this study (18 open, 18 close)

# Results

## 1. Intrafraction Motion (18 Patients, 463 monitoring sessions)

### *Daily Averages*

Case	Mean (mm)	2 SD (mm)	Max (mm)
1	0.8	0.9	2.0
2	1.1	1.0	1.9
3	1.1	0.7	1.7
4	1.2	1.1	2.6
5	1.0	1.2	2.5
6	0.9	1.0	2.7
7	0.9	0.7	1.7
8	0.7	0.6	1.4
9	0.8	0.7	1.6
10	0.8	0.9	1.9
11	1.0	0.9	2.0
12	0.6	0.4	1.0
13	0.6	0.3	0.9
14	1.3	1.4	3.2
15	1.0	0.9	2.0
16	1.0	1.2	2.8
17	0.9	1.3	3.2
18	0.9	0.7	1.7



- Group mean = **0.9 +/- 1.0 mm**
- Literature: **0.25 – 1.4 mm** (n=13)
- Group Correlation = **0.27** (p=0.14) with Fx (only **1 of 18** cases)

# Results

## 2. Shape/Conformation (36 patients, 1080 Daily MVCT scans)

### Similarity / Contours

	Spine (mm)	Mandible(mm)	MI	Pearson
Open	1.6 +/- 1.7	1.8 +/- 2.1	0.342 +/- 0.075	0.918 +/- 0.040
Close	1.5 +/- 1.9	1.8 +/- 2.5	0.329 +/- 0.093	0.906 +/- 0.073
t-test	0.15	0.78	0	0



- Both groups gave worse agreement with Fx

# Results

## 3. Daily MVCT (18 patients, 569 daily MVCT scans)

	X (mm)	Y (mm)	Z (mm)	Roll (°)	Pitch (°)	Yaw (°)
Mean	0.5	0.0	0.1	0.2	-0.5	-0.2
2 SD	4.5	5.2	5.8	1.3	2.1	1.5



Too Much!



# Results

## 4. Anxiety / Anxiety

### Means

Total

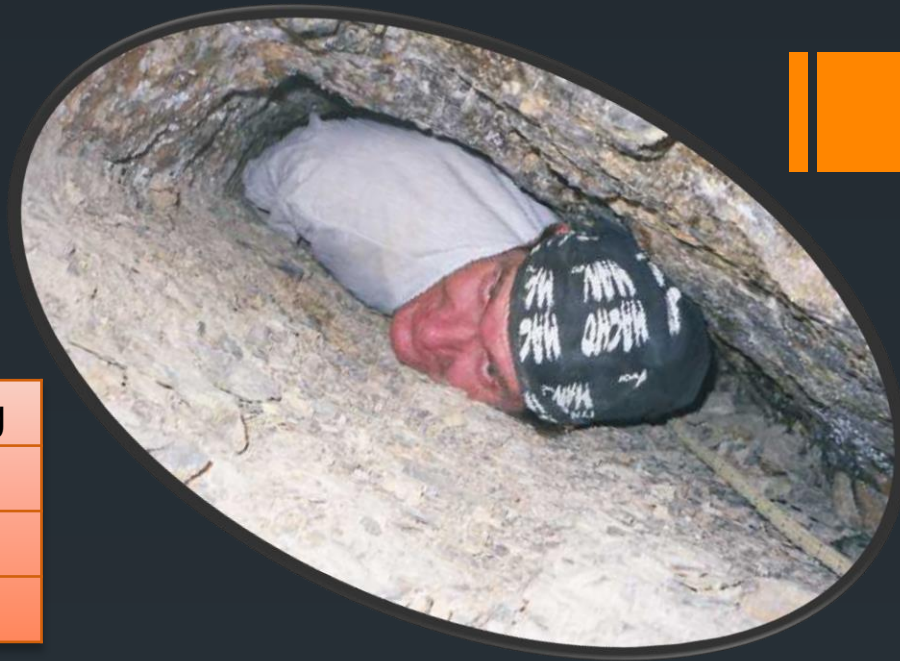
	Anxiety	Claus.	Drug
Open	1.1	1	0.3
Close	1.8	1.6	0.3
p	0.02	0.02	0.47

Pre-Sim

	Anxiety	Claus.	Drug
Open	2.2	2.4	0.4
Close	3	2.9	0.3
p	0.37	0.57	0.91

Post-Sim

	Anxiety	Claus.	Drug
Open	0.9	0.7	0.3
Close	1.5	1.3	0.3
p	0.03	0.01	0.4





# Summary

- Open masks provide adequate intrafraction stability
- Open masks provide “shape preservation” comparable to closed masks
- Surface imaging cannot be used to supplement / replace daily radiographic imaging (under the current scheme)
- Open masks may reduce anxiety and claustrophobia

# Thanks!!!



Missing: Jackie Maurer, Han Liu,  
Brian Lamonds, Jehna Caviness,  
Lenora Holden