Facial Feminization Surgery
Region-specific Importance Recognized by Artificial and Human Intelligence Gender Recognition Correlates With Patient Satisfaction

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No Disclosures
Facial Feminization Surgery (FFS)

- Role in the gender affirmation process
- Surgical modification of sexually dimorphic facial features
- Surgical plan uniquely tailored towards the goals of each patient
- Improved social gender identification
- Patient satisfaction
Unknown: Which regional changes/procedures are most important?
Neural Networks (n=303 patients)

- Combination of all/most procedures (brow, nose, jawline, tracheal shave) (98%)
- Similar correct gendering outcomes to cis-female controls

% Gender-Typed as Female

- Male Control: 2%
- Female Control: 99%
- Preoperative: 52%
- Genioplasty: 58%
- Tracheal shave: 58%
- Cheek implants/Fat grafting: 60%
- Mandibular angle reduction: 62%
- Lip augmentation/Lip lift: 62%
- Frontal sinus setback: 60%
- Rhinoplasty: 68%
- Lateral orbital contouring: 64%
- Jawline region: 86%
- Forehead region: 96%
- Nose/frontal junction: 98%

IBM; Microsoft; Amazon; Face++
Anonymous Crowdsourcing (n=917 responses)

- Preoperative FFS (57%, CM 1.4)
- Postoperative “Complete/All-in-one” FFS (97%, CM 8.9)

Amazon Mechanical Turk
- Neural Network Correct Gender Typing: Preoperative (52%) → Postoperative (96%)
- Crowdsourcing: 95% correct gender typing as female (CM 8.1)
Does the preoperative severity of the frontal brow matter?

- Type 3 (most common): showed the greatest improvement in mis-gendering (45% increase)
- Compared to less severe Type 1 (29%) and Type 2 (33%)

<table>
<thead>
<tr>
<th>Frontal Brow</th>
<th>Defining Features</th>
<th>Transformatory Techniques</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Mild Bossing, No/Min Frontal Sinus, Thick anterior wall</td>
<td>Burring</td>
<td>6%, 3/50</td>
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<tr>
<td>Type 2</td>
<td>Moderate Bossing, Mid-forehead flattening</td>
<td>Burring + Fat filling</td>
<td>8%, 4/50</td>
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<tr>
<td>Type 3</td>
<td>Significant Bossing, Large Projection</td>
<td>Anterior frontal sinus wall set-back</td>
<td>86%, 43/50</td>
</tr>
</tbody>
</table>
• PROM: Patient Satisfaction Assessment

Overall Facial Appearance: 75.1 ± 8.1
Quality of Life: 82.4 ± 8.3
• Multiple views for each patient (i.e. oblique or “everyday” photographs) for better visual representation

• Assessment of neural network and public perception outcomes for gender non-binary patients
Thank You

• Dr. James P. Bradley, MD
• Meghan Miller, BA
• Dana Bregman, MD