

# CPAP MASK FITTING 101

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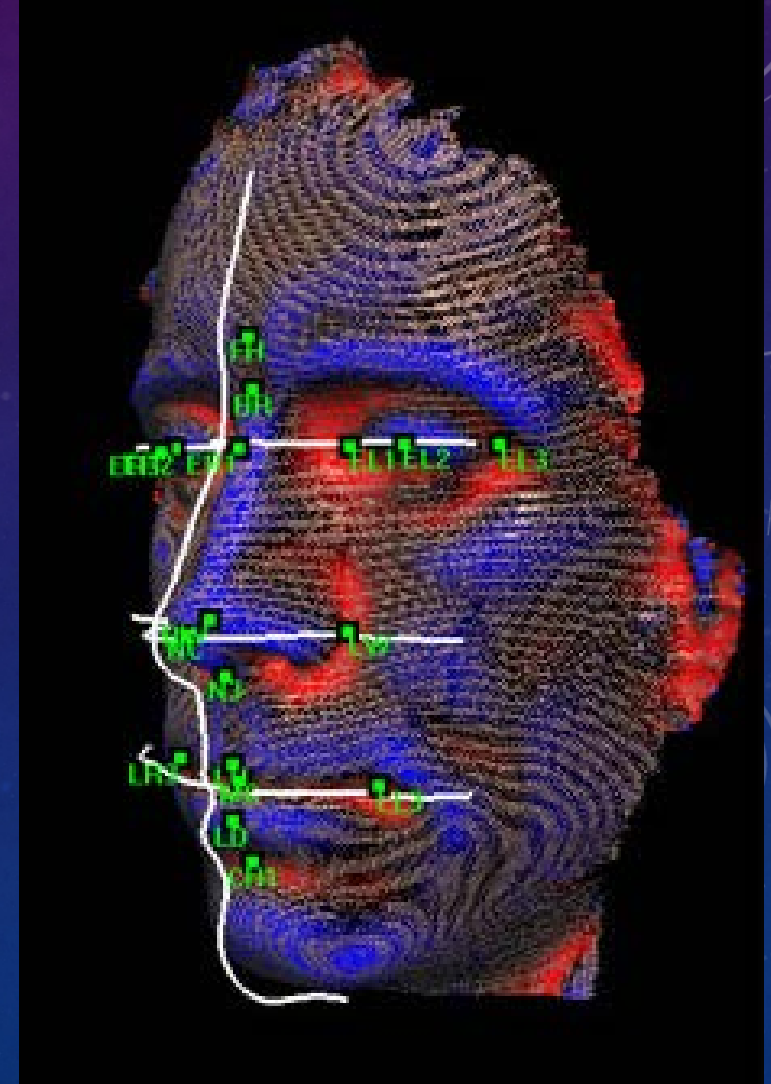
# Objectives

1. Discuss Factors in Facial Assessment
2. How Select the Proper Nasal Mask Interface
3. How Determine the Mask Size
4. Fit the Mask Interface
5. Adjust the Headgear
6. Check the Leak Rate
7. Discuss 3D Mask Imaging and Construction
8. New CPAP Masks



# MASK FITTING STEPS

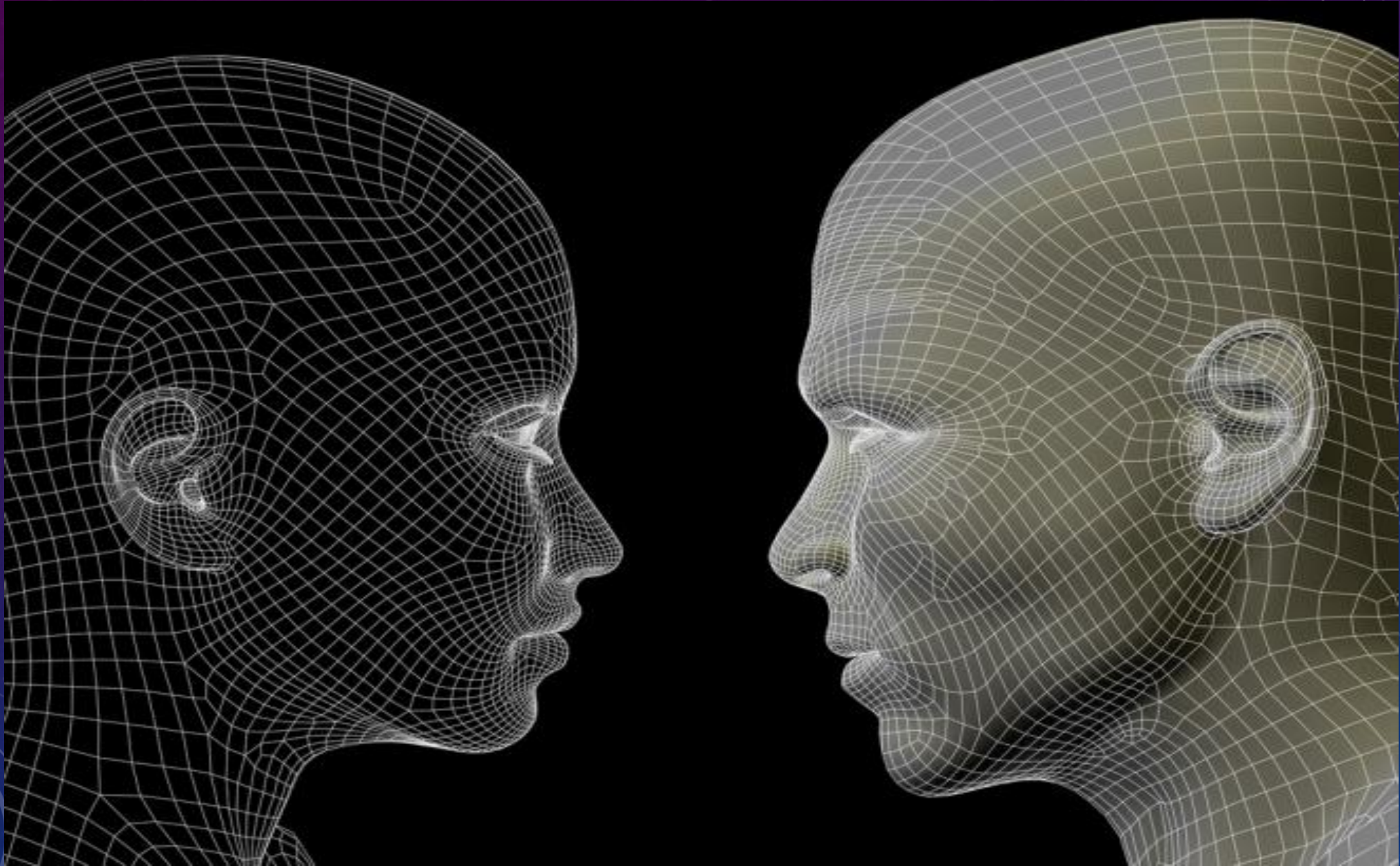
- Assess the Face And Head
- Select the Interface
- Determine the Mask Size
- Fit the Mask Interface
- Adjust the Headgear
- Check the Leak Rate
- Have the Patient Demonstrate Putting on Mask
  - Check Leak Rate



# THE 3 DIMENSIONAL FACE



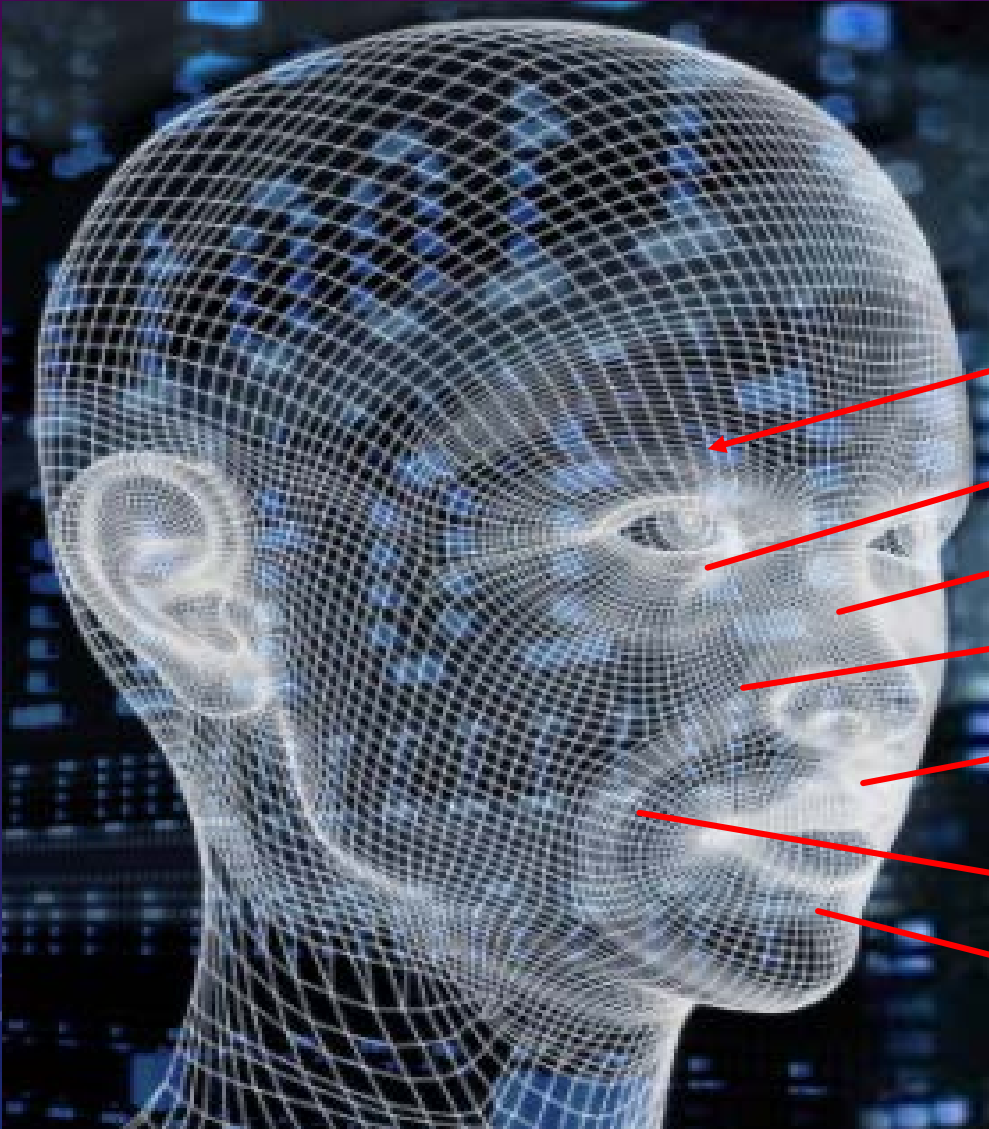
# FACIAL DIFFERENCES BY GENDER



# “WHAT LIES BENEATH”



# FACIAL LANDMARKS



**Radix**

**InfraOrbital Crease**

**Lateral Ridge**

**Nasal Facial Sulcus**

**Filtral Crest Vermillion**

**Nasal Labial Fold**

**Labial Mental Crest**

# ASSESSING THE FACE

## OTHER CONSIDERATIONS

- Facial Symmetry
- Indentation (Eye Glass Pad) Inward Curvature on Bridge of Nose
- Shape of the Nose (Length and width)
- Deviated Septum
- Smile - Frown Lines (Nasal Labial Folds)
- Cheek Hollows
- Chin Cleft (Labial Mental Crest)
- Dentures

The background is a dark blue gradient with a subtle pattern of white stars and dots. Overlaid on this are several faint, light blue technical diagrams. In the top right, there is a large circular gauge with concentric circles and radial markings, resembling a compass or a specialized meter. In the bottom right, there is a smaller circular diagram with concentric circles and arrows indicating a clockwise direction. In the bottom left, there is a partial view of another circular diagram with an arrow. The text is centered and rendered in a bright yellow, bold, sans-serif font.

# AUDIENCE PARTICIPATION FACIAL ASSESSMENT PRACTICE

## WHAT PROBLEMS DO YOU ANTICIPATE IN MASK FITTING THE FOLLOWING INDIVIDUALS









# INTERFACE SELECTION

## Interface Types

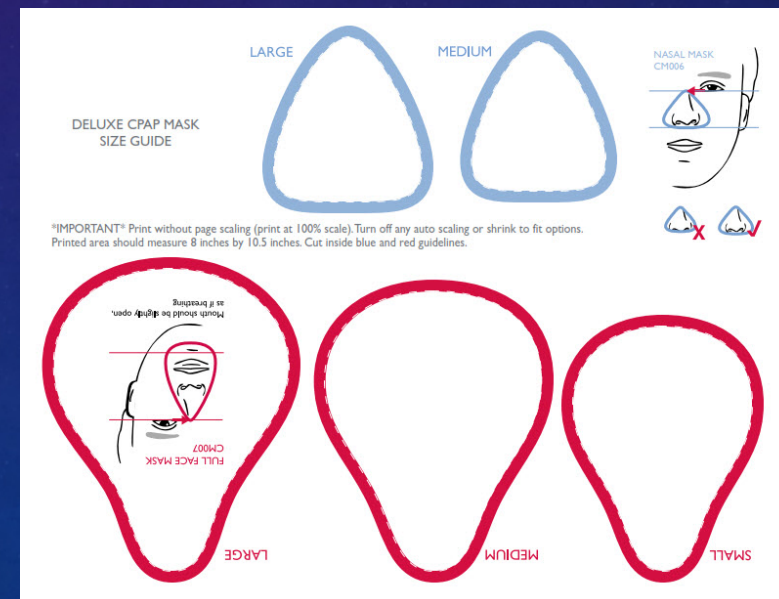
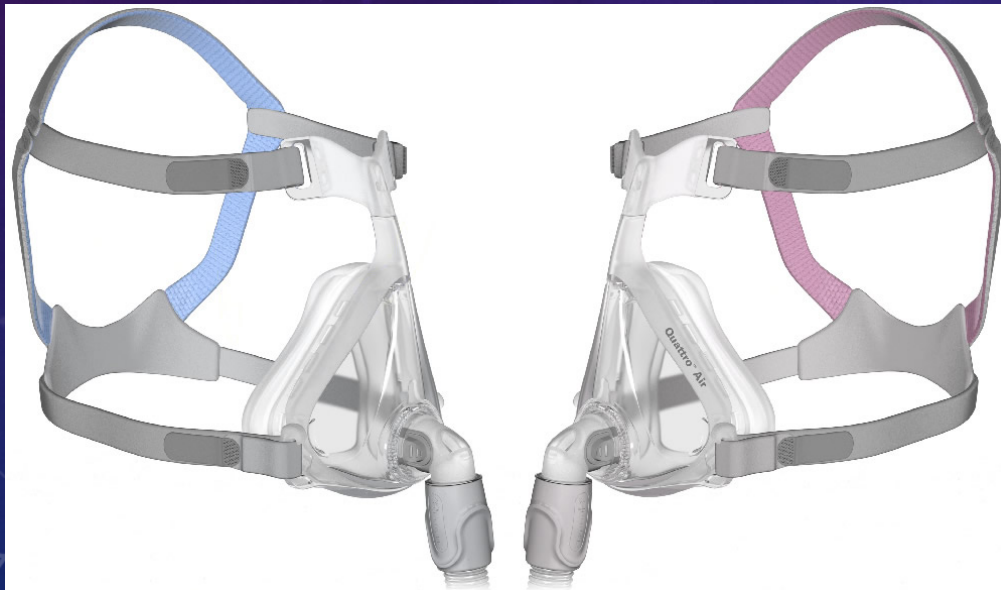
- Nasal Pillows
- Nasal Mask
- Full Face Mask
- Total Face Mask
- Hybrid

## More Considerations

- Claustrophobia (Nasal Pillows)
- Peak Pressure 4-10, 11-15, 16-20
- Beards
- Mouth leaks (dentures)
- Dexterity to put on mask
- Handicap

# SIZE IS (MOSTLY) EVERYTHING

- Exact Mask Sizes
- In Between Mask Sizes
- Headgear Size

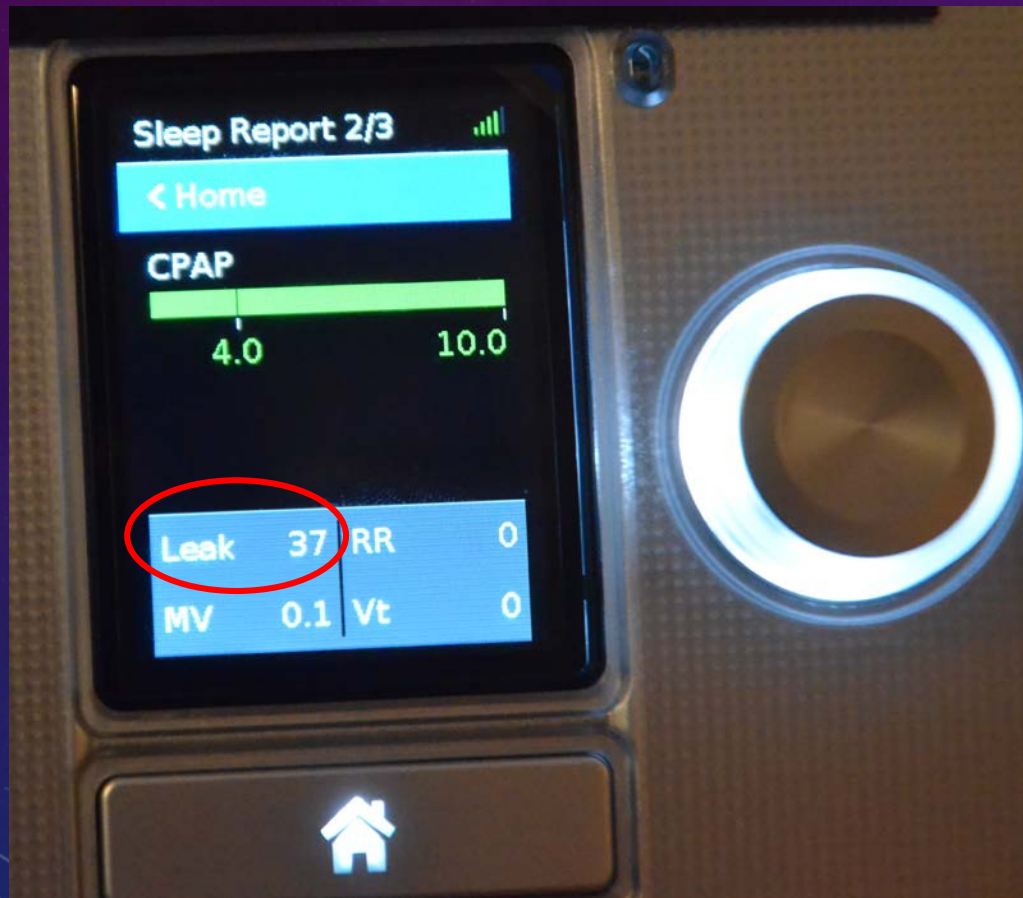


# FITTING THE MASK TO THE FACE

- WHO SHOULD PLACE THE MASK ON THE PATIENT FACE
- WHO SHOULD ADJUST THE HEADGEAR



# CHECK FOR LEAKS / THE LEAK RATE

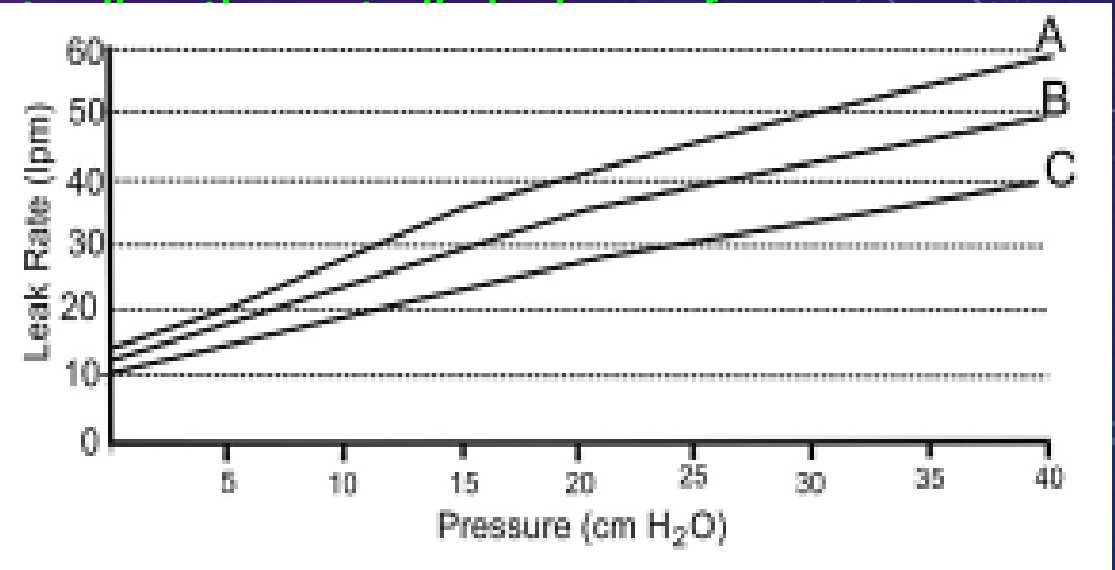


**HAVE PATIENT PUT ON MASK  
THEN CHECK FOR LEAKS/LEAK RATE**



# AIR LEAKS

- Total Leak = Unintentional + Intentional
- Intentional Leaks : engineered holes in mask interface  
pressurized air.
- Unintentional Leaks
  - ✓ Mouth Leaks
  - ✓ Seal Leaks
  - ✓ Cushion Leaks
  - ✓ Machine Leaks (humidifier gasgets)



# A DIFFERENT LOOK AT LEAKS

✓ *Nearly All Masks Leak.*

✓ Significant Leaks

Leak Rate > 25 LPM

AHI > 5

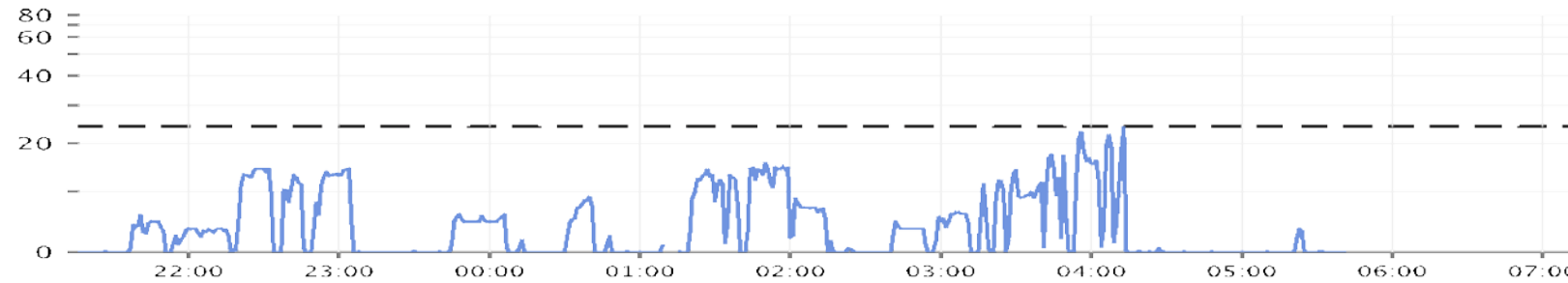
✓ NonSignificant Leak

Leak Rate < 15 LPM

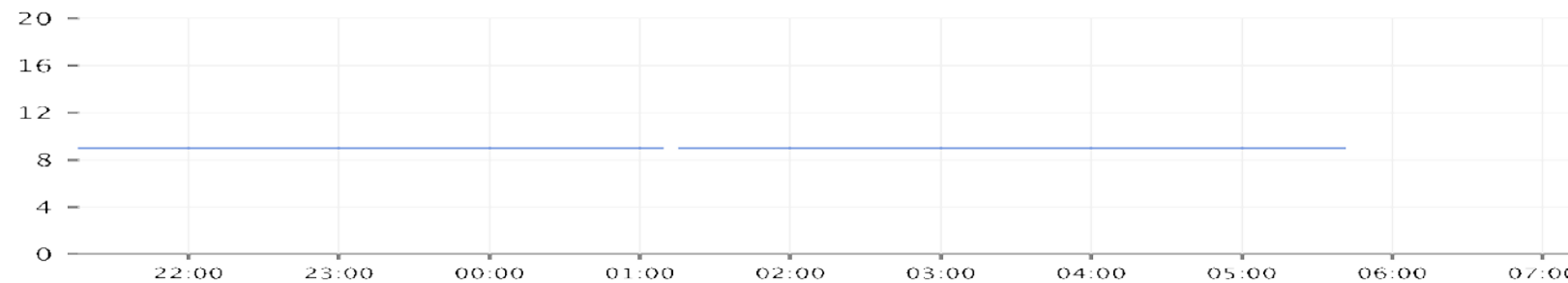
AHI < 5

✓ "REM LEAKS"

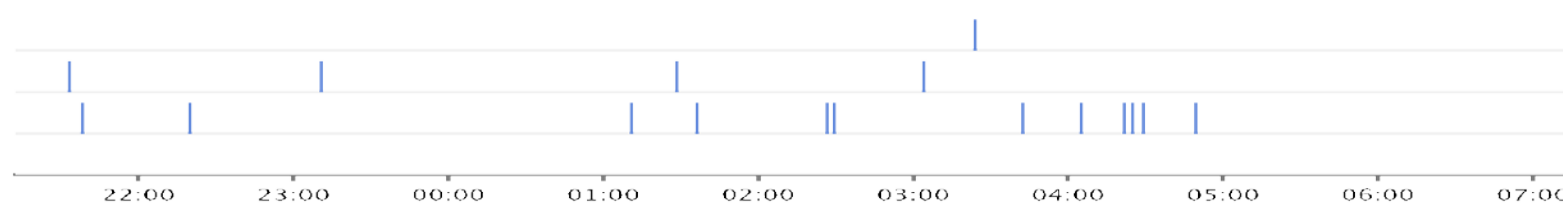
Leak (L/min)



Pressure (cmH2O)



Events



# ADDITIONAL AIDS FOR MASK LEAK



**Full Face Gel Cushion**



# 3D TECHNOLOGY IN RESPIRATORY

## THE FIRST 3D PRINTED TRACHEA AND BRONCHI





# GARRETT'S STORY: A BABY SAVED BY 3D PRINTING

## Difficult Airway Patient

For Airway Emergencies and/or Cardiac Arrest

- Activate Cardiac Arrest Team (Code Blue)  
AND
- Call 141 - STAT page Difficult Airway Team

### Trach Section Depth

Patient Name: Garrett

Trach Type: Tracheostomy

Trach Size: 3.5

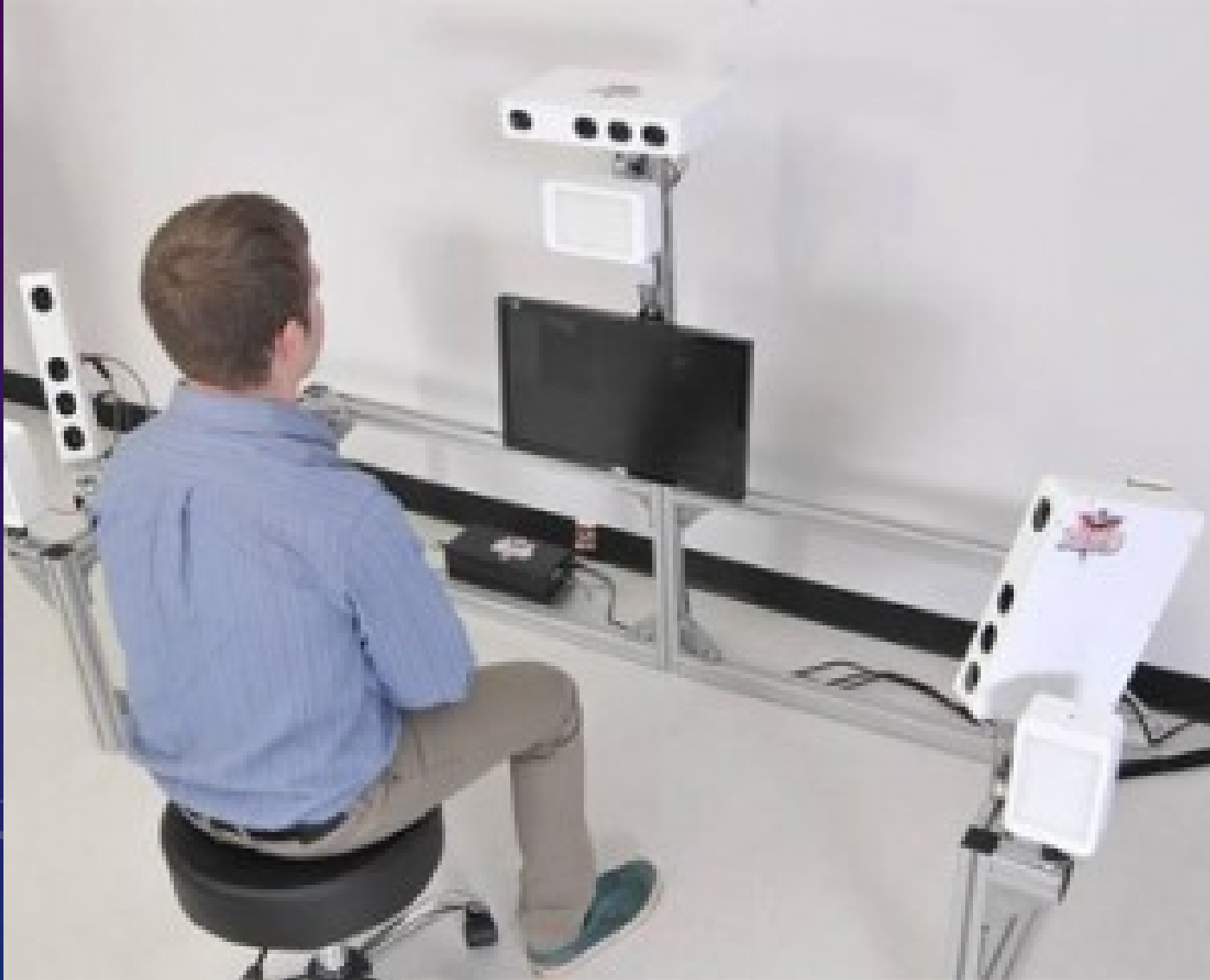
Depth Section Depth:

11

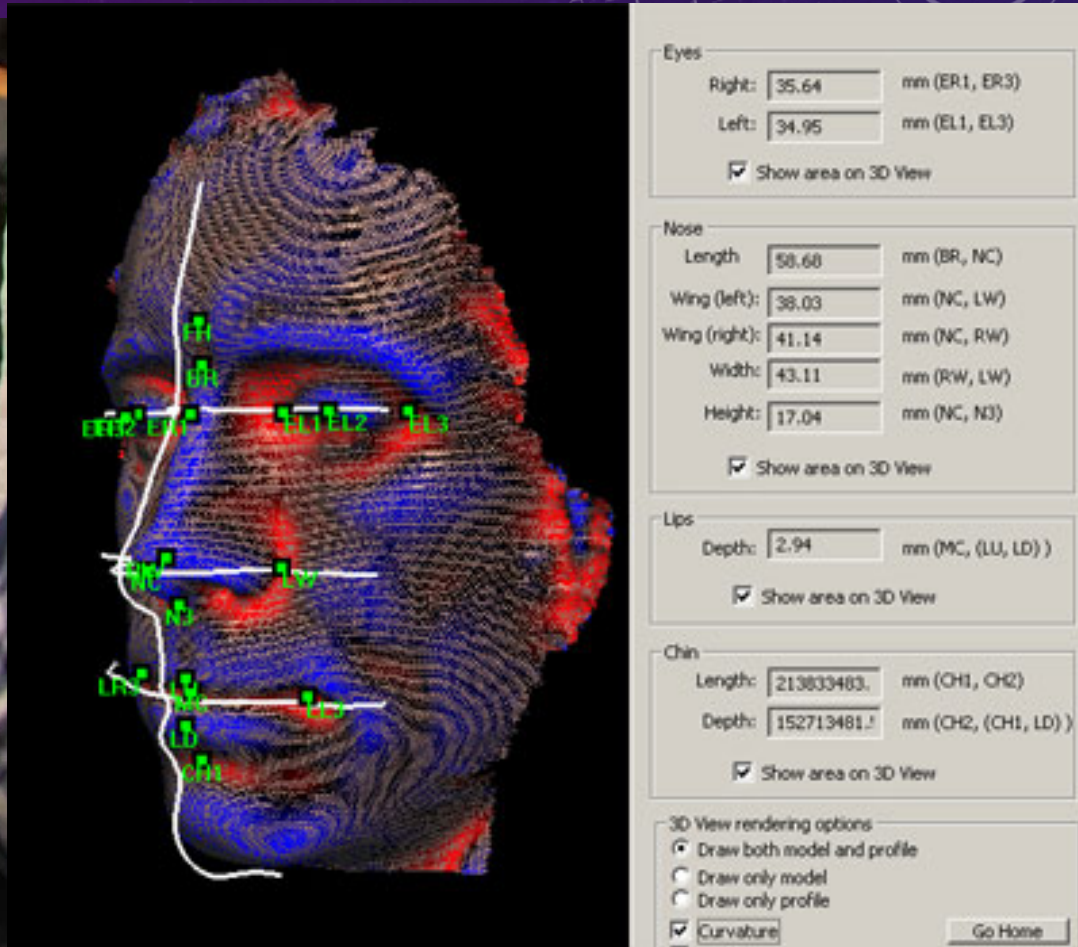
# 3D\_360 HEAD SCAN



# 3D Facial Scan

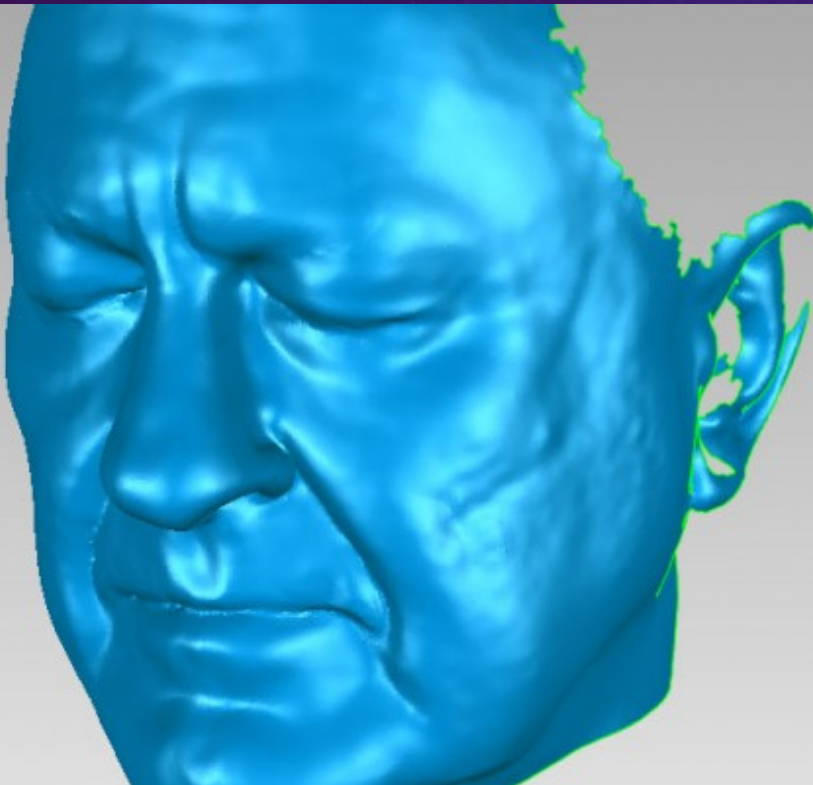


# 3D SOFTWARE



# 3D MASK CONSTRUCTION

metamason™  
(M)



# EXAMPLES 3D CREATED CPAP MASKS





**M<sup>m</sup>** **Metamason™**  
automating customization of  
patient-specific medical devices.

**R<sup>e</sup>** **Respere™** customized CPAP masks,  
**FIT FOR A BETTER NIGHT'S SLEEP.™**

M metamason-c

The image features a white rectangular banner with a dark blue background. On the left, there are two overlapping circles: a grey one with a white 'M' and a superscript 'm', and a blue one with a white 'R' and a superscript 'e'. To the right of these circles is the text 'Metamason™' in a bold, sans-serif font, followed by 'automating customization of patient-specific medical devices.' in a smaller font. Below this, the word 'Respere™' is written in a large, bold, blue font, followed by 'customized CPAP masks,' in a smaller font. At the bottom of the banner, the phrase 'FIT FOR A BETTER NIGHT'S SLEEP.™' is written in a bold, sans-serif font. In the bottom left corner of the banner, there is a small circular logo with an 'M' and the text 'metamason-c'. On the right side of the banner, there is a close-up photograph of a person's face wearing a clear CPAP mask with a blue filter and a white cushion. The background of the entire slide is a dark blue gradient with faint, stylized circular patterns and a large, semi-transparent circular scale on the right side.

# REVIEW

1. Discuss Factors in Facial Assessment
2. How Select the Proper Nasal Mask Interface
3. How Determine the Mask Size
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6. Check the Leak Rate
7. Significant vs NonSignificant Leaks
8. Discuss 3D Mask Imaging and Construction
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