

# CPAP MASK FITTING 101

GARY JEROMIN MA RRT LRT

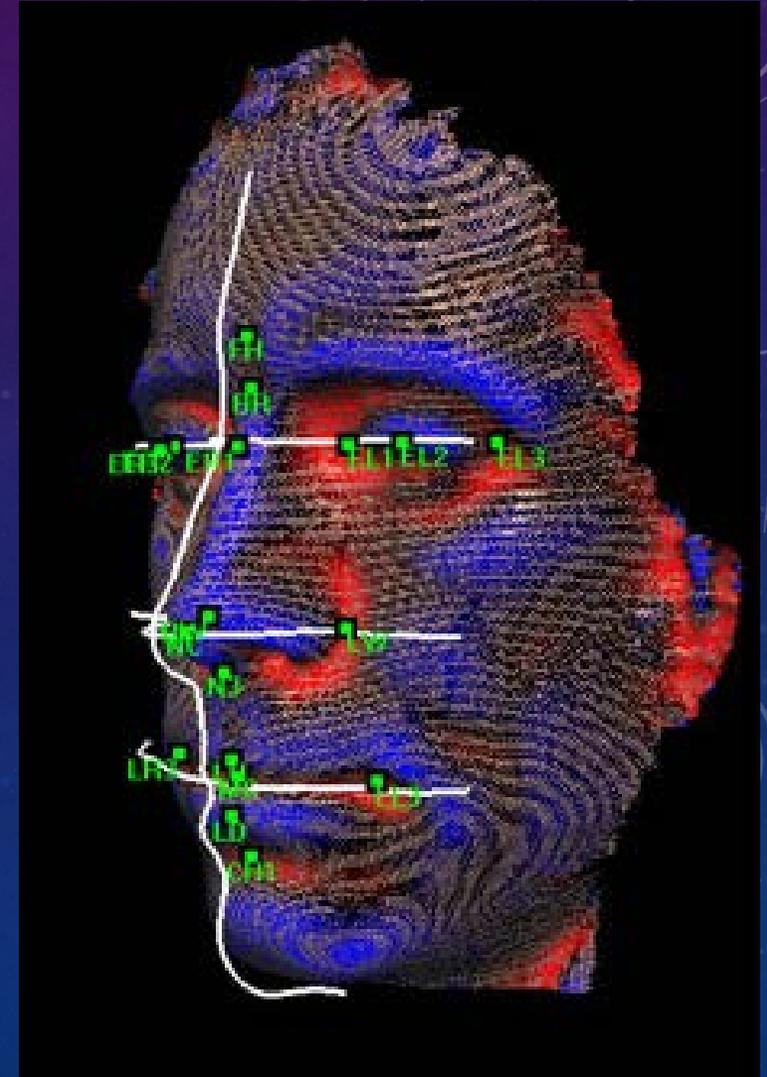
# Objectives

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

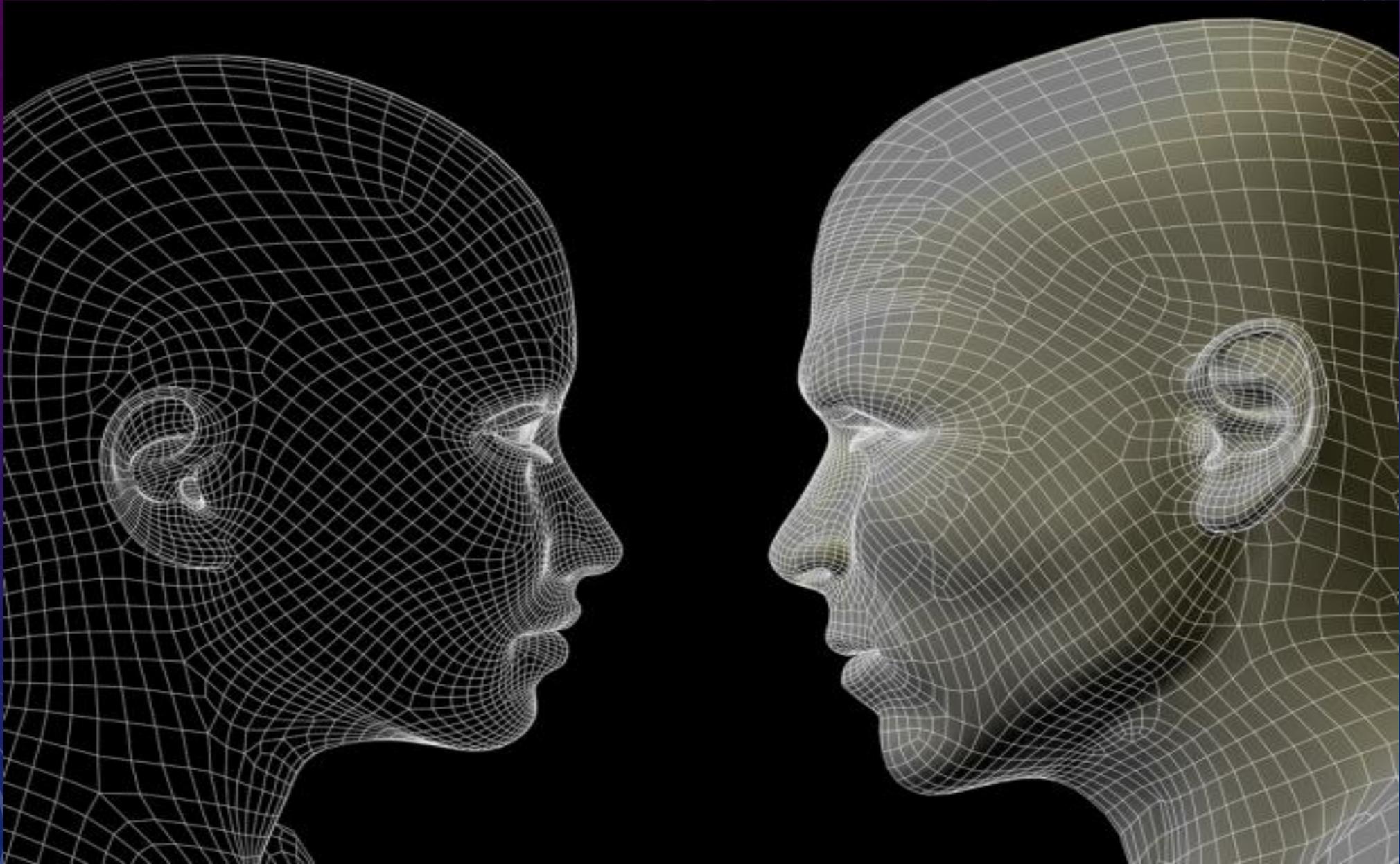
- **Assess the Face And Head**
- **Select the Interface**
- **Determine the Mask Size**
- **Fit the Mask Interface**
- **Adjust the Headgear**
- **Check the Leak Rate**
- **Have the Patient Demonstrate Putting on Mask**
  - Check Leak Rate**



# THE 3 DIMENSIONAL FACE



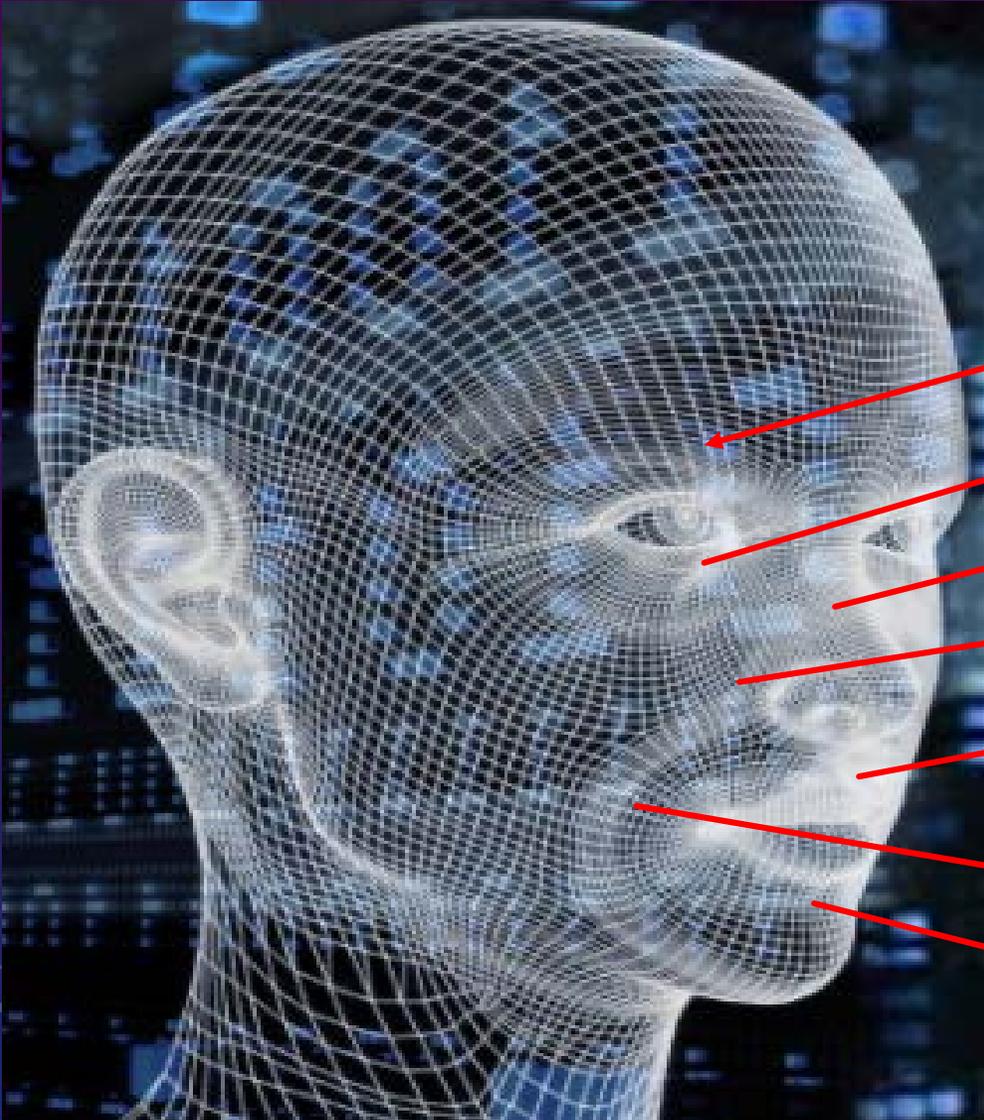
# FACIAL DIFFERENCES BY GENDER



# “WHAT LIES BENEATH”



# FACIAL LANDMARKS



**Radix**

**InfraOrbital Crease**

**Lateral Ridge**

**Nasal Facial Sulcus**

**Filtral Crest Vermillion**

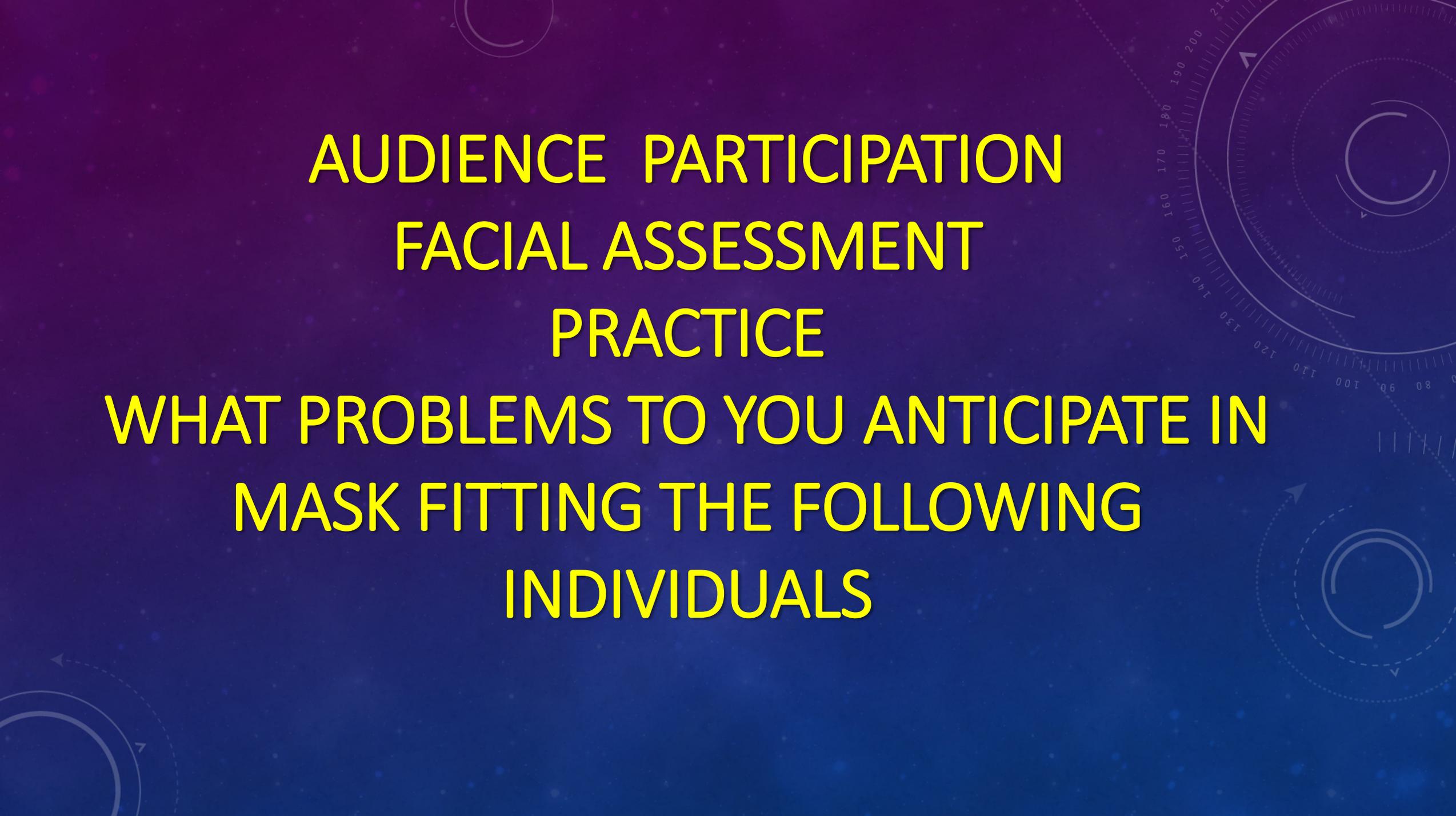
**Nasal Labial Fold**

**Labial Mental Crest**

# ASSESSING THE FACE

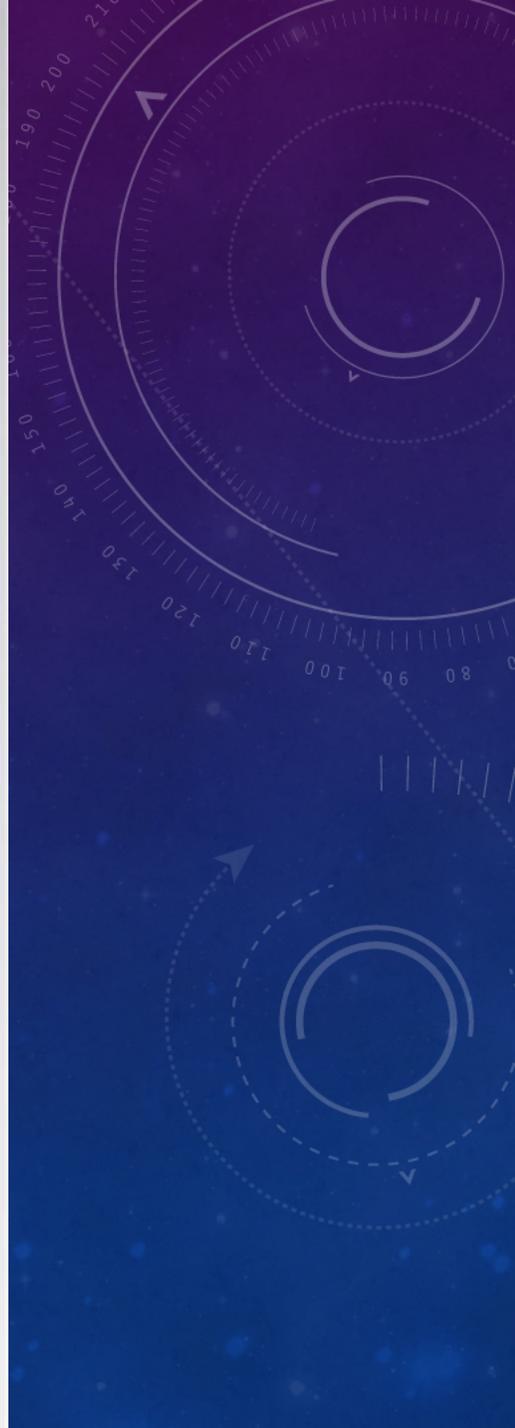
## OTHER CONSIDERATIONS

- 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

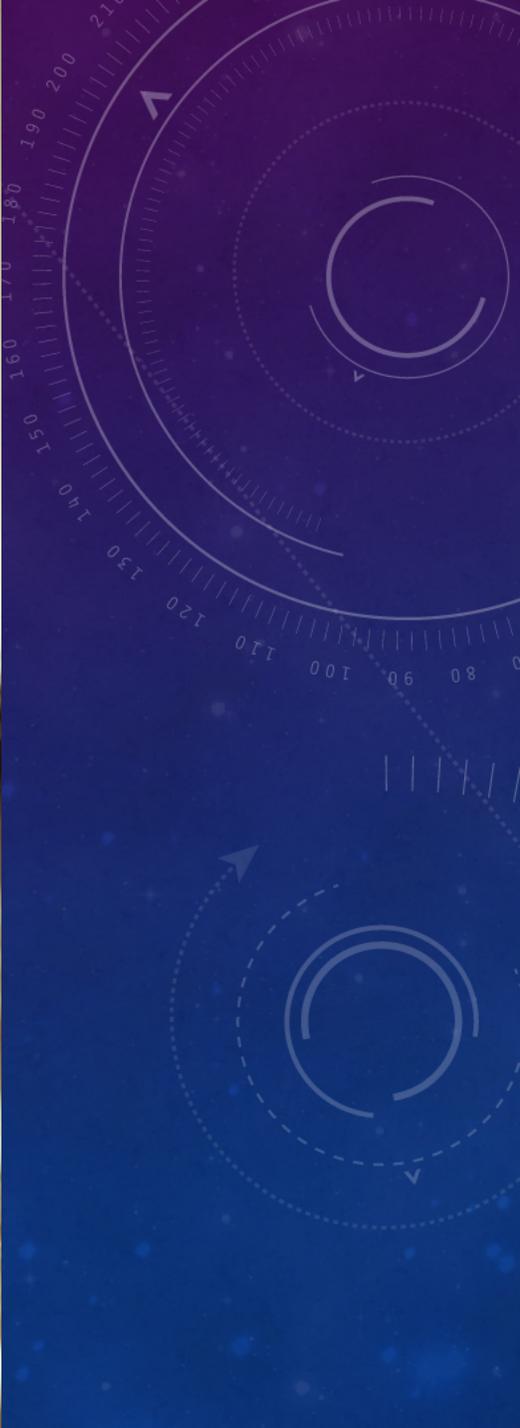
The background is a dark blue gradient with a starry space pattern. On the right side, there are several technical diagrams, including a large circular gauge with numerical markings from 80 to 210 and a smaller circular diagram below it. On the left side, there are faint circular diagrams and arrows.

# AUDIENCE PARTICIPATION FACIAL ASSESSMENT PRACTICE

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









# INTERFACE SELECTION

## Interface Types

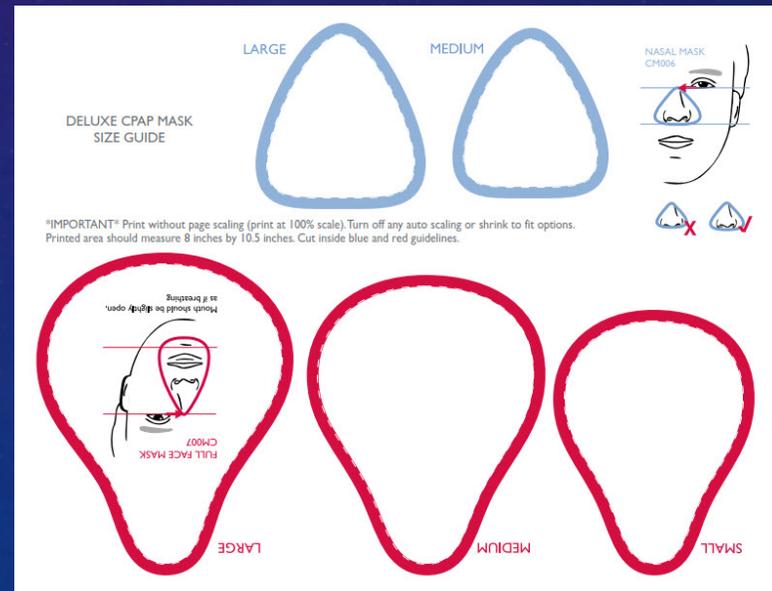
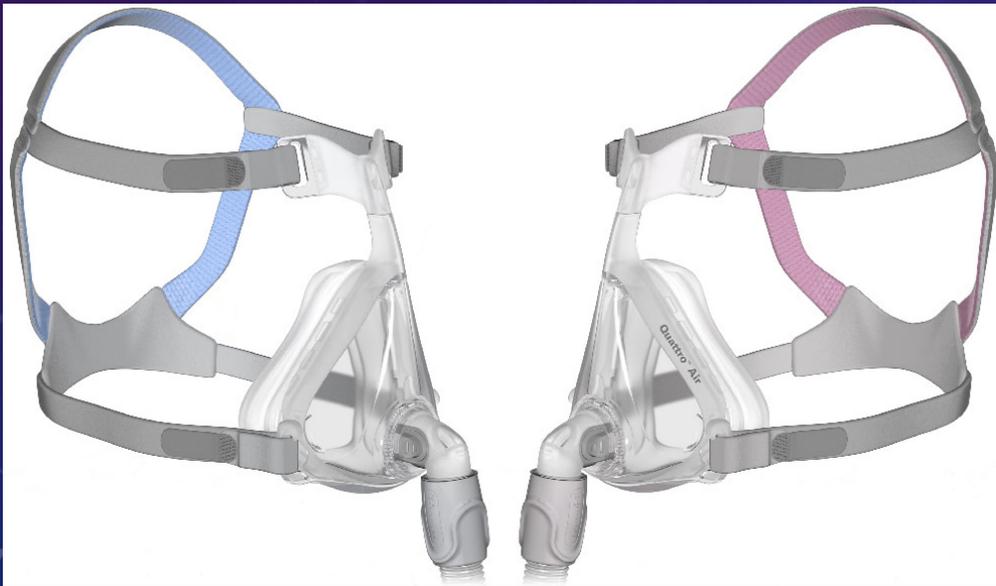
- Nasal Pillows
- Nasal Mask
- Full Face Mask
- Total Face Mask
- Hybrid

## 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

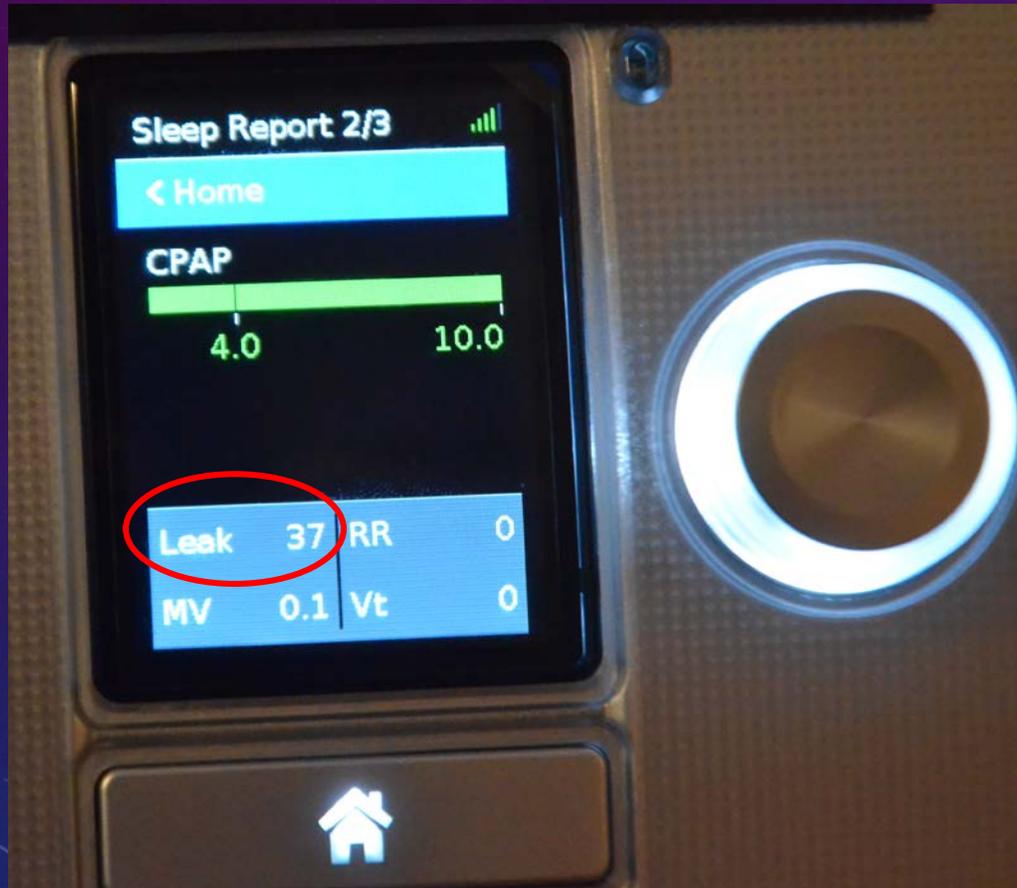


## FITTING THE MASK TO THE FACE

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



# CHECK FOR LEAKS / THE LEAK RATE

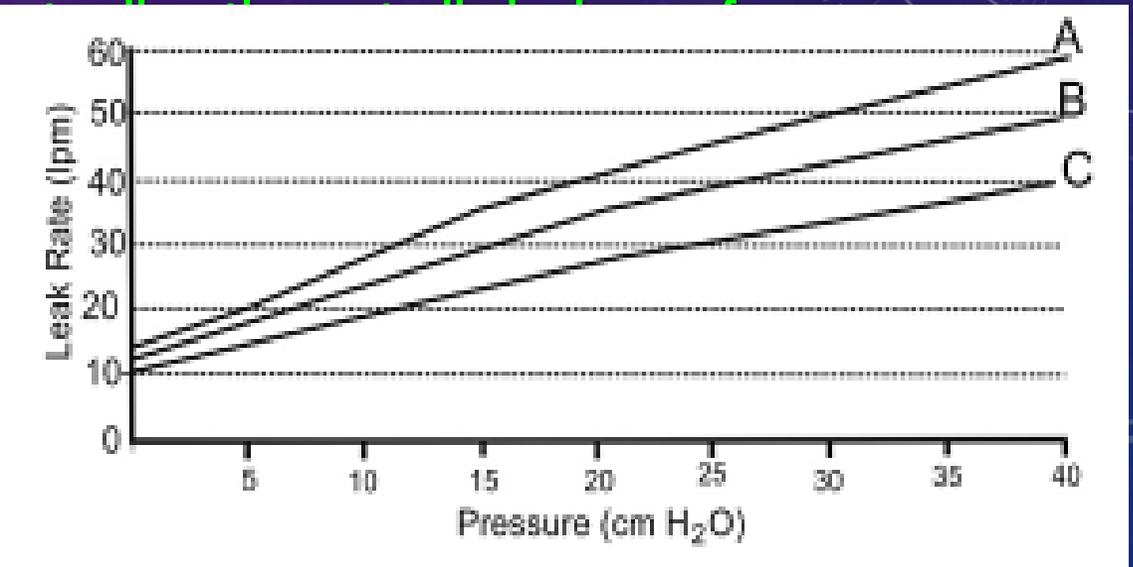


**HAVE PATIENT PUT ON MASK  
THEN CHECK FOR LEAKS/LEAK RATE**



# 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

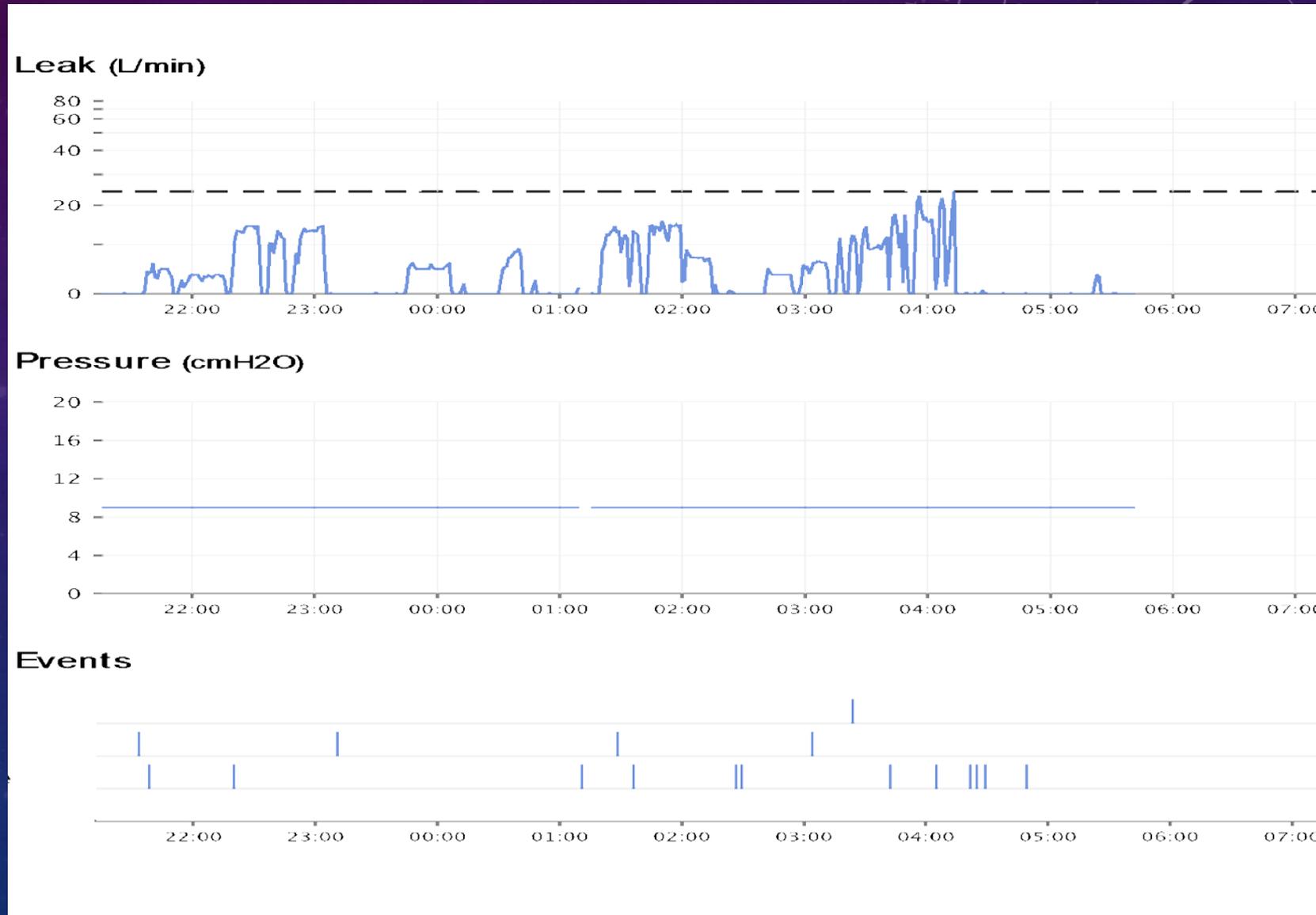
AHI > 5

✓ NonSignificant Leak

Leak Rate < 15 LPM

AHI < 5

✓ "REM LEAKS"



# 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

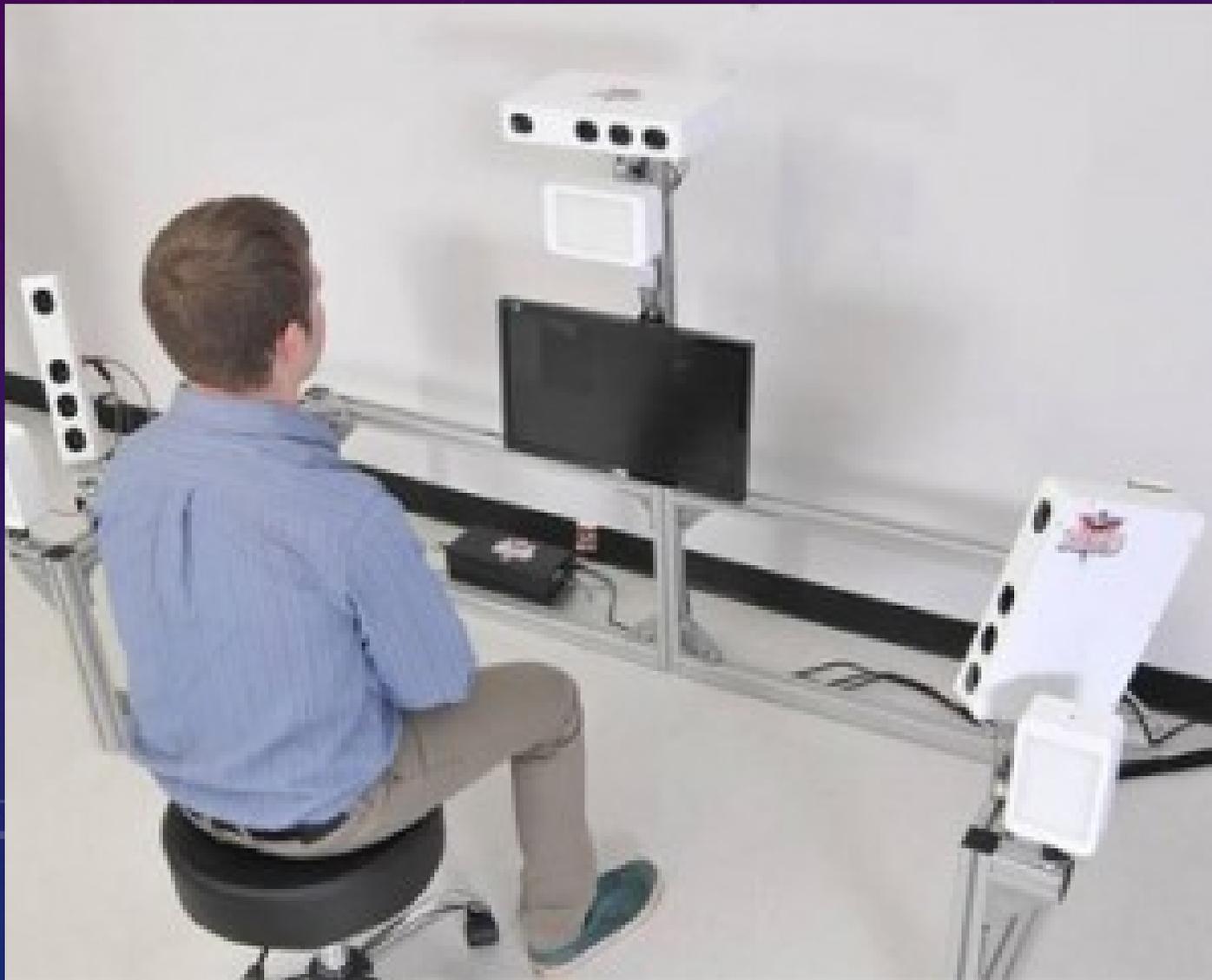
- Activate Cardiac Arrest Team (Code Blue)  
AND
- Call 141 - STAT page Difficult Airway Team

**Trach Suction Depth**  
Patient Name: *Pc*  
Trach Type: *5.0*  
Trach Size: *5.5*  
Insert Suction Depth: *11*

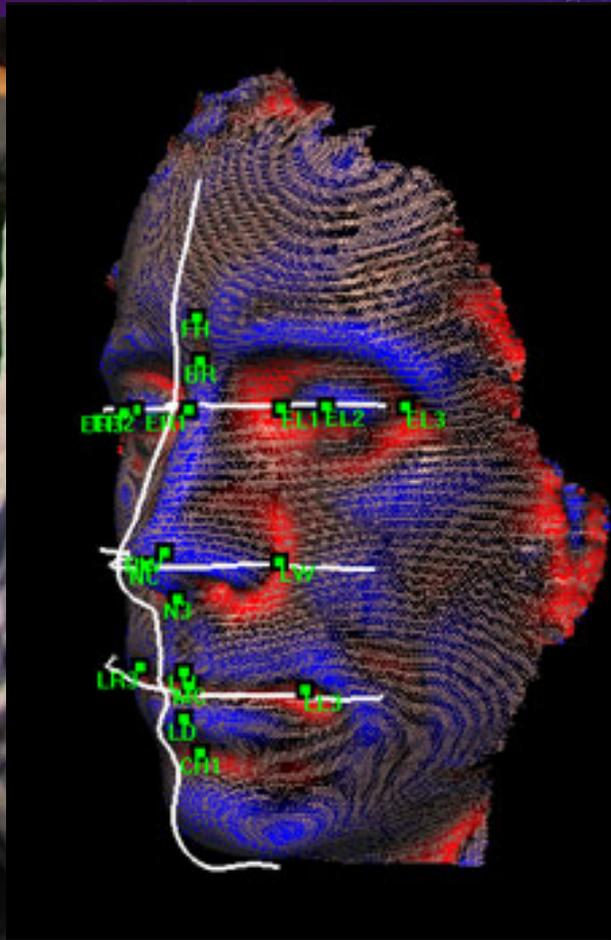
# 3D\_360 HEAD SCAN



# 3D Facial Scan



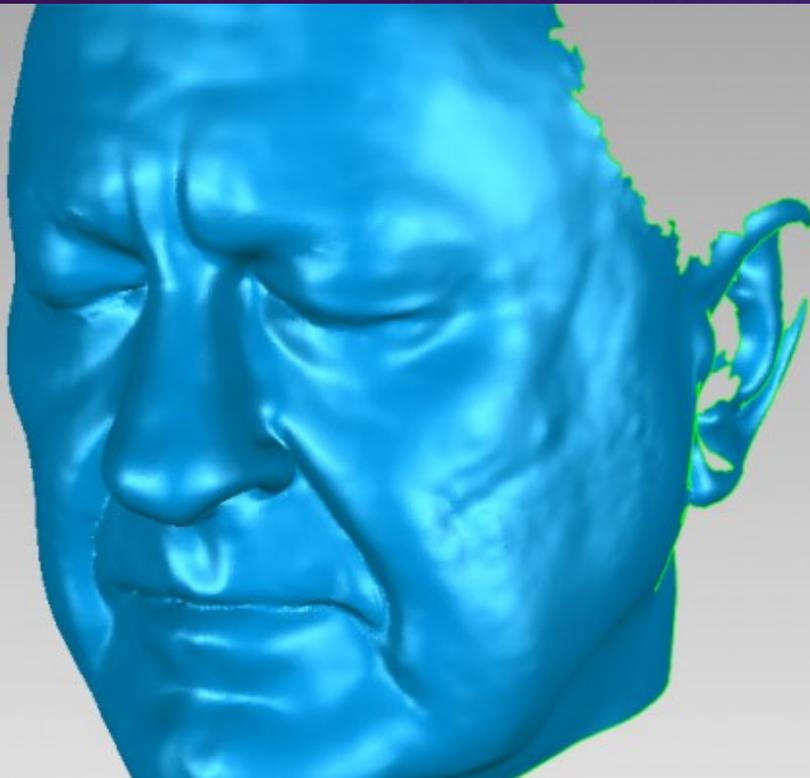
# 3D SOFTWARE



Eyes	
Right:	35.64 mm (ER1, ER3)
Left:	34.95 mm (EL1, EL3)
<input checked="" type="checkbox"/> Show area on 3D View	
Nose	
Length	58.68 mm (BR, NC)
Wing (left):	38.03 mm (NC, LW)
Wing (right):	41.14 mm (NC, RW)
Width:	43.11 mm (RW, LW)
Height:	17.04 mm (NC, N3)
<input checked="" type="checkbox"/> Show area on 3D View	
Lips	
Depth:	2.94 mm (MC, (LU, LD))
<input checked="" type="checkbox"/> Show area on 3D View	
Chin	
Length:	213833483. mm (CH1, CH2)
Depth:	152713481. mm (CH2, (CH1, LD))
<input checked="" type="checkbox"/> Show area on 3D View	
3D View rendering options	
<input checked="" type="radio"/> Draw both model and profile	
<input type="radio"/> Draw only model	
<input type="radio"/> Draw only profile	
<input checked="" type="checkbox"/> Curvature	
<a href="#">Go Home</a>	

# 3D MASK CONSTRUCTION

metamason™



# 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.™

 metamason-c



# 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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7. Significant vs NonSignificant Leaks
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