I-GEL AND EMT AIRWAY UPDATES

i-GEL and EMT Airway Updates

Objectives:

Identify the indications for the use of the i-GEL airway

Identify the indications for the use of C-PAP

Identify the indications for the use of a nebulizer

Demonstrate the proper use of the i-GEL supraglottic airway during practical breakout session

Demonstrate the proper use of a C-PAP device

Demonstrate the proper set up and use of a nebulizer including an in-line procedure

Introducing

i-gel O/2™

McHENRY WESTERN LAKE COUNTY
19 75
EMS

What's an i-gel?

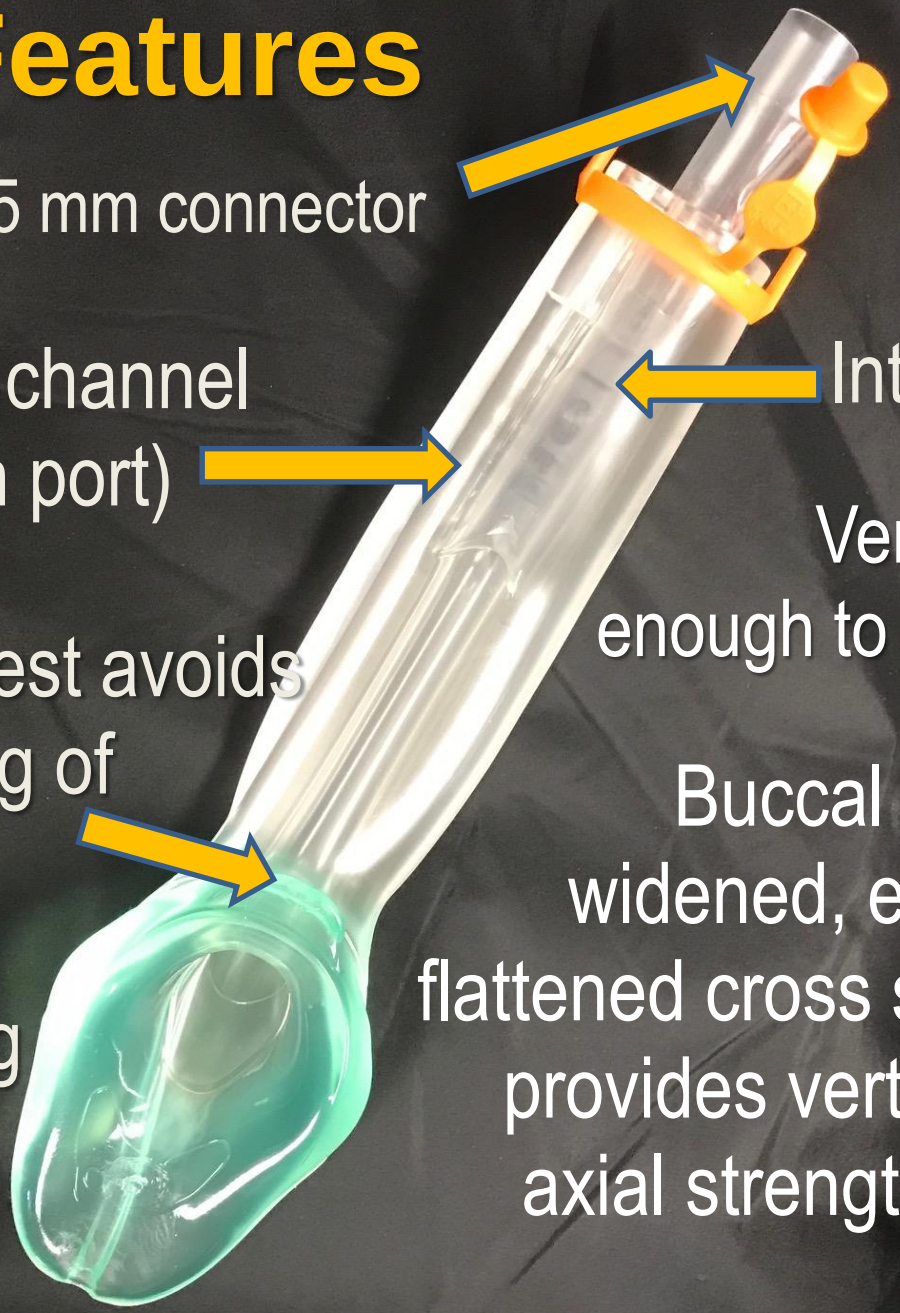
Latex free, sterile, single pt use supraglottic airway

Will replace King LT-D

I-GEL Supraglottic Airway

- New device – New procedure
- The I-Gel airway will be replacing the King LT-D tube.
- Indications will remain the same as King LT-D
- Medications (if necessary) will remain the same
- Pediatric size available

i-gel Features



Standard 15 mm connector

Oxygen port

Gastric channel (suction port)

Integral bite block

Ventilation lumen large enough to pass standard ETT,

Epiglottic rest avoids downfolding of epiglottis

Buccal cavity stabilizer: widened, elliptical, laterally flattened cross sectional shape, provides vertical stability and axial strength upon insertion

Non-inflating cuff

Why the change?

- Evolving science affirms need to provide effective airways for all – adult and peds
- Did not have effective extraglottic alternative to pediatric intubation
- King LT placement success rates variable and declining
- Possible disadvantages to King LT cuffs with tissue compression & displacement

Lots of data considered

Comparative study between I-gel and LMA in anesthetized spontaneously ventilated patients (Helmy, A.M., Atef, H.M., El-Taher, E.M., and Henidak, A.M. (2010). Saudi J Anaesth. 4(3), 131–136.

Objective: *To compare* the LMA and the I-gel, re: ease of device insertion, leak pressure, gastric insufflation, $ETCO_2$, O_2 saturation, hemodynamic and postoperative complications in anesthetized, spontaneously ventilated adult patients performing different non-emergency surgical procedures.

Results*: No statistically significant difference between groups re: HR, arterial BP, SpO_2 and $ETCO_2$.* The mean duration of insertion attempts was 15.6±4.9 sec in i-gel group, 26.2±17.7 sec in LMA group. Leak pressure was (25.6±4.9 vs. 21.2±7.7 cm H_2O) significantly higher in the i-gel group (P=0.016) and gastric insufflation was significantly more in LMA group 22.5% vs. 5%.

Anesthesiology 2009; 111:55–62

Crossover Comparison of the Laryngeal Mask Supreme™ and the i-gel™ in Simulated Difficult Airway Scenario in Anesthetized Patients

Lorenz G. Theiler, M.D., Maren Kleine-Brueggeney, M.D.,† Dagmar Kaisor, M.D.,† Natalia Urwyler, M.D.,* Cedric Luyet, M.D.,* Andreas Vogt, M.D.,* Robert Greif, M.D., M. M. E. Unibe‡*

3/5/2017 A comparison of the i-gel with the LMA Supreme in nonparalys... : European Journal of Anaesthesiology (EJA)

A comparison of the i-gel with the LMA Supreme in nonparalysed [illegible]ized children: 19AP28

Open Journal of Anesthesiology, 2014, 4, 332-339
Published Online December 2014 in SciRes. http://www.scirp.org/journal/ojanes
http://dx.doi.org/10.4236/ojanes.2014.412047

Cross-Over Assessment of the AmbuAuraGain, LMA Supreme New Cuff and Intersurgical I-Gel in Fresh Cadavers

Ana M. Lopez[1], Xavier Sala-Blanch[2], Ric[illegible]lero[3], Alberto Prats[4]

[1]Department of Anaesthesiology, Hospital Clínic de B[illegible], Barcelona, Spain
[2]Orthopedic Anaesthesia Section, Department of Anes[illegible]y, Hospital Clínic de Barcelona, Spain
[3]Neuroanaesthesia Section, Department of Anaesthesiology, Ho[illegible]ic de Barcel
[4]Laboratory of Surgical Neuroanatomy (LSNA), Human Anatomy an[illegible]y Un Universitat de Barcelona, Barcelona, Spain
Email: analopez@clinic.ub.es, xsala@clinic.ub.es, rvalero@clínic.ub.es, aprats@ub.

Received 19 October 2014; revised 28 November 2014; accepted 23 December 2014

Abstract

Background: The AmbuAuraGain is a new single-use supraglottic airw channel designed to facilitate intubation. The aim of the study was to asses and the performance of the AuraGain in fresh cadavers compared to that o and LMA Supreme New Cuff. Methods: The 3 devices were inserted in rand davers without difficult airway criteria. The assessed items were: Insertic tempts and ease of insertion, airway seal pressure, ease of gastric tube inse of vocal cords, efficacy of guided tracheal intubation through the AuraGain fit by lateral X-ray and neck dissections. Results: All devices were successfully inserted within 3

Anesthesia: Essays and Researches

Original Article

Assessment of suitability of i-gel and laryngeal mask airway-supreme for controlled ventilation in anesthetized paralyzed patients: A prospective randomized trial

Ku[illegible] Sri Vidya Radhika, R. Sripriya[1], M. Ravishankar[1], V. R. Hemanth Kumar[1], V. Jaya[1], S. P[illegible]sarathy[1]

Anesthesia & Clinical Research

Fenner et al., J Anesth Clin Res 2014, 5:9
http://dx.doi.org/10.4172/2155-6148.1000440

Research Article Open Access

Randomised Comparison of the Supreme Laryngeal Mask Airway with the i-gel during Anaesthesia

[illegible] Srivastava R, No[illegible]ler C and Cook

Studies Underway to Evaluate the Use of Supraglottic Airways vs. Intubation in Cardiac Arrest Patients

Tue, Dec 20, 2016 | By David Page, MS, NRP, Christopher Boyer[illegible]PA, MA, NRP, FP-C

EMSWORLD PRINT ONLINE EXPO (/)

EDUCA[illegible] TRAINING

Pediatric Alternative Airways: What You Need to Know and Where to Find It

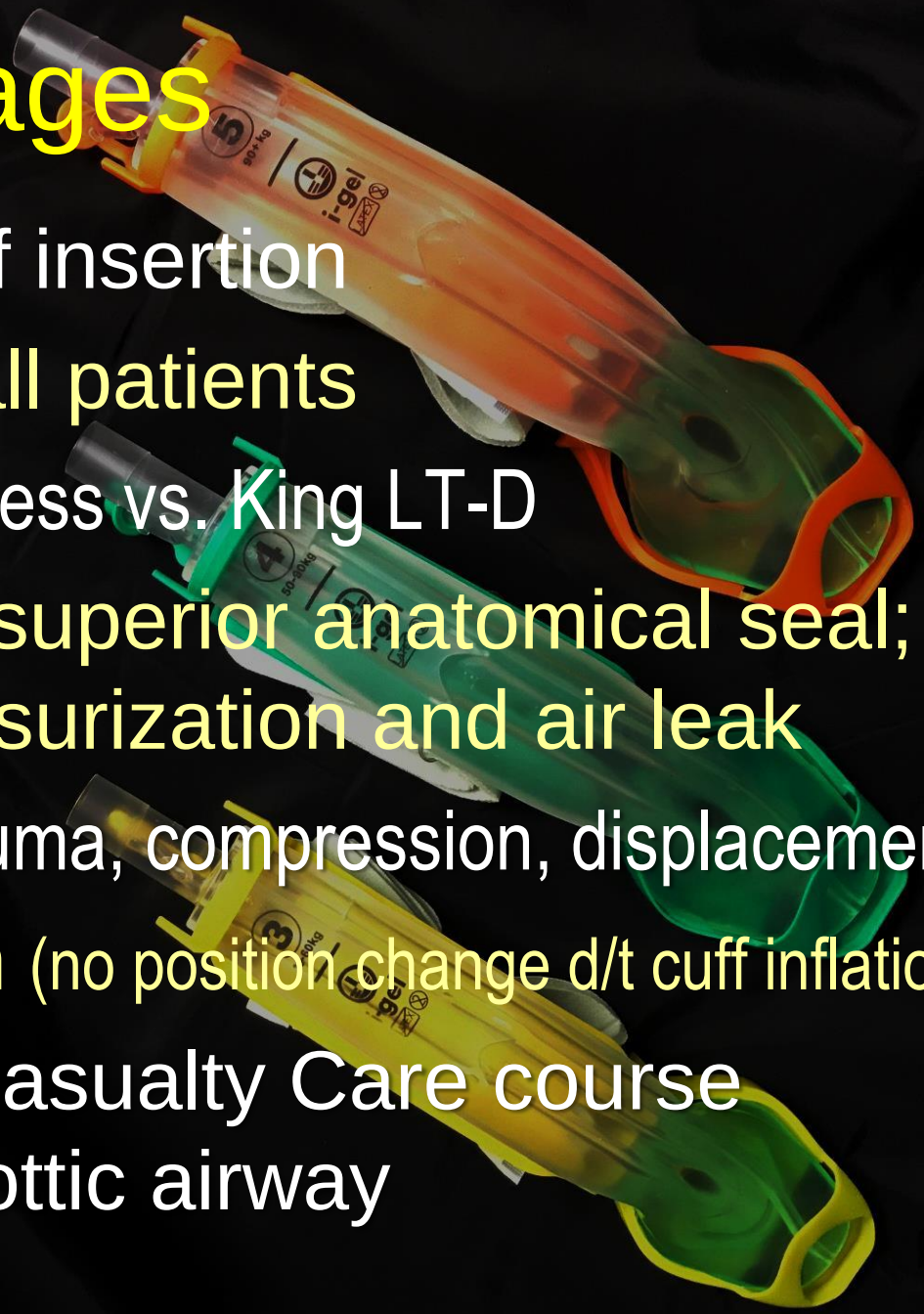
06/29/2018

Issue: July 2018 (/magazine/ems/issue/2018/jul)

Scott DeBoer, RN, MSN, CEN, CPEN, CCRN, CFRN, EMT-P; Michael Rushing, NRP, RN, BSN, CEN, CPEN, CFRN, TCRN, CCRN-CMC; Lisa DeBoer; Michael Seaver, RN, BA (/contact/21178/scott-deboer-rn-msn-cen-cpen-ccrn-cfrn-emt-p-michael-rushing-nrp-rn-bsn-cen-cpen-cfrn)

[illegible] assigned as their initial airway of choice for the duration of the two-year study.

i-gel Advantages



- Ease and speed of insertion
- Multiple sizes for all patients
- Better 1st attempt success vs. King LT-D
- Non-inflating cuff; superior anatomical seal; less cuff over pressurization and air leak
- Minimal risk tissue trauma, compression, displacement
- Stability after insertion (no position change d/t cuff inflation)
- Tactical Combat Casualty Care course choice for supraglottic airway

Indications same as King LTS-D

First line advanced airway during cardiac arrest

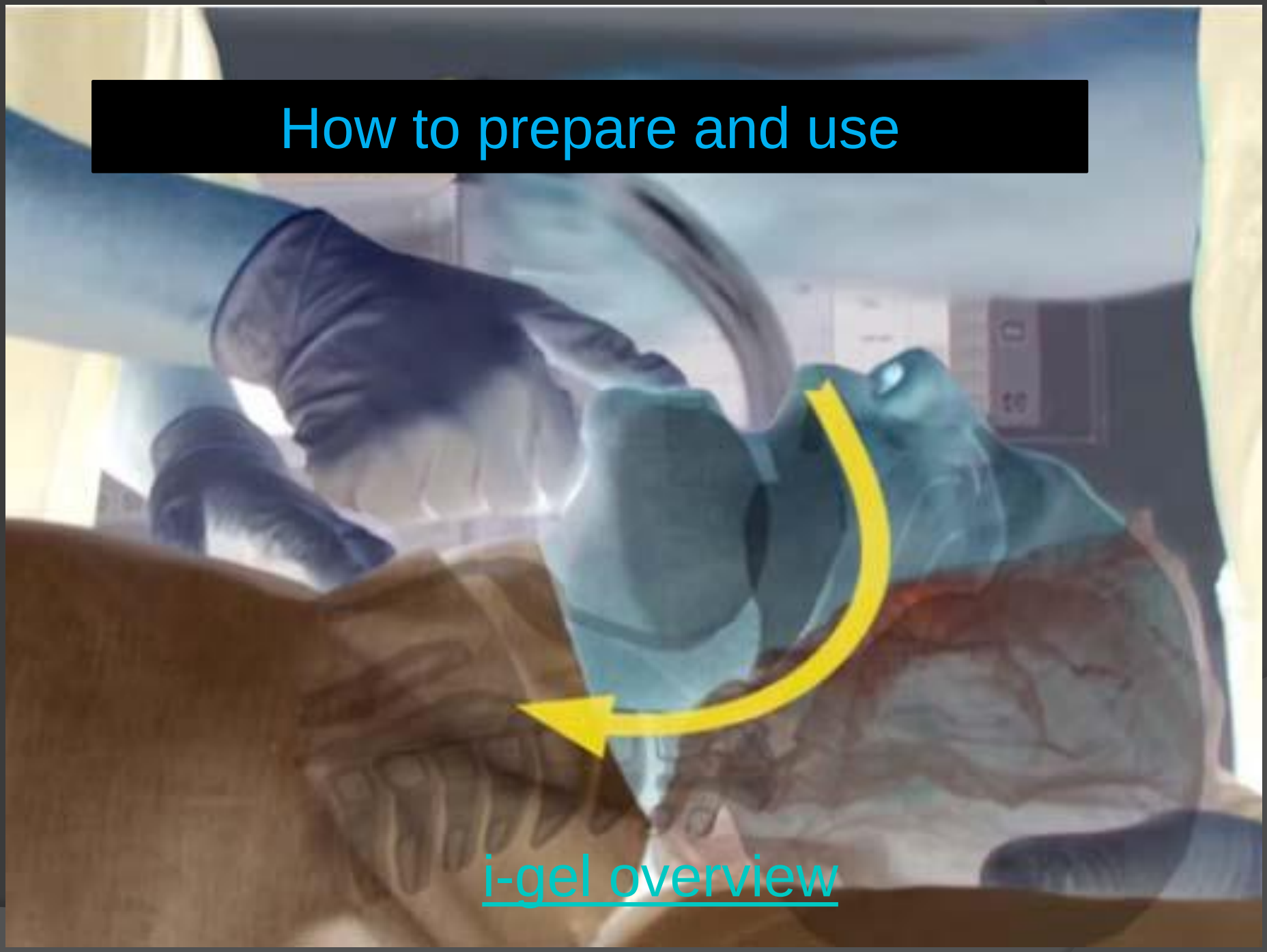
Need for advanced airway in unconscious pt w/ NO gag - 2 attempts ETI unsuccessful or not advised

S&S difficult intubation

Contraindications

- +Gag reflex
- Caustic ingestion
- Trismus/Lockjaw
- Limited mouth opening
- Pharyngo trauma, or mass

How to prepare and use



i-gel overview

Using the i-gel O_2 Resus Pack*

Preparation for use

1

Using the size guide in the grid to the right, choose the correct size of i-gel O_2 Resus Pack for your patient.

2

Open the packaging and remove the inner tray, exiting the support strap, suction tubing and sachet of lubricant to one side and within easy reach. Remove the i-gel O_2.

3

Open the sachet of lubricant and place a small bolus on the inner side of the main shell of the packaging.

4

Lubricate the back, sides and front of the i-gel O_2 with a thin layer of water based lubricant. (Gloving on excess is removed prior to insertion)

Insertion technique

5

Grasping the i-gel O_2 firmly along the bite block, place the patient in the 'sniffing the morning air' position (unless contraindicated) with the head extended and the neck flexed.

6

Position the device so that the i-gel O_2 cuff outlet is facing the patient. Introduce the leading soft tip into the mouth of the patient in the direction of the hard palate.

7

Glide the device downwards and backwards along the hard palate with a continuous but gentle push until a definitive resistance is felt.

8

The tip of the airway should be located into the upper oesophageal opening (a), with the cuff located against the laryngeal framework (b). The incisors should be resting on the bite block (c).

9

Secure the device by sliding the strap underneath the patient's neck and attaching to the hook ring. Take care to ensure the strap is not secured too tight.

Alternatively the device can be secured by taping maxilla to maxilla.

10

Now that the i-gel O_2 has been correctly prepared, inserted and secured, positive pressure ventilation can commence in accordance with applicable resuscitation guidelines.**

i-gel O_2™

i-gel O_2 size		Patient size	Patient weight guidance (kg)
	3	Small adult	30-60
	4	Medium adult	50-90
	5	Large adult+	90+

Notes on insertion:

Insertion can be achieved in **less than five seconds.**

Sometimes a feel of 'give-way' is felt before the end point resistance is met. This is the due to the passage of the bowl of the i-gel O_2 through the fascial pillars. It is important to continue to insert the device until a **definitive resistance** is felt.

Once correct insertion is achieved and the teeth are located on the integral bite block, **do not** repeatedly push down or apply excessive force during insertion.

No more than three attempts on one patient should be attempted.

It is not necessary to insert fingers or thumbs into the patient's mouth during the insertion process.

www.i-gel.com/igel-o2-resus

T: 0118 9656 300

Info@intersurgical.com

INTERSURGICAL COMPLETE RESPIRATORY SYSTEMS

Quality, innovation and choice

* These instructions do NOT constitute a comprehensive guide to the preparation, insertion and use of the i-gel O_2. The user should first familiarise themselves with the complete instructions for use before attempting to use the i-gel O_2.

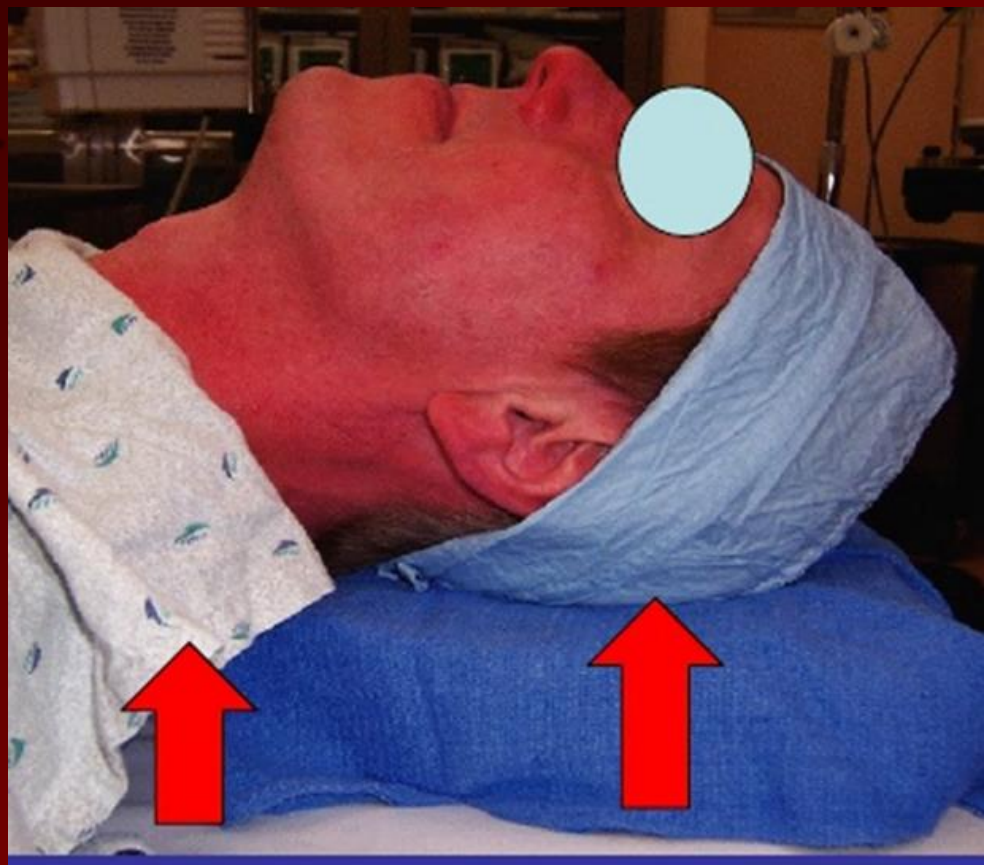
** The i-gel O_2 has been designed to facilitate ventilation as part of standard resuscitation protocols, such as those developed by the European Resuscitation Council (ERC) and the American Heart Association (AHA). However, the i-gel O_2 incorporates a supplementary oxygen port, so can also be used for the delivery of passive oxygenation, or Passive Airway Management® (PAM), as part of an appropriate Cardiocerebral Resuscitation (CCR) protocol. For more information on passive oxygenation, please refer to the instructions for use or contact us.

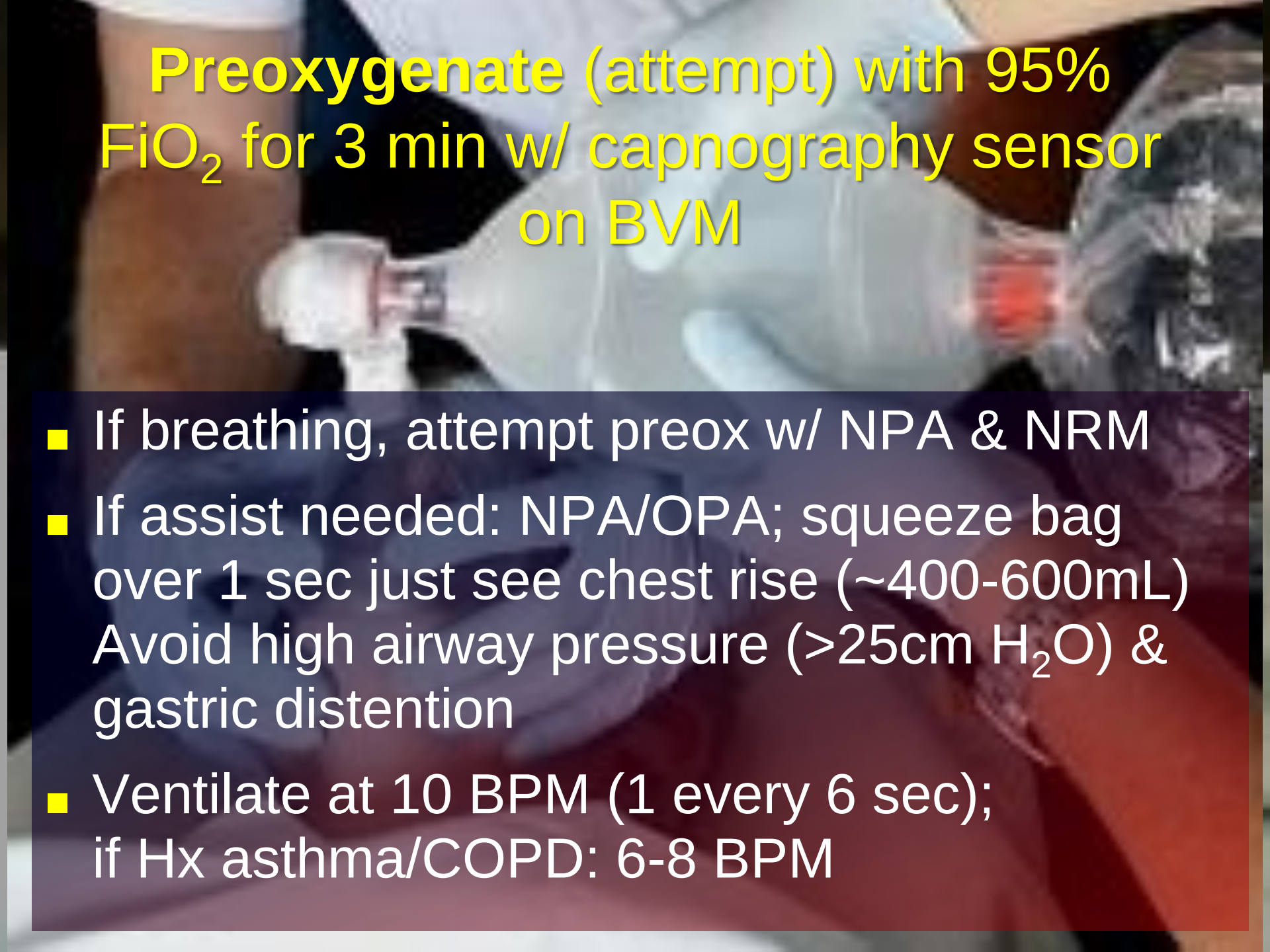
Copies are available by contacting Intersurgical or by visiting our website www.i-gel.com

i-gelO_2 setup poster 11.14

Prepare patient

- Sniffing position unless head/neck movement inadvisable or contraindicated
- Remove dentures or removable plates before inserting





Preoxygenate (attempt) with 95% FiO_2 for 3 min w/ capnography sensor on BVM

- If breathing, attempt preox w/ NPA & NRM
- If assist needed: NPA/OPA; squeeze bag over 1 sec just see chest rise (~400-600mL) Avoid high airway pressure (>25cm H_2O) & gastric distention
- Ventilate at 10 BPM (1 every 6 sec); if Hx asthma/COPD: 6-8 BPM

Prep equipment

Everything ready before procedure

- Prepare suction equipment (connect DuCanto catheter); turn on to ✓ unit; suction prn
- Ensure that laryngeal structures are as dry as possible prior to i-gel insertion

Size selection Adult

Based on patient's ideal weight

iGel size 2 for Pediatric use

MWLC EMSS i-gel sizes

i-gel® supraglottic airway

- 8205000 i-gel, supraglottic airway, size 5, large adult, 90+ kg
- 8204000 i-gel, supraglottic airway, size 4, medium adult, 50-90kg
- 8203000 i-gel, supraglottic airway, size 3, small adult, 30-60kg
- 8202000 i-gel, supraglottic airway, size 2.0, small pediatric, 10-25kg

820400 - i-gel 02 Resus Pack, medium adult – includes a size 4 i-gel 02 with green hook ring, sachet of lubricant, airway support strap

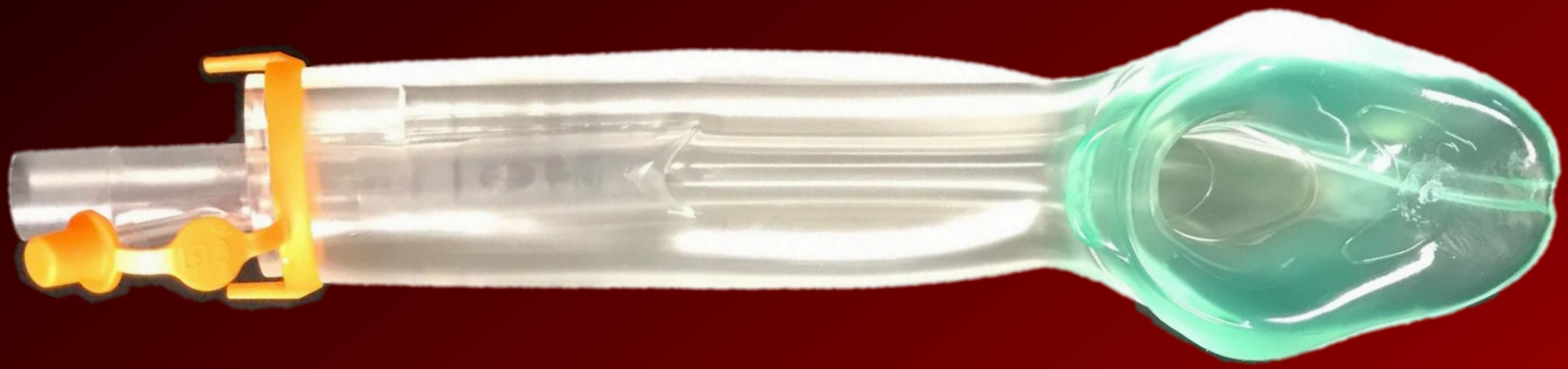
i-gel size	Patient Size	Pt wt (kg)	(LBS)	Broselow color	NG or Suction
1.5	Infant	5-12 kg	11-25	Pink, red, purple	10 Fr.
2	Small child	10-25 kg	22-55	Yellow, white, blue	10 Fr.
2.5	Large child	25-35 kg	55-77	Orange	10 Fr.
3	Small adult	30-60 kg	65-130	Green (2.5-3)	12 Fr.
4	Medium adult	50-90 kg	110-200		12 Fr.
5	Large adult	90+ kg	200+		14 Fr.

Inspect packaging; ensure no damage

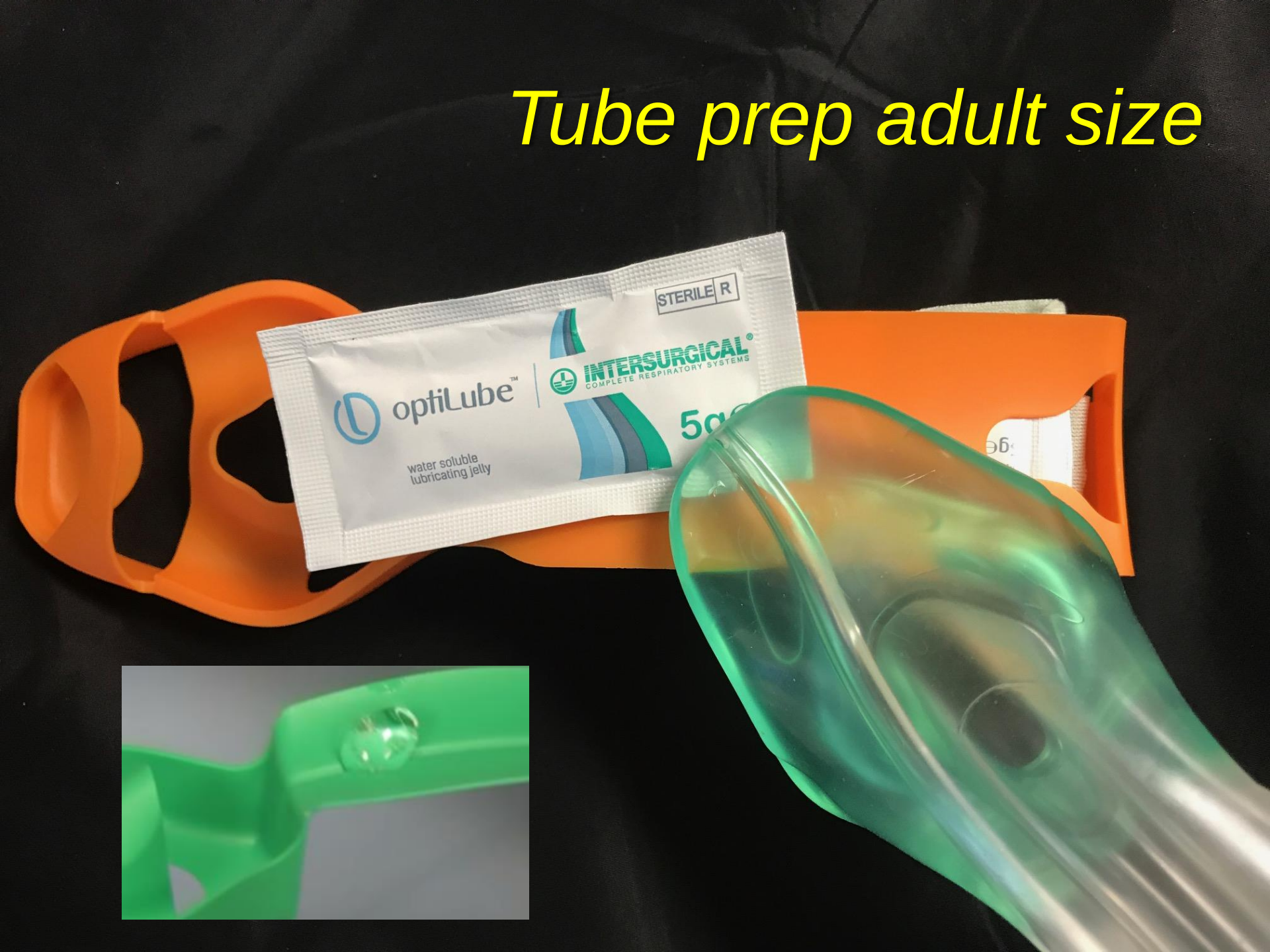
Check expiration date

Inspect device

- ✓airway patency: Confirm no FB or lubricant obstructing distal opening or gastric channel
- Inspect inside bowl, ensuring surfaces are smooth and intact & patent gastric channel
- Discard if device abnormal or deformed
- Ensure 15mm connector is secure



Tube prep adult size



Preparation for use

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

Figure 11

Figure 12

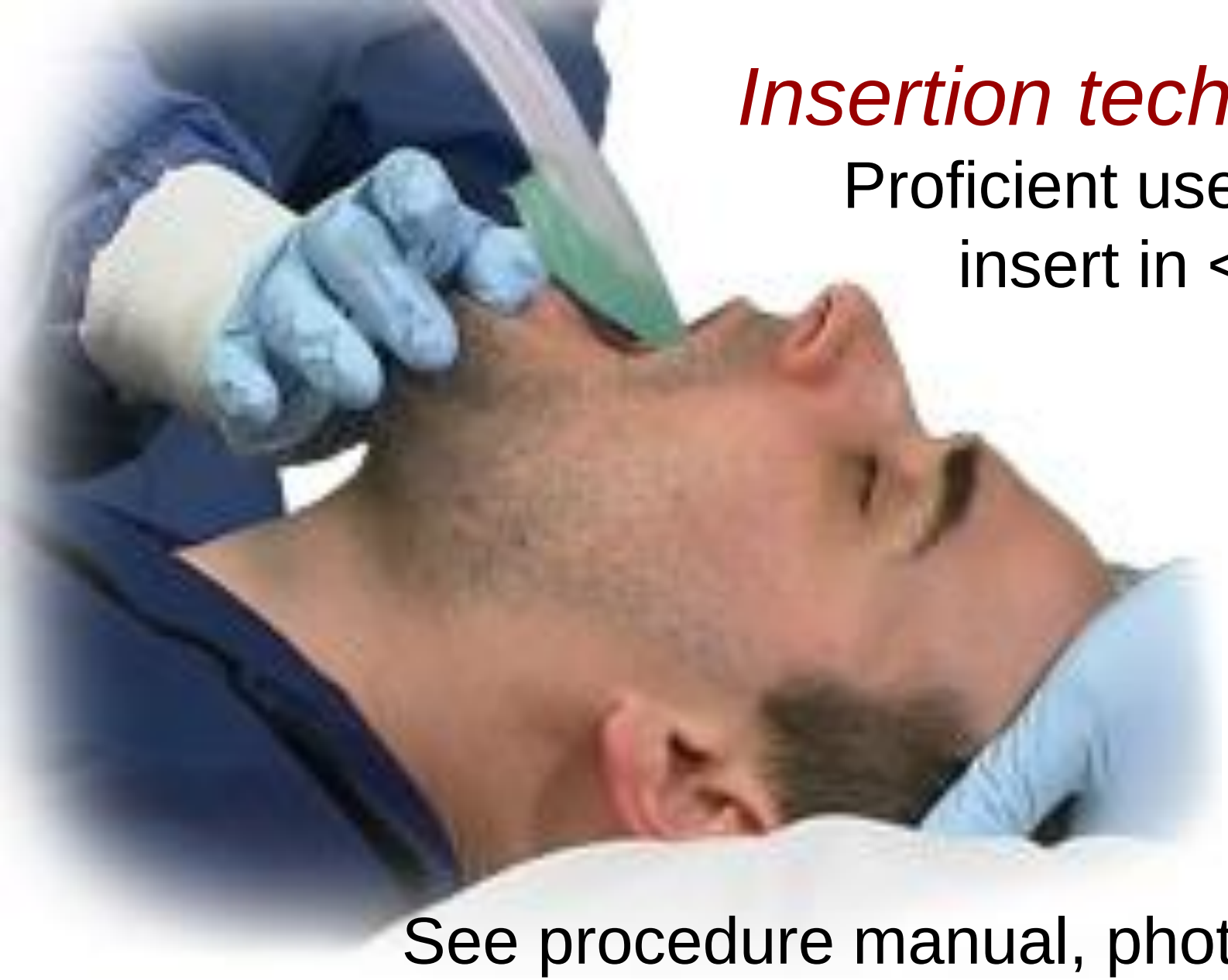
Notes

- Do not place device directly onto pt's chest or surface near patient's head; always place in protective cradle/cage pack after lubrication, pending insertion
- Do not use unsterile gauze or your finger to help lubricate device
- Do not apply lubricant too long before insertion (need to maintain moisture)

Medications

Often unnecessary; most EMS pts needing i-gel are unresponsive with no gag reflex: no blink reflex or response to glabellar tap; easy up and down movement of lower jaw, no reaction to pressure applied to both angles of mandible

See SOP, procedure manual for doses



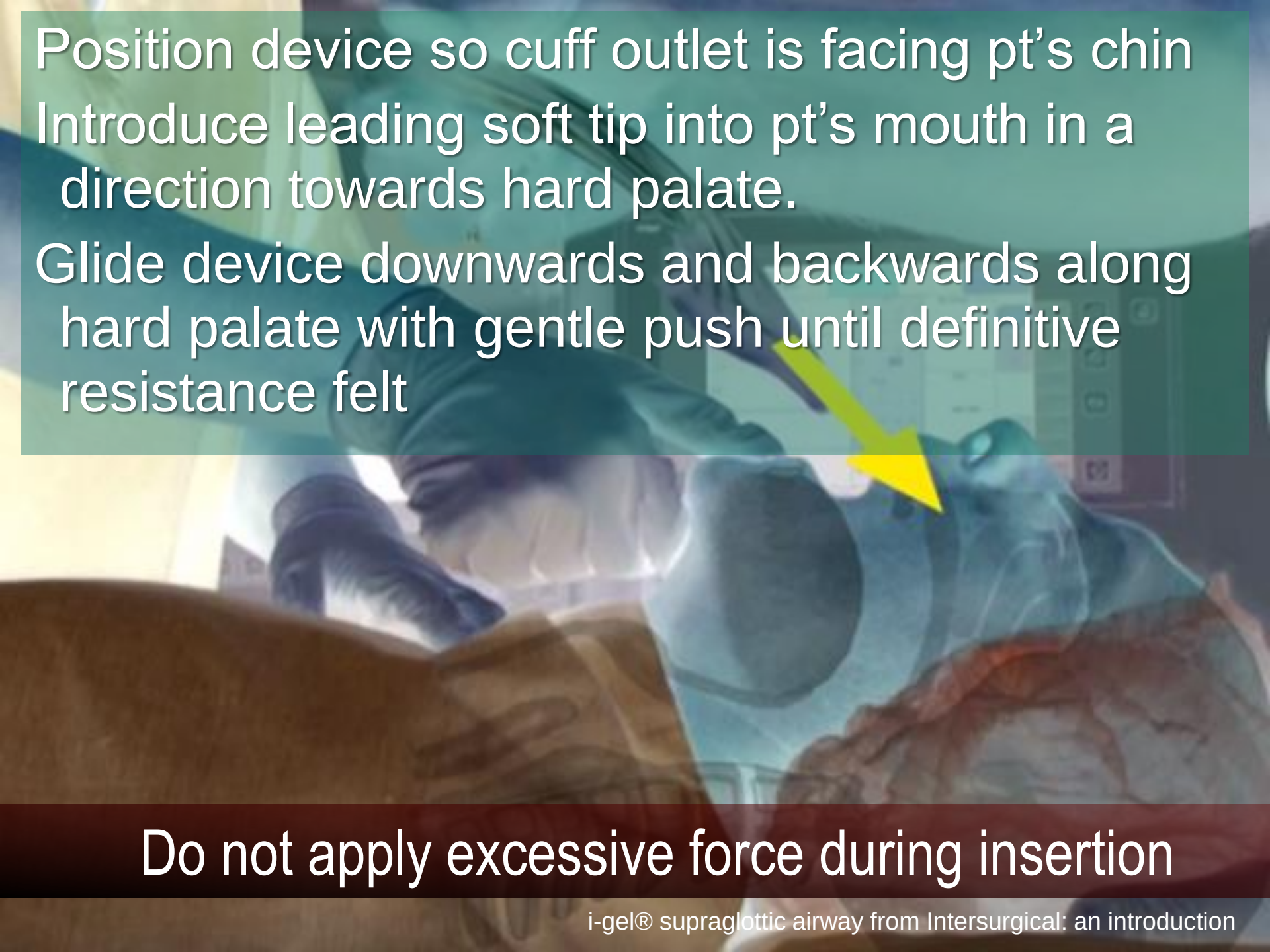
Insertion technique

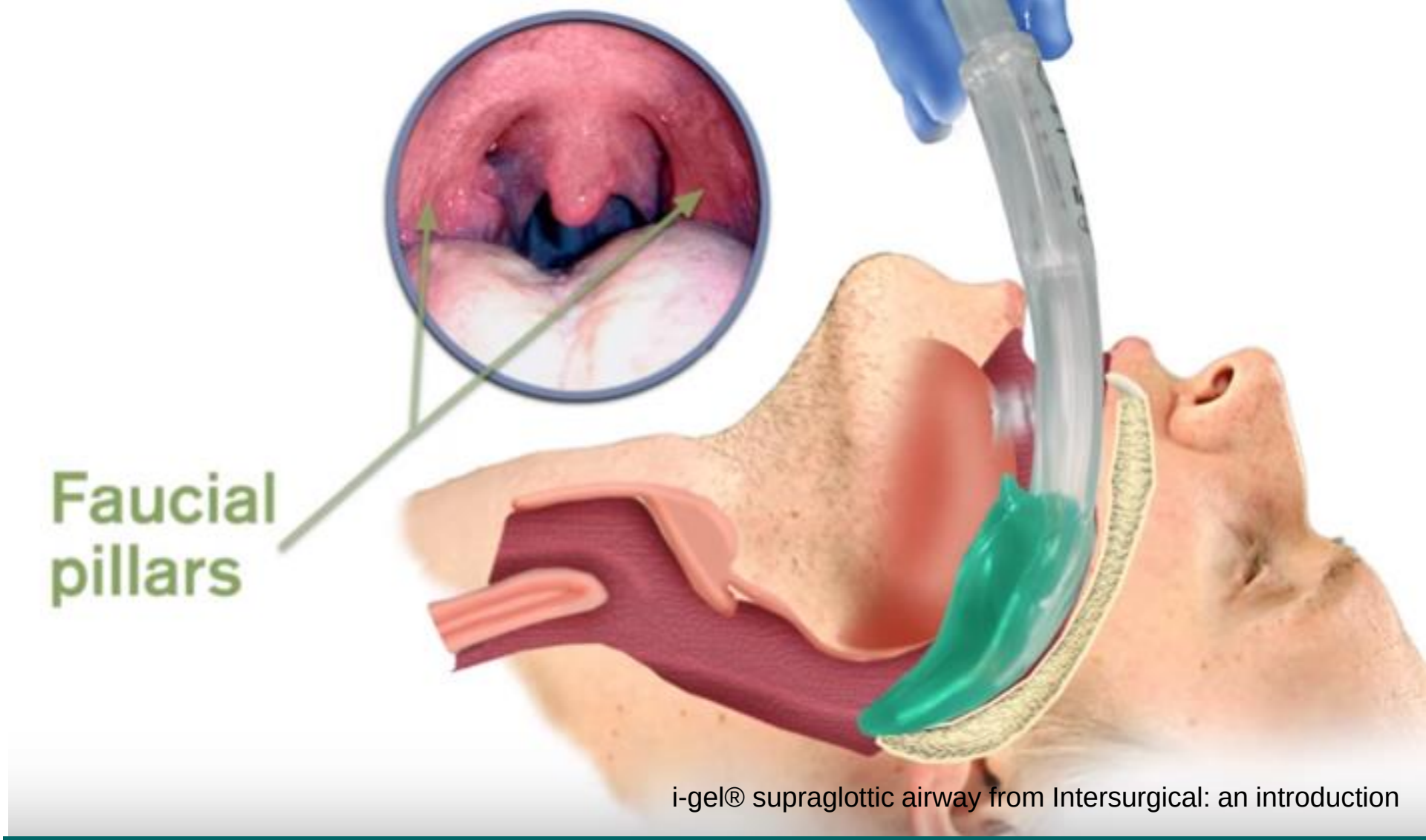
Proficient users can insert in < 5 sec

See procedure manual, photo steps from manufacturer and video for full explanation

Benefits

It is not necessary to insert fingers or thumbs into the patient's mouth during the process of insertion.

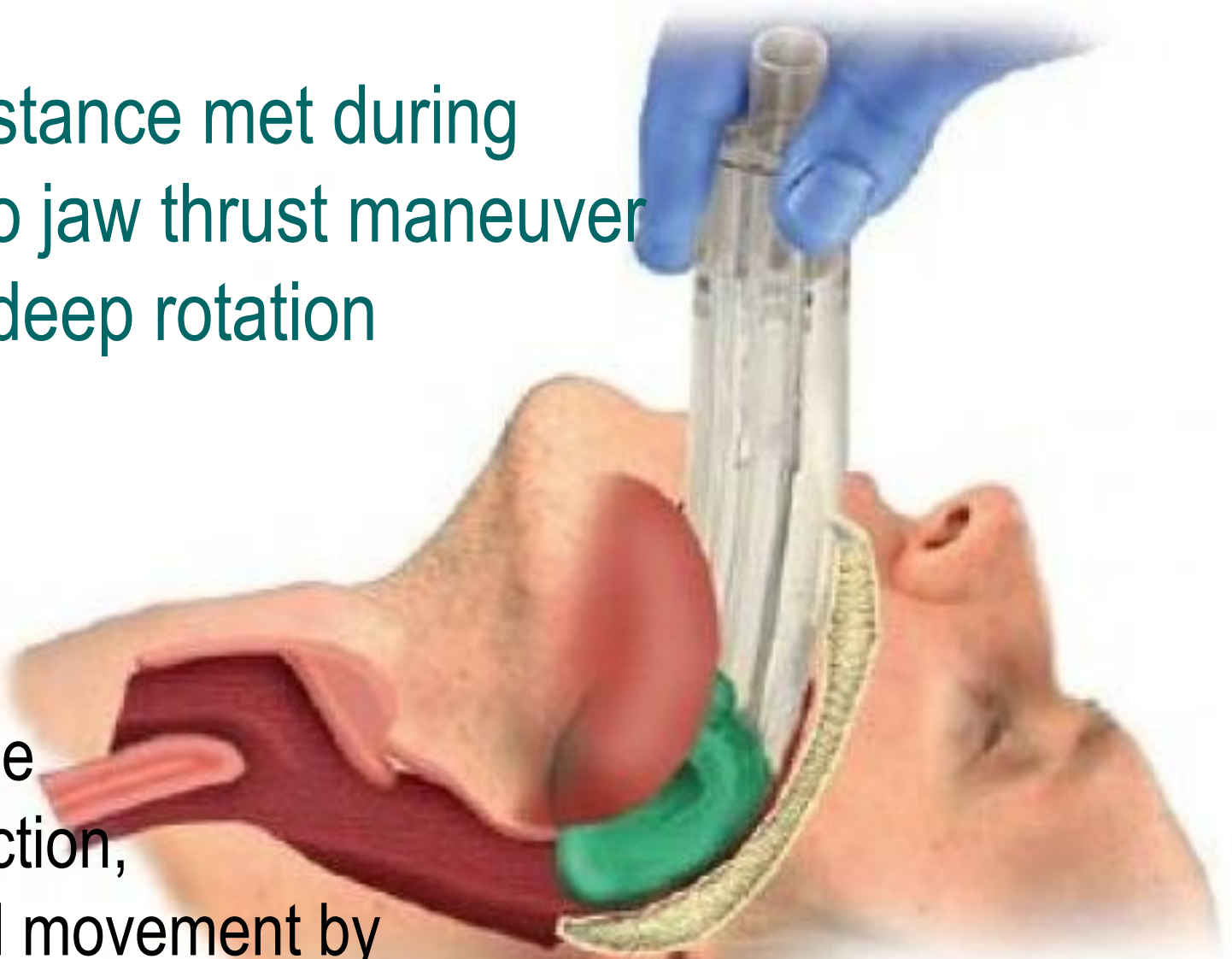

Position device so cuff outlet is facing pt’s chin
Introduce leading soft tip into pt’s mouth in a direction towards hard palate.
Glide device downwards and backwards along hard palate with gentle push until definitive resistance felt
Do not apply excessive force during insertion



i-gel® supraglottic airway from Intersurgical: an introduction

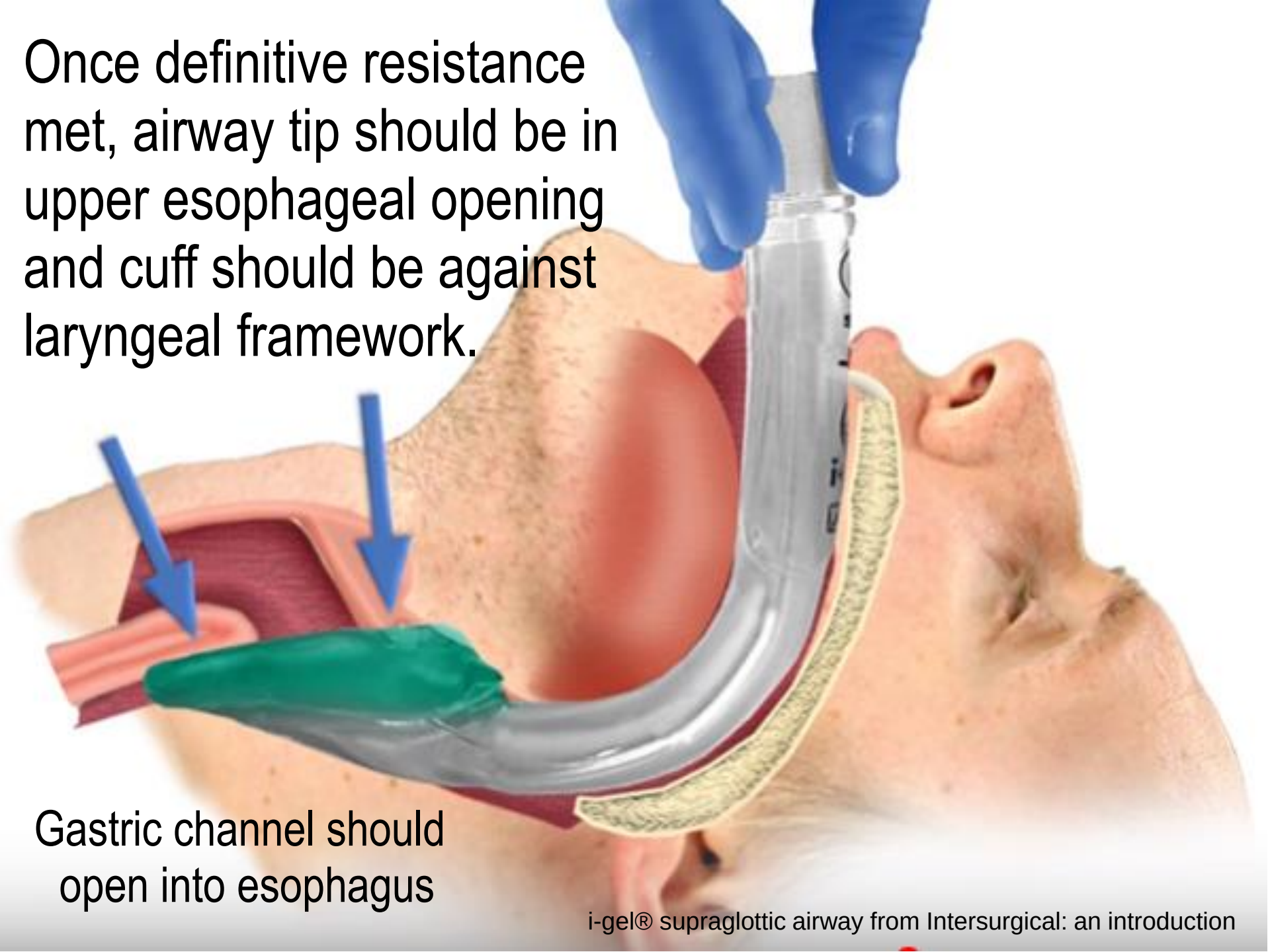
‘Give-way’ may be felt before end point met due to passage of i-gel bowl through faucial pillars
Continue until definitive resistance felt

If early resistance met during insertion, do jaw thrust maneuver or perform deep rotation



For pt in spine motion restriction, prevent head movement by placing thumbs on maxilla & fingers around head/neck (in-line maneuver)

i-gel® supraglottic airway from Intersurgical: an introduction


Once definitive resistance met, airway tip should be in upper esophageal opening and cuff should be against laryngeal framework.
Gastric channel should open into esophagus
i-gel® supraglottic airway from Intersurgical: an introduction

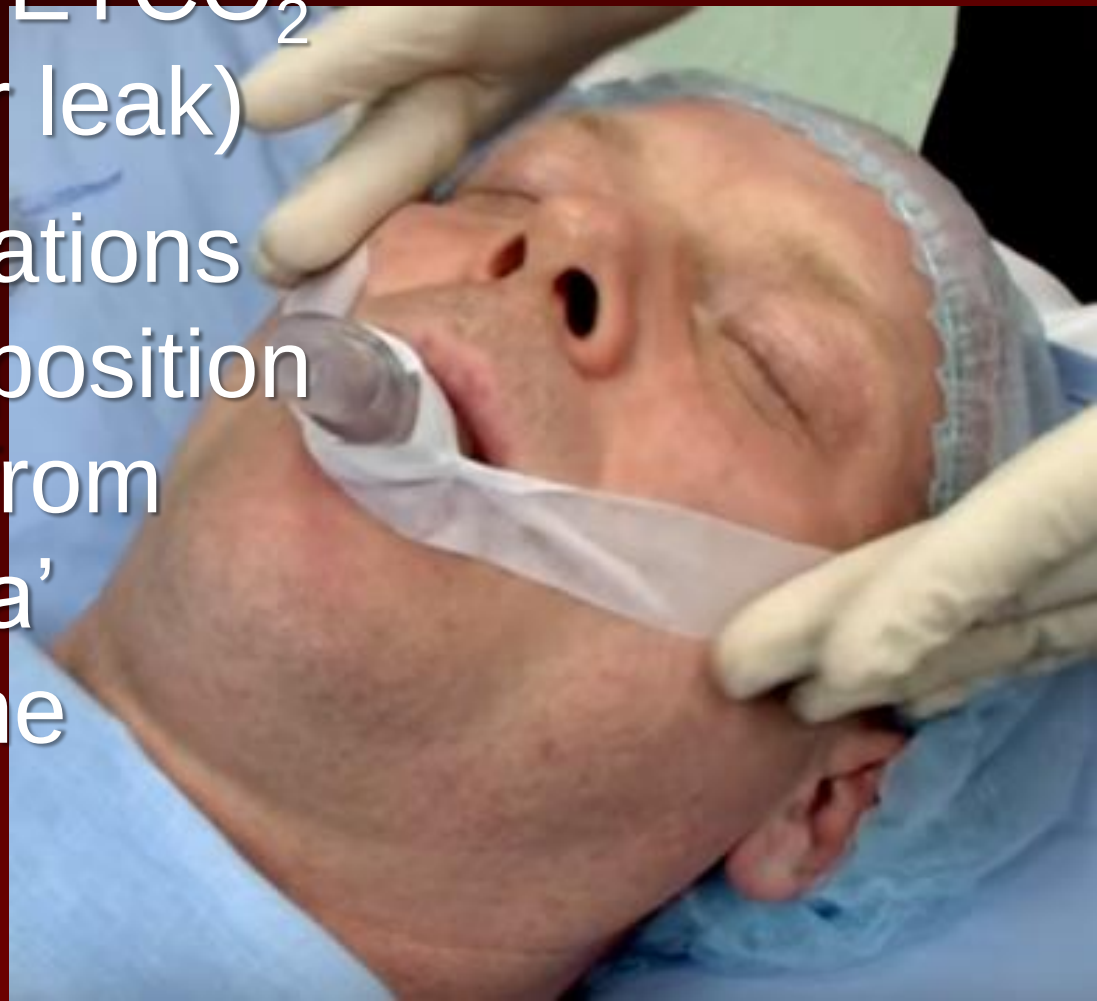
Insertion depth

Once placed correctly, incisors should rest on horizontal line on bite block (adult sizes only)

Confirm placement; secure tube

Confirm placement with 5 point chest auscultation and $ETCO_2$ (+ little gastric air leak)

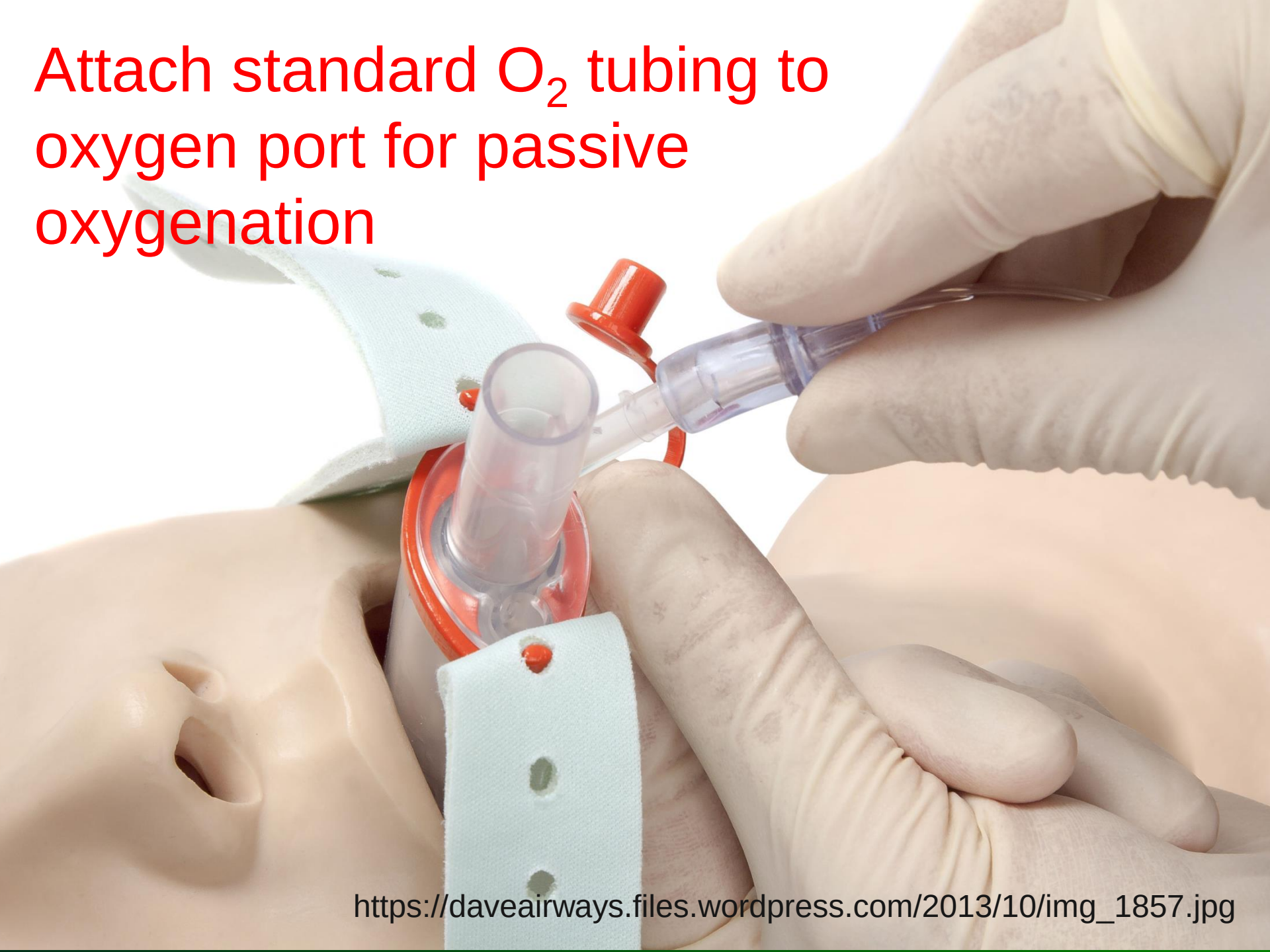
When good ventilations and appropriate position confirmed, tape from ‘maxilla to maxilla’ (keep tube midline in mouth) OR…



Secure tube

Secure with head strap in Resus pack

Attach standard O_2 tubing to oxygen port for passive oxygenation



https://daveairways.files.wordpress.com/2013/10/img_1857.jpg

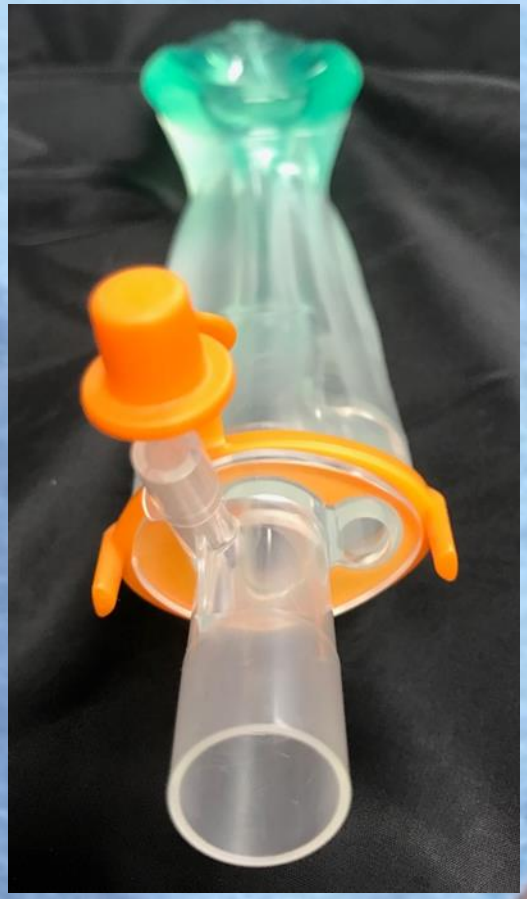
An NG or suction catheter may be inserted into gastric channel

The maximum size of **suction catheter** that can be inserted down the i-gel is:

i-gel size	1	1.5	2	2.5	3	4	5
Suction catheter French gauge / U.S gauge	*	10	12	12	12	12	14

See chart last page of procedure

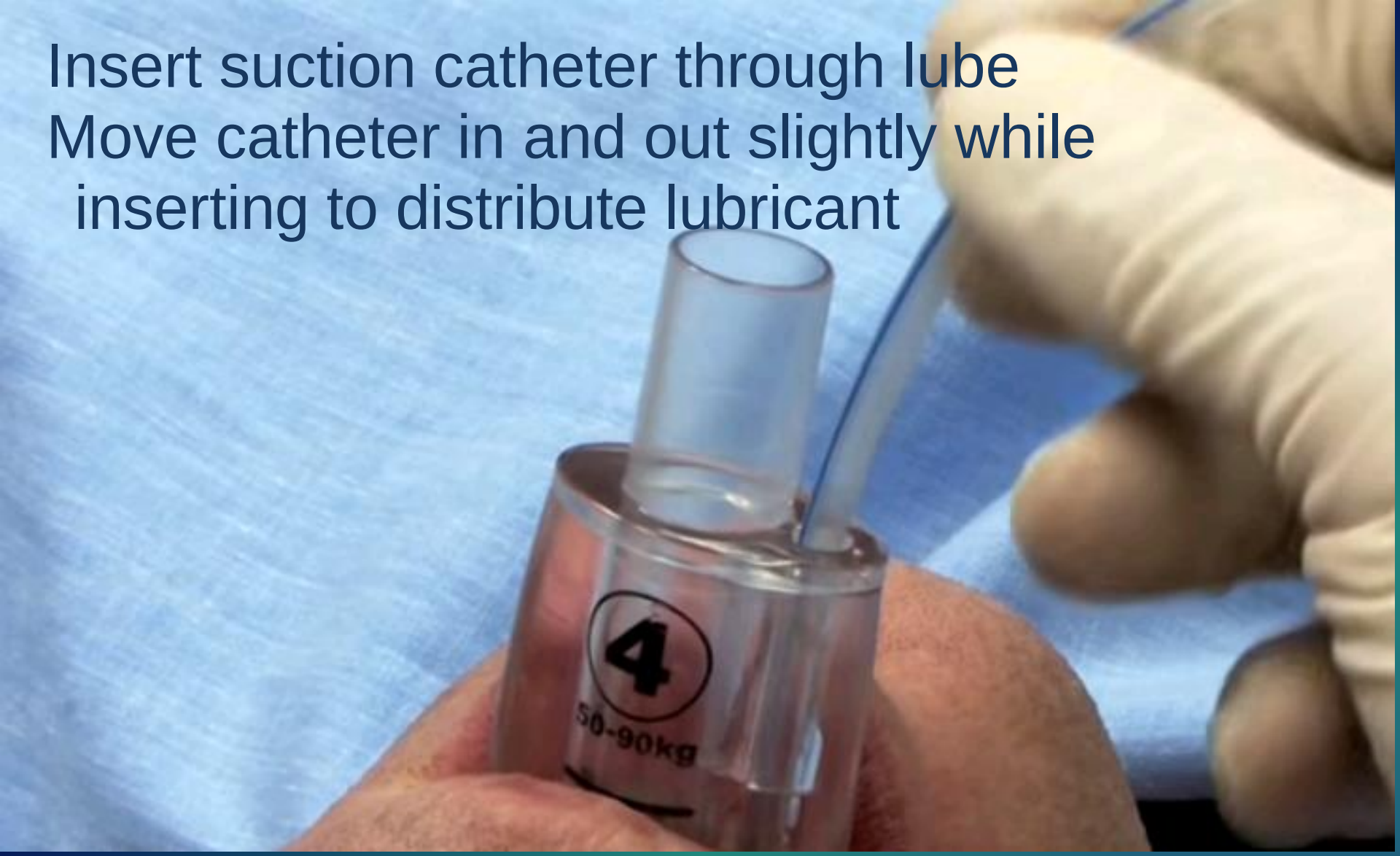
i-gel® supraglottic airway from Intersurgical: an introduction



How to use the gastric channel

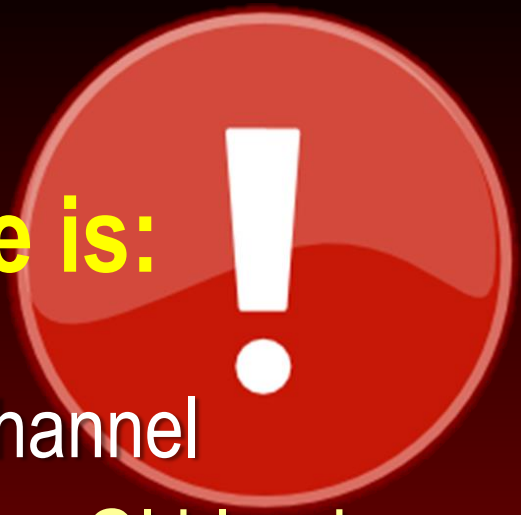
Lubricate prior to tube insertion

Insert suction catheter through lube
Move catheter in and out slightly while inserting to distribute lubricant



Suction optimizes cuff seal & reduces chance of aspiration

Do not insert catheter through gastric channel if there is:



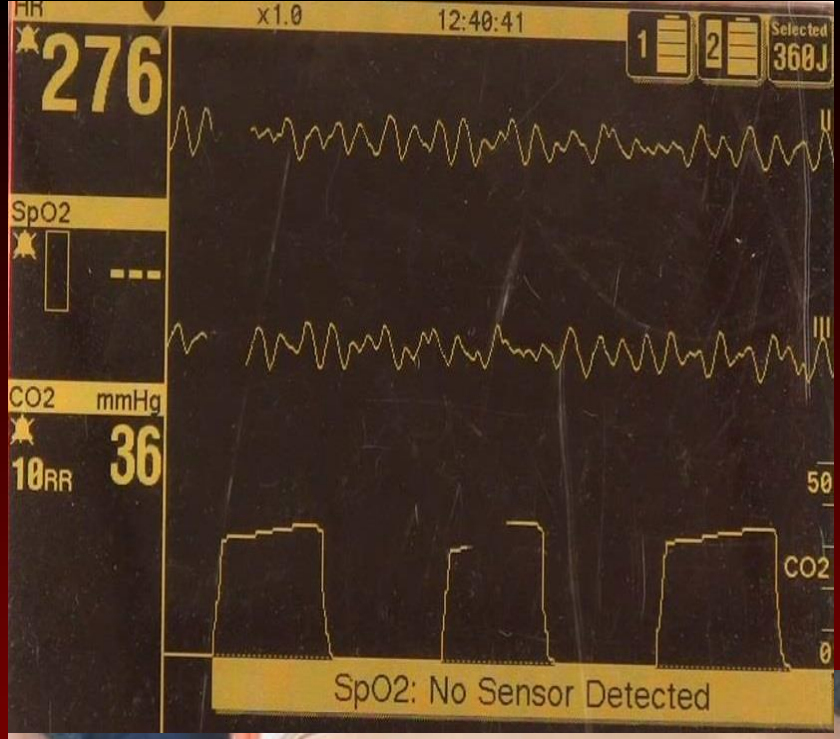
- An excessive air leak through gastric channel
- Esophageal varices or evidence of upper GI bleed
- Esophageal trauma
- Hx of upper GI surgery
- Hx of bleeding/clotting abnormalities

NG/suction catheter insertion with inadequate levels of sedation can lead to coughing, bucking, excessive salivation, retching, laryngospasm or breath holding

Reassess

Frequently to detect displacement and complications (especially after movement or status/condition changes)

- $ETCO_2$
- Lung sounds
- SpO_2 (not in cardiac arrest)
- HR
- BP



Troubleshooting

If excessive air leak during PPV, use one or all of the following:

- Hand ventilate; gentle and slow
- Limit tidal volume to no more than 5mL/kg
- Limit peak airway pressure to 15-20cm H_2O
- Assess depth of sedation; ensure pt is not bucking the tube

If all fail, change to one size larger i-gel

Risks and Complications of inserting an i-gel

- Laryngospasm, sore throat
- Cyanosis
- Tongue numbness
- Trauma to the pharyngo-laryngeal framework
- Down-folding of epiglottis (more common in children)
- Gastric distention, regurgitation, aspiration
- Nerve injuries, vocal cord paralysis, lingual or hypoglossal nerve injuries

Risks and Complications cont.

- If placed too high in pharynx, may result in a poor seal and cause excessive leakage
- If i-gel tip enters glottic opening, will have excessive air leak through gastric channel and obstruction to airflow

  If NG or suction catheter inserted now, will enter trachea and lungs

  If suspected, remove & reinsert i-gel with gentle jaw thrust

Who can insert?

Paramedics, EMT's & PHRNs after education and competency measurement by Agency Peer II or above educator using system skill sheet

iGel Video

https://www.youtube.com/watch?v=ao-Sb_OulE8

QUESTIONS ?