







# 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



#### ots 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. <u>4</u>(3), 131–136.

**Objective:** *To compare* the LMA and the I-gel, re: ease of device insertion, leak pressure, gastric insufflation, ETCO<sub>2</sub>, O<sub>2</sub> 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<sub>2</sub> and ETCO*<sub>2</sub>. 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<sub>2</sub>O) significantly higher in the i-gel group (P=0.016) and gastric insufflation was significantly more in LMA group 22.5% vs. 5%.



12/26/2018

# i-gel Advantages

- Ease and speed of insertion
- Multiple sizes for all patients
- Better 1<sup>st</sup> attempt success vs. King LTS-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 extraglottic airway



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

S&S difficult intubation

Need for CPR where ETI cannot be done without interrupting compressions

In a difficult intubation; pass bougie through i-gel and insert ETT over bougie

#### Contraindications

- +Gag reflex
- Caustic ingestion
- Trismus
- Limited mouth opening
- Pharyngo-perilaryngeal abscess, trauma, or mass





## Prepare patient

Sniffing position unless head/neck movement inadvisable or contraindicated

Remove dentures or removable plates before inserting



- 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<sub>2</sub>O) & 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





65-130 30-60 (110-200 50-90	lbs kg Dibs kg 200+ lbs 90+kg			3	5
Cł	hart from N	IWC EN	1SS Pr	ocedure Manu	al p. 37
i-gel size	Patient Size	Ptwt(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	110-200 200+		12 Fr.
J	Large adult	ou+ kg	2004		14 FL



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Broselow- Luten Color	Broselow. Luten Ideal Body Weights & Patient Height	Ambu King LTS-D size & Gastric access tube size	Ambu Aura Gain size & Gastric access tube size	Morewy Modical Air-Q sp size *NO gastric access	Teleflex LMA Supreme size d Gastric access tube size	Intersurgical i-gel size (Currently used inter mails) i ot app d for p tric resultion in	P E
Bros	elow t	ape s	izing c	correla	ation	AGa Sources	S
Geey	3-5 kg (40-60 cm)	•10 Fr	1 *6 Fr	-102-1	1	1 "NO gastric	
Pink	6-7 kg (60-67 cm)	1 *10 Fr	1 1/2 *8 Fr	1	1 1/2 *6 Fr	1 % *10 Fr	S
	8-9 kg (67-75 cm)	1 *10 R	1 1/2	1 1/2	1 1/2	1 ½ *10 Fr	
Purple	10-11 kg (75-84 cm)	1 *10 Fr	2 *10 Fr	1 1/2	2 *6 Fr	1 ½ *10 Pr	7
Yellow	12-14 kg (84-97 cm)	2 *16 Fr	2 *10 Fr	1 1/2	2 *10 Fr	2 *10 Fr	<b>E</b>
White	15-18 kg (97-110 cm)	2 *16 Fr	2 *10 Fr	1 1/2	2 *10 Fr	2 *10 Fr	
Bhae	19-23 kg (110-122 cm)	2 1/2 *16 Fr	2 1/2 *10 Fr	2	2 *10 Fr	2 *10 Fr	S
Orange	24-29 kg (122-134 cm)	2 1/2 *16 Fr	2 1/2 *10 Fr	2	2 1/2 *10 Fr	2 ½ *10 Fr	https://www.em world.com/mag
	30-36 kg (134-147 cm)	3 *18 Fr	3 *16 Fr	2 1/2	3 *14 Fr	2 1/2 - 3 *12 Fr	zine/ems/issue/



## **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











#### Notes

Important

- 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)







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









# Confirm placement; secure tube

Confirm placement with 5 point chest auscultation and ETCO<sub>2</sub> (+ little gastric air leak) When good ventilations and appropriate position confirmed, tape from 'maxilla to maxilla' (keep tube midling in mouth) OR...



Secure with head strap in Resus pack









Lubricate prior to tube insertion



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



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

- ETCO<sub>2</sub>
- Lung sounds
- SpO<sub>2</sub> (not in cardiac
- HR; BP





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<sub>2</sub>O
- 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

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Laryngospasm, sore throat



- Tongue numbness
- Trauma to the pharyngo-laryngeal framework
- Down-folding of epiglottis (more common in children)

COMPLICATION

- 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

	VV	HEN MU	st I-gels t	be deployed?
NC	RTHW	EST COMMUNIT	Y EMS SYSTEM ast revised: 12/1	- Drug/Supply/Equipment List 12/18
EY: AL EMS aj packag The EN All EMS been g stethos	S Requir Drugs Syster asteris requir gencies shall ing, current IS MD or der S products er ranted and a copes. Nelic	red on all ALS vehicles uni identified by an asterisk (* n hospitalis must replace al ki (**). These items must b ed by IDPH administrative assign appropriate person dates, and good working o lignees will do random uni changed at hospitals must latex-containing ki is mair or pulse oximeter.	ess specified otherwise. All ) are controlled substances i drugs, supplies, and equip e purchased and/or maintai code section 515.830 eld to inventory ambulances d rder. All controlled substanc announced ambulance insp be LATEX-FREE. All non- tained. Contain latex: Do NC	other ferms are required on BLS and ALS vehicles. and must be accounted for per system policy, ment dems EXCEPT those terms indicated by a doubli ined by the KLS provider agency. Stally at shift change to ensure complete par levels, intact cer must be viewed and counted daily per policy. Stally at shift change to ensure complete par levels, intact cochange items must be latter there unless a water has so cochange items must be latter there unless a water has the set of
KEY	Min.	1	ITEM	PACKAGING
ALS	1 1 1	King LTS-D; kits contail Size 3: yellow - pts 4 Size 4: red - pts 5-6°; Size 5: purple - pts >6	n 60 mL syringe (to inflate ci -5'; part # 477- KLTSD 413 part # 477- KLTSD 414 5'; part # 477- KLTSD 415	uffs), lubricant – phase out by attrition after 3-1-19 Keep 15 fr dual-lumen salem sump gastric tube with King KL TSD ainways
ALS		Ligel® Rolling Go-live: PEC competencies comp ALS vehicles by 6.3 Size 5. large adult	supraglottic airway – R <sup>1</sup> S sizes – May start eddi leted by agencies and b 19: ADULT sizes adder 200+LBS /90+kg	esus pack includes legel tabe, strap ing to ALS vehicles by 3-1-19 after user assed on hospital stocking; REQUIRED on all d by attrition after 3-1-19 [Roundtree] i2114-87303 Resus Pack) & & & & & & & & & & & & & & & & & & &

(2114-08225) (2114-08202)



and competency measurement by Agency Peer II or above educator using System skill sheet

00	Do not reuse or attempt to reprocess typ, joel. Patients with any condition which may increase the risk of a full stomach e.g. histel hemia, externe obeasty, prepandory or a history of upper Gl surgery etc. Have suction ready.	
Pre	pare patient: Explain each step as it is performed even though p1 appears unconscious Sniffing position unless head nexk movement is inadvisable or contraindicated. Remove dentures or removable clates if monthe mouth before attention insertion.	