What's an i-gel?
Latex free, sterile, single pt use extraglottic airway
Will replace King LTS-D

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
- Soft, non-inflating cuff fits over laryngeal inlet
- Shape & contour mirrors perilaryngeal anatomy

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


Objective: To compare the LMA and the i-gel, re: ease of device insertion, leak pressure, gastric insufflation, ETCO₂, O₂ 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, SpO₂ and ETCO₂. 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 H₂O) significantly higher in the i-gel group (P=0.016) and gastric insufflation was significantly more in LMA group 22.5% vs. 5%.

i-gel Advantages

- Ease and speed of insertion
- Multiple sizes for all patients
- Better 1st 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 dt cuff inflation)
- Tactical Combat Casualty Care course choice for extraglottic airway

Indications same as King LTS-D

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

HOW to prepare and use

https://www.youtube.com/watch?v=as1YcO6z98
Prepare patient

Sniffing position unless head/neck movement inadvisable or contraindicated

Remove dentures or removable plates before inserting

Preoxygenate (attempt) with 95% FiO2 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 H2O) & 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

Chart from NWC EMSS Procedure Manual p. 37
Peds sizes

No size 1 in NWC EMSS

Inspect packaging; ensure no damage
Check expiration date

Tube prep adult size

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

Broselow tape sizing correlation


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**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

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**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

‘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)

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

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 ETCO₂ (+ 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 O₂ tubing to oxygen port for passive oxygenation

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

Suction catheter
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: 1.5, 2, 2.5, 3, 4, 5
- Suction catheter: French gauge / US gauge 10, 12, 12, 12, 12, 14

See chart last page of procedure

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$_2$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**
- 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

**WHEN must i-gels be deployed?**

<table>
<thead>
<tr>
<th>NORTHWEST COMMUNITY EMS SYSTEM - Drug/Supply/Equipment List</th>
<th>Last revised: 12/2/18</th>
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</table>

**Who can insert?**

Paramedics & PHRNs after education and competency measurement by Agency Peer II or above educator using System skill sheet