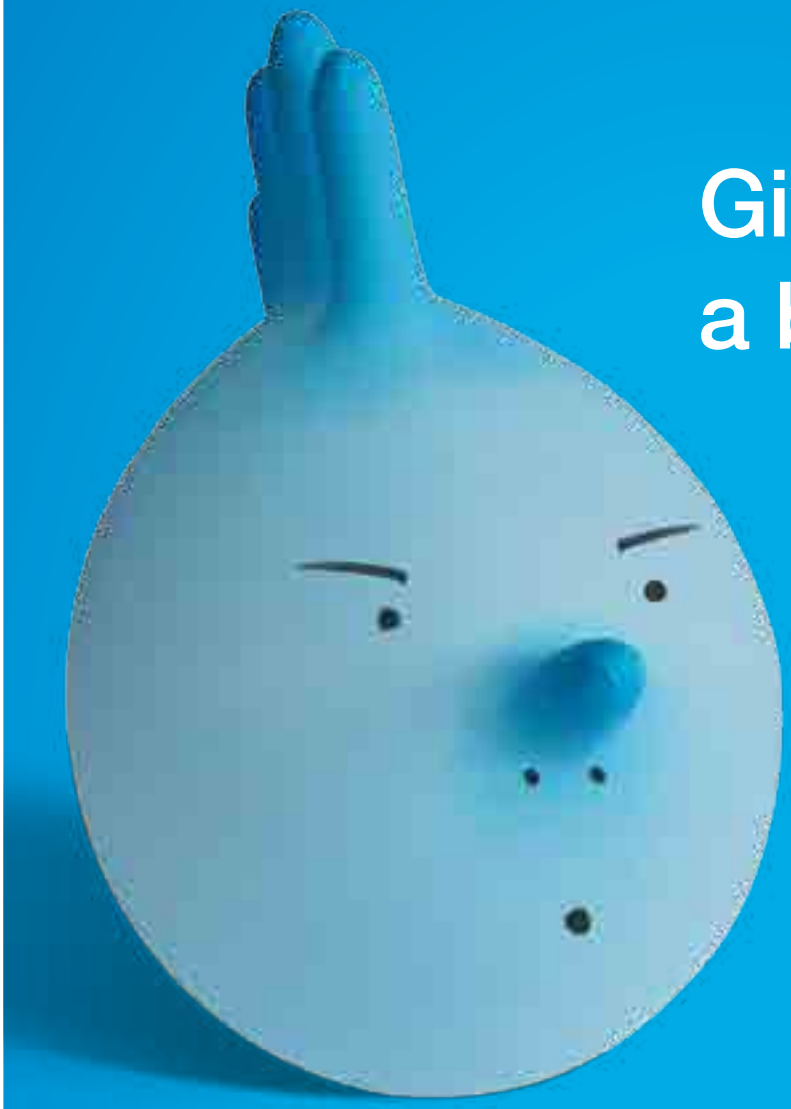
LMA™
Better by Design

Give the glove a break



Inflate the cuff instead

Why should you inflate the cuff?

Evidence suggests that inflatable cuffs offer benefits over non-inflatable cuffs:

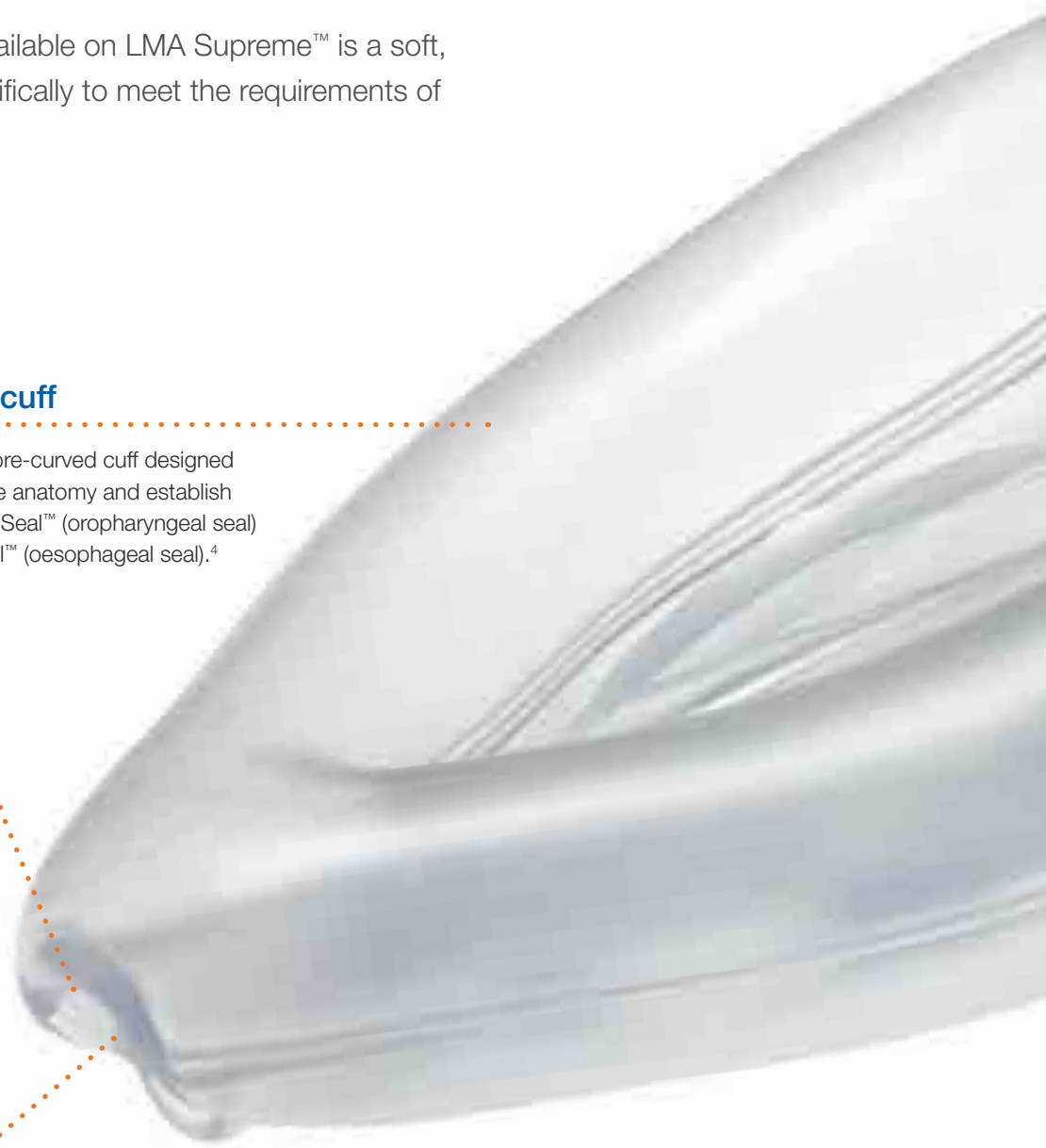
- high seal pressures [1]
- a superior Second Seal™ [2,3]
- a lower incidence of post-operative airway morbidity [3]

LMA AirForm™

Teleflex

A second generation SAD with the additional benefits of an inflatable cuff

The LMA AirForm™ cuff available on LMA Supreme™ is a soft, flexible cuff designed specifically to meet the requirements of a second generation SAD:



Elongated cuff

Large inflatable pre-curved cuff designed to conform to the anatomy and establish an effective First Seal™ (oropharyngeal seal) and Second Seal™ (oesophageal seal).[4]

Drain tube

Integrated drain tube to channel fluids away from the airway and verify correct device positioning.[5]

Tip

The opening of the drain tube is at a 10 degree patented angle to align with the oesophagus.

"The drain tube helps in the immediate diagnosis of incorrect device placement and acts as a conduit for access to gastric content."

Sharma V. et al, 2010

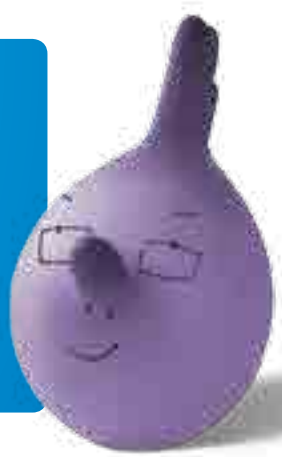
The benefits of an inflatable cuff

Evidence has shown that, when compared to non-inflatable masks, inflatable SADs can:

- Create a superior Second Seal™[2,3]
- Reduce the incidence of post-operative airway morbidity ($p<0.05$ n=109)[3]
- Ease gastric tube insertion[6]
- Advance further into the upper oesophageal sphincter[7]

"The combination of improved sealing and the presence of a drain tube improves efficacy and creates functional separation of the gastrointestinal tract from the respiratory tract (like an artificial larynx). This is likely to improve safety (though this is very hard to prove) and several recent publications have suggested use of supraglottic airway devices (SADs) with effective drain tubes should become a 'standard of care'."

NAP4 report, 2011



A cuff that conforms to the anatomy

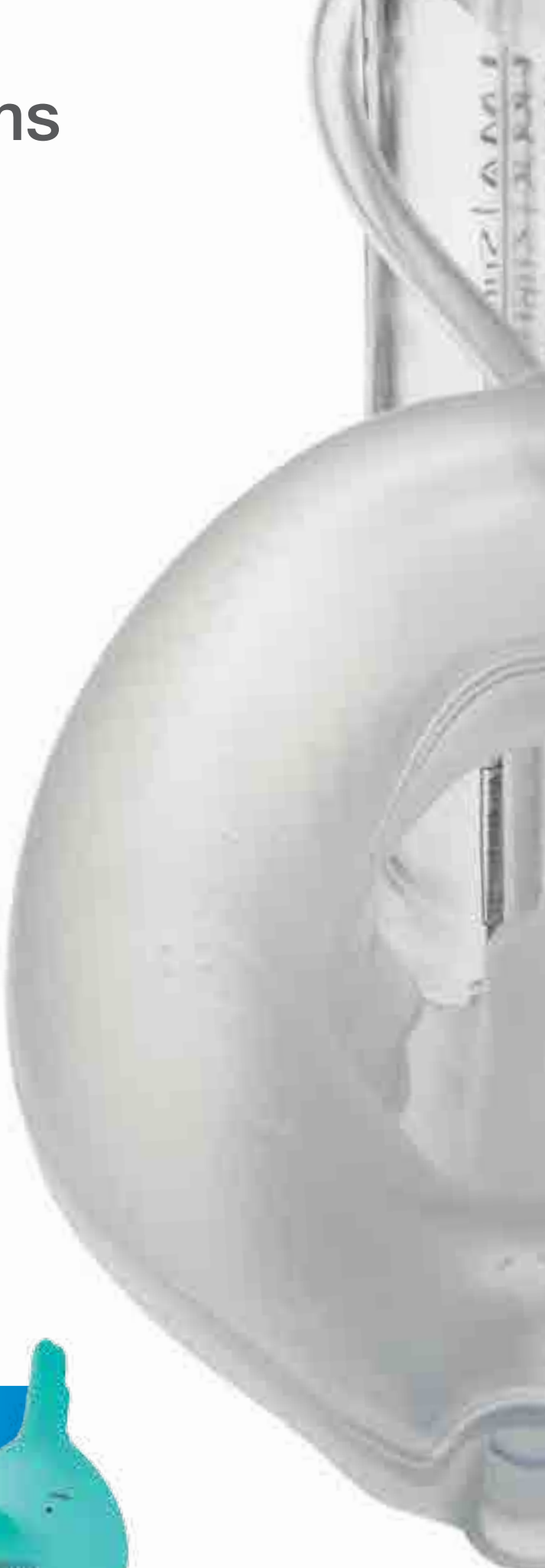
Establishing an effective First Seal™ with the oropharynx

The LMA AirForm™ cuff has been carefully designed to conform to the contours of the hypopharynx, with the bowl and the mask facing the laryngeal opening.[9]

Studies show that it forms an effective First Seal™ with the oropharynx[1,6] and utilises the LMA AirForm™ cuff to deliver measured oropharyngeal leak pressure up to 37 cm H_2O.[1]

Establishing an effective First Seal™ is important for:

- Ventilation performance in routine cases
- Advanced uses of the device such as in:
  - Patients with decreased thoracic compliance
  - Mild-to-moderately obese patients
  - Certain procedures requiring mechanical ventilation where higher seal pressures are required



In a study by Cremer et al., fiberoptic assessment of a SAD with non-inflatable cuff in situ demonstrated that methylene blue dye was visible in the bowl of the mask and around the arytenoids, which indicated incomplete oesophageal sealing.

Cremer S. et al., 2010

Establishing an innovative Second Seal™ with the upper oesophageal sphincter

The LMA AirForm™ cuff has an angled tip designed to advance into the upper oesophageal sphincter (UOS) and form a robust Second Seal™.[7]

When compared to the pre-shaped, non-inflatable cuff of another SAD, LMA Supreme™ with its LMA AirForm™ cuff protruded significantly deeper into the UOS:[7]

	Glottis to tip† (cm)
LMA Supreme™ [mean (SD)]	3.21 (0.41)
SAD with non-inflatable cuff [mean (SD)]	2.25 (0.32)
LMA Supreme™ vs SAD with non-inflatable cuff P-value	p<0.001

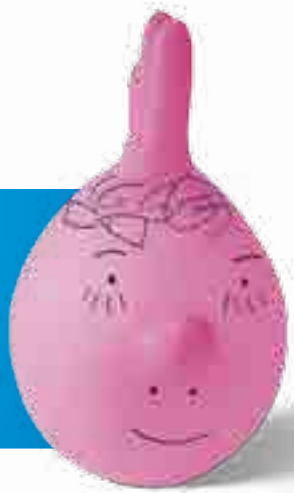
† Distance between the glottis and the distal tip of the supraglottic airway device (SAD).

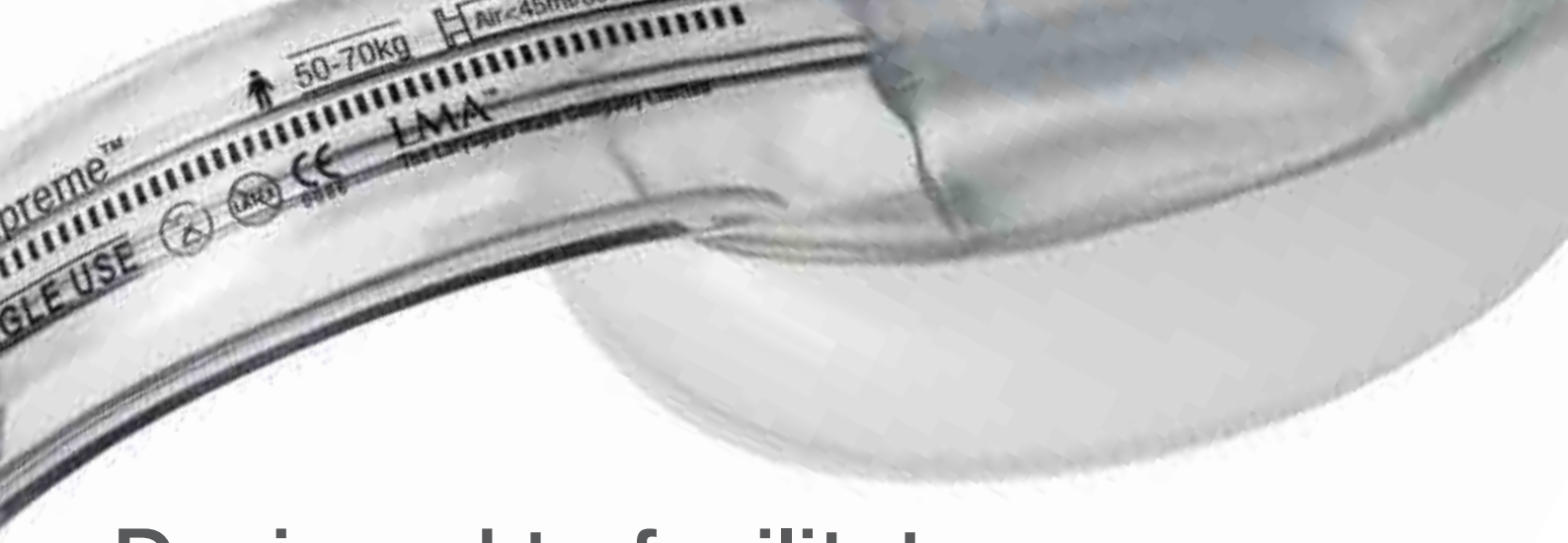
The Second Seal™ is designed to:

- Improve safety vs a first generation device
- Secure the distal tip of the LMA Supreme™ at the UOS to maintain the patency of the drain tube
- Reduce the risk of insufflation during ventilation
- Reduce the risk of regurgitated gastric content leaking around the tip of the mask

"In principle, a non-inflatable cuff is less able to conform to the variable pharyngeal anatomy than an inflatable cuff."

Gasteiger L. et al., 2010





Designed to facilitate insertion success

The anatomically shaped airway tube (LMA Evolution Curve™) and soft LMA AirForm™ cuff of LMA Supreme™ are designed to facilitate insertion:

5 sec

Insertion times as low as 5 seconds from picking up the device to connection to the anaesthetic circuit.[11]

97%

First-time insertion success.[11]

100%

Overall success rate.[11]

When compared with a SAD with non-inflatable cuff, LMA Supreme™ achieved:

- Equivalent insertion times for correct placement[6]
- A significantly higher first-time insertion success rate (p=0.029)[6]
- Significantly fewer placement failures (p=0.025)[6]
- Significantly greater leak pressures (p=0.002)[6]
- A higher rate of successful gastric tube insertions[6]

"The ease and speed of successful insertion, higher glottic seal pressures, and ability to access gastric contents suggest that the LMA Supreme™ may also have a role in securing the immediate airway in cardiopulmonary resuscitation (CPR) and in the 'cannot-intubate – cannot-ventilate' scenario."

Verghese C. & Ramaswamy B., 2008

One explanation for the superior performance of LMA Supreme™ is that its design was less bulky making insertion more predictable and tongue size less influential vs a SAD with non-inflatable cuff.

Ragazzi R. et al., 2012

Minimising post-operative airway morbidity risk

With the ability to monitor and adjust cuff pressure, the LMA AirForm™ cuff is designed to provide greater control over pressure exerted on the mucosa vs a non-inflatable mask.

Findings suggest that :

- Tongue compression is more likely to occur with non-inflatable laryngeal masks vs inflatable laryngeal masks ($p=0.001$)[7,12]
- The incidence of post-operative airway morbidity is lower with LMA Supreme™ compared with other second generation devices ($p<0.05$)[3]

> "Lingual nerve damage following the use of a laryngeal mask with an inflatable cuff is a rare complication."
>
> Renes S., 2011

Sizing and cuff pressure are key to ensuring patient comfort

The incidence of post-operative sore throat is quoted as 17.5% with supraglottic airways.[13]

A number of factors contribute to the risk of post-operative sore throat:

1. Inappropriate sizing of the airway device[13]
2. Over inflation of the cuff with cuff pressures exceeding 60 cm H_20[14]

Studies have shown that with appropriate mask sizing and regular monitoring of cuff pressure, it may be possible to decrease post-operative sore throats by up to 20% and 25% respectively.[13,14]

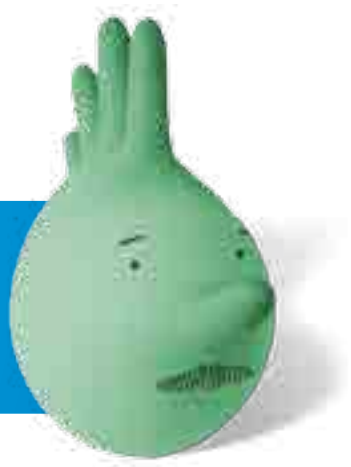
LMA Supreme™: The most advanced single use airway

Mask size	Product code	Patient size	Maximum cuff volume (air)*	Largest size OG tube
1	175010	Neonates/infants up to 5 kg	5 ml	6 Fr
1.5	175015	Infants 5-10 kg	8 ml	6 Fr
2	175020	Infants 10-20 kg	12 ml	10 Fr
2.5	175025	Children 20-30 kg	20 ml	10 Fr
3	175030	Children 30-50 kg	30 ml	14 Fr
4	175040	Adults 50-70 kg	45 ml	14 Fr
5	175050	Adults 70-100 kg	45 ml	14 Fr

*These are maximum volumes that should never be exceeded. It is recommended that the cuff be inflated to a maximum of 60 cm H_20 intracuff pressure.

OG = orogastric

These findings suggest that if it isn't possible to adjust cuff pressure and mask sizing is incorrect, there may be an impact on patient outcomes. Choose LMA Supreme™ and maintain control with the inflatable LMA AirForm™ cuff.



Find out more about LMA Supreme™ and the LMA AirForm™ cuff

Clinical evidence

For the latest clinical evidence on LMA Supreme™ visit **www.lmaco.com/evidence**

LMA AirForm™

For more information on the LMA AirForm™ cuff, visit **www.LMAairform.com**

YouTube

For the latest digital case reports, educational videos and clinician testimonials on the benefits of LMA Supreme™, visit **www.youtube.com/LaryngealMaskAirway**

For the latest news from LMA, like us on **www.facebook.com/LMAInternational**

LMA™
Better by Design

For product information and access to product instructions for use, visit **www.lmaco.com**

Teleflex

For information on other products within the Teleflex product portfolio, visit **www.teleflex.com**

References:

1. Van Zundert A., Brimacombe J. Anaesthesia 2008; **63**: 202-213.
2. Schmidbauer W. et al. BJA 2009; **102**: 135-139.
3. Cremer S. et al. Poster presented at the 14th Scientific Annual Meeting, Society for Airway Management, Chicago, Illinois, 2010.
4. Sharma V. et al. BJA 2010; **105** (2): 228-232.
5. Cook T.M. et al. Anaesthesia 2009; **64**: 555-562.
6. Ragazzi R. et al. Anaesthesia 2012.
7. Russo S.G. et al. BJA 2012; **109** (6): 996-1004.
8. 4th National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society: Major Complications of Airway Management in the United Kingdom. Report and findings: March 2011. Editors: Dr Tim Cook, Dr Nick Woodall and Dr Chris Frerk.
9. LMA Supreme™ IFU, 2013.
10. Gasteiger L. et al. Anaesthesia 2010; **65**: 913-916.
11. Verghese C., Ramaswamy B. BJA 2008; **101** (3): 405-410.
12. Renes S. Anaesthesia 2011; **66**: 220-231.
13. Gross J. et al. EJA 2010; **27** (47): 245, 19API-5.
14. Spiro M. et al. EJA 2010; 19AP3-1.

Distributed by:

PMS-2500-048 Rev C IW 201402

TELEFLEX HEADQUARTERS INTERNATIONAL, IRELAND
Teleflex Medical Europe Ltd., IDA Business and Technology Park, Dublin Road, Athlone, Co Westmeath, Ireland
Phone +353 (0)9 06 46 08 00 **Fax** +353 (0)14 37 07 73
orders.intl@teleflex.com

Manufactured by:
The Laryngeal Mask Company Limited
Le Rocher, Victoria, Mahé, Seychelles

eIFU indicator **Consult IFU on this website: www.LMACO.com**

Teleflex www.teleflex.com
LMA www.lmaco.com

94 07 19 – 00 00 01 · REV C · LMA / WM · 12 14 01

Teleflex