

REFLUX

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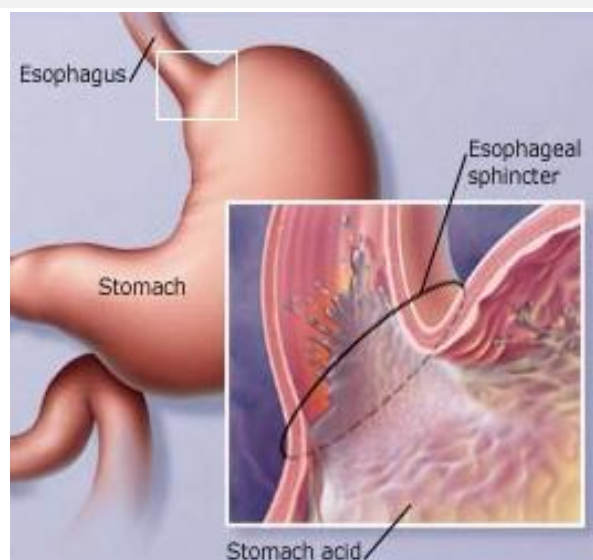
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NEW TREATMENT FOR HEARTBURN – GASTRO-OESOPHAGEAL REFLUX DISEASE – A MAGNETIC RING THAT AUGMENTS THE WEAKENED SPHINCTER – THE LINX



LINX – Titanium beads with magnetic cores linked to form a closed ring

GORD results from a weak Lower Oesophageal Sphincter (LOS). The weak LOS allows acid and bile to reflux from the stomach into the oesophagus. The LINX® System augments the LOS, restoring the body's natural barrier to reflux.



GORD has a profound detrimental impact on patients health-related quality of life. It can affect every aspect of normal activities (including sleeping) and ultimately, if poorly treated, may result in serious long-term complications.

Heartburn is a very common condition, affecting some 10-20% of the adult population. It can become troublesome in patients who need to take medication with PPI on a constant basis. Some patients may not tolerate the medication or find that they need to take increasing amounts. Other patients suffer from have far reaching symptoms such as sore throat and recurrent chest infection due to high reflux. The disease is caused by a weak valve between the stomach and the oesophagus (gullet). The damage to the lining of the oesophagus causes inflammation (oesophagitis) and can result in permanent scarring (Figure 1), or even transformation into pre-cancerous cells (Barrett's metaplasia, (Figure 2) which ultimately can become malignant.



Figure 1 Severe inflammation (oesophagitis) of the lower oesophagus causing scarring



Figure 2 Barrett's metaplasia, a pre-malignant condition secondary to reflux

Whilst most patients will respond to and are happy to carry on medication with PPI some with severe symptoms seek surgical treatment in the form of Laparoscopic Nissen fundoplication (LNF) which is a keyhole operation. A part of the upper stomach (the fundus), is used to make



a collar (wrap) around to lower oesophagus which then acts as a physiological pressure valve, normally keeping the junction of the gullet to the stomach closed to prevent reflux, but opening in response to swallowing. The formation of such a wrap is known as a fundoplication. This however is a complex procedure, and once performed is not easily reversible. Some patients do get unusual symptoms after the operation such as bloating, dysphagia, or flatulence, and these can occasionally be troublesome and irritating, negating some of the benefit of the elimination of reflux symptoms. So although LNF is a good operation for many patients, it is not ideal for everyone.

AUGMENTATION OF THE LOWER OESOPHAGEAL SPHINCTER USING MAGNETIC BEAD TECHNOLOGY (LINX® REFLUX MANAGEMENT SYSTEM)

The LINX® System is a novel technology, designed to magnetically augment a defective lower oesophageal sphincter, restore the barrier to reflux, and eliminate the symptoms and consequences of gastro-oesophageal reflux disease.

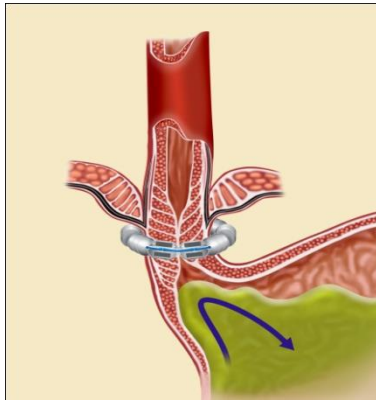
The magnetic sphincter augmentation device consists of a series of titanium beads, each with a magnetic core. These beads are linked together with independent titanium wires to form a flexible band that is placed around the distal oesophagus. The magnetic attraction between the beads provides a sustained force to augment the LOS, keeping it in the naturally closed position. During swallowing however, the device expands, with exponential reduction of the magnetic force between the beads as distension increases.

The device is implanted using keyhole surgery, and performing the procedure is substantially less complex and time-consuming than a LNF. It does not alter the anatomy in the way that a fundoplication does, resulting in less side effects (it is also potentially removable and hence reversible).

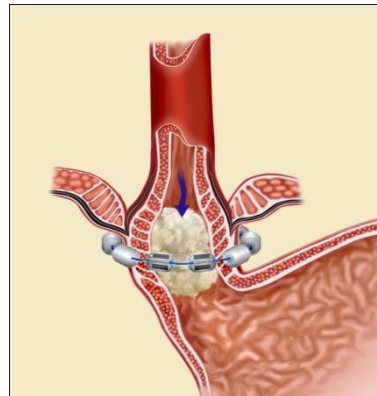
The LINX® System is therefore an encouraging new technology for effective and permanent GORD treatment, eliminating either the

requirement for long-term unsatisfactory drug therapy or highly complex surgery.

Mechanism of action of LINX



The LINX™ System augments the LOS, preventing reflux from the stomach into the oesophagus



Swallowing forces break the bond, allowing food and liquid to pass normally into the stomach

Info <https://www.jnjmedicaldevices.com/en-US/campaign/LINX-GERD-relief>

For NICE guidelines on this device please visit

<http://publications.nice.org.uk/laparoscopic-insertion-of-a-magnetic-bead-band-for-gastro-oesophageal-reflux-disease-ipg431>