Solar GI HRM

Solid state
High Resolution Manometry

- **Full coverage of esophagus**
- **Simple procedures leading to high quality recordings**
- **Visual motility interpretation**

High Resolution Manometry (HRM) is a new approach of measuring pressures in the esophagus. The Solar GI HRM system simplifies clinical procedures and offers fast and accurate diagnostic reports.

Up to 36 closely spaced pressures capture the entire esophageal motor function from the pharynx to the stomach. Accurate sphincter location becomes so easy that specialized technical training is no longer required. Besides conventional manometry displays, rapid data interpretation via Clouse contour plots can be established.

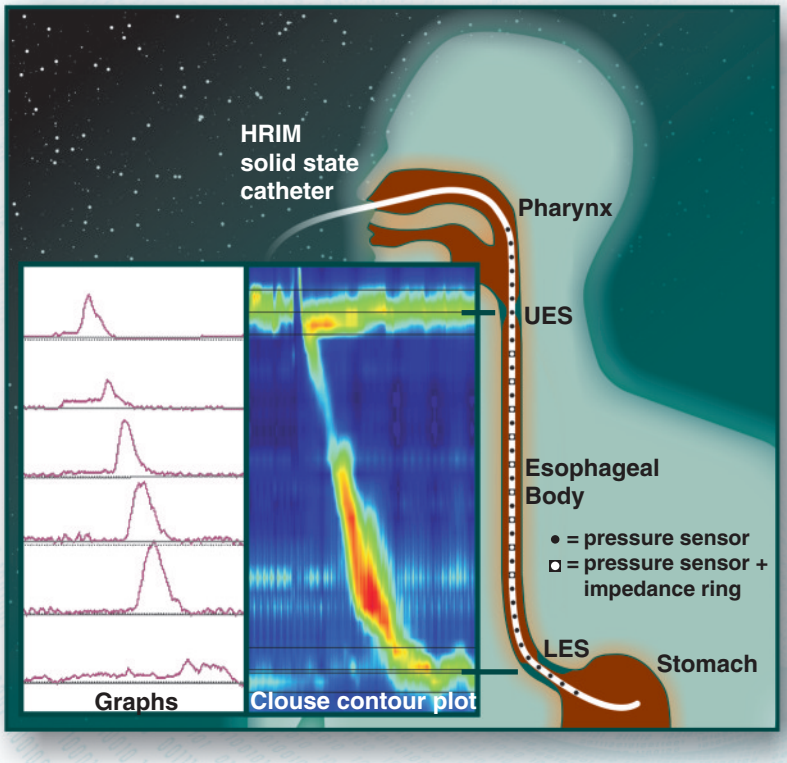
A selection of Solar GI HRM benefits:

- Fast data collection
- Captures motor function of entire esophagus
- Accurate and consistent data
- Optimal motility visualization and customized reports
- Solid state catheter for simple operation
- 36 Pressures at 1 cm spacing cover full esophagus

MMS
Medical Measurement Systems

Advanced Clinical Use

Full coverage of esophagus

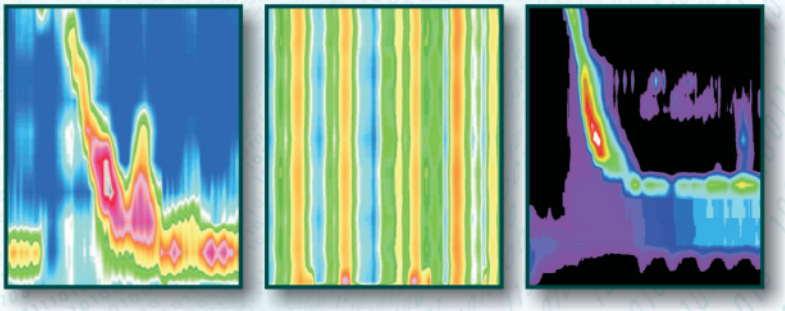


With 36 pressures (spacing: 1 cm) the solid state HRM catheter covers the complete esophagus:

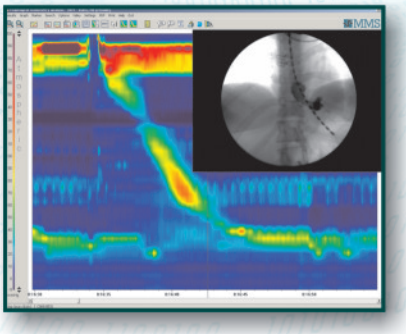
- Up to 30 pressures monitor the pharynx, the UES and the esophageal body
- Approximately 5-6 pressures monitor the LES to determine its length, relaxations and resting pressure
- 1-2 pressures for the gastric pressure
- Optionally: up to 12 Impedance channels

Visual View

The Clouse contour plot display offers more information than the traditional pressure curves, and is still easier to analyse due to the recognition of typical patterns. So, more information and easier analysis go perfectly together.

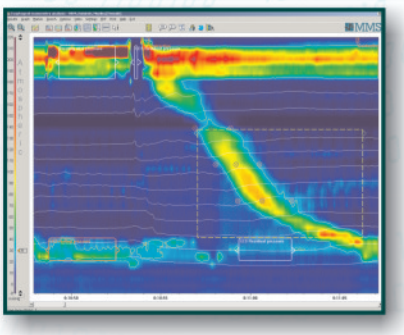


Double peak *Achalasia* *Pressure entrapment*



Combined with X-ray

By adding X-ray images and cine loops to the HRM pressure measurement you can see the swallow and bolus movement in real time.



Combined with Impedance (Solar HRIM)

While HRM measures peristalsis, Impedance measures the actual bolus movement, making it a very powerful combination as 51% of patients with Inefficient Esophageal Motility (IEM) have normal bolus transit*. Solar HRIM offers the new standard for total esophageal function monitoring.

*Tutuian R, Castell DO, American Journal of Gastroenterology, 2004, 2:230-236

Simple procedures leading to high quality recordings

Fast and easy setup

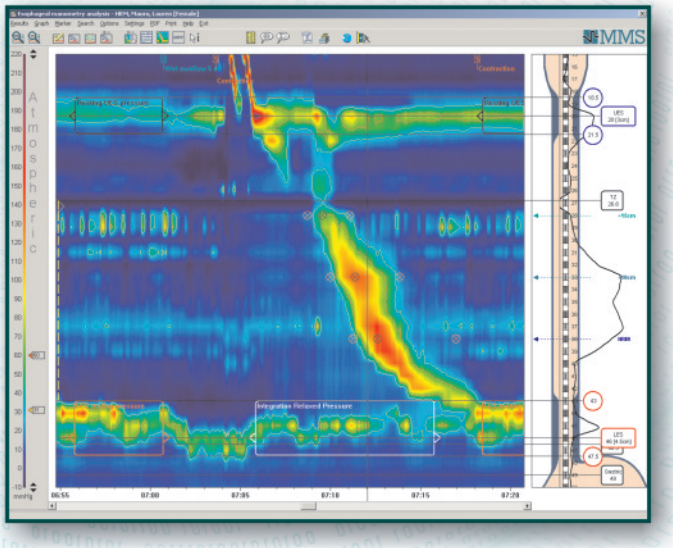
The fast, standard and one-time positioning of the HRM catheter makes the esophageal manometry examination so simple that a consistent high quality measurement can be achieved. The preparation of the Solar GI HRM procedure offers several advantages:

- No setup time.
- Reduced study time.
- Simple probe positioning.

Solar GI HRM pressure and Impedance interface

Esophageal manometry has never been so easy

UES and LES can easily be recognized on the monitor of the Solar GI HRM. After location of both sphincters the HRM examination can be started. Up to 36 pressures cover the complete esophageal length. A stepwise pull-back of catheter is not needed, which saves time.
Patient can be instructed to swallow water, viscous food or solid food. The Solar GI HRM procedure for an assessment of the complete esophagus normally takes no longer than 10 minutes.



Easy data analysis

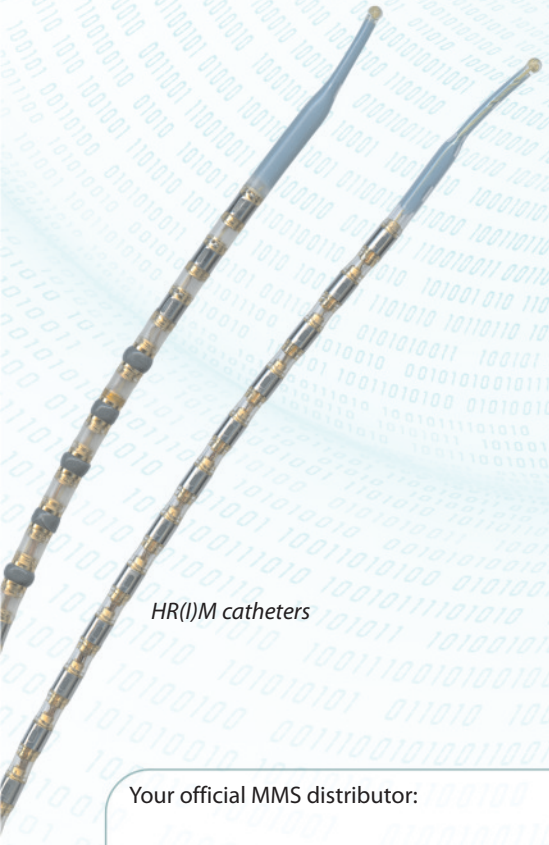
Solar GI HRM analysis software helps you to review all manometry data very efficiently. It provides for fast and accurate determination of diagnostic parameters using intuitive graphical markers. Peristaltic movements and disorders can be diagnosed easily by recognizing typical patterns. After quickly checking all swallows you can print a report with plots of all marked contractions. Additional benefits are:

- Sphincter locations are easily recognized in the Clouse contour plots.
- Automatic marking of LES and UES resting pressures and LES residual pressure.
- Automatic marking of the contraction.
- Automatic result calculation.
- Instantly switching between Clouse contour plot and graphs.
- Multiple isobar indication, also during the study.

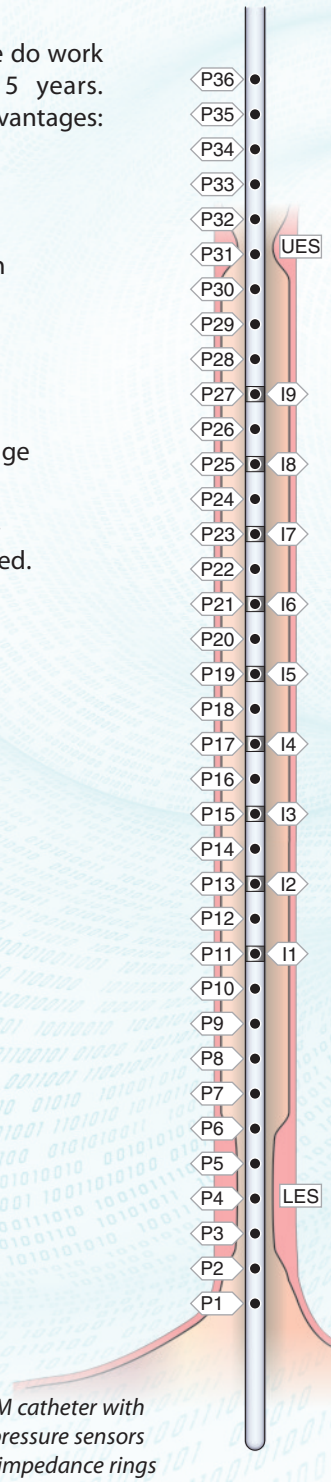
Advantages of solid state HRM catheters

MMS offers a solid state HRM solution as we do work with this proven technique for over 15 years. Solid state HRM catheters offer many advantages:

- The probe spans the entire esophagus, from pharynx to stomach.
- Dense coverage from pharynx till stomach (spacing: 1cm).
- No study preparations needed.
- No calibration.
- One connector for all pressures.
- Changing patient positions does not change measured pressures.
- Catheter can be cleaned in a few minutes.
- Up to 12 Impedance channels can be added.
- Rapid response to measure the true physiological signature.
- Simple operation.
- Low maintenance.



HR(I)M catheters



HRIM catheter with 36 pressure sensors + 9 impedance rings

Additional products and software options

The **Ohmega Impedance-pH recorders** can be added using the same MMS patient database.

The **Orion *II* pH recorders** can be added using the same MMS patient database.

The **Solar GI Neuro module** can be used for stimulation and high speed EMG studies.

Networking: linking the system to other hospital departments as well as the outside world.

HIS: connect your system to the hospital information system.

Other GI studies: Small bowel, Colon manometry, Anorectal manometry, EGG, TMPD and Barostat.

Software available in more than **15 languages**

Ohmega: ambulatory Impedance-pH recorder

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