

Product Brochure



ANI monitor

“Finding an objective pain monitoring is an increasing need during the perioperative time. Measuring the parasympathetic tone can help clinicians to deal with it.”



The FIRST parasympathetic tone monitoring DEVICE in the WORLD

Physiological mechanisms related to nociception and to its removal, are located at different subcortical levels. That's why, it was necessary to move research towards a way of analyzing the autonomous nervous system tone (sympathetic and parasympathetic activities). The purpose of MDMS was to provide doctors a non invasive, easy to use and to read monitoring system which offers a continuous and reliable index. So, the access to ANS through the ECG (ElectroCardioGram) which has been selected.

Among all technologies which have paid attention to this analysis, the ANI technology is the only one which takes the opposite course to the previous attempts by using the sympatho-vagal balance to measure the nociception effect and its treatment (antinociception). The ANI technology, before being a monitoring system of pain is a monitoring system of parasympathetic tone, which informs about the comfort or discomfort condition of the organism, that is to say about the onset of pain or stress which may be of cellular or surgical origin. A patient that is described as «comfortable» will have a dominant parasympathetic tone whereas he would activate his sympathetic system with a parallel decrease of the parasympathetic tone if he experiences a sharp pain.



Battery 09:57:49 Stop

Analgesia/Nociception Index

ANI

ANI
36
26
 $\rho\Sigma$

ANI navigation

Snapshot

Energy
1.041

Reset ECG

Parameters

MDMS

A.N.I. monitor



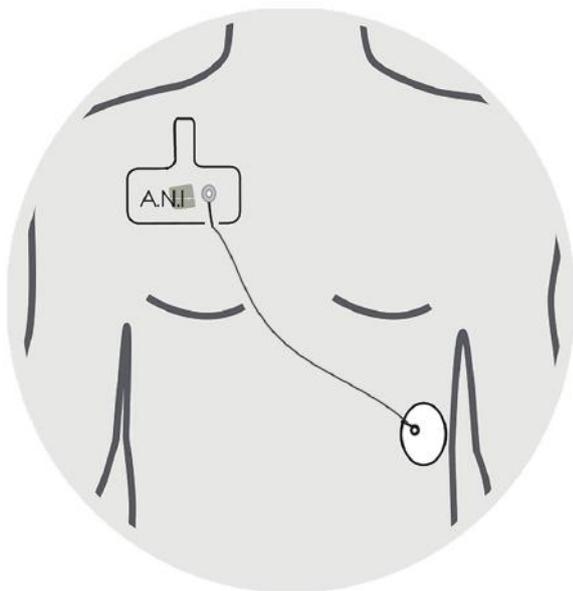
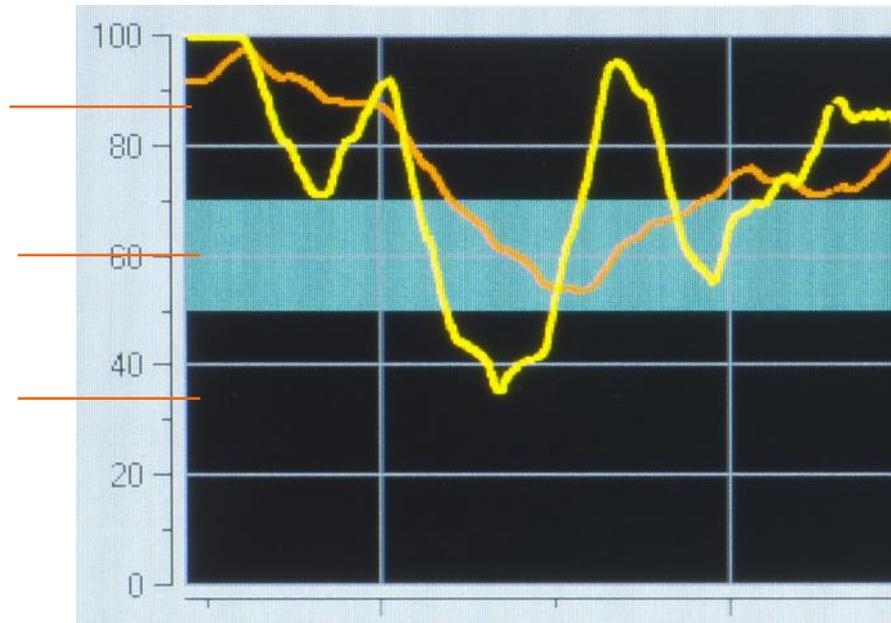
On / Off

Interpretation

When the ANIm (the orange curve) is above 70, you have the possibility to decrease doses of opioids safely (if opioids are used).

The optimal range of comfort and/or adequate range of analgesia corresponds to 50/70 window.

If the ANIm (the orange curve) stays below 50, there's a possibility of hemodynamic reactivity few minutes after.*



How to place SENSORS ?

Position the large and the small patch in order to detect a cardiac vector of good amplitude.

E.G. : the large patch on the right shoulder and the small patch on the left side of the chest.

* Boselli et al, Minerva Anestesiologica, 2014

For WHO?



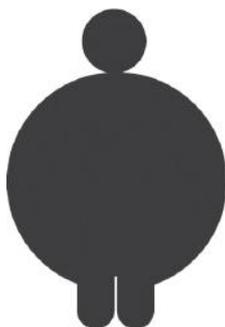
Elderly people, very sensitive to opioids overdose, to bradycardia risk and to hypotension

Children



Non communicating patients or bedridden

Obese patients, whose distribution volumes are modified compared to others. Most of clinicians who are using the ANI have reduced the opioids doses from 30% to 60% compared to the initial doses delivered to these patients



Drug addict patients

Long time surgery >3h



Benefits

Titrate opioids avoiding infra and overdosing

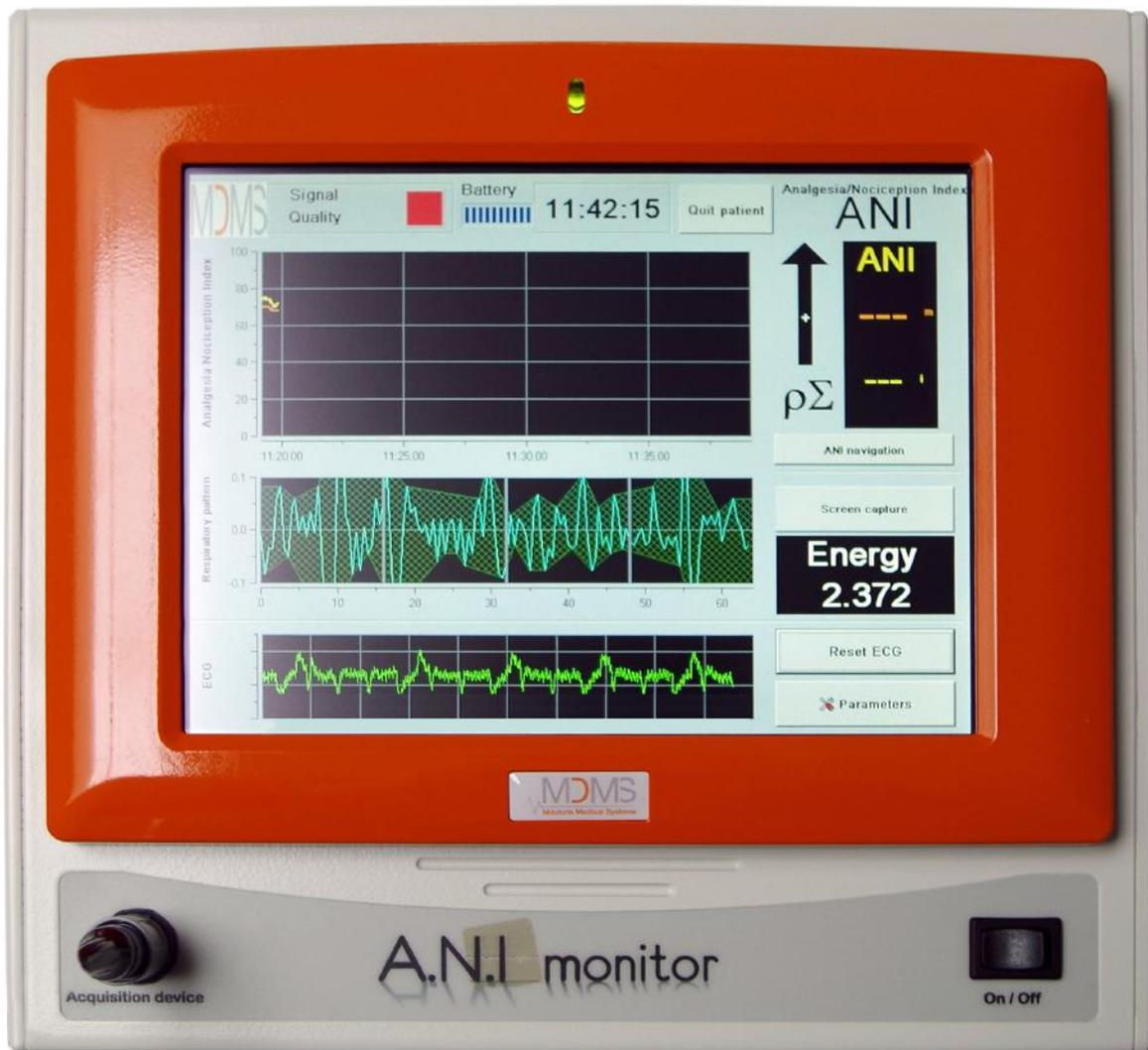
Diagnose the ethology of the haemodynamic event

Predict postoperative pain

Predict haemodynamic reactivity



ANI Monitor Specifications



General

| Parameter | Specification |
|----------------------------|-------------------------------------|
| Power Requirements | 100-240VAC through AC power adapter |
| Main Frequency | 50/60 Hz |
| AC Power consumption | |
| Battery Type | Lithium-ion |
| DC Input | 12V+/- 5% 60W |
| Battery Charge / Discharge | About 6 hours / 1 hour 30 minutes |
| Patient Leakage Current | <5 μ A @ 220V and 50 Hz |

Environmental

| Parameter | Specification |
|--|--|
| Cooling Method | Convection. Fan less |
| Temperature Operating Storage | 5°C to 40°C -20°C to 60°C |
| Humidity Operating Storage | >15% and <95% non-condensing >15% and <95% non-condensing |
| Altitude Operating Storage | 360 to 800 mmHg 360 to 800 mmHg |
| Dimensions Monitor Acquisition Device | 265 × 247 × 79.5 mm 157 × 103 × 68.5 mm |
| Weight Monitor Acquisition Device | 3.17 Kg 0.4 Kg |
| Finish Monitor Acquisition Device | Front : white and orange Back : white White |

Display

| Parameter | Specification |
|---------------------|----------------------|
| Type | Color Liquid Crystal |
| Size | 200 mm (8 inches) |
| Resolution | 800 x 600 pixels |
| Active Viewing Area | 173 x 130 mm |
| Pixel pitch | 0.216 x 0.217 mm |

Output

| Parameter | Specification |
|-----------------|----------------|
| Export Protocol | UART interface |
| Data Export | USB interface |

Connector

| Parameter | Specification |
|-----------------------------------|---|
| AC Input (monitor) | 3-pin power connector |
| Acquisition Device (monitor) | 4-pin female connector to provide power and communication to Acquisition Device |
| Export (monitor) | Sub-D9 connector to export data in real time |
| Data Export (Monitor) | USB connector to export data and snapshot to USB stick |
| Sensor cable (Acquisition Device) | 6-pin female connector |
| | 6-pin male connector |
| | 4-pin male connector |
| Sensor (Acquisition Device) | 5-pin female connector for sensor |



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