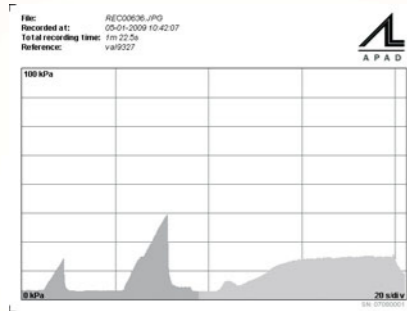


## Registration and documentation of the epidural puncture



### Herman Wijffels Innovation Award

The Herman Wijffels Award was instituted as a means for promoting innovative and sustainable enterprise in the Netherlands. In competition with over 250 participants, APAD was evaluated the best innovative product of 2007 and won this most prestigious award.

#### Technical Data and Specifications

##### Size and Weight

· Height	220 mm
· Width	230 mm
· Depth	90 mm
· Weight	2 kg

##### Display

- Colour TFT with LED Backlight
- 320x240 Pixel Resolution
- Touch Screen
- Vertical Scale 0-100 kPa
- Vertical Resolution  $\leq 0,6$  kPa

##### Audio

· Frequency	140 Hz-1 kHz
· Resolution	$\leq 0,4$ Hz

##### Conformity Mark

APAD is in compliance with the regulations as set out in the Medical Devices Directive (MDD 93/42/EEC). Classification: for Europe: Class IIb: Manufacturer Apad B.V.



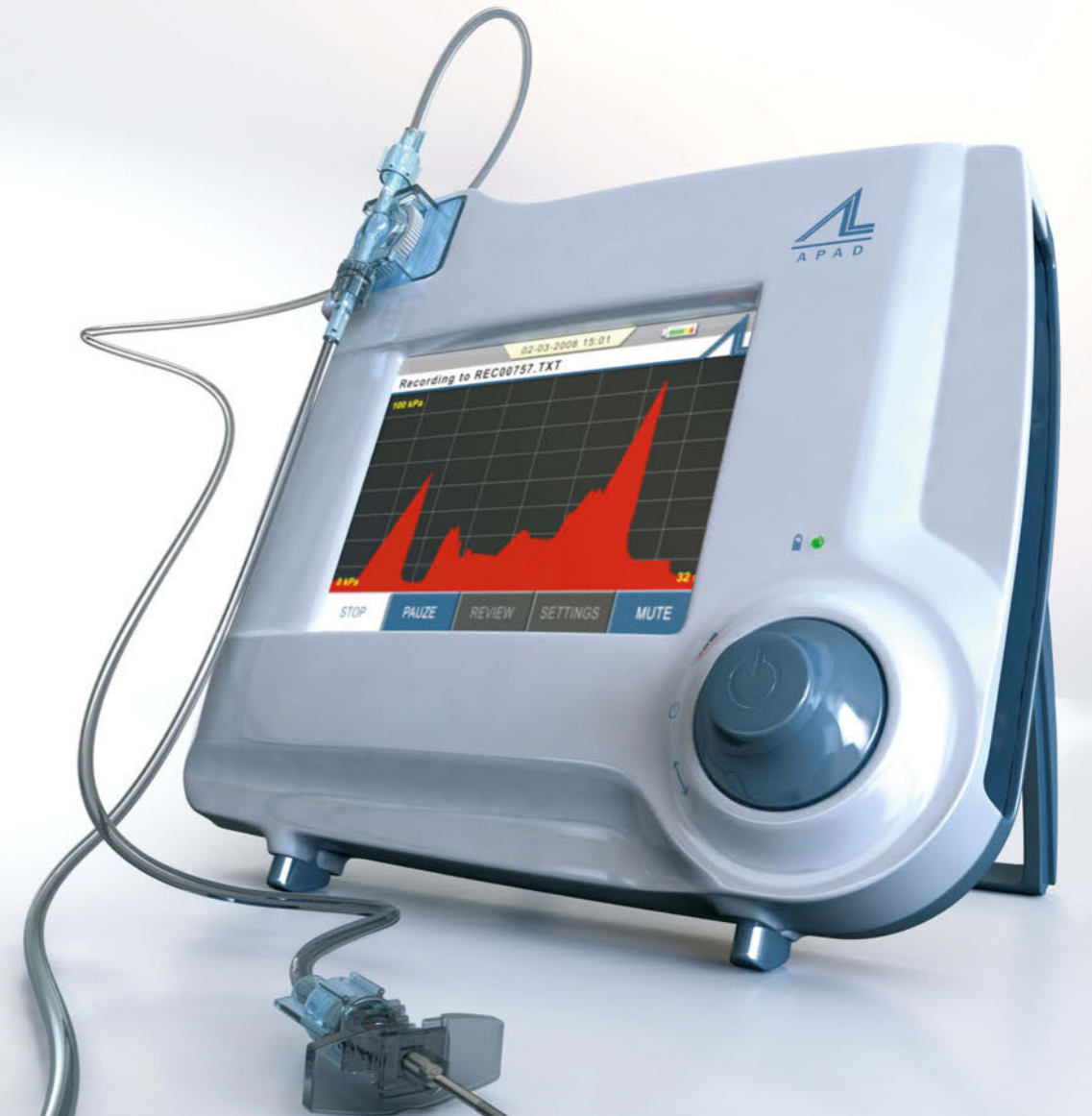
APAD is an invention of T.J.M. Lechner, MD, Anesthesiologist and has been patented by APAD Octrooi BV.



Equip Medkey BV | Edisonstraat 16J | 2809 PB Gouda | The Netherlands | T +31 (0)182-573 293 | F +31 (0)182-531 364  
info@equip.nl | www.equip.nl | GE Artesia Bank: 63.94.83.828 | IBAN: NL60 ARTE 063.94.83.828 | BIC / SWIFT: ARTENL2A  
KvK: 24400829 | VAT: NL817000240B01



**New approach to the epidural space**



**SAFE, SOUND AND SIMPLE**



Start of the procedure



Two hands needle control



APAD confirms finding of the epidural space



Control of the catheter placement



Registration of the puncture



A perfect procedure

**Revolutionary acoustic system to locate the epidural space featuring the following unique advantages:**

- . Registration and documentation of the epidural puncture
- . Guaranteed finding of the epidural space
- . Penetration of the epidural space is indicated by a clear variation of the acoustic signal
- . Acoustic monitoring is superior to the sense of touch
- . Two handed technique for absolute needle control
- . An outstanding educational tool
- . Monitoring of the different layers guarantees a safe procedure

**APAD (Acoustic Puncture Assist Device)**

APAD is a revolutionary device to localise the epidural space by means of an acoustic signal. This device is measuring the pressure in an extension tube between the epidural needle and the syringe placed in a pump. The generated pressure is translated into a corresponding acoustic and visible signal.

The device enables the anesthesiologist to handle the epidural needle with both hands and to detect the epidural space by means of the acoustic signal. The method has been proven to be reliable, safe, and simple in several studies (publications 1, 2, 3, 4).

The benefits of this new epidural puncture technique include: registration and documentation of the epidural puncture, better needle control, certitude that the epidural space has been reached, the free space can be checked and APAD is an outstanding educational tool.

**List of Publications**

Several studies have proven the APAD-procedure to be reliable, safe, and simple. The clinical results have been published in various leading journals. Please inquire for the following articles, for further reference:

1. Lechner, T.J.M. van Wijk M.G.F., Maas A.J.J. Clinical results with a new acoustic device to identify the epidural space. *Anaesthesia*, 2002;**57**:768-772
2. Lechner T.M.J., van Wijk M.G.F., Maas A.J.J. *et al.* Clinical Results with the Acoustic Puncture Assist Device, a New Device to Identify the Epidural Space. *Anesthesia & Analgesia*, 2003;**96**:1183-1187
3. Lechner T.M.J., van Wijk M.G.F., Maas A.J.J. *et al.* Thoracic epidural puncture guided by an acoustic signal: clinical results. *European Journal of Anesthesiology* 2004;**21**:694-699
4. Lechner T.M.J., van Wijk M.G.F., Maas A.J.J. De akoestisch-geleide epidurale punctie. *Nederlands Tijdschrift voor Anesthesiologie* 2004;**17**:1003-1007
5. Lechner T.M.J., van Wijk M.G.F., Maas A.J.J. *et al.* The use of a sound-enabled device to measure pressure during insertion of an epidural catheter in women in labour. *Anaesthesia*, 2011;**66**:568-573