

# EXPAIR software

The software judged  
unanimously as the most intuitive

## Functionality

- User friendly software
- Use of SQL with tools
- Historic trend results
- Comments notepad
- User definable reports
- Multi Language compatible
- Incentive test screen
- Full quality control and history of calibration
- Remote access assistance (VPN ou similar)
- Technical Engineer functions

## Integration possibility with PFT instrumentation

*The MediSoft factory is a state of  
the art modern facility with clinical  
research, precision engineering and  
computer design departments.*

# HYPAIR Fe<sub>NO</sub>

## GENERAL SPECIFICATIONS

**Dimensions (HxWxD) cm :** 14 x 21 x 33  
**Weight :** ± 10 kg  
**Power requirements :** 230/115 VAC 50/60Hz  
**Power consumption :** < 20 VA  
**Warm up time :** < 30 minutes  
Conform to electric safety requirements IEC 60601/1

## NO ANALYSER

**Cell type :** Electrochemical  
**Cell life time :** min. 2 years  
**Measurement range :** 1 to 200 PPB (Bronchial)  
1 to 2000 PPB (Nasal)  
**Response time :** 25 seconds  
**Analysis time :** 35 seconds  
**Stability :** drift < 1 % / day  
**Relative accuracy :** Better than 2,5 PPB  
**Linearity :** error < 0,5 %  
**Reproducibility :** ± 2 PPB  
Compensation automatic of the drift due to the temperature variations

## AMBIENT CONDITIONS

**Ambient temperature :** 15° to 35° C  
**Ambient humidity :** 10 to 80 % not condensed

## AMBIENT POLLUTION LIMITS

No limit ambient NO measurement capabilities

## ESSENTIAL CONSUMABLE

**Absorption column to eliminate ambient NO :** typical lifespan  
> 6 months

## COMPUTER INTERFACE

**Type :** USB with galvanic isolation  
**Operating system :** Windows® XP or Windows® 7

## MEASUREMENT OF EXPIRED FLOW RATE

Measurement of differential pressure  
Piezo resistive pressure sensor  
Flow rate range : 0,01 to 1 L/sec  
Expired flow rate controlled from **50 to 350 ml/sec**

## MEASUREMENT BY EXPIRED PRESSURE

Pressure sensor type piezo resistive protected against overpressures  
Measuring range ± 50 cm H<sub>2</sub>O  
Expired pressure range standardised between **10 - 20 cm H<sub>2</sub>O**

## NEW OPTIONS

- **Operator and Patient separate screens with second monitor**
- **Rapid gas and signal processing** for bronchial and alveolar measurements
- **Pneumotachograph** for relaxed and forced Spirometry



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## CALIBRATION

### Analyser

Automatic procedure to performed regulary  
Range calibration gas : ± 100 PPB  
Gas consumption : ± 0,25 L / cal

### Pneumotachograph (Flowmeter)

Procedure automatic with pump of calibration 1 liter -  
periodicity (min 1 x the year)

### Pressograph (Oral pressure)

Procedure automatic with column of water - periodicity  
( min 1 x the year)

## PNEUMOTACHOGRAPH FOR SPIROMETRY

- Typical measurement range 0.02 to 15 L/sec  
(actual range set by user 20 L/sec suggested max)
- Accuracy : error max < 3%
- Acquisition frequency (100 to 400 Hz)
- Dead space 35 ml
- Volume expressed in B.T.P.S.
- Calibration by 3 liter syringe (optional syringe)
- In compliance ATS - ERS - BTS recommendations
- Exchangeable Pneumotachograph head
- Automatic compensation of the differential pressure sensor drift
- Cross infection and contamination control
- Best use with Medisoft MS028 antibacterial filter

## EXTERNAL SUBJECT CIRCUIT

Flexible breathing hose - length 60 cm Ø 10 mm  
Single-use anti-bacterial filters  
Dead space ± 20ml

## CLEANING / DISINFECTION

The system requires the use of a single use anti-bacterial filter  
to protect the patient circuit

## BIBLIOGRAPHY REFERENCES

Am J Respir Crit Care Med  
Vol 171.pp 912-930, 2005  
DOI : 10.1164/rccm.200406-710ST  
ERJ 2009 : 34 : 1264 - 1276

## USER RESTRICTIONS

- Use of provided power cord essential
- Max USB lead 3 meter
- Medical Grade computer - Conformity to IEC60601-1 only permitted
- The Hypair Feno and accessories must be cleaned and disinfected in accordance with the instructions contained in the user manual
- This device is for use by qualified Staff trained and for its application only
- This device must be used with single subject use barrier filters (Medisoft MED 59)(Fe<sub>NO</sub> option)
- This device is intended for use in Hospital Clinic or Private Surgery only.
- The user must be a qualified person such as; medical Specialist, Nurse, Laboratory technician.
- The unit is designed for use within the ambient conditions of the specifications.

Your official dealer :



Cert. N°: 09/RE/AR14  
ISS 13485 (2005)

For early detection  
and management of Asthma

# HYPAIR Fe<sub>NO</sub>

## MEASUREMENT OF ENDOGENOUS NITRIC OXIDE

- BRONCHIAL
- ALVEOLAR
- NASAL



# HYPAIR Fe<sub>NO</sub>

## Device for Measurement of endogenous NO in exhalation by On-Line and Off-Line method.

For 3 modes of operation : Nasal, Bronchial and Alveolar

### ► Measurement of Bronchial Fe<sub>NO</sub>

- **Best marker for**
  - Inflammation of respiratory tracts
  - Response to steroids
- **Allows planning of follow up therapy**
- **Direct relationship between Steroids dose and decrease value of moderate Fe<sub>NO</sub>**

#### Technique :

- Standardized (guideline ERS / ATS)
- 4 flows (50 - 100 - 150 350 ml / dry) (alveolar measurement)
- Simple, fast, non-invasive
- Results very reproducible (Maximal variation < relative 15 %)

### ► Measurement of Nasal Fe<sub>NO</sub>

- **Using Nasal Catheter (bung)**
  - New standardised method : during apnea or in continuous expiration during 10 (adult) or 8 (children) sec. Very useful to screen ciliary primary dyskinesy
  - Conventional method : Analysis of nasal sample under controlled respiration 45-60 sec

### ► Competitive advantages

- Very low use costs
- Simple control of flow and expiratory pressure
- Full integration into our PFT product range
- Automated Quality Control for gas analysis without routine use of reference gas cylinder



### ► Spirometry included in the Fe<sub>NO</sub> module

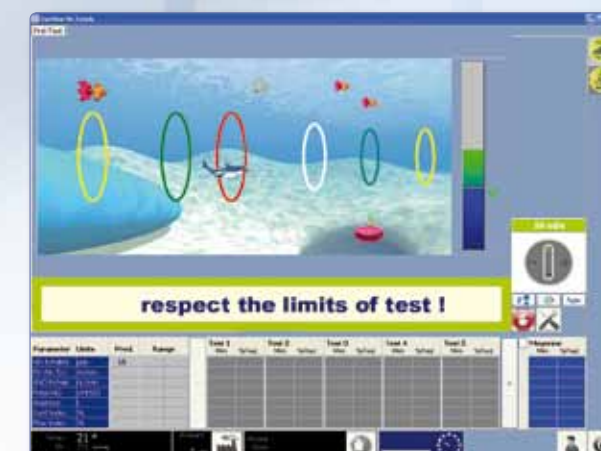
- To provide accurate and repeatable Spirometry measurements in Clinical use.
- With unequalled high performance and value for money.



## Progress of the measure



OR



Incentive screen

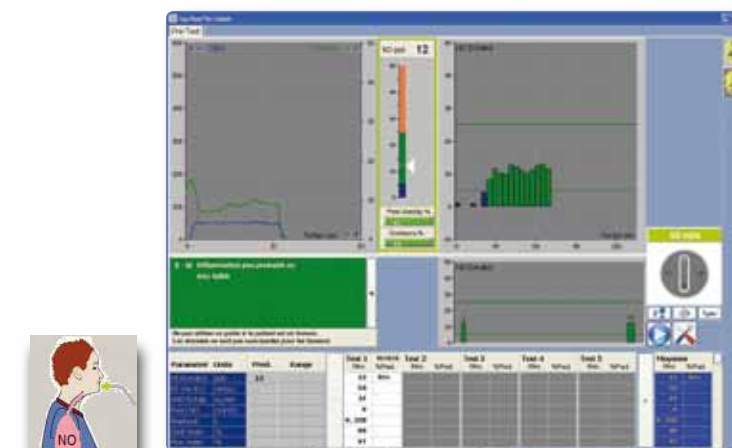
**1 INITIALISATION**  
Patient breathes out to room

**3 EXPIRATION**  
Controlled Expiration through flow control

**2 INSPIRATION**  
Maximal Inspiration through ambient absorber for NO free air

**4 SAMPLE COLLECTION AND GAS ANALYSIS**

## Display of the results



Bronchial or alveolar measure



## Key Parameters

### NO

Maximal value of exhaled NO in ppb

### VE

Average expired flow (L/min)

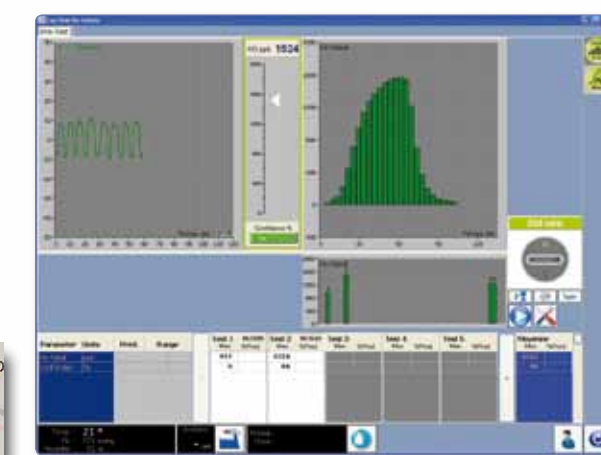
### VNO

Average of expired NO flow (ml/min)

### Pres.

Expiratory Pressure averaged (cmH<sub>2</sub>O)

- Screen display of test (5 max)
- Averaging of test results



Nasal measurement