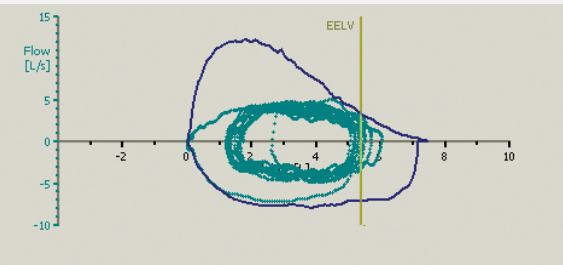## Intrabreath: Testing during Exercise

Subjects, whose Flow-Volume Loop is considerably reduced, cannot exercise to a maximum. The Intrabreath program allows to superimpose the Flow-Volume Loop at rest to the Flow-Volume Loop during exercise and consequently provides information about a possible ventilatory limitation or emphysema during the measurement. Besides, EELV and IC will be determined exactly.
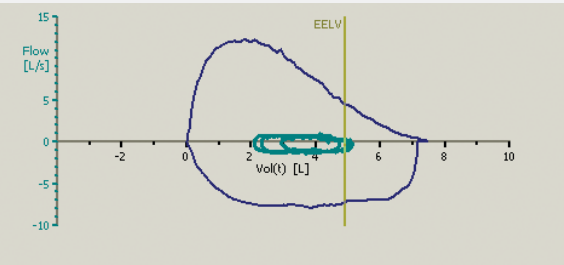

■ Intrabreath measurement at 50 watts   ■ Intrabreath measurement at 120 watts

Unlimited networking possibilities

The JAEGER JLAB database provides multiple networking possibilities. No matter whether you intend to network simply MasterScreen CPX or multiple JAEGER systems - you only have one central database on a single server.

Consequently, patient data have to be entered only once or are imported from the practice administration system (PAS) via the GDT interface or from the hospital information system (HIS) via the HL7 interface. Of course, data can also be exchanged vice versa.

At your workstation computer you are free to choose whether you want to view the reports or the printout only (Reader) or whether you want to edit the data, for example, for AT determination. If you have a network of many workstations, our Intranet-based I-Net Server will be at your disposal. You simply require a Browser and Acrobat Reader for each of your workstations. You can also create a report in PDF format and save it to any location in your network.

Contact us for detailed information.
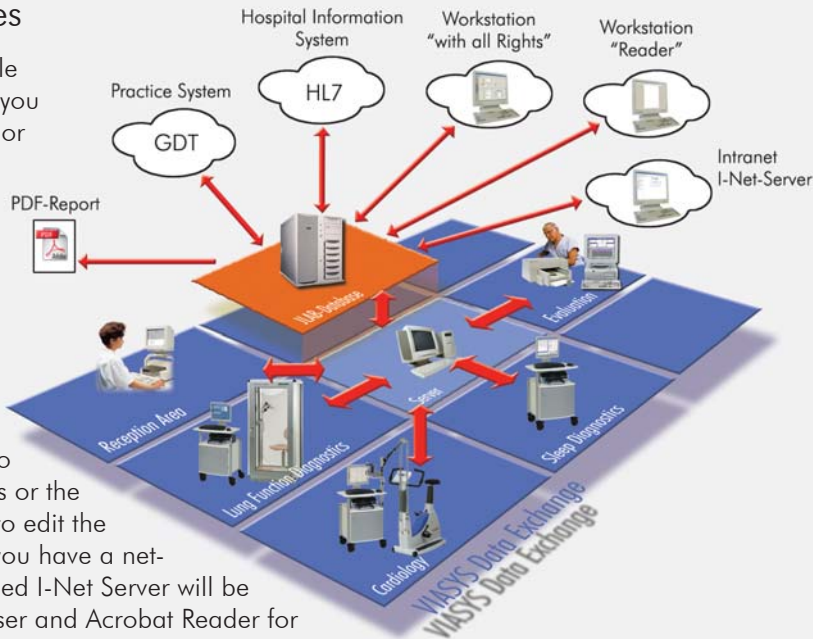
Performance Features

☑ Full-featured exercise test including Flow-Volume-Loop
☑ Breath-by-Breath measurement
☑ AT determination according to different methods
☑ Functional, compact design
☑ Automatic volume and gas calibration
☑ Ambient module for temperature and pressure
☑ Indirect Calorimetry
☑ Intrabreath measurement for dynamic Flow-Volume Loop
☑ Calculated Cardiac Output
☑ Pulse oximeter with finger clip and ear clip
☑ Off-line blood gases/lactate and AaDO$_2$ estimation
☑ Training and nutrition reports
☑ Interpretation program IntelliSupport

☑ Automatic ergometer control
☑ Powerful analysis software including Report Generator
☑ Interfaces for practice administration systems

Options:
○ Integrated 12-lead ECG
○ Interface for GE-ECG, Cardiosoft
○ Interface for Custo ECG, on request
○ Suction unit
○ Dual Monitor
○ Heart rate monitoring including Polar belt
○ Mobile system
○ Mobile system including telemetry
○ Bicycle ergometer
○ Treadmill ergometer
○ Network

CE 0123

VIASYS
HEALTHCARE
Excellence For Life
RESPIRATORY CARE

MasterScreen® CPX

● Small, lightweight and compact design
● Breath by Breath
● Intrabreath including Flow-Volume Loop during exercise
● Expandable for mobile use
● Integrated ECG
● Nutrition Assessment
● Cardiac Output
● Complies with international regulations, MDD and FDA

MasterScreen CPX and options
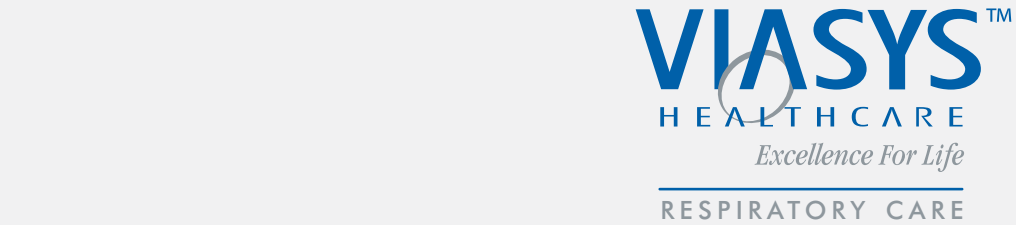
Cardiopulmonary Exercise Testing by **JAEGER®**
It's experience that counts

VIASYS Healthcare
Respiratory Care
Your partner:

Outpatient Monitoring	Lung Function Diagnostics	Cardiorespiratory Diagnostics
Sleep Diagnostics & Therapy	Point-of-Care Diagnostics	Ventilation

40 Years of Experience in Exercise Testing packed in a Compact Unit

MasterScreen CPX: Excellent in both stationary and mobile use

We have taken careful note of the clinician's requirements to create a small and partially mobile system which offers the full spectrum of cardiopulmonary measurements. MasterScreen CPX allows you to run a complete exercise test including stress ECG (option) quickly and easily.

Volume Sensor: Precise and lightweight

Our patented digital TripleV-Volume Sensor complies with ATS criteria, performs without drift and is completely insensitive to moisture. This is highly sophisticated technology you can really rely upon. As compared to a turbine, the flat fan system has no starting or hunting problems due to its small inertia. Thanks to its compact and lightweight design (45 g only), the sensor adds minimal resistance to airflow and has a dead space of only 30 ml. Patients and athletes will highly appreciate the fact that it is extremely comfortable to wear with both mask and mouthpiece.
The TripleV-Volume Sensor can be used for all groups of patients from children and adults to critically ill patients and athletes.

■ Highly-precise
  digital TripleV Sensor

Operation: Easy and quickly to comprehend

Every system is just as good as its operator. Consequently, operation must be easy to ensure that you can quickly master the system and not vice versa.

Automated program sequences can be controlled by a single key thus allowing you to concentrate on your patient rather than on computer monitors. Is there anything easier?

Volume and gas analyzer calibration is done automatically and is consequently just as easy as operation. A manual calibration pump is not required.

Automatic volume calibration

Automatic gas analyzer calibration

■ Automatic calibration

Option: Dual-Monitor, ECG and exercise data on separate TFT screens

Small, lightweight and highly-precise analyzers

Option: Suction unit including 3-dimensional extension arm

3-dimensional extension arm for precise positioning of analyzers

Trolley with modern design and adjustable desk; computer, automatic calibration unit and isolation transformer included.

Option: Swivel-mounted lateral desk

Option: VIAsprint™ 150/200P State-of-the-art, rpm-independent bicycle ergometer including seat and handle-bar adjustment

Less consequential costs

MasterScreen CPX is a paradigm of cost-effectiveness. The system is featured with gas analyzers with a long economic lifetime and minimum gas consumption during calibration (50 mL).

With the optional Online Service Agreement you can make use of cost-saving and quick support without requiring a service technician to travel to your site.

Training and competence

Exercise testing is a very complex issue; however, an internationally recognized team of trainers will be at your disposal to meet the great demand for training in this area. Not only do we offer theoretical and practical training courses but also courses in interpretation.

MasterScreen CPX: Expandable for mobile use

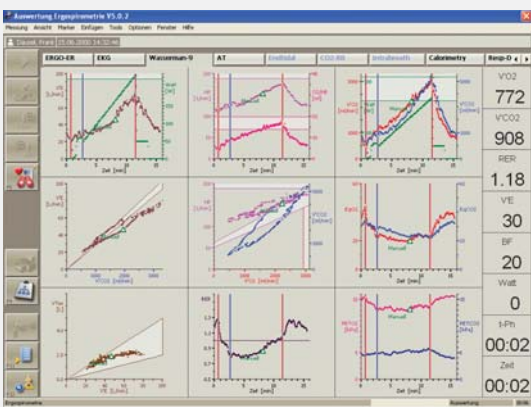Mobile system including telemetry

Mobile system

CPX
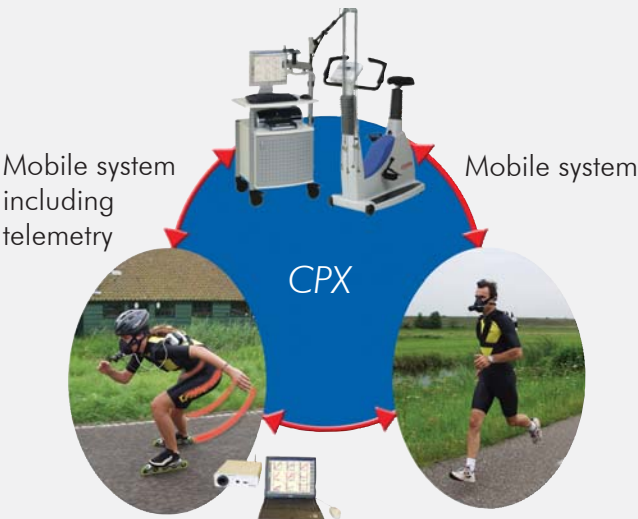
The Test

Don't leave anything to chance. Already during the test the program provides you with an excellent breath-by-breath overview. Just click to jump to different displays:
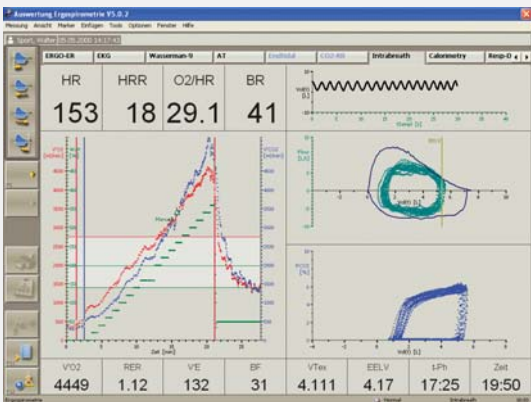
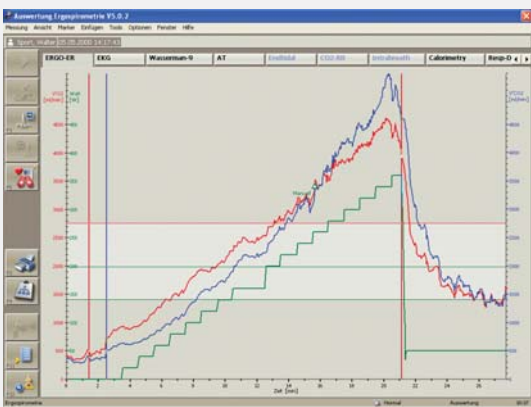Exercise testing and dynamic Flow-Volume Loop during exercise

■ Breath-by-Breath and Intrabreath

The nine-panel graph by Wasserman can already be displayed during the test. Automatic self-adjusting axis scaling ensures optimal display.

„Custom displays can be created individually"

■ Nine-panel graph

If you want to view a specific curve simply double-click on the desired graph and a full-screen graph will be displayed. This is sophisticated Windows technology!

■ Full-screen display

Combined graph: CPX and ECG *„ECG including automatic ST measurement"*

■ ECG and CPX

Evaluation

Correct evaluation is of major importance, as a large amount of data accumulates during cardiopulmonary exercise testing.

Anaerobic Threshold

The data can be evaluated directly after collection. If desired, the test can also be evaluated later as MasterScreen CPX allows you to read in an already stored test. Evaluation is focussed on the determination of the Anaerobic Threshold (AT). Different methods such as V-Slope, Breathing Equivalent, RQ=1 and Lactate are available. The measurements will be displayed at AT to perform a plausibility check.
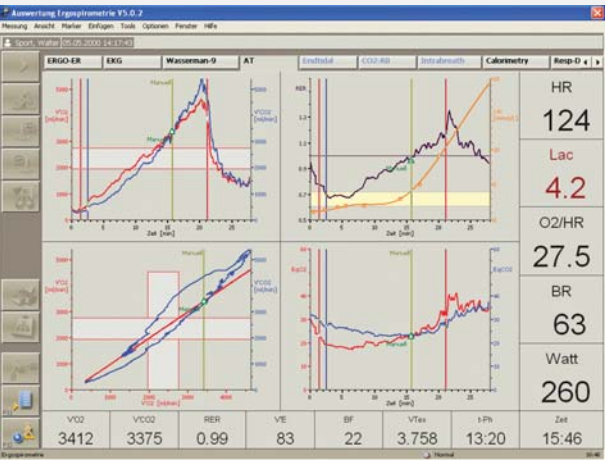
■ Evaluation of Anaerobic Threshold

Nutrition Assessment: For a perfect diet

The Indirect Calorimetry program allows to determine the Basal Metabolic Rate and exercise-dependent Energy Expenditure (EE) including a differentiation between carbohydrates, fats and proteins for perfect training control and effective weight loss. Energy Expenditure is calculated on the basis of VCO_2, VO_2 and urea nitrogen. Special reports for training control and nutrition are included.
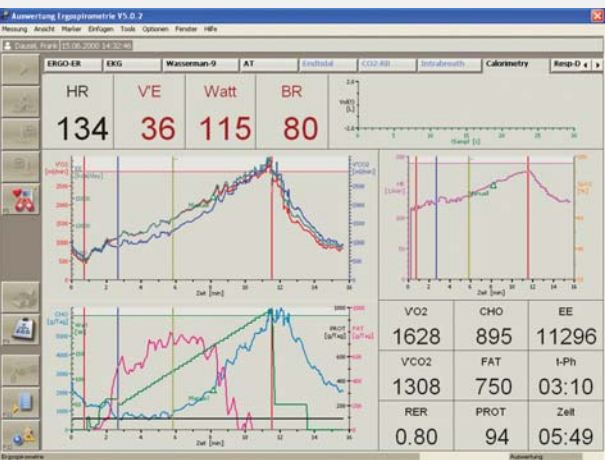
■ Evaluation of Indirect Calorimetry Measurement

Interpretation program

IntelliSupport, a graphics-based expert system, supports the busy physician in data analysis. Based on the accepted guidelines and predicted values described by the worldwide renowned Professor Karlman Wasserman, IntelliSupport uses decision trees to guide the clinician through the data accumulated during a test to arrive at a suitable interpretation.
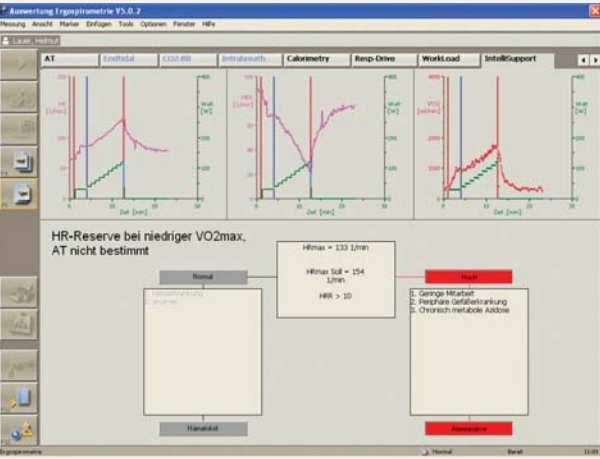
■ Intelli Support interpretation program

IntelliSupport interprets, for example:
• Anaerobic Threshold
• Maximum Oxygen Uptake
• Maximum Dynamic Flow-Volume Loop
• Arterial Blood gases, O_2 pulse and ECG at VO_2max

Besides, the program calculates the perfect training ranges for:
• Weight loss, endurance training
• Increase in performance

Cardiac Output

Cardiac evaluation is based on the dynamically calculated Cardiac Output according to Wasserman. For assessment of cardiac insufficiency special slopes such as VE/VCO_2 are calculated.

■ Evaluation of Cardiac Output