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TCM400

The information you need to make the right decision

RADIOMETER

Making the right decision

Non-invasive and quantitative

By non-invasively providing quantitative information about cutaneous oxygenation and perfusion, transcutaneous oxygen measurements become a valuable diagnostic tool for the assessment of peripheral vascular disease. For the busy clinician, it is an essential support system in the rush of daily decision making.

Accurate mapping of the measuring site

The TCM400 is the only portable monitor to provide up to six simultaneous measurements of transcutaneous oxygen tension (tcpO_2).

The more measurement sites, the more information for the clinician. Together, the measurements provide an accurate mapping of the site and thus a better foundation for diagnosing and deciding on the most appropriate course of treatment.

The TCM400 is easy to use and allows you to extract more information from your measurements and to make the most of your time.

TCM400

Multichannel monitor

- Transcutaneous tcpO_2 multichannel monitor
- One to six measuring modules
- Low-drift and rapid-response electrodes
- Electrode temperature range available from 37 to 45 °C

Always ready

- Integrated 1-point calibration system
- Calibration completed within 2-3 minutes
- Calibration of all six electrodes by pressing one button

Easy to use

- Windows-based user interface
- Touch screen
- On-screen video tutorials
- Minimal training required

Take it everywhere

- Built-in battery
- Compact and lightweight
- Flexible handle
- Click-and-go modules. Upgrade your system whenever you need to.

Make the most of information

- Patient information is automatically linked to measurements
- Type in patient name and ID by using on-screen keyboard
- Marking of predefined events
- Different data views for analyzing data
- Automatic calculation of regional perfusion index (RPI)

Data storage and output options

- Connection to PCs for downloading and storing data
- Connection to a standard USB printer for printing reports
- Analyze data and generate reports through dedicated PC software

Making the most of your time

Easy-to-read color display

The large 6½" color touch screen display makes interaction with the TCM400 straightforward. Each electrode can be color-coded, making it easy to keep track of individual measurements. The size of the screen makes it possible to view all six measurements simultaneously.

Intuitive operation

The combination of touch screen and a user-friendly Windows CE software makes the TCM400 intuitive and easy to work with. Minimum training is required and operators have full access to on-screen video tutorials, ensuring trouble-free operation of the monitor.

Simple and accurate calibration

An internal barometer registers the atmospheric pressure and automatically calculates the correct calibration value, ensuring reliable and reproducible measurements. Calibration of all six electrodes is initiated by pressing one button and is completed within 2-3 minutes.

Portable and fully customizable

The flexible handle combined with a built-in battery and a compact and lightweight design make it easy to move TCM400 around in the hospital to wherever it is needed.

TCM400 has been designed as a completely modular system. Customize the monitor to meet your needs by choosing from one to six measuring modules. The click-and-go modules make it easy for you to upgrade your monitor with additional modules along the way.

Principle of transcutaneous oxygen

Transcutaneous oxygen (tcpO_2) is a non-invasive monitoring of the oxygen tension in the skin. A Clark-type electrode is placed on the skin and heated. The heat from the electrode dilates the underlying capillaries, increases the local perfusion and opens the pores of the skin. O_2 diffuses through the skin to the electrode where pO_2 generates a current which is measured and tcpO_2 values are provided on the monitor.

tcpO_2 is a direct indication of the microvascular function. As opposed to pressure and volume assessments, tcpO_2 maps the actual oxygen supply available for the skin tissue cells. tcpO_2 also responds to macrocirculatory events, e.g. change in blood pressure and provocational maneuvers.

Electrodes with superior performance

Radiometer electrodes are renowned for their measuring accuracy as well as their durability and ease of use in clinical practice. They show demonstrably low drift and rapid response during measurements. The pO_2 part of the electrodes has an extremely low oxygen consumption, which makes it possible to obtain reliable measurements at sites of the body with poor perfusion.

Making the most of your information

No mix-ups

With the TCM400, you can match the correct patient with the correct measurement. Once you begin measuring, just enter the patient's name or ID using the on-screen keyboard and the information will be linked to that measurement.

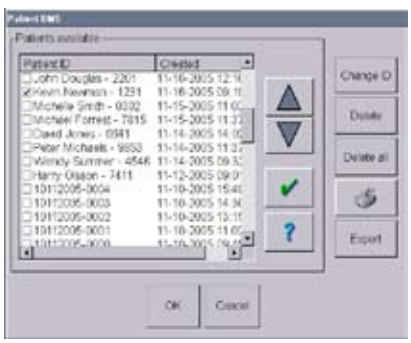
Patient Data Management System

The Patient Data Management System (DMS) manages all session/patient ID data, and it helps reducing the risk of patient data mix-up.

A session is a collection of data starting when the first electrode is removed from the calibration chamber and ending when the last electrode is placed back in the calibration chamber. Each session gets a unique number, which can be linked to a specific patient ID at any time. It is thereby possible to link several sessions to the same patient ID.

From the Patient DMS screen it is possible to:

- change the automatically generated session number to a unique patient ID
- view data from a session in the Trend table or Trend curve view
- print one or more reports
- export one or more sessions
- delete sessions
- see detailed information about a session



The Patient Data Management System (DMS) manages all session/patient ID data.

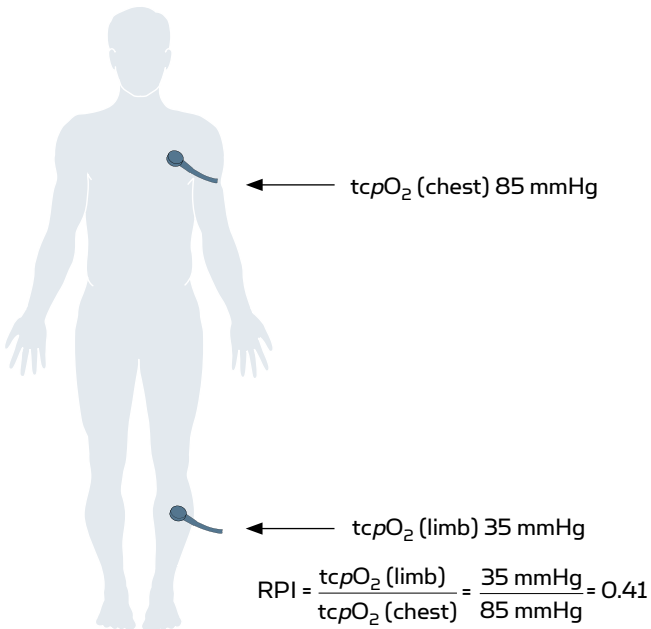
Visualize information

Trends can be displayed and printed in both graphical and tabular formats and you can mark events in your measurement protocol at the touch of a button by choosing from a predefined list.

Application of RPI

The regional perfusion index (RPI) is a practical method used to eliminate cardio-respiratory influence and simplify the tcpO_2 interpretation. The regional perfusion index is automatically calculated on the TCM400 and can be used to quantify tissue perfusion in peripheral vascular disease. The RPI is defined as the relationships between extremity and chestwall tcpO_2; limb tcpO_2 is thereby normalized to chest values.

Calculation of RPI



$$RPI = \frac{tcpO_2\ (limb)}{tcpO_2\ (chest)} = \frac{35\ mmHg}{85\ mmHg} = 0.41$$

Prediction of wound healing	
RPI = < 0.4	predicts a poor outcome *
RPI = > 0.6	predicts an excellent outcome *
0.4 < RPI < 0.6	some heal and some do not *

* Hauser CJ. Tissue salvage by mapping of skin surface transcutaneous oxygen tension index. Arch Surg 1987; 122: 1128-30.

Hard-copy documentation

TCM400 reports can easily be printed to provide you with the necessary documentation of your measurements. You can print information as viewed on screen, saving you time and removing the risk of errors associated with handwritten reports. The Patient DMS enables you to simply mark the sessions of your patients that you wish to print out and all the data is then sent to the printer. You can connect a standard USB printer to the TCM400.

Convenient storage and transfer of data

The internal memory ensures storage of measurement information for later review or printout. Data can also be exported to a database, spreadsheet application or dedicated PC software for further analysis and report generation. The memory function stores up to 48 hours of accumulated measuring data, which can be recalled whenever it is needed. The only way data is automatically deleted is when the memory is full. In order to store a new session, the oldest session will be deleted.

Make the most of transcutaneous monitoring

For more information on Radiometer's transcutaneous monitors and support services, visit www.radiometer.com/tc.

For more clinical information on transcutaneous monitoring, visit www.bloodgas.org.

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Simpler, faster, better

Radiometer's products and services simplify and automate all phases of acute care testing, providing you with the speed and ease of use you want and the accuracy you need.

This is acute care testing truly made simpler, faster and better.

Sales companies:

Country:	*Radiometer representative:*	*Telephone:*	*E-mail:*	*Website:*
Australia:	Radiometer Pacific Pty. Ltd.	(+61) 3 9259 2222	sales@radiometer.com.au	www.radiometer.com.au
Canada:	Radiometer Canada	(+1) 877 414 0447 (toll free)	info@radiometercanada.com	www.radiometer.ca
China:	Radiometer China	(+86) 21 6128 6466	pol@radiometer.com.cn	www.radiometer.cn
Denmark:	Radiometer Danmark	(+45) 38 27 28 29	rdan@radiometer.dk	www.radiometer.dk
France:	Radiometer S.A.S.	(+33) 1 49 44 35 50	marketing@radiometer.fr	www.radiometer.fr
Germany:	Radiometer GmbH	(+49) 2154 8180	info@radiometer.de	www.radiometer.de
Ireland:	Radiometer Ireland Ltd.	(+353) 1 888 3611	sales@radiometer.ie	www.radiometer.ie
Japan:	Radiometer K.K.	(+81) 3 5777 3500	salesdep@radiometer.co.jp	www.radiometer.co.jp
The Netherlands:	Radiometer Nederland BV	(+31) 79 361 4593	info@radiometer.nl	www.radiometer.nl
New Zealand:	Radiometer New Zealand	(+64) 9 574 1400	sales@radiometer.co.nz	www.radiometer.co.nz
Poland:	Radiometer Sp. z o. o.	(+48) 22 518 02 40	info@radiometer.pl	www.radiometer.pl
Portugal:	Radiometer Ibérica, S.A.	(+351) 214 12 39 70	rapor@radiometer.es	www.radiometer.pt
Spain:	Radiometer Ibérica, S.A.	(+34) 91 655 99 50	resp@radiometer.es	www.radiometer.es
Switzerland:	Radiometer GmbH	(+41) 44 723 38 60	info@radiometer.ch	www.radiometer.ch
United Kingdom:	Radiometer Ltd.	(+44) 1293 517 599	sales@radiometer.co.uk	www.radiometer.com
USA:	Radiometer America Inc.	(+1) 800 736 0600 (toll free)	info@radiometeramerica.com	www.radiometeramerica.com
Other countries:	Radiometer International Sales Division	(+45) 38 27 38 27	isd@radiometer.dk	www.radiometer.com

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