

PeriFlux System 5000

Predicting Non-Healing Wounds

Chronic, non-healing wounds are problematic not only for the affected patient, but also for the health care system due to long hospitalization, slow healing and a high risk of recurrence. Several factors influence the wound healing process. One such factor is tissue oxygenation surrounding the wound. An adequate oxygen supply is essential and dependent on both a functioning macrocirculation and a local skin microcirculation. Sufficient perfusion and tissue oxygen is also important in determining the amputation level or the planning/evaluation of revascularizations.¹



The **PeriFlux System 5000** provides your staff with a *simple, non-invasive* solution for objective assessment of tissue oxygenation and blood perfusion at the wound/amputation site. Multiple Function Units allow for several macro- and microcirculatory examinations simultaneously. The system is operated using the dedicated PeriSoft for Windows (PSW) software.

MACROCIRCULATION

TBI/ABI - TOE/ANKLE BRACHIAL INDEX

PERIPHERAL PRESSURES TOE/ANKLE/LIMB/FINGER

PVR - PULSE VOLUME RECORDING

MICROCIRCULATION

TcpO₂ - TRANSCUTANEOUS OXYGEN

HEAT-CONTROLLED LASER DOPPLER MEASUREMENT

SPP - SKIN PERFUSION PRESSURE

SENSITIVE at low pressures

PeriFlux System 5000 uses laser Doppler for blood flow measurements. Laser Doppler is a recognized technology in the scientific field and has been implemented in numerous applications investigating the peripheral circulation both on a macro- and microcirculatory level. Furthermore, laser Doppler has proved to be more sensitive than photoplethysmography in the low pressure range and does not require pulsatility.²

VERSATILE solution for the vascular lab

PeriFlux System 5000 is a modular system with flexibility in number and function of channels included. Laser Doppler technology can be combined with heat, transcutaneous oxygen and pressure enabling different approaches to study the peripheral circulation. To further extend the possibilities, various laser Doppler probes suitable for measurements in different tissues and organs have been designed.

ONE software for all examinations

PeriSoft for Windows, PSW, is a dedicated software for recording, analyzing and printing data from the PeriFlux System 5000. The program is user-friendly and well suited for the clinical environment, yet advanced enough for the most demanding researcher.



M
A
C
R
O

Peripheral Pressures - toe/ankle/limb/finger, ABI/TBI

Toe and ankle pressures including toe/ankle-brachial index are well established, objective tests for the diagnosis of peripheral arterial disease including critical limb ischemia. Toe pressures are of particular importance in patients suffering from arterial calcification, resulting in falsely high ankle pressure values and under-diagnosis of disease.^{1,2,3} Laser Doppler technology can be employed for detection.

Pulse Volume Recording

Based on air plethysmography, PVR measures changes in pressure reflecting arterial pulsatility. PVR can aid in localizing significant occlusive lesions in limbs.¹ Detection is performed using laser Doppler technology.^{1,3}

Transcutaneous Oxygen

A non-invasive method routinely used by clinicians for wound healing prediction and qualification for hyperbaric oxygen therapy, aggressive wound management or revascularization. $tcpO_2$ measures local O_2 released from the skin through the capillaries, reflecting the nutritive flow.^{1,4,5} Remote panel systems facilitate use in a hyperbaric chamber.

Heat-controlled laser Doppler

Heat combined with laser Doppler can be used to determine the viability of tissue and the degree of microcirculatory impairment. A thermostatic laser Doppler probe induces local heating at the measuring site, triggering vasodilation. The increase in blood perfusion indicates tissue reserve capacity and endothelial function, important parameters for healing prediction and amputation level determination.¹

Skin Perfusion Pressure

SPP reflects the local pressure in the microcirculation. A laser Doppler probe is used to detect the return of flow and is positioned underneath a pressure cuff.⁶



M
I
C
R
O

References:

1. Wound Care Practice. Edited by P.J Sheffield et al, Best Publishing Company, 2004, p117-156
2. The Usefulness of a Laser Doppler in the measurement of toe blood pressures. Graaf et al J Vascular Surg 2000;32:1172-9
3. Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASCII). Eur J Vasc and Endovasc Surgery, Vol 33 suppl 1 2007
4. The use of transcutaneous oximetry in the noninvasive vascular laboratory. Rooke Int. Angiology vol 11 no 1, 1992
5. Transcutaneous Oxygen Tension and Toe Blood Pressure as Predictors for Outcome of Diabetic Foot Ulcers. Kalani et al. Diabetes Care vol 22 no 1, 1999
6. The correlation between three methods of skin perfusion pressure measurement: Radionuclide washout, laser Doppler flow, and photoplethysmography. Trivino et al. J Vasc Surg, 15::823-30, 1992

For more information please contact Perimed AB

Perimed AB, Box 564, SE-175 26 Järfälla, Stockholm, Sweden | Tel: +46-8-580 119 90 Fax: +46-8-580 100 28
E-mail: mail@perimed.se | Websites: <http://www.perimed.se> and <http://www.tcpo2.com>