



Is
**Ankle-
Brachial
Index**
all you have
time for?

*Our **Vascular Lab**
lets you do more!*

With our parallel testing you have
time to do a thorough investigation.

*Vascular assessments
made simple!*



Case: Diabetic patient with non-healing ulcer on right foot.

Parallel testing in less than 35 minutes.

1-5 MINUTES

- ▶ Enter patient information or automatically import via DICOM workflow.
- ▶ Select Examination.
- ▶ Enter clinical history.

5-10 MINUTES

- ▶ Attach $tcpO_2$ electrodes around the wound.
- ▶ Attach laser Doppler probes on toe tips and on ref arm.
- ▶ Place pressure cuffs on arm, ankles and toes.

10-25 MINUTES

- ▶ Start $tcpO_2$ baseline recording, 15 minutes.
- ▶ In parallel, perform ankle pressure and toe pressure.
- ▶ Perform left and right PVR if needed.

25-35 MINUTES

- ▶ Check baseline $tcpO_2$ value. If value < 40 mmHg, provocation is recommended.
- ▶ Start $tcpO_2$ provocation, for example O_2 inhalation.
- ▶ Move laser Doppler probes closer to the wound, start local heating and laser Doppler measurement.

IN 35 MINUTES

You have now completed a **bilateral, distal arterial investigation** of the **macrocirculation** as well as an evaluation of the **microcirculation** by performing the following tests:

- ▶ Ankle pressure – ABI
- ▶ Toe pressure – TBI
- ▶ Baseline $tcpO_2$ – provocation
- ▶ Tissue response to local heating
- ▶ Pulse Volume Recording - PVR



Distal circulatory test

Bilateral investigation of the arterial circulation in the legs using the Multi-Channel Vascular Lab PeriFlux System 5000.

Date	12/12/2011	Dep	Vascular Lab
Patient	Patient, Patient	ID	0123456

Anamnesis

Diabetes	Yes
Comment	Insulin intake
Smoker	Yes
Comment	100 pack/year
Heart disease	No
Lung disease	No
Arm blood pressure	125
Reference arm	Left
Other	Amputated third digit right foot



Reference values	
ABI	1,40 - 0,90
TBI	≥ 0,70
Ankle pressure	≥ 70 mmHg
Toe pressure	≥ 50 mmHg
TcpO ₂ (baseline)	≥ 30 mmHg
Tissue response to heat	≥ + 150%

Toe- and Ankle Pressure

Left Toe					Right Toe				
	1	3	4	Mean		1	3	4	Mean
Left Toe	40	40	38	39	Right Toe	10	14	16	13

Left Ankle					Right Ankle				
	1	3	4	Mean		1	3	4	Mean
Left Ankle	132	139	140	137	Right Ankle	184	186	187	185

ABI		TBI	
(Arm)	Mean	(Arm)	Mean
Right Ankle	1.5	Right Toe	0.10
Left Ankle	1.1	Left Toe	0.31

Microcirculation

tcpO ₂ LEFT				tcpO ₂ RIGHT			
	BL	Leg low.	O ₂		BL	Leg low.	O ₂
tcpO ₂ LEFT	58	61	117	tcpO ₂ RIGHT	0	48	54
tcpO ₂ LEFT, %	-	4%	100%	tcpO ₂ RIGHT, %	-	-	-

Tissue response to heat LEFT			Tissue response to heat RIGHT		
	Baseline	Heat.		Baseline	Heat.
LD probe LEFT	6	54	LD probe RIGHT	15	21
LD probe LEFT, %	-	774%	LD probe RIGHT, %	-	42%



Get the big picture of the limb circulation.

Combine macrovascular tests with microvascular. Indicate measuring sites in color photo. Present data in tables and automatically calculate indices. Include medical history, data from other exams and tables with reference values.

What vascular tests can you do with a Vascular lab PeriFlux System 5000

ANKLE PRESSURE – ABI

TOE PRESSURE - TBI

“Trust ABI when low but not when high.”¹ Combine with ABI to get a more accurate assessment of the severity of PAD in patients with diabetes, CLI and end-stage renal disease.^{1,2,3} Laser Doppler is used for detection, which has proven sensitive also at low pressures.⁴ Local heating at the measurement point simplifies measurements in cold, ischemic feet.

TCP_{O₂}

Patients with CLI and diabetic foot ulcers commonly also have impaired microvascular function. $tcpO_2$ is recommended for further risk stratification and wound healing assessment.^{1,2,3}

TISSUE RESPONSE TO LOCAL HEATING

Gives valuable information about the status of the microcirculation.⁵ Reflects the endothelial function as a response to local heating.⁶

PVR

Use the pressure unit to visualize the arterial pulsations at different positions and localize significant occlusive lesions. Display curves in the report for evaluation.^{1,3}

SEGMENTAL PRESSURES

Position appropriate cuffs at desired sites and obtain bilateral pressure values. The laser Doppler probe used for detection is positioned on the toe tip throughout the examination.¹

SPP

Skin perfusion pressure measures the local pressure of the skin microcirculation.⁷

PeriFlux System 5000 Vascular Lab – Common configurations



**BASIC
VASCULAR LAB**



**MULTI-CHANNEL
VASCULAR LAB**



**BI-LATERAL
TOE PRESSURE
SYSTEM**



**TRANSCUTANEOUS
OXYGEN**

Diagnostic value	Advanced PAD diagnosis including micro- and macrocirculation. Accurate wound healing and amputation level assessments. All functionalities in a compact system. One leg at the time. One site tcpO ₂ .	Advanced PAD diagnosis including micro- and macrocirculation. Accurate wound healing and amputation level assessments. Perfect for the high volume environment. Both legs and reference arm simultaneously. Several sites tcpO ₂ .	Extended macrocirculatory PAD assessment including toe pressures/TBI as well as ABI, segmental pressures and PVR. Complete solution for distal pressures. Bilateral pressure assessment. Reference arm value entered separately.	Well established microvascular assessment for wound healing potential, amputation level determination, HBO evaluation and more. Ideal for Wound Care and Hyperbaric clinics. Flexible number of sites.
Toe/Ankle Pressure*	✓	✓	✓	–
ABI/TBI	✓	✓	✓	–
PVR	✓	✓	✓	–
Segmental Pressures	✓	✓	✓	–
tcpO₂	✓	✓	–	4 channels per main unit. Several main units may be connected.
SPP	✓	✓	✓	–
Tissue response to local heating	1 site simultaneously	2 sites simultaneously	2 sites simultaneously	–

* To simplify measurement in cold ischemic feet, all described configurations include local heating at the measurement point.

Due to its modular design, other configurations are possible. Please contact Perimed for more information. The PeriFlux System 5000 Vascular lab is operated using PSW ExM software. PSW ExM is DICOM compatible.

REFERENCES:

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6. Kellogg DL, Jr. In vivo mechanisms of cutaneous vasodilation and vasoconstriction in humans during thermoregulatory challenges. J Appl Physiol 2006;100:1709-1718.
7. 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



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