



All in one Diabetic Foot Lab

DIABETIK MINILAB



Features:

- ★ India's best all-in-one complete Diabetic Foot Lab
- ★ ABI, TBI, Doppler Velocity Waveform, VPT, Plantar Pressure and Foot Temperature in one device
- ★ Master Report with Patient clinical history, medical history, physical examination with all measured data
- ★ Supports Windows operated computer
- ★ Supplied with Trolley and Scanner/Printer



Vascular Screening:

- ▶ Unidirectional 8MHz probe
- ▶ Photo-plethysmograph PPG Toe sensor
- ▶ Ankle Brachial Index(ABI)
- ▶ Toe Brachial Index(TBI)
- ▶ Doppler Velocity Waveform
- ▶ Venous Examination

Neuropathy Screening:

- ▶ Digital 0 to 50 Volts indicator
- ▶ Vibrator with Mute/Check & Record key
- ▶ Full solid-state design
- ▶ Monofilament Test in-built

Plantar Pressure measurement:

- ▶ Foot Imprinter Harris Mat FM1111
- ▶ Licensed software to scan and analysis greyscale image
- ▶ Report to include the footwear measurements
- ▶ Multi-color picture image indicates high pressure

IR Foot Temperature measurement:

- ▶ Simple one-handed operation
- ▶ Laser targeting °C / °F select switch, Accuracy +/- 2%
- ▶ Early marker for Charcot foot
- ▶ Can reduce risk of ulceration

All – in – One Diabetic Foot Lab – Diabetik Minilab

Non-Invasive Testing Methods For PAD

Whenever one suspects Peripheral Arterial Disease (PAD), the clinician must perform few non-invasive vascular testing methods that are commercially available and widely implemented. They include the ankle brachial index (ABI), the toe-brachial index (TBI), segmental Pressure Study and pulse volume recording (PVR) and transcutaneous oxygen monitoring (TCPO₂).

Ankle Brachial Index:

The ankle brachial index is the most well-known, non-invasive vascular testing tool. ABI test is performed with a Doppler and a blood pressure cuff. One calculates the ABI by dividing the ankle pressure by the brachial systolic pressure. An ABI of < 0.9 is abnormal and ABI values have a linear correlation with wound healing potential in lower extremity wounds. Patients with DM may have calcified and hardened lower extremity arterial walls that cannot be readily compressed and occluded with blood pressure cuffs. This produces falsely elevated ankle pressure readings that are often in the "normal ABI range" (0.9 to 1.4) or sometimes in the non-physiological range of above 1.4. However, Calcified leg arteries in Diabetes Mellitus or dialysis patients may yield falsely elevated ABI results.

Toe-Brachial Index:

The digital arteries in great toes are less affected by medial arterial calcification. One would calculate TBI by dividing the blood pressure of the great toe by the systolic brachial blood pressure. A TBI value of < 0.7 is considered abnormal. Absolute Toe pressure of > 55mmHg is considered normal. Toe pressure < 30 mmHg is considered severely ischemic.

Testing Methods of Neuropathy

Diabetes can result in long-term health complications, with one of the most common being microvascular damage that leads to diabetic neuropathy (DN), that affects multiple body systems and increases amputation risk. A typical form of DN is diabetic peripheral neuropathy (DPN), which is known to be a primary cause of balance issues, sensation loss in the feet, and a major contributor to nontraumatic lower limb amputations. Earlier detection of DPN in at-risk individuals and in those with prediabetes (PD) or type 2 diabetes (T2D) allows for potential better management through optimal intervention and lifestyle changes. Various simple neurological tests have been reported to be used for screening for DPN, some of which have also been combined into composite scoring systems to enhance the accuracy in the detection of DPN.

Semmes Weinstein monofilament test (SWMT):

The SWMT is a common screening tool for assessing the sensory function and the loss of pressure sensation (light touch perception). A 10 g monofilament test (also referred to the 5.07 monofilament) is the most common in practice.

Biothesiometry:

Biothesiometry is a useful non-invasive tool for the detection of subclinical neuropathy in children and adolescents. The Biothesiometer is an instrument which

measures the threshold of appreciation of vibration sense and the amplitude of the stimulus (measured in volts) is gradually increased until the threshold of vibratory sensation is reached, and the stimulus is appreciated by the patient. Patients with the threshold >25 volts are at a high risk to develop ulcers later. We are a pioneer in the manufacture and export of Digital Biothesiometer and more than 10000+ are supplied to 36 countries.

Understanding Plantar Pressure Systems:

Diabetic foot ulcer is a major source of morbidity and a leading cause of hospitalization. It is estimated that approximately 20% of hospital admissions among patients with diabetes mellitus are due to diabetic foot ulcer. It can lead to infection, gangrene, amputation, and even death if appropriate care is not provided. Overall, the lower limb amputation in diabetic patients is 15 times higher than in non-diabetics.

Understanding foot biomechanics is an important component in the evaluation of diabetic foot. The abnormal plantar pressure distribution play a key role in the formation of plantar calluses and diabetic foot ulcer. Abnormal value of foot pressure as well as neuropathy could play an important role in the formation of plantar ulcers independently.

Current international guidelines advocate achieving at least a 30 % reduction in maximum plantar pressure to reduce the risk of foot ulcers in people with diabetes. Multiple foot pressure mapping systems are available for measurement of plantar foot pressure. In shoe and platform methods are used widely for measuring plantar foot pressure.

Monitoring Temperature in foot can prevent Ulcers

Diabetic neuropathy consists of multiple clinical manifestations of which loss of sensation is most prominent. High temperatures under the foot coupled with reduced or complete loss of sensation can predispose the patient to foot ulceration. Not only is there a high incidence of ulcerations but fighting ulcers becomes a relentless battle secondary to the high ulcer recurrence rate. An estimated 40 percent of foot ulcerations will recur within one year, 60 percent will recur in three years and 65 percent will recur in five years.

As inflammation is a precipitating sign of ulceration, clinicians have sought techniques to identify inflammation using one of its most common symptoms, increased temperature. Randomized controlled trials have found that local areas of increased temperature, identified using simple infrared thermometers, indicate areas that are likely to ulcerate. This suggests that monitoring of foot and skin temperatures, along with subsequent offloading following observed areas of increased temperatures, can dramatically reduce the occurrence of ulcerations.

One identifies areas of increased temperature using asymmetry analysis, comparing temperatures between a pair of feet. The defined threshold reported in numerous studies is an asymmetrical difference of 4°F (2.2°C). Because most patients at risk for ulceration are also at risk for Charcot, monitoring foot temperature would be an effective tool.



Diabetic Foot Care India Pvt Limited

No.18/1, Kannappanagar, 3rd Main Road, Thiruvanniyur, Chennai - 600 041
Tel - 91-44-43564129 E-mail : mesmedi@gmail.com

Master Report

| | |
|-------------------------|-----------------------------|
| ID : 2345 | Gender : Male |
| Name : Mr. Chandrasekar | Date : 29/Aug/2018 Visit: 1 |
| AGE : 42 | Referral : Dr. Narendran |

CLINICAL HISTORY

Height /Weight : 168 cm/ 69.0 Kg BMI : 24.45 Kg/m2 Sugar F/PP : 110.0/132.0 mg/dL HBA1C : 5.8 %
Total Cholesterol : 152.0 mg/dL HDL : 48.00 mg/dL LDL : 104.0 mg/dL Sys / Dia BP : 129 /80 mmHg

MEDICAL HISTORY

| | CURRENT SYMPTOMS: | PAST MEDICAL HISTORY: |
|----------------------------|---------------------------------|----------------------------|
| Type of DM : None | Intermittent claudication : No | Peripheral Neuropathy : No |
| Duration of DM : | Numbness, Tingling in feet : No | Nephropathy : No |
| History of amputation : No | Ulceration : No | Retinopathy : No |
| History of ulceration : No | Rest Pain : No | Vascular Disease : No |
| Smoking : No | Gangrene : No | Hypertension : No |
| Alcohol : No | Ingrown Toe nail : No | Dyslipidemia : No |
| Tobacco : No | | Heart disease : No |
| | | Stroke / TIA : No |

PHYSICAL EXAMINATION

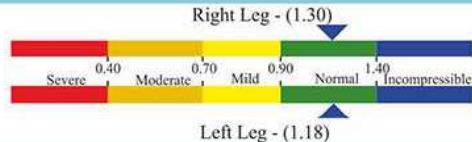
| DERMATOLOGY EXAM: | MUSCULOSKELETAL EXAM: | VASCULAR EXAM: |
|-----------------------------------|---------------------------|-----------------------------|
| Nail thick or Ingrown : Yes | Hammer toe deformity : No | Pedal hair growth : No |
| Skin thin, fragile or shiny : Yes | Clawfoot deformity : No | Varicosities present : No |
| Foot or Ankle swollen : No | Bunion deformity : No | Pedal pulse present : Yes |
| Callus or Fissures : No | MTH prominent : No | FOOTWEAR EXAM |
| Redness or Warmth : No | Ankle dorsiflexion : Yes | Appropriate Footwear : No |
| Maceration : No | Charcot deformities : No | Inserts/Orthotics used : No |

MEASUREMENT & RESULTS:

| Parameter | ABI/TBI Vascular Doppler Study | | IR Dermal Thermometry- Monofilament 10gm Study | | | | |
|---------------------------------|--------------------------------|------|--|-------|------|---------|---------|
| | Right | Left | SPOT | Right | Left | Right | Left |
| Brachial | 110 | 112 | Great Toe | 98.3 | 98.5 | Present | Present |
| Posterior Tibial | 126 | 126 | I MTH | 97.9 | 98 | Present | Present |
| Dorsalis Pedis | 146 | 132 | III MTH | 97.4 | 97 | Present | Present |
| Great Toe | 100 | 100 | V MTH | 98 | 97.5 | Present | Present |
| Ankle Brachial Index (ABI) | 1.30 | 1.18 | Instep | 99.1 | 100 | Present | Present |
| Toe Brachial Index (TBI) | 0.89 | 0.89 | Heel | 100 | 99.8 | Present | Present |
| Biothesiometry- Volts (Average) | 14 | 17 | Dorsum | 99.7 | 99.4 | | |

ABI

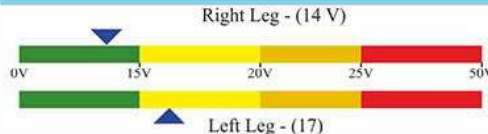
Result
Right: Normal Arterial Study
Left: Normal Arterial Study



TASC II Guidelines:
ABI: 0.91 - 1.40 - Normal Arterial Study
0.71 - 0.90 - Mild PAD
0.41 - 0.70 - Moderate PAD
<0.41 - Severe PAD
>1.41 - Incompressible artery
TBI: >0.7 - Normal TBI Study
<=0.7 - Abnormal

VPT

Result
Right: Normal Study
Left: Mild loss of Vibration Perception



VPT Guidelines:
0 - 15 Volts - Normal Study
15 - 20 Volts - Mild Loss of Vibratory Perception
21 - 25 Volts - Moderate Loss of Vibratory Perception
Above 25 Volts - Severe Loss of Vibratory Perception

Podiascan Remarks

NORMAL

Remarks
Normal ok

Consultant : Dr.Paneer Selvam
Specialisation: Diabetologist

Technician: A. Kumar

NR - Not Recorded

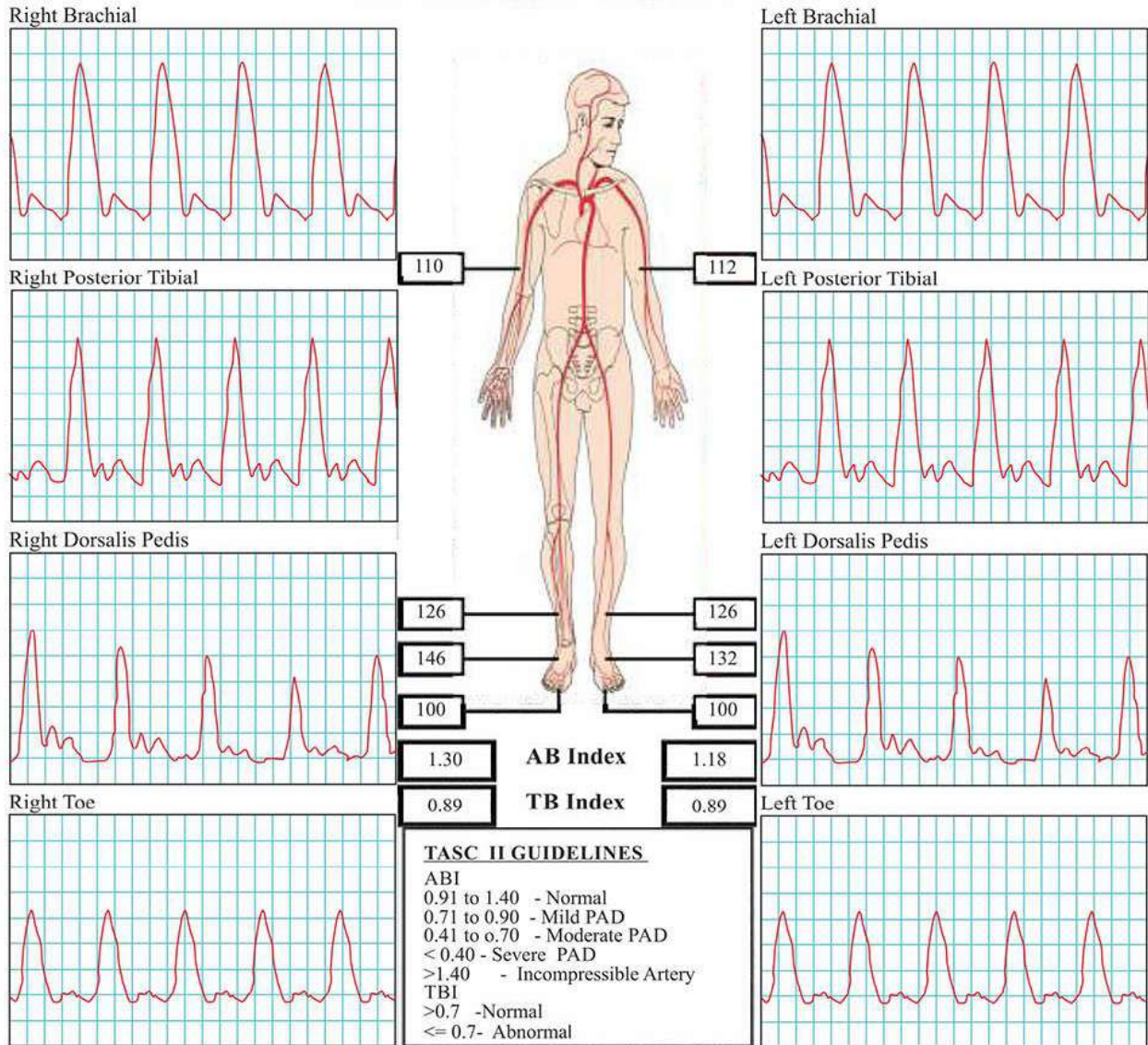


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| ID : 2345 | Gender : Male |
| Name : Mr. Chandrasekar | Date : 29/Aug/2018 Visit: 1 |
| AGE : 42 | Referral : Dr. Narendran |

Arterial Doppler Study for PAD



Interpretations
 Right : Normal Arterial Study
 Left : Normal Arterial Study
Remarks :

Consultant : Dr. Paneer Selvam
 Specialisation: Diabetologist
 Minilab - Vascular Doppler Report

Technician: A. Kumar
 The result may be Clinically Correlated

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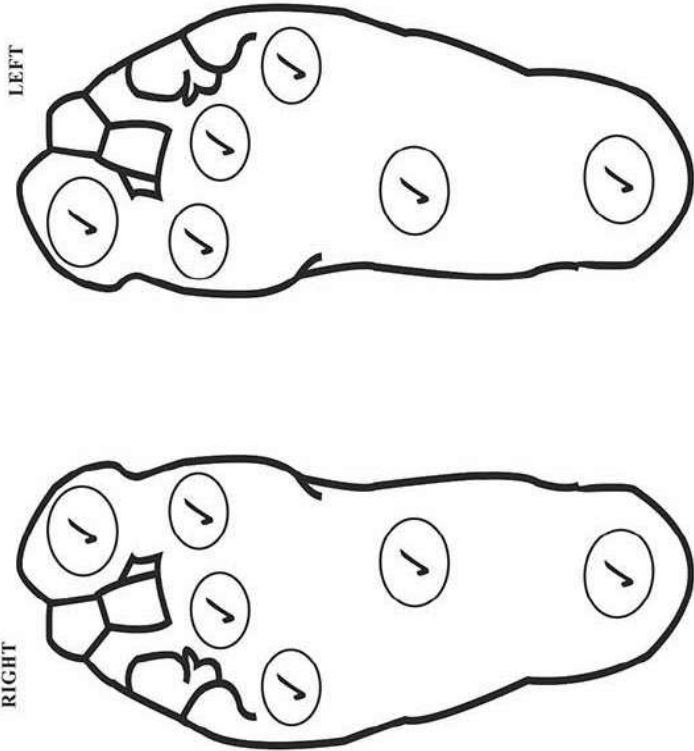
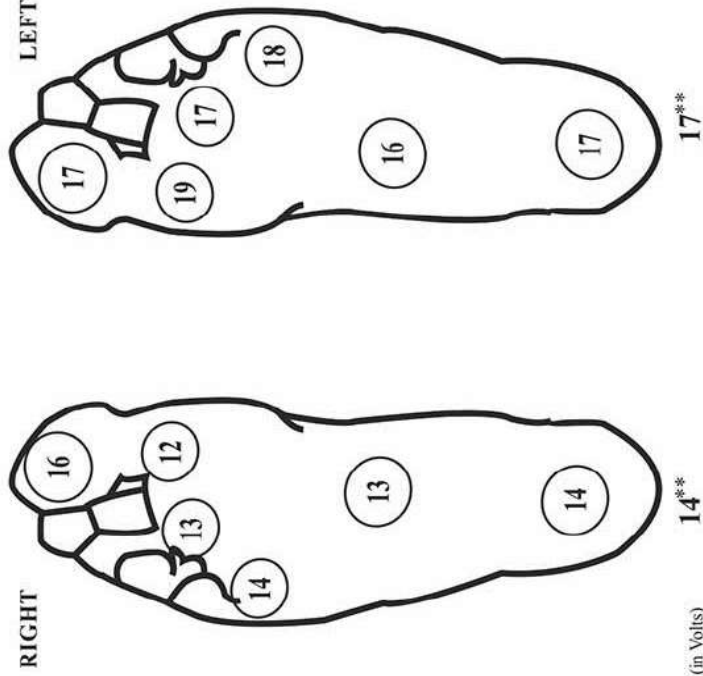


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 Name : Mr. Chandrasekar Date : 29/Aug/2018 Visit: 1
 AGE : 42 Referral : Dr. Narendran

DIGITAL BIOTHESIOMETRY STUDY FOR DPN

Monofilament Study for DPN



✓ Present XX - Absent NR - Not Recorded

Interpretations:
 Right: Normal Study
 Left: Mild Loss of Vibration Perception

Remarks

Consultant: Dr. Pancer Selvam
 Specialisation: Diabetologist
 Minilab - Digital Biothesiometer Report

Technician: A. Kumar
 ** Clinically Correlated

Consultant : Dr. Pancer Selvam
 Specialisation: Diabetologist
 Minilab - Monofilament 10gm Report
 The result may be Clinically Correlated

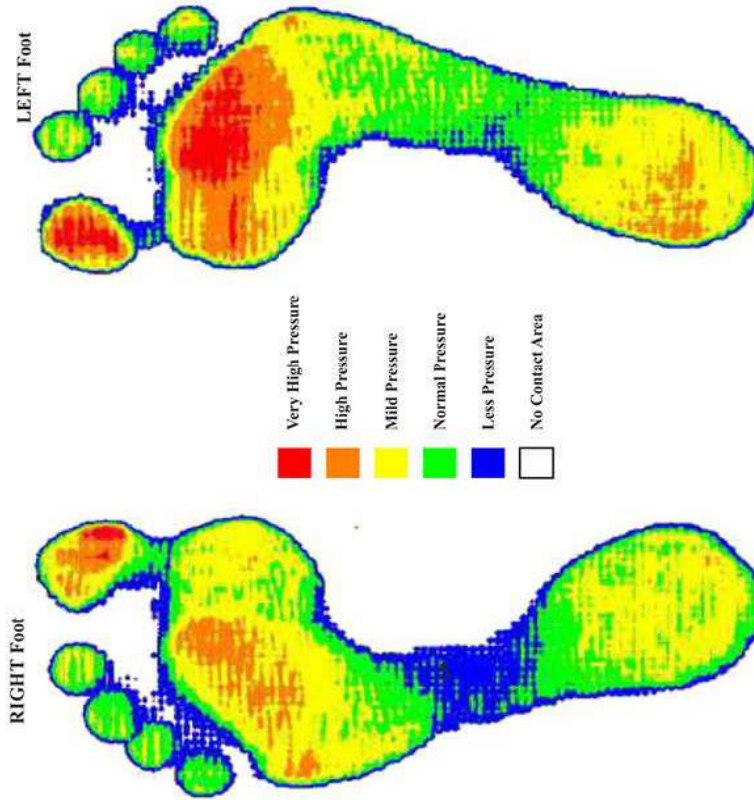


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 AGE : 42

MINILAB Plantar Pressure Report



Remarks
Normal ok

Consultant : Dr. Pameer Selvam
 Specialisation: Diabetologist

Technician: A. Kumar
 The result may be Clinically Correlated

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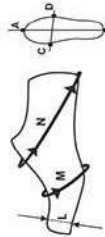
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 AGE : 42

Plantar Pressure Report

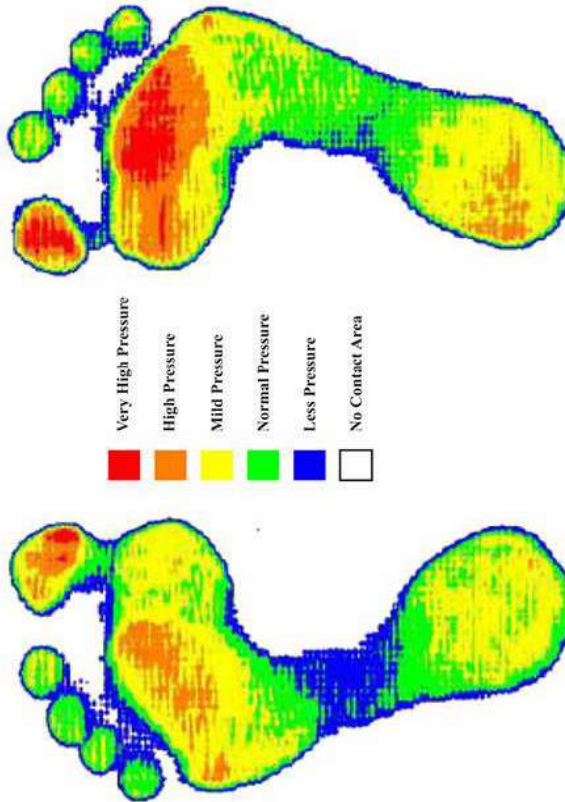
MEASUREMENT & RESULTS

| | Footwear (cms) | | | | |
|------------|----------------|-------|-------|-------|-------|
| | AB | C-D | M | N | L |
| Right Foot | 26.00 | 14.00 | 29.00 | 40.00 | 13.00 |
| Left Foot | 26.00 | 14.00 | 29.00 | 40.00 | 13.00 |



LEFT Foot

RIGHT Foot



Remarks
Normal ok

Consultant : Dr. Pameer Selvam
 Specialisation: Diabetologist

Technician: A. Kumar
 The result may be Clinically Correlated

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Our Sales & Service Network:

| | | |
|----------------------------------|-----------------------|--------------|
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| Director | : Kalaiichelvi Elango | - 9840093752 |
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| All India Service (HQ) | : Suresh K/ Prakash | - 7810002998 |

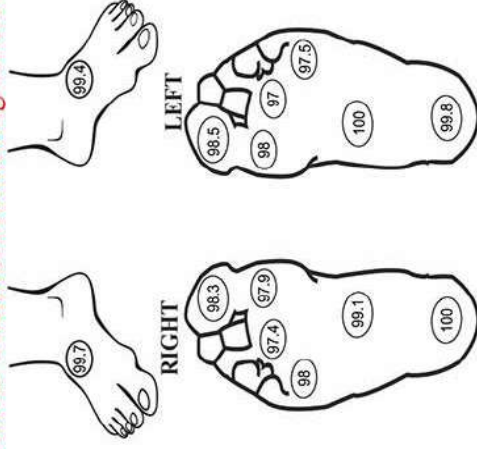


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IR DERMAL THERMOMETRY

ID : 2345 Gender : Male
 Name : Mr. Chandrasekar Date : 29/Aug/2018 Visit: I
 AGE : 42 Referral : Dr. Narendran

Plantar Thermal Monitoring for DPN



| Measurement Points | Right | Left | Difference (°F) |
|--------------------|-------|------|-----------------|
| Dorsum | 99.7 | 99.4 | 0.3 |
| Great Toe | 98.3 | 98.5 | 0.2 |
| I MTH | 97.9 | 98 | 0.1 |
| III MTH | 97.4 | 97 | 0.4 |
| V MTH | 98 | 97.5 | 0.5 |
| Instep | 99.1 | 100 | 0.9 |
| Heel | 100 | 99.8 | 0.2 |

(Elevated Temperature gradients between feet > 4° F(>2.2° C) were considered to be 'at risk' of ulceration due to inflammation.)

REMARKS :

Consultant : Dr. Dr. Panceerselvam
 Specialisation : Diabetologist
 Minilab - IR Foot Temperature Report

Technician: A. Kumar
 The Result may be Clinically Correlated

Our Product Range

Vascular Screening Devices



Hand Held Doppler VD8M



Hand Held Doppler L150R



Vascular Doppler for
ABI VERSADOP Dx

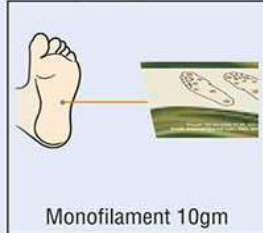


Vascular Doppler Recorder for
ABI/TBI VERSALAB LE



Automated Vascular Doppler
Recorder VERSALAB Auto

Neuropathy Screening Products



Monofilament 10gm



Portable Vibration Sense
VIBRATIP



Neuropathy
Assessment Kit NA03



Digital Step Biothesiometer
VIBROSCREEN



Digital Biothesiometer
VIBROTEST



Digital Biothesiometer
POLYNEURO+



Thermometry HCP



Neuropathy Analyser
VIBROTHERM Dx



Digital Biothesiometer
with Vascular Doppler
VIBRODOP

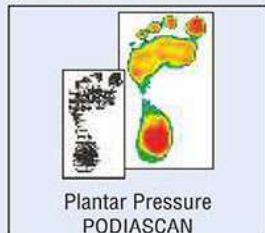


Cardiac Autonomic
Neuropathy System Analyser
CANS 504

Foot Pressure Screening Products



Foot Imprinter Harris Mat
FM1111



Plantar Pressure
PODIASCAN



Electronic Foot Pressure
Plate PODIASTAT



Pedography emed



In-Shoe Pedography pedar

Pain, Wound Care, Podiatry and other Products



Neuropathy Therapy
Stimulator NEUROSTIM
(2 variants)



IR LED Light Therapy
NEUROLITE (2 Variants)



Transcutaneous Oxygen
Monitoring tcpO2
PRECISE 8001



IR Foot Thermometer FT4



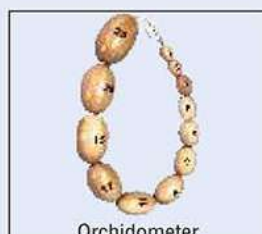
Electric Nail File System
PEDIFILE V / PEDIMAX



Podiatry Kit Mini / Full



3 Motor / 5 Motor
Podiatry Chair



Orchidometer



Handy PC Based ECG
Machine HT2



Ambulatory BP
Machine ABPM50



Diabetic Foot Care India Pvt Limited

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