VADOplex® by OPED
VASCULAR IMPULSE TECHNOLOGY

DEVELOPING IPC FURTHER
WHY IIC OFFERS ADDITIONAL BENEFITS

This is a comparison between IPC with slow compression and with fast compression (Intermittent Impulse Compression IIC).

IIC is a further development of IPC devices. Unlike the slow compression of other IPC devices, the compression of VADOplex is fast like an impulse. A pressure of 130 mmHg is applied within only 0.4 seconds every 20 seconds, which is called Intermittend Impulse Compression (IIC)[*1][*2].
This makes a significant difference in many aspects, which are shown below.

High Peak Flow Velocity with IIC

Intermittent Impulse Compression (IIC) induces a high peak blood flow velocity in the deep distal as well as proximal veins[*3].

IIC is as effective as Low Molecular Weight Heparin (LMWH)

The protection from thromboembolic events is only with IIC as good as[*4] [*5] or better[*6] than with LMWH. This means that IIC can replace LMWH for patients where its contraindicated (e.g. in Neurosurgery or Heparin Induced Thrombocytopenia).

No Stockings required with IIC

Using DVT prevention stockings is not required in conjunction with IIC. Studies have shown that they provide no additional benefit[*7] [*8]. This means easy handling and time saving for caregivers and nursing staff and lower costs for the clinic.

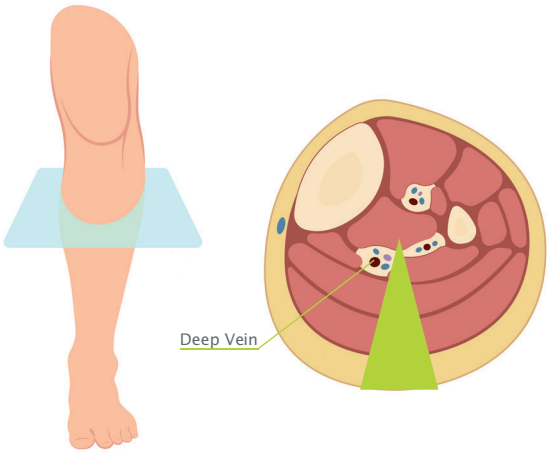
IIC leads to fast Swelling Reduction

The fast impulse compression of the IIC leads to accelerated wound healing and fast swelling reduction e.g. after fractures or surgery.[*9] [*10] This results in 3.6 days of earlier discharge[*11], fewer complications and savings in average of 1,661 €/patient.[*10]

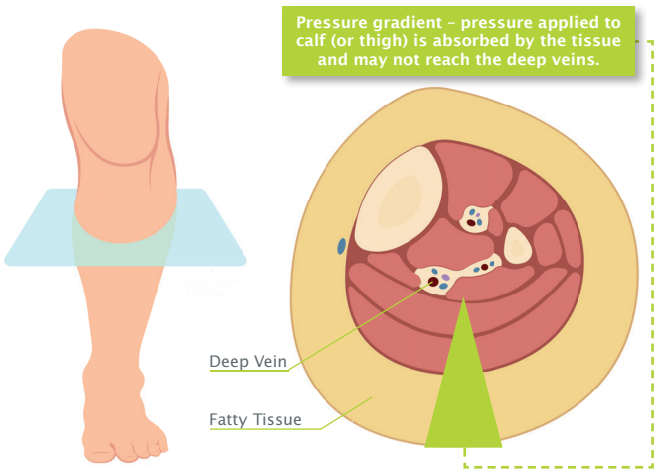
IIC works, independently of the Patients Calf or Thigh Circumference

The IIC applies pressure to the venous foot plexus, which is directly connected to the deep vein system of the leg. This way, the pressure has a straight effect and is not restricted by the circumference of the thigh or calf.

Normal Weight Patient Cross Section of the Calf



Obese Patient Cross Section of the Calf



This document refers to international Guidelines and recommendations. Please follow also the Guidelines valid in your country.

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ADVANTAGES OF IIC AT A GLANCE

DIFFERENCES *1 *2

Intermittent Impulse Compression (VADOplex*13)	Compression with slowly inflating Garments
Technology	
Compression impulse applied to the feet or hands venous plantar plexus.	Broad compression pressure to the calf and/or thigh.
Pressure level of 130 mmHg achieved within max. 0.4 seconds.	Compression with slow pressure raise.
Physiology	
Proven equal or higher efficacy as/than LMWH.	No comparison data known.
Use without stockings recommended.	Use mostly recommended in conjunction with stockings.
Suddenly accelerated blood flow generates shear forces acting on the inner surfaces of the veins (venous endothelium).	No sudden acceleration of blood flow.
Shear forces promote the production and release of tissue hormones by the venous endothelium – especially endogenous nitric oxide (NO) and prostacyclin.	Significantly lower production and release of tissue hormones.
Study proven fast swelling reduction due to impulse compression.	Barely study data about effect on edema.

References

*1 ***VADOplex Mode of Action***
OPED GmbH, on: https://oped.de/produkte/product-vadoplex (accessed on May 18th, 2022)

*2 Gardner AM, Fox RH. ***„The Venous System in Health and Disease."*** (2001). (3. Au.), IOS Press

*3 Nicolaides AN, Fareed J, Kakkar AK, et al. ***"Prevention and treatment of venous thromboembolism–International Consensus Statement."*** Int Angiol. 2013;32(2):111-260. Device: A-V Impulse

*4 Warwick D, Harrison J, Glew D, Mitchelmore A, Peters TJ, Donovan J. ***„Comparison of the Use of a Foot Pump with the Use of Low-Molecular-Weight Heparin for the Prevention of Deep-Vein Thrombosis after Total Hip Replacement. A prospective, randomized trial."*** Bristol, Unites Kingdom, The Journal of Bone and Joint Surgery (Br) Aug 1998: Vol 80A: No 8.

*5 Warwick DJ, Harrison J, Whitehouse SL, Glew D, Mitchelmore AE. ***„Comparison of the Use of a foot pump with the Use of Low-Molecular-Weight Heparin for the prevention of Deep-Vein Thrombosis after Total Knee Replacement."*** University of Bristol, Avon Orthopaedic centre, Bristol, BS10 5NB, UK, Orthopaedic Proceedings, Journal of Bone & Joint Surgery (Br); Supp II; 1999; p210 (0.355)

*6 Pietsch M, Kuhle J, Hamer H, Pitto RP. ***"Mechanical versus drug prevention of thrombosis after total hip endoprosthesis implantation. A randomized, controlled clinical study."*** Biomed Tech (Berl). 2003;48(7-8):207-212. Device: A-V Impulse

*7 Young, Pitto et. al. ***„Efficacy, Safety and Patient Compliance Of Foot-Pumps Without Graduated Compression Stockings For Prevention Of Deep-Vein Thrombosis In Total Joint Replacement."*** Journal of Bone and Joint Surgery - British Volume, Vol 91-B, Issue SUPP_I, 76-77.:2009 FORT - European Federation of National Associations of Orthopaedics and Traumatology (8th Congress); Florence, Italy: 11-15 May 2007

*8 Warwick D, Pandit H, Shewale S, Sulkin T. ***„Venous impulse foot pumps: should graduated compression stockings be used?"*** Southampton University Hospitals, Southampton, The Journal of Arthroplasty, 2002. Vol. 17 No. 4 pp 446-448

*9 Schnetzke M, El Barbari J, Schüler S, et al. ***„Vascular impulse technology versus elevation for the reduction of swelling of lower extremity joint fractures: results of a prospective randomized controlled study."*** Bone Joint J. 2021;103-B(4):746-754. Device: VADOplex

*10 Keehan R, Guo S, Ahmad R, Bould M. ***„Impact of intermittent pneumatic foot pumps on delay to surgery following ankle fracture."*** Department of Trauma & Orthopaedic Surgery, Weston General Hospital, Weston-Super-Mare, BS23 4TQ, UK DOI: http://dx.doi.org/10.1016/j.fas.2013.04.004 Publication History Published online: May 21, 2013Accepted: April 12, 2013; Received in revised form: March 16, 2013; Received: January 19, 2013

*11 Cashman J, Blagg S, Bishay M. ***"The Efficacy of the A-V Impulse System in the Treatment of Posttraumatic Swelling Following Ankle Fracture. A rospective Randomized Controlled Study."*** Royal United Hospital, Bath UK; Injury 1998; Vol 29 Nr. 2

*12 Dodds MK, Daly A, Ryan K, Souza LD. ***"Effectiveness of ,"in-cast' pneumatic intermittent pedal compression for the pre-operative management of closed ankle fractures: A clinical audit."*** Department of Orthopedic Surgery Mid Western Region Hospital Limerick, Ireland; Foot & Ankle Surgery 20 (2014) p40-43

*13 ***Data refer to studies with the IIC device A-V Impulse System.***
The product variants of the IIC device VADOplex are identical to the A-V Impulse System from Covidien from a technical, functional and qualitative point of view. (Expert opinion G - 21 - 119 - A, Assessment of technical equivalence, Berlin CERT GmbH, June 2021).

Abbreviations

DVT Deep Vein Thrombosis
HIT Heparin Induced Thrombocytopenia
IIC Intermittend Impulse Compression
IPC Intermittend Pneumatic Compression
LMWH Low Molecular Weight Heparin
NO Nitric Oxide

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Keeps you going.

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