



## 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 Intermittent Impulse Compression (IIC)<sup>\*1\*2</sup>. 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<sup>\*3</sup>.

### IIC is as effective as Low Molecular Weight Heparine (LMWH)

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

### No Stockings required with IIC

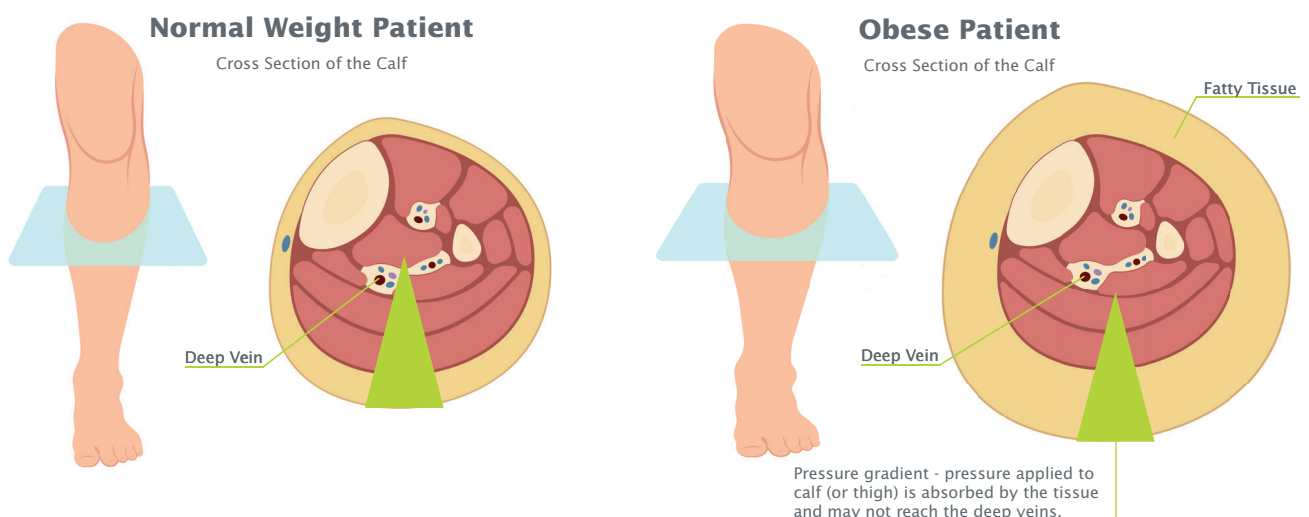
Using DVT prevention stockings is not required in conjunction with IIC. Studies have shown that they provide no additional benefit<sup>\*7\*8</sup>. This means easy handling and time saving for caregivers and nursing staff and lower costs for the clinic.

### 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.<sup>\*9\*10</sup> This results in 3.6 days of earlier discharge<sup>\*11</sup>, fewer complications and savings in average of 1,661 €/patient.<sup>\*10</sup>

### 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.



## ADVANTAGES OF IIC AT A GLANCE

<b>DIFFERENCES</b> *1 *2	
<b>Intermittent Impulse Compression (VADOPlex<sup>®13</sup>)</b>	<b>Compression with slowly inflating Garments</b>
<b>Technology</b>	
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.
<b>Physiology</b>	
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

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- \*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
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- \*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** Heparine Induced Thrombocytopenia  
**IIC** Intermittend Impulse Compression  
**IPC** Intermittend Pneumatic Compression  
**LMWH** Low Molecular Weight Heparine  
**NO** Nitric Oxide

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



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