Education and hands-on practice for the benefit of patients with venous disease

**evf HOW – Education in Venous Disease from top to bottom**

The 8th evf HOW is returning to Krakow, Poland

By Marianne De Maeseneer, Tomasz Urbanek, Stephen Black

The first European Venous Forum Hands-on Workshop on Venous Disease (EVF HOW) was organized in 2010 in Larnaca, Cyprus. The format combines “state-of-the art” presentations providing up-to-date information of modern practical management of venous disease, illustrated by case management discussions, live demonstrations, and most importantly, hands-on instruction with training on modern procedures. For the last 6 years, this combination of learning instruction has been shown to be successful and was so again at the 7th EVF HOW, which took place in Limassol in beautiful Cyprus on 27-29 October, 2016. Each Workshop is limited to 100 participants. A faculty of more than 35 ensures an unusual low learner/instructor ratio (3:1). The impact on the learners was significant. Multiple choice questions (MCQ) tests performed before and after the meeting had an 75% response rate and the average correct result was substantially increased for the vast majority of the delegates. The Workshop would influence and change the almost all (97%) learners’ clinical practice in the future. This success could not have been sustained through the years without the support of dedicated faculty members and the strong commitment of industry partners. The format will be continuously refined as we develop the 8th EVF HOW, which is planned to return on 26-28 October to the historic university city Krakow, Poland in 2017. Almost 800 physicians, including the 7th Workshop and the satellite mini - EVF HOW in Georgia 2014, have now completed the course, so EVF HOW is step-by-step expanding knowledge of venous disease and its clinical management in Europe. As only 100 participants are accepted on a “first come – first served” basis, it is recommended to register early to ensure a place. Please contact Anne Taft, Administrative Director, European Venous Forum; tel/fax +44 (0)20 8575 7044; email admin@europeanvenousforum.org. More information is available at www.evfvip.com.
The objectives of evf HOW

To educate, train and update learners (the delegates) in the current clinical management of patients with venous disease by close informal interaction with venous experts during lectures, case discussions and hands-on activities in small groups.

At the end of this course the learner (delegate) should be able to
1. identify venous disease in patients
2. apply appropriate venous investigations
3. construct a plan for management
4. understand different interventional procedures
5. successfully incorporate treatment of venous patients in his/her practice
6. realize when to refer a patient for expert care

evf HOW Format

The EVF HOW mission statement is "Education and hands-on practice for the benefit of patients with venous disease". The goal is to provide understanding of modern practical management of venous disease and hands-on training of modern procedures. An integral partner in this effort is the providers of different devices, sclerosing agents, stockings, bandages, ulcer care materials, ultrasound machines etc. The objectives of the EVF HOW are impossible to fulfill without this partnership. The instruction of learning has from the start been structured on a few principles, which are important for the success of the Workshop:

- the number of learners is limited to 100 to facilitate interaction between instructors and delegates and thus the faculty/learner ratio is high – 1/3
- the hands-on sessions are largely truly hands-on for the delegates, not small lectures or only a demonstration of procedures
- all learning sessions are informal in a relaxed setting to allow uninhibited communication between delegates, faculty members and industry representatives
- plenty of time is set aside for discussion with the greatest interaction occurring at the workshop stations
- the learners are encouraged to bring their own cases for presentation and discussion
- there is no exhibition or parallel activity.

The format of the EVF HOW in 2017 will be similar to previous years including formal lectures, case discussions and interactive video demonstrations on different treatment techniques and duplex scanning, covering acute and chronic venous diseases. The focus will be on hands-on training on procedures and devices. Faculty members in collaboration with
the industry experts will instruct at 20-24 workshop stations. The delegates will attend each workshop station during 30 min in small groups (4-5 delegates), giving each participant time to try out devices, practicing bandages etc.

Learning Enhanced by Associated Website

In 2013 the EVF HOW website was introduced. This is a web-based password-protected portfolio. Each learner participating in the EVF HOW has access to the presentations, important references and guidelines, case reports for discussion, videos of procedures supplementary information about the workshop stations and other study material. Access is available for one year after the Workshop. This gives the learners a possibility to go back and reinforce and enhance their learning experience. Additional material will be added during this year. The response has been very positive from the learners and the website is increasingly used. Most learners used the website before the start of the Workshop and accessed it during the Workshop. All participants fully (81%) or partially (17%) agreed that the EVF VIP was a valuable supporting tool especially by giving access to the presentations on-line, having references and guidelines in pdf format available, and to be able to return to posted video material.

A Report from 7th evf HOW 2016 in Limassol, Cyprus

The 7th EVF HOW took place at the Grand Resort Hotel in Limassol, Cyprus, 27-29 October, 2016. This facility was excellent for our needs. Dr. Stylianos Pappas and his local team had worked hard to make excellent local arrangements and provided excellent patients for the training. The primary reason for attendance by the majority of learners was to update overall knowledge about venous disease and its treatment (81%). In an assessment after the course, the overwhelming majority of the delegates indicated that these goals were achieved (98%). The learners felt the workshop stations achieved all or most stated goals between 93-100% at each station. Their over-all expectations were met in 99% and the Workshop would change their practice in the future in 97% of the learners. More than half of the delegates were vascular surgeons (63%) followed by other specialties such as phlebology (8%), general surgery (7%), interventional radiology (5%), dermatology, angiography and cardiovascular surgery. Although the majority of learners came from Europe (80%), with Portugal at the top representing 13% of all learners, other countries and continents were represented as previous years (Middle East 12%, and delegates from South Africa, USA, China and New Zealand).

The Program of evf HOW 2016

The instruction at the 7th Hands-on Workshop on Venous Disease, 2016, was provided by an international faculty with 33 experts from Europe and the USA. They not only give presentations, but also actively discussed case presentations and were an integral part of the workshop giving
practical tips and tricks from their own experience. The clinical input by the faculty members balanced well the specific device information presented by the industry representatives.

**Presentations and Live Demonstrations**

The presentations spanned the following subjects:

- **Basic principles** of venous pathophysiology; accuracy of tests; and classification and assessment of treatment outcome

- **Treatment of varicose veins** conservatively with drugs and compression; with invasive procedures such as saphenous ablation with laser, radiofrequency, steam, foam sclerotherapy, pharmacomechanical means and open surgery; in addition techniques preserving the saphenous vein were highlighted. After intense discussion, Doctor Steve Elias tried to make sense of it all. The controversies of the perforators were elucidated, interventions for recurrent or residual varicose veins (PREVAIT – Presence of varices after intervention) and pelvic congestion syndrome (PCS) were debated.

- **Guidelines** for prevention and treatment of venous thromboembolism (VTE) and superficial vein thrombosis (SVT).

- **Treatment of acute VTE** with traditional conservative measures, direct oral anticoagulants, catheter-directed thrombolysis and pharmaco-mechanical thrombectomy was described and outcome reported; surgical thrombectomy and the role of IVC filters were also presented.

- **Diagnosis and treatment of chronic venous insufficiency** using a sequential treatment plan was presented, focusing on management of venous ulcers in clinical practice, the use of compression, treatment of deep venous obstruction and the role of valve reconstruction in limbs with primary deep venous reflux or postthrombotic disease.

![Fig. 1: Delegates attending presentations and live demonstrations](image-url)
Two live demonstration of duplex ultrasound scanning (DUS) were performed to show the optimal investigation of patients with suspicion of acute DVT and with chronic venous disease, later to be practiced during the DUS workshop stations.

**Award for the Best Case Report**

The number of case discussions increases every year and is a popular part of the Workshop. At EVF HOW 2016 a wide range of 28 cases were presented illustrating the previously given lectures: about varicose veins, superficial vein thrombosis, acute iliofemoral DVT, chronic outflow obstruction, venous ulcer management, nutcracker syndrome etc. This year we had an increase in the number of cases presented by attendees to 12 (up from 8) with the remaining provided by the faculty. Cases brought by the learners were accepted for discussion and the remaining provided by the faculty. To encourage the learners to bring their own cases, the participant having the best presentation received an award of EURO 500. The prize was awarded this year to Dr. G.L. van Rooijen for his presentation about a patient with combined superficial and deep venous problems entitled: “Collateral damage”. Each case was presented in stages and the moderator encouraged the faculty and learners to join in at all stages, which lead to lively discussions.

![Fig. 2 and 3 Case Report Discussions](image)

**Hands-on workshops**

As previously emphasized, this component of the EVF HOW is the most important. The function of the device or the method presented at each workshop station was explained in detail by the industry expert. Its role in the treatment of venous disease and personal clinical tips and tricks were highlighted by the faculty member. Each learner trained hands-on, whenever possible, under expert supervision after a short demonstration.
Workshop 1 – Duplex ultrasound scanning

The learners performed live imaging in patients with different types of vein pathologies. Dr. Stylianos Pappas and colleagues had collected numerous patients from their practice, well representing a variety of disease. The aim was twofold. After this workshop, firstly the learner should be able to position the patient properly, use appropriate transducers, know imaging principles and optimize the image; secondly learners should to be able to identify acute and chronic disease, reflux, obstruction, and pathology surrounding the vessels.

**Station 1.** Lower limb veins – Recurrent varicose veins (GE Healthcare – Faculty: Anders Thurin, Niki Georgiou)

**Station 2.** Abdominal and pelvic vein investigation (Philips – Faculty: Maura Griffin, Neophytos Zambas)

**Station 3.** Lower limb with superficial incompetence (Toshiba – Faculty: Evgeny Shaydakov, Stylianos Papas)

**Station 4.** Lower limb with deep incompetence (GE Healthcare – Faculty Lena Blomgren, Eleftherios Koulouteris)

![Workshop 1 DUS station 3](image)

Fig. 4 Workshop 1 DUS station 3

Workshop 2

**Station 1.** Intermittent pneumatic compression (ICD) device

The delegates learned how compression is applied through sequential inflation. They used duplex ultrasound to demonstrate the increased volume flow and velocity achieved with ICD while observing the Vascular Refill Detection (VRD) technology. (Medtronic - Faculty: Stavros Kakkos, Andrew Nicolaides)

**Station 2.** Ovarian vein embolization
An anatomical model allowed for practical hands-on experience of catheterization strategies for the ovarian vein and safe coiling techniques. The participant learned how to choose the right coil types, sizes and lengths and to place the selected coils correctly in the anatomical model. (Cook Medical – Faculty: Anthony Lopez)

**Station 3.** Foam sclerotherapy

The learner practiced how to produce foam with Aethoxysklerol® and the EasyFoam® Kit. Cannulation of larger veins and the injection of tiny spider veins was practiced on phantoms using ultrasound or the portable vein finder Veinlite LED®. Tips and tricks for optimal results were pointed out. (Kreussler – Faculty: Tomasz Urbanek)

**Station 4.** Techniques of Deep valve repair

Different techniques for deep valve repairs were demonstrated by video. Selection of patients and technical tips and tricks were discussed. (Faculty: Marzia Lugli, Michel Perrin)

![Fig. 5 Workshop 2 Station 3](image)

**Workshop 3**

**Station 1.** Venaseal medical adhesive ablation

The VenaSeal™ procedure, its unique attributes and placement were briefly introduced. The learners practiced DUS-guided access of a saphenous vein in a model and to accurately place the catheter tip at the saphenofemoral confluence and position the catheter in a leg simulator. (Medtronic – Faculty: Carl Henrik Schelp)

**Station 2.** IVC filter

The learners practiced placement of a Cook filter (jugular and femoral) using the NavAlign™ delivery system available on Celect®Platinum and Günther Tulip® Vena Cava Filters in a tube model. (Cook Medical – Faculty: Lars Lönn)
**Station 3.** ClariVein® pharmaco-mechanical ablation

The participants learned about the technical aspects of the ClariVein® infusion catheter. They practiced placement of the device by ultrasound guidance on a blue phantom limb and performed a mock treatment. (Vascular Insights®, LLC - Faculty: Steve Elias)

**Station 4.** Mechanical thrombectomy catheter

Participants practiced insertion and use of the Straub Medical Aspirex® S thrombectomy catheters in a model with venous thrombotic occlusion to perform a sufficiently powerful aspiration for effective venous thrombus removal. The insertion of the Straub Medical Capturex® peri-interventional filter catheter was also demonstrated. (Straub Medical - Faculty: Thomas Heller)

![Fig. 6 Workshop 3 Station 1](image)

**Workshop 4**

**Station 1.** VICI VENOUS STENT®

The placement of the VICI VENOUS STENT® was practiced by each learner in a specially designed venous tubular model replicating the iliocaval vein segment and and specific techniques for its precise placement will be emphasized. (Veniti - Faculty: Patty Thorpe)

**Station 2.** Compression stocking

The learners practiced to choose a correct medical compression stocking (MCS) by measuring the leg. They learned how to apply long- and short-stretched MCS with and without fitting aid. They used a Picopress device to measure the working pressure with these stockings on. (Bauerfeind – Faculty: Michael Jünger)

**Station 3.** Vbox, steam ablation of varicose veins

The participants learned how to choose the appropriate energy for the treatment and practiced steam injection on phantoms using the Vbox. They were told specific tips and tricks for obtaining optimal results. (Miravas – Faculty: René Milleret)
Station 4. Intravascular Ultrasound (IVUS)

The learners familiarized themselves with the IVUS tower and the corresponding catheters. Case studies of procedures using IVUS video-loop recordings were reviewed to demonstrate differences in venogram and IVUS images during treatment of patients with obstruction. Each learner practiced image interpretation using an anatomical model, including how to identify the vessel lumen, locate side branch or collateral vessels, identify stenosis and assess completeness of treatment. (Philips Volcano - Faculty: Stephen Black)

![Fig. 7 Workshop 4 Station 3](image)

Workshop 5

Station 1. Ultrasound debridement

Participants were given a demonstration of the Söring UAW (Ultrasonic-Assisted Wound Debridement) and the pros and cons in the individual patient’s situation were analysed. The learners had the opportunity to practice the use of the Söring UAW on wound models. (Söring – Faculty: Dominik Heim)

Station 2. Compression bandage

Strong short-stretch compression bandage was applied by each learner on each other, sub-bandage pressure measurements were monitored, and the learners were made aware of what a correctly applied bandage on their own leg feels like. (Lohmann & Rauscher – Faculty: Joseph Caprini, Olle Nelzén)

Station 3. ClosureFast™ catheter (radiofrequency ablation)

Saphenous radiofrequency ablation using the ClosureFast™ catheter was practiced by the learner including how to accurately place the catheter tip at the saphenofemoral confluence and to sequentially position the catheter in a leg simulator. Tips and tricks to achieve successful ablation were pointed out. (Medtronic – Faculty: Marianne De Maeseneer, Jan Christenson)
Station 4. The Wound Care therapy chain

This workshop highlighted treatment of venous leg ulcers by the use of ulcer debridement and compression therapy – the medi therapy chain. The learners experienced the effect of a simple debridement cloth on their skin and they learned how to apply properly a Velcro device. (medi GmbH & Co. KG - Faculty: Els Brouwer, Maria Nothaft)

Fig. 8 Workshop 5 Station 4

Workshop 6

Station 1. Advanced therapy solution for venous leg ulcers

The learner practiced choice and application of the appropriate wound dressing for a venous ulcer and how to select the right compression therapy in the acute healing phase, either compression bandages or 2-in-1 JOBST® UlcerCARE stocking. (BSN JOBST – Faculty: Sylvain Chastanet)

Station 2. Radial laser ablation

After longitudinal and transverse access to the vein under ultrasound guidance, saphenous laser ablation was practiced on a phantom leg using Biolitec ELVeS® Radial 2ring™ and ELVeS Radial Slim™ fiber with a 1470 nm laser generator. Tips and tricks were pointed out and how to decide the dosage of energy was practiced. (Biolitec – Faculty: Niels Baekgaard)

Station 3. Foam sclerotherapy

The participants practised making good quality sclerosant foam using sodium tetradseryl sulfate (Fibrovein) and discussed treatment approaches to superficial venous reflux using ultrasound guided foam sclerotherapy (UGFS). (STD Pharma – Faculty: Marianne Vandendriessche)

Station 4. Venovo Venous Stent™ and Atlas Gold PTA dilatation catheter*
The learners practiced the deployment of the BARD Venovo Venous Stent System as well as the use of the Atlas Gold PTA Dilatation Catheter in a model. In this workstation, essential background in theoretical knowledge, technical skills required for clinicians beginning to undertake the treatment of iliofemoral venous vessel stenting and angioplasty were extensively discussed. (BARD – Faculty: Haraldur Bjarnason)

Fig. 9 Workshop 6 Station 1

Special Awards and Thanks

At the end of the programme a special celebration was organised to thank those friends and colleagues from the Industry and Faculty, who have been most loyal to EVF HOW from the very beginning and have been present at all 7 EVF HOWs so far. They all received a special award, a little Swiss cow bell, to thank them for their most appreciated commitment and support.

The recipients of the cow bell were the following:
- Faculty: Niels Baekgaard, Jan Christenson, Niki Georgiou, Michel Perrin

Bo Eklöf and Peter Neglén, who have been, together with Andrew Nicolaides, the Directors of EVF HOW since the very first HOW in 2010, handed over their large cow-bells to Marianne De Maeseneer, Stephen Black, Tomasz Urbanek and Marzia Lugli; the New Team, all ready for the fascinating challenge of organising successful future EVF HOWs!
Fig. 10 and 11 EVF HOW Cow Bells awarded to Faculty and Industry Colleagues for their dedicated services over the last 7 years!

**evf HOW Plus report 2016**

*The EVF HOW Plus* courses throughout 2016 were concerned with education in the field of diagnostics and the treatment of venous disease; dedicated to a wide group of physicians.

The courses were designed for physicians with experience in the field of venous disease treatment who could gain a unique opportunity to meet World-renowned experts and specialists by gaining practical (hands-on), phlebological skills in small groups of participants.

The proposed course structure of the EVF HOW Plus courses are that they are organised in the form of “hands – on” workshops, with an active participation of the learners which is focused on gaining practical skills dedicated to the course topic.

The *EVF How* Plus courses, give an excellent opportunity to improve practical knowledge, as well as discussing important subjects during the meetings and practical exercises with experts. The goals of the “*Plus* courses” are to create opportunities of direct transfer of the knowledge and practical skills from experts to the participants. To achieve this, small groups of participants are invited and trained in centres led by World renowned phlebologists. The courses are particularly suitable to previous *EVF HOW* participants as well as other physicians, who can apply for a Plus course by completing a special application form. Most courses comprise 2 days with 4-10 persons attending (depending on the procedures being trained). The intention is that after the course the learner should be able to:

- understand the decision-making process leading to the intervention
- choose the appropriate investigations in a patient
- select the correct patient for the procedure
- decide on the appropriate technique of the procedure
- list the details of the procedure
- manage complications
- plan an appropriate follow-up of the patients
- initiate the use of the procedure in his/her institution.
In 2016 four EVF HOW Plus courses were organized.

In collaboration with Professor Oscar Maleti and Dr. Marzia Lugli, (who run a comprehensive venous center at Hesperia Hospital in Modena, Italy), a EVF HOW Plus course on venous stenting “Stenting of ilio-femoral venous outflow” was held in Modena for the second time. The course took place in Hesperia Hospital on 18th and 19th of April 2016 and 4 experienced learners were invited. During this course the participants received practical education on venous stenting from these experts in the field, along with an opportunity to scrub in on stent procedures. The participants could compare and discuss their experience with the experts as well as take part in the endovascular procedures with practical implementation of IVUS and venous stenting. The evaluation forms from these participants showed that the high practical aspect of this course was particularly valued.

The second EVF HOW Plus course also took place in Modena (Hesperia Hospital) and was dedicated to vein valve reconstruction (EVF HOW Plus course on Deep Valve Repair). The course was organized on the 9th and 10th of May 2016 and again, as in 2015, only 4 participants were selected. The learners had an opportunity to obtain the required knowledge and skills in valve reconstruction procedures; including the opportunity of scrubbing in on vein valve repair procedures. The course directors Oscar Maleti and Marzia Lugli shared their experience and knowledge concerning these very advanced venous surgical procedures. The post course evaluation also valued the high practical input that was offered

Figs 12, 13 EVF HOW Plus Courses in Modena, on Stenting of ilio-femoral venous outflow and Deep Valve Repair.
The Third EVF HOW Plus course in 2016 took place in London on 6th June 2016 for a Venous Stenting Training Day, attending the Department of Academic Surgery in St Thomas’ Hospital. The course was led by Mr. Stephen Black and his group in collaboration with Dr. Peter Neglén who moderated the discussions. The main feature of the course were the live cases with commentaries from Stephen Black and Peter Neglén, and with close interaction with the 9 learners. During the course, procedures dedicated to venous stenting were presented and discussed as well as several venous stenting live cases were shown. Stent procedures, IVUS as well as dedicated venous stent implementation were amply discussed and during question time the participants had an opportunity to get the answers to all their questions. During the course there was an interactive exchange of knowledge, starting from each learner’s own experience in this field. Participants post course evaluations were very positive.

Fig 14, EVF HOW Plus Course in London “Venous Stenting Training Day”

The fourth and final EVF HOW Plus course in 2016 was held in Vienna, Austria and was dedicated to venous ulcer treatment. During this excellent and very practical course organized by Dr. Alfred Obermayer in collaboration with Prof. Hugo Partsch 12 learners from Europe, USA, Asia and India, learned, observed and took part in the diagnostic workup as well as in a patient tailored therapeutic approach. During the
course Dr. Obermayer presented his personal experience and discussed a comprehensive approach to venous ulcer treatment, including reflux ablation as well as local treatment. The practical part of compression treatment (with active participation of the learners) was taken care of by Prof. Hugo Partsch. On the second day of the course, the participants were invited to St. Josef’s Hospital in Vienna where several procedures of reflux ablation with simultaneous ulcer shaving operation were followed by mesh skin graft application. All cases were well presented and many technical details were emphasised. This was a great and very practical experience for most participants. Also, for this course, the final evaluation by the participants was extremely positive.

Fig 15, EVF HOW Plus Course in Vienna on Venous Ulcer Treatment.

What about EVF HOW Plus courses in 2017?
Considering the very positive evaluation of the EVF HOW Plus courses in 2016, the Organizing Committee will continue their efforts to propose future EVF HOW Plus “hands – on” courses for physicians who want to improve their practical skills in several specific venous procedures. In 2017, the following courses will be scheduled:

- Venous stenting courses
- Vein valve repair course
- Venous Doppler Ultrasound course
- Local thrombolysis in acute venous obstruction course
- Venous ulcer treatment course

Practical information about all the upcoming courses and application forms will be available on the EVF How web page www.evfvip.com

Considering the very high practical value as well as the importance of the EVF HOW Plus courses in the world of phlebology and vascular disease treatment, the Organising Committee would like to thank all organizers as well as all people involved in the local organisation. The Organizing Committee also expresses their gratitude to all sponsors helping them to realise this very important educative effort.