5th International NPWT Expert Meeting
Unlocking the potential of Negative Pressure Wound Therapy
21st and 22nd March 2014, Frankfurt

Programme booklet
Chairs’ welcome

Dear Colleagues,

A warm welcome to the 5th International Expert Meeting on Negative Pressure Wound Therapy. The pace of development of this therapy over the past 5 years has been considerable. Not only do new devices become available, with different options and in different shapes and sizes, but as experts we constantly learn, adapt and refine our own techniques, allowing us to bring NPWT into a wider spectrum of therapeutic methods. By unlocking the potential of NPWT we dig deeper into an understanding of its actions and effects, and go beyond wound healing into new and exciting areas with enormous potential for the wellbeing and protection of our patients.

These meetings are a great opportunity for us to come together and share the latest thinking behind NPWT and the different ways in which we may apply it. They are also unique in their reliance on presenting and discussing the most recent clinical papers in this important therapy. As we have mentioned at previous meetings, the deployment of NPWT technology has moved at a faster pace than evidence based scientific and clinical research into this topic. It is our duty to redress this imbalance.

This meeting is divided into 2 parts: The first day is devoted to presentations on the “State of the Art” of NPWT, in other words into the most recent scientific and clinical research into several aspects of the therapy.

The second day features a series of presentations on the use of NPWT in incisional management – how, when and where it is effective. Effective incisional management has the potential to considerably reduce complications after surgery, which in turn reduces both patient suffering and treatment cost. We call this “Reducing the Human and Economic Cost of Wounds” and we are delighted that we are continuing to address this challenge through the development of effective therapies such as NPWT.

We will then hold smaller breakout sessions to outline potential protocols for the use of NPWT in specific areas of incisional management.

We will conclude with an open discussion outlining the key points made from each session and point towards new areas of development for NPWT.

Once again, we will rely on your participation, ideas and questions so that we can continue to develop this field together as experts. As is tradition in the NPWT Expert Meeting, we will be using a tablet voting system with which the entire audience can express their views and see instantly the consensus opinion in the room. Thank you for joining us here in Frankfurt and we hope that you will find this to be a stimulating and fruitful meeting.
NPWT in 2014 and the 5th International NPWT Expert Meeting

Since the start of the 21st century, Negative Pressure Wound Therapy (NPWT) has transformed the management of acute, sub-acute and chronic wounds and reconstructive surgery. Several thousand papers have been written on the subject of NPWT, which is now being provided by a wide range of clinicians, many of whom will be represented today. The use of NPWT in incision management for high risk surgical wounds takes us to a new level and introduces NPWT to an even broader group.

The state of the art in the science of NPWT

Over the past 15 years we have encountered several theories which explain the beneficial effects of NPWT. One idea is that NPWT stimulates blood flow and that this plays a part in the overall combined mechanisms of action. Another finding from some studies is that ischaemia - reduced perfusion as pressure is applied to the tissues under NPWT - may be a powerful stimulus for angiogenesis. Professor Donald Hudson, the co-chair of this meeting, will begin by presenting a recent study from his group that questions the prevailing theory that a zone of increased perfusion exists a couple of centimetres away from where NPWT is applied – that in fact this is counterintuitive due to the fact that NPWT increases tissue pressure. Professor Shigeru Ichioka will continue the discussion around the role of perfusion as a key mechanism of action of NPWT. Using an experimental model that allows direct visualization of the wound bed micro-vasculature, Professor Ichioka will argue for increased perfusions as a result of NPWT and present a recent article published by his group investigating the mechanisms by which changes in tissue perfusion occur, in particular the role played by nitric oxide. Of course both increased and decreased zones of perfusion may be occurring at different positions, but we invite you to participate in the discussion around these interesting papers.

The roles played by different fillers in the use of NPWT add to the discussion

Dr. Marco Fraccalvieri will summarize a series of studies that have been published in several papers developed by his group identifying the differences in the formation of new granulation tissue using different fillers (foam and gauze). The data accumulated using immunohistochemistry and ultrasound investigation suggest that a differential use of the two fillers should be recommended, depending on the specific clinical goal that the use of NPWT is trying to achieve.

NPWT in 2014 and the 5th International NPWT Expert Meeting

The clinical state of the art

The role of NPWT in the treatment of flaps remains controversial. Professor Peter Maitz will review the evidence for and against the use of NPWT over flaps and will share his group’s experiences using NPWT in this area.

On skin grafts and other types of reconstructive surgery, Professor Franck Duteille will present the evidence on the use of NPWT to improve the take rate of split-thickness skin grafts, and will share his personal experience with the use of NPWT in plastic and reconstructive surgery.

Regarding the use of NPWT in open fracture wounds, Professor James Stannard, one of our co-chairs, will present the evidence developed by his group on the use of NPWT in the management of high-energy trauma fractures. The patients treated with NPWT in his study were only one-fifth as likely to have an infection compared with patients randomized to the control group. A hypothesis tested by the group was that combining NPWT with serial debridements and antibiotic therapy would decrease the incidence of deep infection and osteomyelitis, when compared with the use of serial debridements and antibiotics alone.

Finally, Mr Sudheer Karlakki will present a review of the evidence for the use of NPWT used in the management of surgical incisions, showing a reduced incidence of wound healing complications, possibly driven by reduction in seroma and haematoma and increased clearance of oedema. He will also outline recent randomised study results on the use of NPWT on closed orthopaedic surgical incisions from his own practice.
NPWT in 2014 and the 5th International NPWT Expert Meeting

Moving beyond wound care: NPWT in abdominal surgery and surgical incisional management

NPWT has been widely used in the management of the open abdomen despite uncertainty regarding several aspects of usage. An expert panel was convened to develop evidence-based recommendations describing the use of NPWT in the open abdomen and Professor Norbert Runkel, Chair of the NPWT Expert Panel (EP) will present a recent recommendation paper based on the panel's findings. This represents the latest phase of the NPWT-EP's consensus work which has now published evidence-based recommendations in four separate fields.

Moving to the management of surgical incisions, experts will present the interim results of randomized controlled trials on the use of PICO® in several areas. Professor Sandro Giannini will look at hip and knee prosthesis revision surgery, Dr Matthias Brem will examine spinal surgery, Professor Van der Hulst will present on surgical incisions after breast reduction, Dr Luis Miguel Nuila Durán will present on PICO after the introduction of implantable cardiothoracic devices, Dr Gianluca Pellino will discuss the management of abdominal surgical incisions in Crohn's patients, and finally, Mr Sean Burns and Ms Lindsey Bullough will focus on incisions following cesarean sections in high BMI and high risk patients.

There will then be a series of breakout meetings aimed to establish how protocols for NPWT in incisional management could work in different areas of surgical practice. Such discussions have always been a fundamental part of the NPWT Expert Meeting and this year will be no exception. As a participant you will get an opportunity to share your views and put questions about the use of NPWT on closed incisions to some of the clinicians with practical experience in this area. We will then gather back to hear everyone's views and summarize what we have covered at the meeting.

We sincerely hope that by the end of our 5th NPWT Expert Meeting you will have either learnt something new or been able to teach someone else something new - contributing in your own way in unlocking the potential for NPWT to reduce both the human and the economic cost of wounds.

A full review of the sessions in this meeting will be written up and circulated, as well as making videos of presentations available on website, www.npwtexperts.com, providing you with a detailed account of the state of the art and potential of NPWT in 2014.

*PICO is a single use, canister-free NPWT System
### Agenda - Day 1
**Friday, 21st March 2014**

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<td>Welcome Lunch</td>
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<td>Plenary session 1: State of the art of NPWT</td>
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<td>13.00</td>
<td>Introduction and welcome</td>
<td>Chairs</td>
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<td>13.20</td>
<td>Mode of Action of NPWT: is it still an open question?</td>
<td>Don Hudson, South Africa</td>
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<td>13.45</td>
<td>Mode of Action of perfusion changes during NPWT: recent data</td>
<td>Shigeru Ichioka, Japan</td>
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<td>14.10</td>
<td>The role of different fillers in the use of NPWT in plastic and reconstructive surgery</td>
<td>Marco Fraccalvieri, Italy</td>
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<td>14.35</td>
<td>Interactive Panel discussion</td>
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<td>15.00</td>
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<td>15.30</td>
<td>Use of NPWT on flaps</td>
<td>Peter Maitz, Australia</td>
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<td>15.55</td>
<td>Use of NPWT on skin grafts and other reconstructive surgeries</td>
<td>Franck Duteille, France</td>
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<td>16.20</td>
<td>Use of NPWT in the management of surgical incisions: a review of evidence and mechanism of action</td>
<td>Sudheer Karlakki, UK</td>
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<td>16.45</td>
<td>Use of NPWT in the management of open fracture wounds</td>
<td>James Stannard, USA</td>
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<td>17.10</td>
<td>Interactive Panel discussion</td>
<td>Chair</td>
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<td>17.30</td>
<td>Conclusion of day 1</td>
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### Agenda - Day 2
**Saturday, 22nd March 2014**

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<th>Time</th>
<th>Topic</th>
<th>Location</th>
<th>Speaker(s)</th>
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<tr>
<td>08.00-10.30</td>
<td>Plenary session 2: use of NPWT in the open abdomen and in incision management</td>
<td>Chairs: Norbert Runkel, James Stannard</td>
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<tr>
<td>08.00</td>
<td>Consensus in the Use of NPWT in the management of the open abdomen</td>
<td>Norbert Runkel, Germany</td>
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<td>08.20</td>
<td>NPWT in the management of incisions in hip and knee prosthesis revision surgery</td>
<td>Sandro Giannini, Italy</td>
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<td>08.40</td>
<td>NPWT in the management of incisions in spinal surgery</td>
<td>Matthias Brem, Germany</td>
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<td>09.00</td>
<td>NPWT in the management of surgical incisions in breast reduction</td>
<td>Rene Van der Hulst, The Netherlands</td>
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<td>09.20</td>
<td>NPWT in the management of incisions in cardiothoracic surgery</td>
<td>Luis Nuilla, Spain</td>
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<td>09.40</td>
<td>NPWT in the management of surgical incisions in Crohn’s patients</td>
<td>Gianluca Pellino, Italy</td>
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<td>10.00</td>
<td>NPWT in the management of caesarian section in high BMI patients</td>
<td>Sean Burns, UK</td>
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<td>10.30</td>
<td>Coffee break</td>
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<td>Coffee break</td>
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<td>12.15</td>
<td>Round table on the output of the break-out sessions</td>
<td>One moderator for each break-out session will present the key points</td>
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<td>13.00</td>
<td>Interactive Panel</td>
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<td>13.30</td>
<td>Lunch</td>
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Speaker Profiles

Donald Hudson is the Head of the Department of Plastic and Reconstructive Surgery at the University of Cape Town and Groote Schuur Hospital, South Africa and has been in this position for over a decade. He is one of a very small group of plastic surgeons from South Africa who is registered as a specialist plastic surgeon with the General Medical Council of Great Britain. Professor Hudson serves on the editorial board of the British Journal of Plastic Surgery and is the only South African to regularly review for Plastic and Reconstructive Surgery. He is a member of the NPWT-EP and a pioneer in the use of Negative Pressure Wound Therapy.

Shigeru Ichioka is Professor of the Department of Plastic Surgery at Saitama Medical University, Japan. His research focuses on wound healing, microcirculation, limb salvage, foot care and reconstructive surgery. Professor Ichioka is a delegate to the following societies: Japanese Society of Plastic and Reconstructive Surgery, Japanese Society for Wound Healing, and Japanese Society for Medical and Biological Engineering. He is also on the Board of Directors of the Japanese Society of Pressure Ulcers, Japanese Society of Limb Salvage and Podiatric Medicine, Japanese Society for Footcare, and Japanese Society of Wound, Ostomy, and Continence Management. He was a Chair of the Promotion Committee of the World Union of Wound Healing Societies 2012 and president (2013) of the joint Congress of the Japanese Society for Footcare and Japanese Society of Limb Salvage and Podiatric Medicine. He officially serves as an expert on the board for Pharmaceuticals and Medical Devices Agency (PMDA). Professor Ichioka is a member of the NPWT-EP.

Marco Fraccalvieri is Consultant in Plastic Surgery Unit at the Hospital S. Giovanni Battista di Torino, at the University of Turin, Italy, where he is also Assistant Professor. He is an investigator in several fields of plastic and reconstructive surgery, including biomaterials, neo angiogenesis, healing of foetal wounds, peripheral nerve regeneration, melanoma, hyperbaric oxygen therapy, wound healing and NPWT. He has practiced in several countries around the world and is the author of more than 230 papers published in national and international journals.

Peter Maitz is a Consultant Plastic Surgeon and the Medical Director of the Burns Unit at Concord Hospital in Sydney, Australia. He is also the Chairman of the Education Committee, Australian and New Zealand Burns Association and Director of the Skin and Tissue Engineering Laboratory at Concord Hospital, Sydney.

Peter Maitz cont. He initiated his medical training at the University of Vienna then spent two years at the Brigham and Women's Hospital, Harvard Medical School, Boston as a General Surgery then Plastic Surgery Overseas Fellow before returning to Vienna. During his time in Boston, Professor Maitz was involved in experimental monitoring of flap perfusion and more recently his work with CEA and other burn treatment modalities has been recognised.

Franck Duteille is the Head of Department of Plastic Reconstructive and Aesthetic Surgery, at the University Hospital, Nantes, France. Professor Duteille practices trauma, burn, chronic wound and plastic surgery, all fields in which he has extensive experience of the usage of NPWT. He is a member of the NPWT-EP.

James Stannard is Chairman of the University of Missouri’s Department of Orthopaedic Surgery. He is also the medical director of the Missouri Orthopaedic Institute and specializes in sports medicine, orthopaedic trauma and complex knee injuries. He was recognized as one of the Best Doctors in America in 2007-2008, and again in 2008-2009.

Sudheer Karlakki is Consultant Orthopaedic & Arthroplasty Surgeon at the Robert Jones & Agnes Hunt Hospital, Oswestry, and at the Spire Yale Private Hospital, Wrexham, UK. He currently performs a large number of hip and knee replacements, revision hip and knee surgeries, and hip and knee arthroscopies. He is also involved in research and has published in these areas.

Norbert Runkel is Director of the Department of General Surgery at the Black Forest Hospital, Villingen, and a Professor at the University of Freiburg, Germany. Professor Runkel is a Fellow of the American College of Surgeons and Doctor honoris causa at the University of Cluj, Rumania. He is also the chair of the NPWT-EP where he was closely involved in the 4 recommendation papers developed by the panel.

Sandro Giannini is Head General of Medicine, Director of the Movement Analysis Laboratory and Director of the 2nd Orthopaedic and Traumatologic Clinic at the Istituto Ortopedico Rizzoli in Bologna, Italy. He is a professor in Musculoskeletal diseases at the University of Bologna and has specialised in the Orthopaedics and Traumatology since 1974. He holds 4 patents for medical devices and is author of over 600 Congress presentations, 45 book chapters, 3 books and 400 papers in indexed International journals.
Speaker Profiles

Matthias Brem is Section Head of Orthopaedic Sports Medicine at the Department of Orthopaedic and Trauma Surgery at the Klinikum Nuremberg, Germany. He is also the Team Physician at Nuremberg Football Club.

Rene van der Hulst is head of the Department of Plastic Reconstructive and Hand Surgery at the Academic Hospital in Maastricht, the Netherlands. He specializes in facial surgery (both reconstructive and aesthetic) and micro surgery (in particular microvascular breast reconstruction). He is also highly experienced in general plastic and hand surgery.

Luis Miguel Nuila Durán is Resident in the Cardiovascular Department at the University Hospital Virgen de las Nieves, Granada, Spain. He has both a doctorate and a diploma in community medicine. Dr Nuila is currently engaged in a major study on the effectiveness of PICO® following cardiothoracic surgery.

Gianluca Pellino is Resident in General Surgery at the Division of General and Geriatric Surgery at the second University of Naples, Italy. He is currently preparing his PhD thesis in Translational Medicine. He has participated in a number of research projects and multi-centre trials in the field of Crohn’s disease.

Sean Burns is Consultant Obstetrician & Gynaecologist at the Royal Albert Edward Infirmary in the Wigan, Wrightington and Leigh NHS Foundation Trust, UK. There he specialises in the treatment of gynaecological cancers and minimal access surgery, as well as having the role of Clinical Director in the directorate of Obstetrics and Gynaecology. He is collaborating with infection control and tissue viability nurses to form a multi-disciplinary team approach to tackle surgical site infections in women undergoing caesarean section.

Lindsey Bullough is a Tissue Viability Nurse at Wrightington Wigan & Leigh NHS Foundation Trust, UK. She is also an associate lecturer in Tissue Viability at Edge Hill University and UCLAN. She has been integral in the development of the Pressure Ulcer Prevention and Treatment policy for the Trust and also regularly audits the Pressure Ulcer Prevention and Management practice there. In 2012 she published evidence review at the Wounds UK conference on reducing post-operative caesarean section complications.
References:


For further information

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