

Avelle™

Negative Pressure Wound Therapy System

The Hydrofiber® Difference

The Hydrofiber® Technology you trust,
combined with the healing power
of NPWT for up to 30 days.



POWERED BY



 ConvaTec

Negative Pressure Wound Therapy




Healing complications can have a significant impact on health care systems, care providers and their patients

With ageing populations and an increase in chronic diseases, wound care continues to impose a substantial health economic burden. As the number and complexity of **surgical interventions rise each year, substantial numbers of patients develop surgical site infections** and other incisional complications which pose a threat to patient outcomes.¹


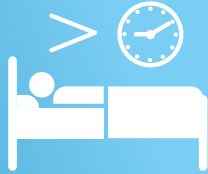





Better wound care, including effective diagnosis, treatment and prevention of wound complications, will help to minimise treatment costs.²



 **ConvaTec** *global leader in advanced wound care,
focused on improving the lives of the people we touch.*

Challenges of Incision Management

Complications such as SSIs can have a significant effect on patients and budgets.

 <p>Increased length of stay & likelihood of time in ICU³</p>	x5 <p>Increased likelihood of readmission x5³</p>	 <p>Delayed healing³</p>
 <p>Healthcare related costs almost double if a patient suffers an SSI³</p>	 <p>SSIs cost the NHS approximately £700m a year³</p>	 <p>Impaired quality of life³</p>
 <p>1 in 7 of all hospital acquired infections are SSIs³</p>	£ <p>£5239 median cost per patient attributable to SSIs from a UK study⁴</p>	 <p>Patients with SSIs are twice as likely to die³</p>

Infections, amputations and mortality as a consequence of a wound are too common and may be avoidable with accurate diagnosis and early appropriate treatment.⁵

Certain patient factors are known to increase the risk of surgical site complication^{1,6}

Consider the following patient factors:

ASA* Score

Previous history of wound breakdown

Smoking History

Steroids or other adjunctive therapy

Skin problems that will impact healing

BMI, obesity or malnutrition

Comorbidities such as diabetes, lung disease or autoimmune disease

Patient Factors

Surgical Procedure

Micro-organisms

Patient factors are part of 3 core groups of factors that contribute to the risk of SSIs¹.

* The American Society of Anesthesiologists physical classification system designed to assess the fitness of patients before surgery



Hydrofiber® Technology

engineered to optimise NPWT

For more than 20 years ConvaTec has been helping clinicians to improve patient outcomes, enabling patients to move on with their lives through the use of Hydrofiber® Technology – **globally proven and trusted.**

Hydrofiber® Technology



Locks in wound exudate and traps bacteria⁷⁻⁹ to help protect peri-wound skin and reduce maceration.¹⁰⁻¹¹



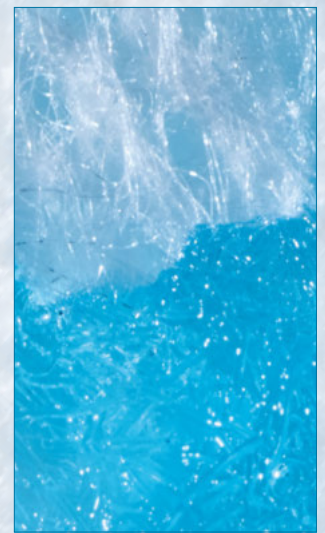
Micro-contours to the wound bed, minimizing dead space where bacteria can grow.¹²



Balances wound fluid levels through gelling to maintain a moist wound healing environment.¹³



Hydrofiber® Technology

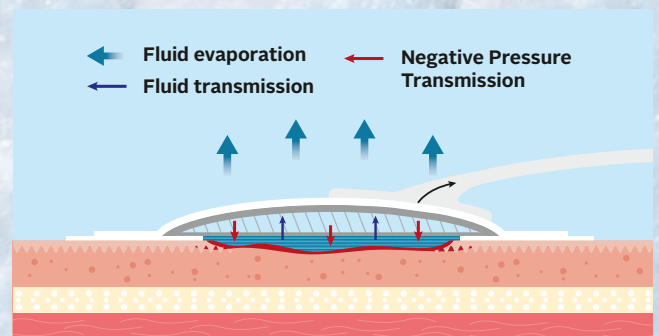


Gelling effect of Hydrofiber® Technology



NPWT – Mechanism of Action¹⁴⁻¹⁵

- Reduction in tissue oedema
- Wound contraction via applied strain
- Increased perfusion
- Stimulation of angiogenesis
- Formation of granulation tissue







Avelle™ NPWT Pump and a Hydrofiber® Technology Dressing – proven benefits of NPWT and moist wound healing¹⁶ combined.

The Avelle™ NPWT Pump

Avelle™
Negative Pressure Wound Therapy System

The right NPWT pump and dressing combination can make the difference in supporting wound closure and aiding patient recovery.

The disposable, single patient use Avelle™ NPWT Pump:

-  **Up to 30-day lifespan***
Versatile therapy delivery across care settings.
-  **Clinically cost effective**
Health economic solution when compared to 7-day devices.
-  **Small and portable**
Ergonomic design to enhance the patient experience.
-  **Delivers 80 mmHg (±20 mmHg)**
Continuous therapy delivered to the wound bed.
-  **Single button operation**
Ease of use, short learning curve.



Improving patient comfort and quality of life with the Avelle™ NPWT System



Patients can disconnect the pump and shower with the dressing in place whilst maintaining NPWT for up to 1 hour.*



Patients can stay active whilst using the Avelle™ NPWT System to aid recovery and rehabilitation.



Fluids are managed by the Hydrofiber® Technology dressing to prevent exudate from soiling clothing.

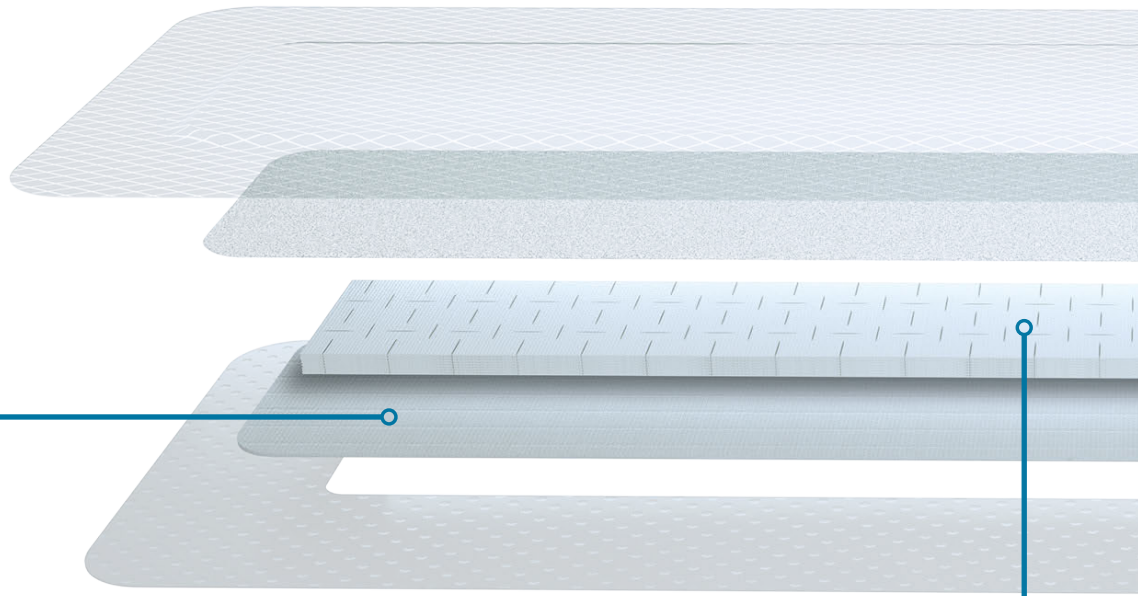
*As demonstrated *in-vitro*

†Battery change may be required during pump lifetime

The interactive Avelle™ NPWT Dressing

The Hydrofiber® Difference

The Hydrofiber® Technology interface and inner layers within the Avelle™ NPWT Dressing are specially engineered into an apertured design to allow negative pressure transmission through to the wound.*



Hydrofiber® Technology wound contact layer

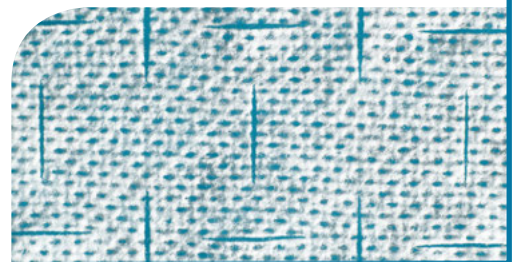
Stitch-bonded Hydrofiber® wound contact layer **gels on contact with wound fluid** and is designed to maintain integrity on removal.¹⁷



Hydrofiber® Technology layers (8 layers)

Gel on contact with wound fluid and **locks in bacteria** within it.^{17/18}

Fenestrations in the Hydrofiber® Technology layers are designed to promote vertical fluid movement throughout the dressing.



* As demonstrated *in-vitro*.

Foam layer

Aids distribution of negative pressure across the dressing and to the wound bed.

Film layer

The backing film permits evaporation of exudate, **aiding overall fluid handling** while providing a **bacterial, viral and showerproof barrier**.¹⁷

Soft-port

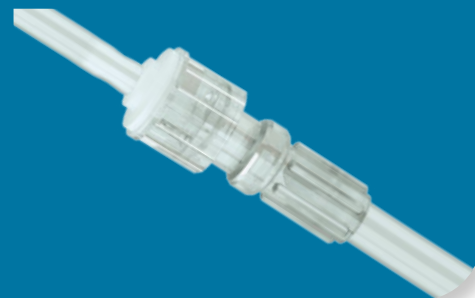
Designed to **minimise** the risk of **pressure damage**.

Perforated silicone adhesive borders

Specifically designed to secure the dressing in place while being **gentle** to the skin during removal.

The Avelle™ NPWT Dressing connector

A one-way valve maintains NPWT at the wound for **one hour** after disconnection from the pump,* enabling patients to continue with their daily routines (e.g. showering with peace of mind).



Effective fluid handling

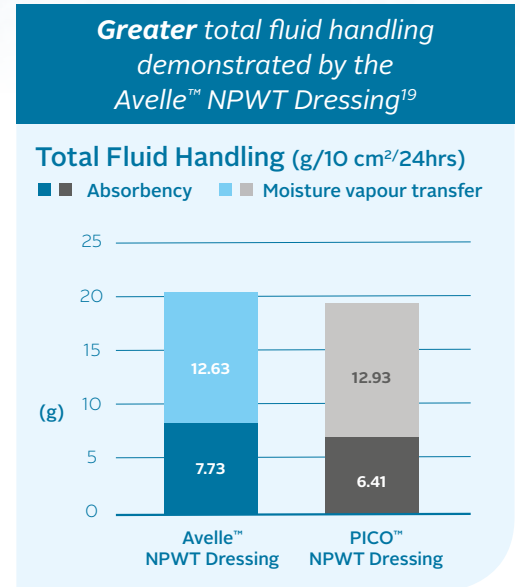
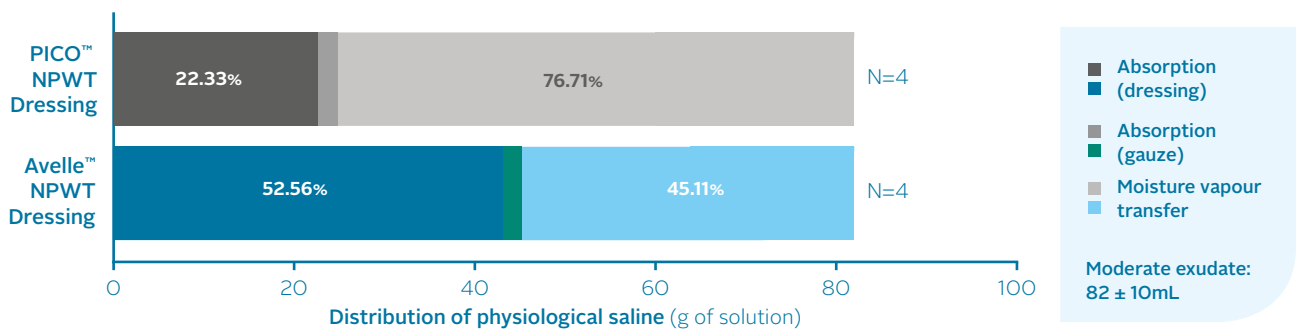
The Avelle™ NPWT Dressing with Hydrofiber® Technology interacts with the wound bed by creating a **moist wound healing environment** whilst **absorbing** and **locking in** exudate^{7,18} and the bacteria⁹ it contains.

PROVEN

In-vitro fluid handling studies demonstrate¹⁹ that:

- The Avelle™ NPWT Dressing **absorbed all test fluid** whilst under 80 mmHg with **no fluid pooling** demonstrating optimal fluid management.
- **Effective fluid handling** harnessing the mode of action of Hydrofiber® Technology.

Moderate exudate simulated wound bed after a 3-day period



Hydrofiber® Technology specifically engineered for NPWT provides an optimal balance between total absorbency and moisture vapour transfer to create a moist wound healing environment.

The Avelle™ NPWT Dressing – much more than the average NPWT dressing.

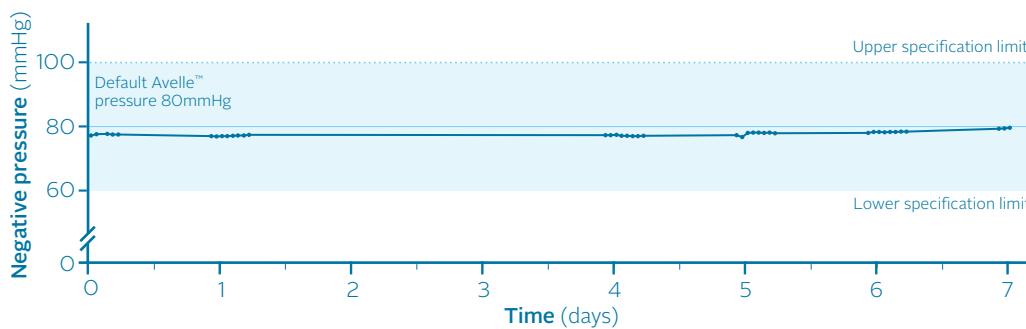
Note: 24-ply gauze filler dressing used in low and moderate simulated wound studies to allow fluid handling comparison.

Continuous delivery of negative pressure

The Avelle™ NPWT System is designed to produce a continuous negative pressure of 80 mmHg (± 20 mmHg) across the wound surface. *In-vitro* studies demonstrate¹⁹ that:

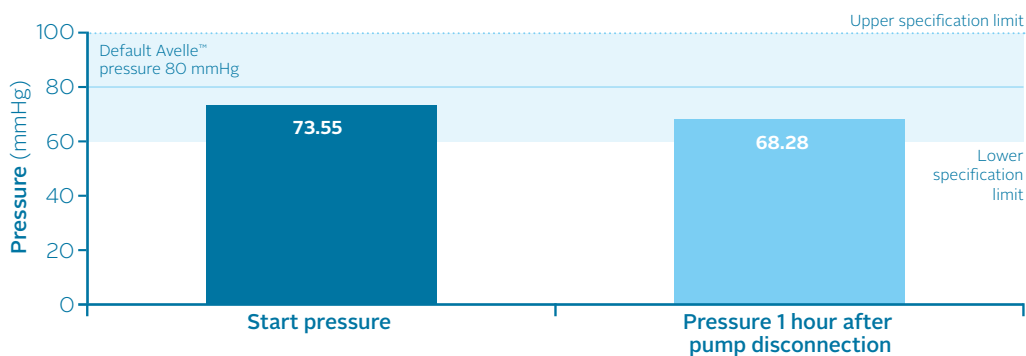
PROVEN: Negative pressure of 80 mmHg (± 20 mmHg) is delivered through the hydrated Hydrofiber® Technology Dressing to the simulated wound bed through 4 layers of AQUACEL® Extra Dressing to a depth of 2 cm over 7 days.

Delivery of negative pressure over 7 days through 4 layers of AQUACEL® Extra Dressing



Maintenance of negative pressure

In-vitro testing¹⁹ demonstrates one-way valve within the airway luer lock connector maintains pressure after removing the pump from the dressing after 1 hour ± 10 mmHg.



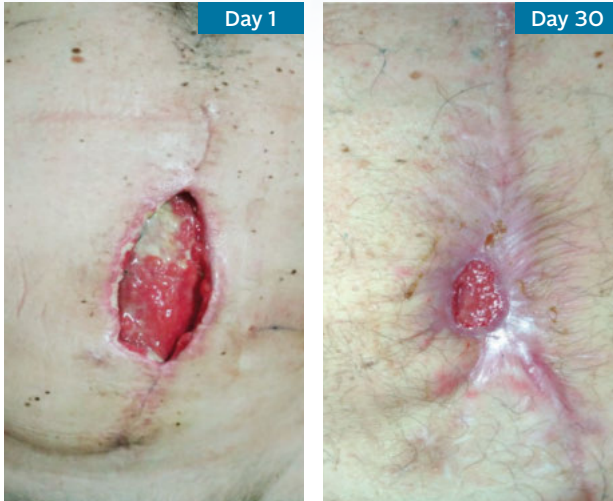
Avelle™ NPWT System

- **PROVEN** to deliver continuous negative pressure of 80 mmHg (± 20 mmHg) to the wound bed.
- **PROVEN** to maintain pressure upon disconnection from the pump for up to 1 hour.

Note: Avelle™ 16 cm x 21 cm dressings used in low and moderate *in-vitro* studies

Avelle™ NPWT System in practice: Case studies

Dehisced Abdominal Wound



Patient

- 56-year-old male.
- BMI of >35 underwent surgery for ulcerated diverticulitis with peritonitis.

Wound

- Grade 1 dehisced surgical wound.
- Wound measured 22 cm in length at the start of therapy.

Management & Results

- The Avelle™ NPWT System was applied for a 30-day period with 8 dressing changes.
- The wound had significantly reduced in size at the end of the 30-day therapy period.

In a multi-centre evaluation of 92 patients treated with the Avelle™ NPWT System²⁰:

96% *very good or good system ease of application.*

89% *very good or good ease of dressing removal.*

82% *wound size reduction.*

Closed Surgical Incision



Patient

- 45-year-old female.
- BMI of >35.
- Breast cancer patient – mastectomy with immediate breast reconstruction using a total latissimus dorsi flap.

Wound

- 21 cm surgical wound. Skin closed stitched with resorbable subcuticular sutures.
- The wound broke down and was measured at (L) 6 cm x (W) 2 cm with extensive undermining.

Management & Results

- Avelle™ NPWT System with the 12x31 cm dressing applied on day 2, and the dressing was changed on days 5, 7 and 10 postoperatively, at which point NPWT discontinued.
- The wound showed improvement, measuring (L) 6 cm x (W) 1.5 cm, exudate in the drain remained stable. The wound had dried up; dead tissue had been successfully debrided and the peri-wound skin was less purple.

Mixed Aetiology Leg Ulcers



Patient

- 63-year-old male.
- Palliative diagnosis of primary cancer of the bladder.

Wound

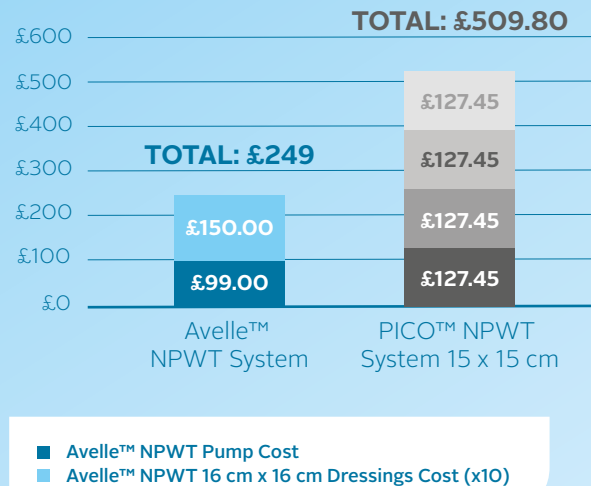
- 3 static pre-tibial leg ulcers of mixed aetiology with approximately 60% granulation tissue and 40% slough.
- The largest of the 3 wounds measured approximately 1.5 cm x 1.0 cm x 0.2 cm deep.

Management & Results

- The Avelle™ NPWT System was started using a 16 cm x 16 cm dressing.
- After day 11 the wound measured 0.9 cm x 0.6 cm x 0.1 cm with 100% granulation tissue. Avelle™ NPWT System stopped.
- On day 15 NPWT was resumed with the Avelle™ NPWT System due to wound deterioration.
- On day 29 the Avelle™ NPWT System was stopped and the wounds had reduced in size by 95% in 26 days.

Cost effective over 30-days

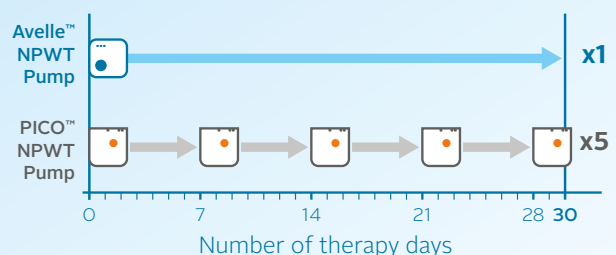
Mixed Aetiology Leg Ulcers Case Study – 26-Day NPWT Cost Model²¹



Compared with alternative 7-day devices:

- The Avelle™ NPWT Pump has a 30-day lifespan which provides flexibility for extended ciNPT or NPWT.
- Multiple dressing changes can be made without the need for weekly pump replacements helping you to contain treatment costs.

One pump for up to 30-days

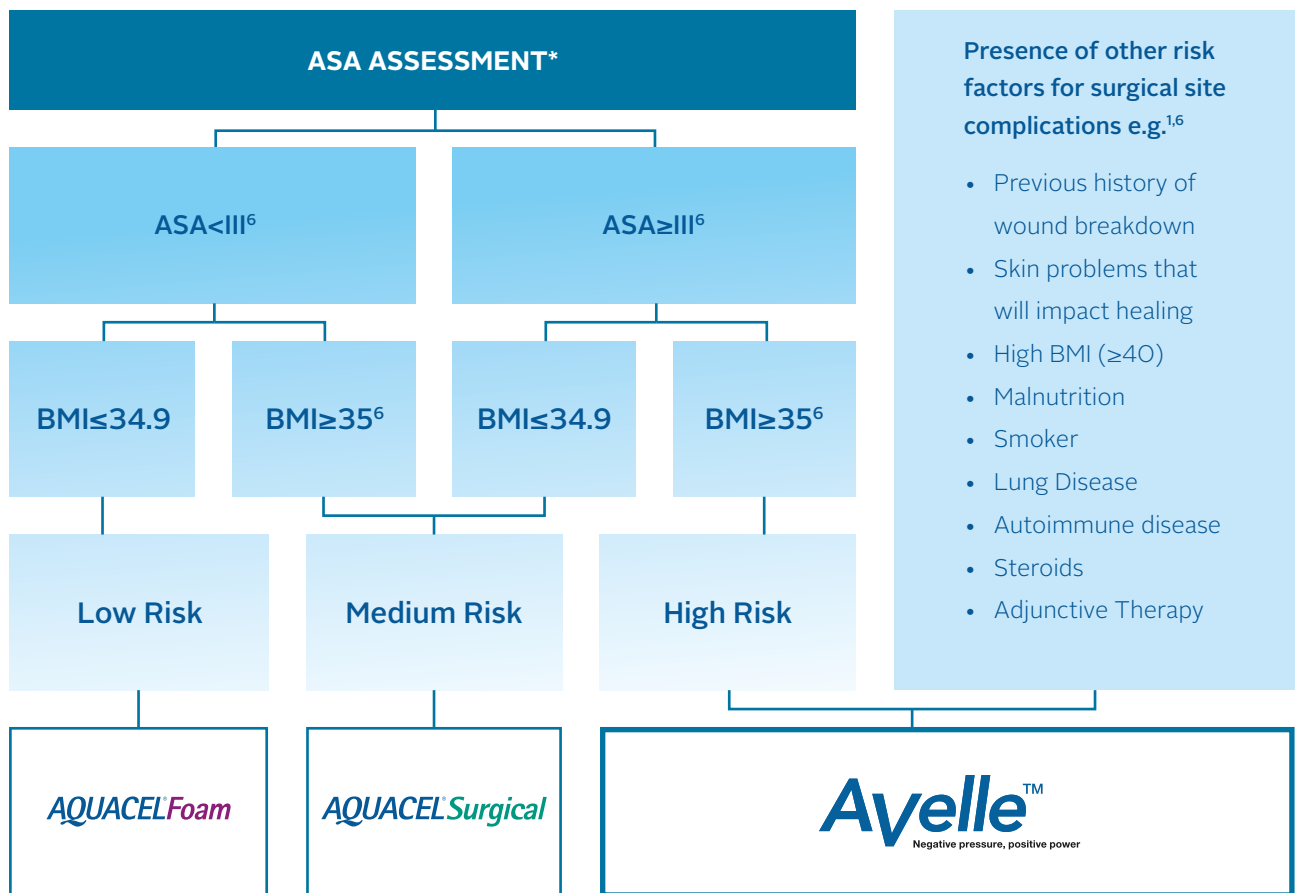


51% cost saving with the Avelle™ NPWT System vs PICO™ NPWT System over 26-day therapy period.²¹

Complete Incision Management with ConvaTec

The right product, for the right patient, at the right time.

ConvaTec's comprehensive portfolio of Advanced Wound Care dressings & ciNPT allow for optimal post-operative incision management across your caseload.



*The American Society of Anesthesiologists physical classification system designed to assess the fitness of patients before surgery

Consider the Avelle™ System for these high risk patients



An ASA score of III or above and a BMI of ≥35

or



Other risk factors that predict complications with the incision

Potential benefits of an Incision Pathway



The EWMA Consensus document on NPWT 2017 states that²²:



Every surgical discipline or the scientific societies of various surgical specialities have to create a risk profile of operation and patient-related risk factors for surgical wound complications and then determine a cut-off marker for the decision to apply ciNPT”

Ordering information



Avelle™ NPWT System

Description	Product Code	Pack Size	NHS Code
Avelle™ Pump	421551	1	ELZ853
Pump Carry Bag	446650	1	ELZ875
16 x 16 cm	421552	5	ELZ857
16 x 21 cm	421553	5	ELZ856
12 x 21 cm	421554	5	ELZ855
12 x 31 cm	421555	5	ELZ854
12 x 41 cm	422155	5	ELZ965
21 x 26 cm	422156	5	ELZ981
26 x 26 cm	422157	5	ELZ982

AQUACEL® Foam

Description	Product Code	Pack Size	NHS Code
8 cm x 13 cm	421149	5	ELY574
10 cm x 20 cm	421150	5	ELY572
10 cm x 30 cm	421154	5	ELY573

AQUACEL® Ag Surgical

Description	Product Code	Pack Size	NHS Code
9 cm x 10 cm	412009	10	ELY341
9 cm x 15 cm	412010	10	ELY342
9 cm x 25 cm	412011	10	ELY343
9 cm x 30 cm	420670	10	ELY403
9 cm x 35 cm	412012	10	ELY344

AQUACEL® Surgical

Description	Product Code	Pack Size	NHS Code
9 x 10 cm	412017	10	ELY323
9 x 15 cm	412018	10	ELY324
9 x 25 cm	412019	10	ELY325
9 x 30 cm	420669	10	ELY402
9 x 35 cm	412020	10	ELY326

1. World Union of Wound Healing Societies (WUWHs) Consensus Document. Closed surgical 7incision management: understanding the role of NPWT. Wounds International, 2016. 2. Guest JF, et al. Health economic burden that wounds impose on the National Health Service in the UK. BMJ Open 2015;5:e009283. doi:10.1136/bmjopen-2015-009283. 3. Under the Knife Report, 2011: Taking a zero tolerance approach to preventable surgical site infections in UK hospitals. 4. Jenks et al (2014) Clinical and economic burden of surgical site infection (SSI) and predicted financial consequences of elimination of SSI from an English hospital, Journal of Hospital Infection; 86, 24-33. 5. Jarbrink et al. The humanistic and economic burden of chronic wounds: a protocol for a systematic review. Systematic Reviews (2017) 6:15. 6. National Institute for Health and Clinical Excellence. Surgical Site Infection Guideline. 2008. 7. Waring MJ, Parsons D. Physico-chemical characterisation of carboxymethylated spun cellulose fibres. Biomaterials. 2001; 22:903-912. 8. Newman, G.R., et al., Visualisation of bacterial sequestration and bactericidal activity within hydrating Hydrofiber wound dressings. Biomaterials, 2006. 27(7): p. 1129-39. 9. Walker M, Hobot JA, Newman GR, Bowler PG. Scanning electron microscopic examination of bacterial immobilisation in a carboxymethylcellulose (Aquacel) and alginate dressings. Biomaterials. 2003; 24(5):883-890. 10. Coutts P, Sibbald RG. The effect of a silver-containing Hydrofiber dressing on superficial wound bed and bacterial balance of chronic wounds. Int Wound J. 2005; 2(4): 348-356. 11. Robinson BJ. The use of a hydrofiber dressing in wound management. J Wound Care. 2000; 9(1):32-34. 12. Jones S, Bowler PG, Walker M. Antimicrobial activity of silver-containing dressings is influenced by dressing conformability with a wound surface. WOUNDS. 2005; 17(9): 263-270. 13. Parsons D, Bowler P, Myles V, Jones S. Silver antimicrobial dressings in wound management: A comparison of antibacterial, physical and chemical characteristics. Wounds. 2005; 17: 222-232. 14. Borgquist O, Gustafsson L, Ingemansson R, Malmso M, 2009, Tissue Ingrowth Into Foam but Not Into Gauze During NPWT, Wounds 2009; 21(11):302-309. 15. Malmso M, Borgquist O. NPWT setting and dressing choices Made Easy. Wounds International 2010; 1(5): 16. Bishop SM, Walker M, Rogers AA, Chen WYJ. Moisture balance: optimising the wound-dressing interface. J Wound Care. 2003; 12:125-128. 17. Assessment of the in-vitro properties Avelle™ Negative Pressure Wound Therapy Dressing. WHRI4520 MS128. Data on file. 2015. ConvaTec. 18. HFM-2015-017. Data on file. 2015. ConvaTec Inc. 19. The in-vitro physical performance characteristics of the Avelle™ Negative Pressure Wound Therapy System ConvaTec Inc. AP-019221-MM. 20. Avelle™ NPWT System Post Market Evaluation Report. Data on file. 2018. ConvaTec. 21. UK Drug Tariff October 2017 price comparison of Avelle™ NPWT System and PICO™ NPWT System. 22. Apelqvist, J., Willy, C., Fagerdah, A.M. et al. Negative Pressure Wound Therapy – overview, challenges and perspectives. J Wound Care 2017; 26: 3, Suppl 3, S1-S113.

Avelle™
Negative Pressure Wound Therapy System



To find out more about the ConvaTec portfolio
or to arrange a visit from your local ConvaTec representative:
Call **0800 289 738 (UK)** or **1800 946 938 (ROI)** www.convatec.co.uk

®/™ Avelle, Hydrofiber and AQUACEL are trademarks of ConvaTec Inc.
All other trademarks are the property of their respective owners.
©2019 ConvaTec Inc. AP-020071-BB



Negative Pressure Wound Therapy