

What is

# Larval Therapy?



### Discover Larval Therapy

Larval Therapy uses the live larvae of the greenbottle fly species *Lucilia sericata* to remove unviable tissue and bacteria from non-healing, chronic and some acute wounds. Larvae produce secretions that contain proteolytic enzymes which selectively liquify devitalised tissue into a liquid or semi-liquid which they ingest through the net of the BioBag® dressing.

This process, assisted with microsurgery (use of mandibles to score and loosen the tissue) allows the larvae to physically and selectively remove unviable tissue and bacteria from the wound. This debridement process is both gentle and precise.

### The Larval Therapy Effect

- Progression from the inflammatory phase of wound healing <sup>1</sup>
- Significant reduction in wound odour <sup>2</sup>
- Normalisation of moisture balance <sup>1</sup>
- Lower incidence of infection <sup>3</sup>
- In-vitro biofilm eradication within 48 hours <sup>4</sup>

### Larval Therapy Discovered

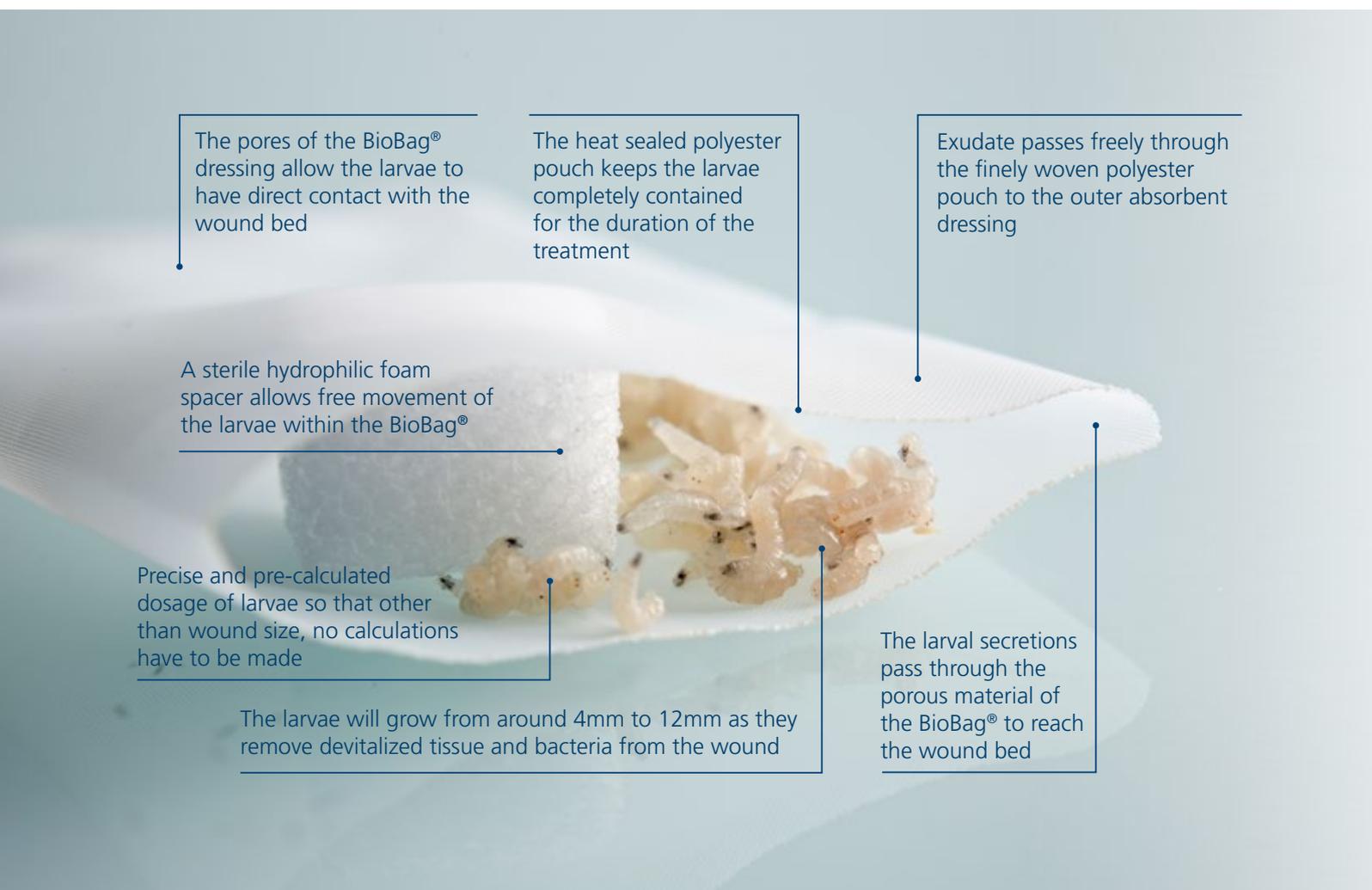
Larval Therapy has a long and successful history. It is said to have been used by Aboriginal Tribes and Maya Indians for thousands of years. Its powerful wound cleaning abilities were first documented during war time, from the Italian War in 1557 through World War I. By World War II Larval Therapy had become an accepted form of treatment for non-healing and infected wounds but fell out of favour in the 1940s due to the advent of penicillin.

### Adverse Events

Known adverse events include an increase in wound pain (particularly in patients with pre-existing wound pain or limb ischaemia), peri-wound skin irritation and bleeding. Light bleeding of the granular wound bed would be considered normal.

## Discover BioBag®

BioBag® is a biosurgical wound dressing containing aseptically produced living larvae of the greenbottle fly *Lucilia sericata*. The BioBag® is available in five different sizes to deliver precise dosing for optimal results. BioBag® is simply placed onto the area to be treated and remains on the wound for up to four days.



## Containing Larval Therapy

- Innovative sealed dressing
- Patients' preferred application method <sup>5</sup>
- As effective as the traditional application method <sup>6</sup>
- Easy to apply, assess, and remove

# What is Larval Therapy?

## Indications

BioMonde Larval Therapy products are indicated for the debridement of non-healing necrotic skin and soft tissue wounds, including:

**LEG ULCERS**



**PRESSURE ULCERS**



**HAEMATOMA**



**DIABETIC FOOT ULCERS**



**DONOR SITES**



**BURNS**



AMPUTATION SITES



DEHISCED SURGICAL WOUNDS



TRAUMATIC WOUNDS



SUSPECTED BIOFILM



## Contraindications & Precautions

- Wounds that have a tendency to bleed or are close to an exposed major blood vessel
- Patients on anticoagulants i.e. Warfarin where the relevant clotting marker is not within an acceptable clinical range
- Wounds over adjacent exposed organs or leading to a body cavity
- If the patient is allergic to fly larvae or the components of the dressing including polyester and polyvinyl alcohol foam



**DON'T FORGET!**  
Effective on a wide range of wounds, including **Pyoderma Gangrenosum & Calciphylaxis**.

## What is Larval Therapy?

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### 01. Safe & Easy

Removing unviable tissue, slough, necrosis and bacteria from the wound bed is the first step towards making healing possible.

The combination of the larvae's physical and biochemical action means that there are at least **10 Good Reasons** to treat your wounds with Larval Therapy.

Larval Therapy which is proven to be safe and effective is usually very well tolerated by patients with few side effects. <sup>7,8</sup> The application of the BioBag<sup>®</sup> takes the same length of time as a standard wound care dressing and can be removed from the wound quickly and easily. <sup>9</sup>

### 03. Healing Progression

Effective wound bed preparation supports cell proliferation <sup>10</sup> and Larval Therapy can achieve complete debridement in an average of 8 days <sup>3</sup> and produce properties that stimulate fibroblast migration and angiogenesis and reduce wound inflammation. <sup>11,12,13,</sup>

### 02. Cost-effective

Larval Therapy has been shown to be the most cost-effective debridement method due to its speed and probability of debridement, amputation avoidance, lower infection rates and lower requirement for dressing changes, antibiotics and analgesics. <sup>14</sup>

### 04. Antimicrobial

Larvae act on bacteria and fungus in many ways. Primarily microbes are ingested into the larva's alimentary tract and either physically removed or killed. <sup>15</sup> Their secretions contain broad spectrum antibacterial factors that are effective on both gram +ve and gram -ve bacteria. <sup>16</sup>

05.  
**Antibiofilm**

The proteolytic enzymes that larvae produce break down the EPS matrix that protects biofilm structures allowing the bacterial biofilm to be broken down and ingested. <sup>16</sup> The secretions have an additional benefit of preventing biofilm reformation. <sup>17</sup>

06.  
**Less  
Antibiotics**

Antibiotics have an associated financial cost, risk of complex sideeffects plus they increase the threat of antimicrobial resistance. The patients treated with Larval Therapy have been shown to require fewer antibiotics plus have a lower infection rate. <sup>3, 19</sup>

07.  
**Amputation  
Prevention**

Larval Therapy is associated with a 3 x lower rate of amputation. <sup>22</sup> Studies show that when compared to standard therapies Larval Therapy was not only associated with lower amputation rates but also increased healing rates and in some cases patients avoided imminent amputation. <sup>8, 19</sup>

08.  
**Selective**

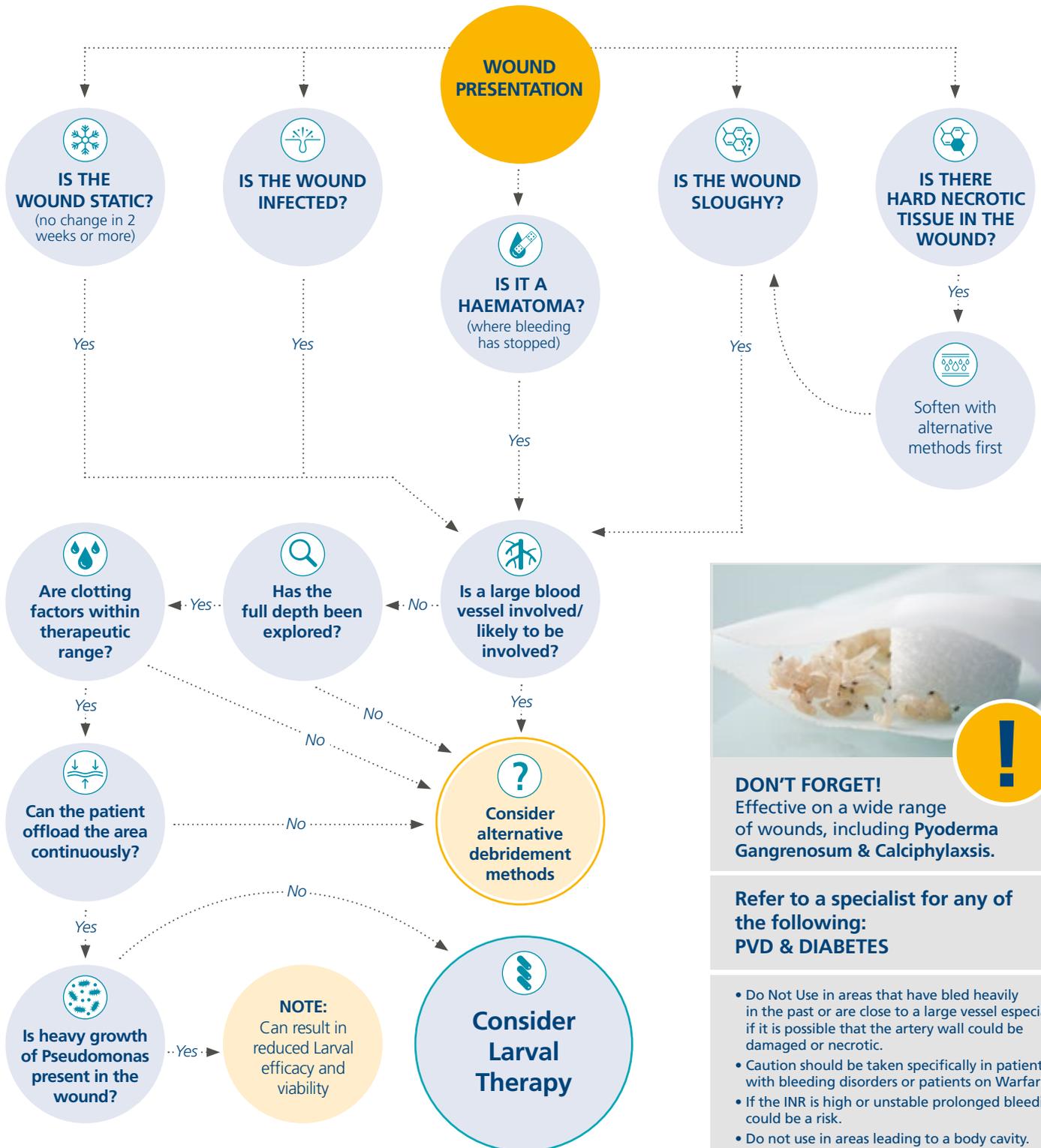
Larvae debride with complete precision. Larval secretions are unable to break down healthy, viable or perfused tissue making Larval Therapy safe to use around viable structures such as tendon and bone and can support diagnosis in limb salvage. <sup>8, 18</sup>

09.  
**High Probability**

Larval Therapy has a 99% success rate at improving wound conditions <sup>20</sup> and a 98% chance of successful debridement. <sup>3</sup> In some cases Larval Therapy achieves complete debridement in a little as one treatment with most wounds being cleaned within 2-10 days. <sup>21</sup>

10.  
**Proven  
Effectiveness**

The safety and efficacy of Larval Therapy has been proven in 5 Randomised Controlled Trials, over 500 clinical and scientific publications and has been documented as being used safely on over 1,000 patients. Rapid debridement is proven with a reduction in wound size and increased granulation tissue. <sup>22</sup>



**DON'T FORGET!**  
Effective on a wide range of wounds, including Pyoderma Gangrenosum & Calciphylaxis.

**Refer to a specialist for any of the following:  
PVD & DIABETES**

- Do Not Use in areas that have bled heavily in the past or are close to a large vessel especially if it is possible that the artery wall could be damaged or necrotic.
- Caution should be taken specifically in patients with bleeding disorders or patients on Warfarin.
- If the INR is high or unstable prolonged bleeding could be a risk.
- Do not use in areas leading to a body cavity.
- Do not use BioBag® if the patient is allergic to any of the materials.

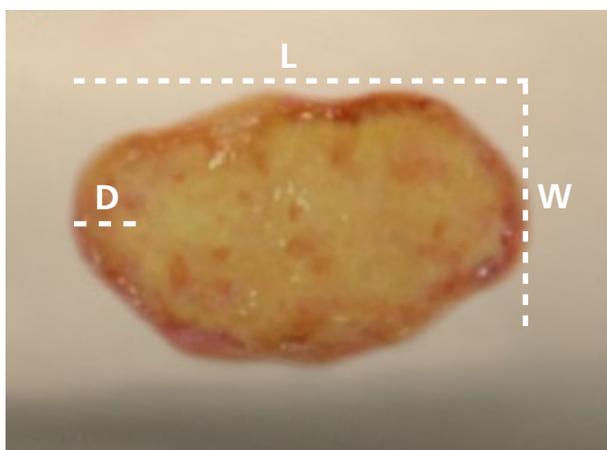
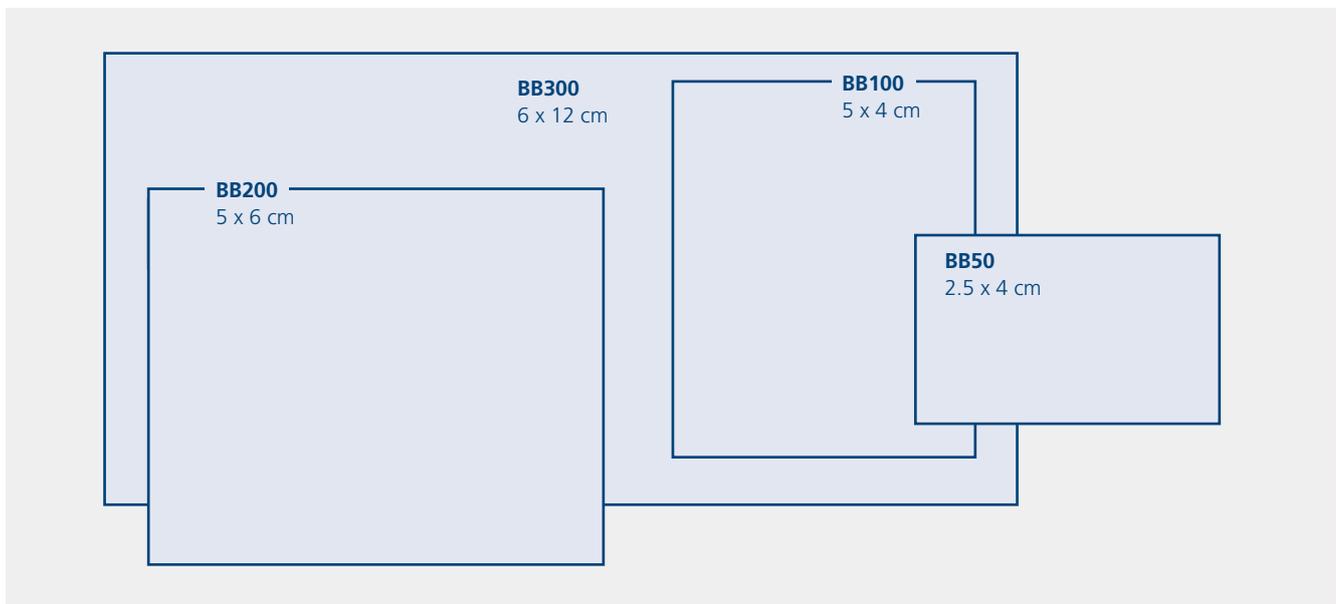
## Tips for success:

- Larvae require Moisture + Nutrition + Oxygen
- Soften hard or dry tissue prior to treatment
- Offload to avoid direct pressure
- Maintain a continuous oxygen supply
- Avoid use in deep areas of pooling fluid

## BioBag® can be:

- Overlapped onto the peri-wound area
- Folded
- Rolled into a sinus
- Packed into a wound

## BioBag® Sizes



## Choosing the right size

- Measure the length, width and depth of the wound
- Cover the wound bed and overlap onto the wound margins
- BioBag® size(s) should take into account the depth of the wound
- BioBag® must have direct physical contact with the area to be treated

## OUR TEAM ARE HERE FOR YOU

**Clinical Helpline: 0345 230 6806**

**E-mail: [clinicalsupport@biomonde.com](mailto:clinicalsupport@biomonde.com)**

**Ordering: 0345 230 1810**

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## Literature:

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