# Discovering Hydroconductive Dressings

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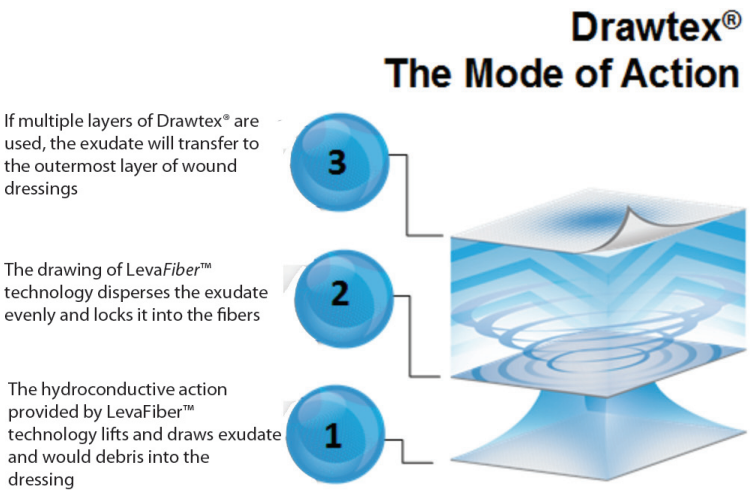
Topical therapy is one of the most confounding issues in wound care. Currently, more than 50 different classes of dressings and more than 3,000 products are available to clinicians. Each has various properties designed to enhance the body's ability to heal a wound; many dressing choices and strategies have merit. It is up to the clinician to develop a formulary and select the most suitable dressing for each wound at each evaluation.[1]

Ideal dressings should be impermeable to bacteria, able to absorb excess exudate, allow for gaseous exchange, facilitate a moist wound environment, be removed without pain to the patient or trauma to the wound bed, promote wound healing, not adhere to the wound bed, and be easy to use, cost effective, and acceptable to the patient.[2] Clinicians also consider the length of time a dressing can be worn (particularly in this era of reimbursement challenges in wound care) and its ability to be used in conjunction with multilayered compression therapy. Inappropriate dressing selection can delay wound healing.

Two of the main issues clinicians address when choosing a dressing are infection/inflammation and moisture balance within the wound bed. Co-existing conditions, such as venous disease, chronic kidney disease, and diabetes mellitus, can create obstacles to healing, such as excess exudate, edema, and an impaired immune system. Often, especially in chronic wounds, the wounds can be highly exudative and also become colonized with bacteria such as *Pseudomonas aeruginosa* that are difficult to eradicate from the wound bed. Finding an effective dressing to address these issues is very important.

Alginates, hydrofibers, carboxymethylcelluloses, and polyurethane foams are among the numerous absorptive dressing classes on the market. These dressings can hold varying amounts of exudate and generally wick fluid away from the wound bed. They also can have antimicrobial properties designed to reduce surface bacteria; in some instances, they can perform autolytic debridement.

In 2011, a novel class of products, hydroconductive dressings (Drawtex®), was introduced at the Symposium on Advanced Wound Care. These dressings provide a capillary action that lifts and moves exudate and debris away from the wound surface. LevaFiber™ technology, the proprietary name of the Drawtex dressing technology, combines two types of absorbent, cross-action structures that facilitate the ability to move large volumes of fluid and other debris from the wound through the dressing (see figure). This hydroconductive action allows the dressing to lift, hold, and transfer the wound exudate both horizontally and vertically into the dressing, where it can absorb 500% of its own weight. The hydroconductive action disperses the contents of the dressing and allows additional hydroconductive layers to be used for more heavily exuding wounds. The dressing also provides hydroconductive debridement that lifts and loosens adherent slough not absorbed into the dressing, allowing it to migrate toward the dressing for easy removal when the dressing is changed.[3]




Due to its composition, Drawtex is extremely versatile and can be cut to fit any shape or size wound. It does not shed fibers or break apart if packed into a tunneled wound. It comes in a variety of sizes as well as in a wrap that can be applied circumferentially around a limb. The product features a 7-day wear time.

Before its formal introduction to the US market at SAWC 2011, the product was used successfully in South Africa, where early clinical data were collected. As part of the poster presentations at the SAWC 2011, Wolcott and Dowd[4] won first place in the clinical research category with their poster, "Drawtex® Effects on VLU Healing and

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Biofilm". Their research demonstrated that rapid removal of wound exudate speeds healing and suppresses biofilm activity. Biofilm needs a host community of nutrient-rich, inflammation-related exudate to live. Bacteria, fungi, and yeast all exist in this environment. Studies have shown it is exceedingly difficult to eradicate biofilms successfully from wound beds for prolonged periods of time.[4] Drawtex removes biofilm nutrients, reduces inflammation, and loosens slough — Wolcott and Dowd[4] saw an improvement in wound healing in 10 patients who used Drawtex. Although the bacterial level was not uniformly reduced in their study, further data have demonstrated that bacterial level decreases using Drawtex. Additionally, Lichtenstein et al[5] demonstrated that Drawtex decreases deleterious cytokines in the wound bed such as MMP-9.

As a wound clinician, I am often called upon to evaluate new wound dressings for my patients. These patients include persons with acute wounds who have just returned from serving overseas in Afghanistan, as well as military retirees or dependents with chronic wounds. In the acute wound setting, our team has used Drawtex in dehisced amputation incisions. Our goal is to heal patients as rapidly as possible so they may proceed with their rehabilitation and prosthetic fitting. Drawtex has been a useful adjunct in that arena. In the chronic wound patient population, patients have chronic venous disease that cannot be remedied with surgery and deal with an endless cycle of office visits, multilayer dressing changes, copious amounts of exudate, and pain. Drawtex has been used successfully to treat venous ulcers, several of longer than 2 years' duration.

In summary, a new class of hydroconductive dressings is able to handle a large volume of exudate and move debris away from the wound surface, a valuable product for the wound clinician's toolbox. Future studies will help to elucidate Drawtex's role in biofilm removal and overall wound healing. ■

## References


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