Chronic wounds need an ideal microenvironment.
Wound microenvironment of chronic wounds represents a major therapeutic challenge

Relevant factors that influence the healing process are:

- **Oxygen**: In chronic wounds there is a substantial imbalance between the supply of oxygen and the high-energy demand of the healing tissue. Inadequate oxygenation can delay the wound healing process.⁴
- **Bacteria**: Bacterial biofilm plays an important role in maintaining prolonged inflammation and increasing tolerance to antimicrobials.³
- **Proteases**: Proteases (e.g., MMPs and elastase) play a key role in wound healing but excessive expression can lead to prolonged inflammation and delayed wound healing.²
- **Biofilm**: Bacterial biofilm provides favorable conditions for uncontrolled bacterial growth. Bacterial infection is one of the most prevalent causes for poor wound healing.⁹

An acidic environment can contribute to reboot healing in a stalled wound:

- **Bacteria**
- **Proteases**
- **Biofilm**
- **Oxygen**

**The importance of pH in the wound healing**

Wounds with an alkaline pH have demonstrated lower rates of healing⁶

Healthy skin has a slightly acidic pH⁵

The pH of a chronic wound is mainly alkaline⁸

Hypochlorous acid inhibits microbial contamination within the solution. Antimicrobial preservative effectiveness has been demonstrated against the organisms in the table below in vitro testing:

### Bactericidal activity tests

#### Results

<table>
<thead>
<tr>
<th>Time Kill Assay</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PSEUDOMONAS AERUGINOSA</strong></td>
<td>&gt;99.9999% (&gt;6.1 Log₁₀) reduction of Pseudomonas aeruginosa after 15 second exposure time</td>
</tr>
<tr>
<td><strong>ESCHERICHIA COLI</strong></td>
<td>&gt;99.9999% (&gt;5.55 Log₁₀) reduction of Escherichia coli after 15 second exposure time</td>
</tr>
<tr>
<td><strong>PROPIONIBACTERIUM ACNES</strong></td>
<td>&gt;99.9999% (&gt;6.9 Log₁₀) reduction of Propionibacterium acnes after 1 minute exposure time</td>
</tr>
<tr>
<td><strong>MULTI-DRUG RESISTANT (MDR) STAPHYLOCOCCUS AUREUS</strong></td>
<td>&gt;99.9999% (&gt;5.44 Log₁₀) reduction of MDR-Staphylococcus after 15 second exposure time</td>
</tr>
<tr>
<td><strong>VANCOMYCIN RESISTANT (VR) ENTEROCOCCUS FAECALIS</strong></td>
<td>&gt;99.9999% (&gt;5.87 Log₁₀) reduction of VR-Enterococcus after 15 second exposure time</td>
</tr>
<tr>
<td><strong>EXTENDED-SPECTRUM BETA-LACTAMASE (ESBL) PRODUCING ENTEROBACTERIACIAE</strong></td>
<td>&gt;99.9999% (&gt;6.23 Log₁₀) reduction of ESBL-producing Enterobacteriaceae after 15 second exposure time</td>
</tr>
<tr>
<td><strong>MULTI-DRUG RESISTANT (MDR) ESCHERICHIA COLI</strong></td>
<td>&gt;99.9999% (&gt;5.92 Log₁₀) reduction of MDR-Escherichia after 15 second exposure time</td>
</tr>
<tr>
<td><strong>CANDIDA ALBICANS</strong></td>
<td>&gt;99.9999% (&gt;5.01 Log₁₀) reduction of Candida albicans after 15 second exposure time</td>
</tr>
</tbody>
</table>

### Indications

- Leg ulcers
- Diabetic ulcers
- Post-surgical wounds
- 1st and 2nd degree burns
- Stasis ulcers
- Stage I-IV pressure ulcers
- Grafted and donor sites

**Our solution**

Wound cleansing is performed to remove surface contaminants, bacteria, non-viable tissue and excess exudate from the wound bed and surrounding skin. An ideal wound cleanser should modulate the wound microenvironment balancing the management of key components with preservation of tissue safety.

NEXODYN can support the physiological healing process.

**Acidic pH: 2.5 - 3.0**

**The pH value is preserved over the shelf life**

**High purity** >95% of free chlorine species from hypochlorous acid (HClO)

**Free Chlorine species: 40-70 ppm**

**Long stability** 30 days from first opening

NEXODYN is a FDA-cleared hypochlorous acid-based wound cleanser, developed for topical treatment in the field of acute and chronic wound management.

The mechanical action of the fluid flowing across the lesion can help to remove biologic and inert materials such as microorganisms, biological debris and environmental dirt.

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(11) Main RC (2008): J Wound Care 17(3): 112-114

NEXODYN can support the physiological healing process.
A significant and clinically relevant reduction of infection cases was found in the group using NEXODYN. After each application of Nexodyn, patients felt a sensation of relief.

In vitro metabolic activity assay on 3D-reconstructed human epidermis (measured after 24 h treatment with Nexodyn).

How to use NEXODYN™
Applying NEXODYN™ on wounds is fast and simple

1. At each application, the whole lesion area should be abundantly sprayed with Nexodyn.
2. The solution should be allowed to dry. No rinsing required.
3. A second application of Nexodyn can be consecutively repeated, if necessary.
4. The solution should be allowed to dry. No rinsing required.
5. Shortly after last cleansing with Nexodyn™, standard therapy can be applied as required.

Contraindications: Do not use in case of hypersensitivity to any component of the product (hypochlorous acid, chlorine and hypochlorite ion)

NEXODYN™ Antimicrobial Wound Care Solution
3.5 fl. oz. (100 ml) spray
12 bottles/case
Product code: 21204

This document is addressed to HCPs only

The data presented in this material relate to medical devices that are referred to by different product names, according to the market concerned. The products that are the subject of the presentation are produced using the same technology of Nexodyn Antimicrobial Wound Care Solution, which has been FDA-cleared for marketing in the US. Please note that the clinical use of the products as described in this material may not be in accordance with the indications for use cleared by FDA. US clinicians should, therefore, check the cleared indications statement for the product before prescribing.