Scientific background
- What is Iontophoresis?
- References

Practical guide
- PH control
- Electrode's Design
- Drugs
- Treatment protocol

Products Range
- Chattanooga IONTO
- IOMED patented technologies
- COMPANION80
- IOGEL
- TRANSQ
- OPTIMA
**What is Iontophoresis?**

- The principle of Iontophoresis
- Effects of Direct Current
- Skin permeability
- Depth efficiency
- Quantity of drug delivered
- Indications
- Dangers and contraindications
The principle of Iontophoresis:

- **Iontophoresis** is a method of treatment which uses current flow between two electrodes to push ions through the skin barrier.

Direct Current is used to move a drug or therapeutically active ion through the skin. The aim is to drive active ions locally rather than having to inject them or have them taken systemically.
Benefits:

- Non-Invasive
- Painless
- Low Risk-No Trauma
- No Infection Risk
- Localized Delivery
- No Systemic Effects
- Consistent Results
- Quick

Compare to Injection

Compare to pills
Effects of Direct Current:

- Direct Current is current which flow in one direction only.
- It may generate 2 effects:
  - Polar effect
  - Ion transport
Polar effect:

Acid-base reaction

\[
\text{H}_2\text{O}(l) + \text{H}_2\text{O} (l) \rightarrow \text{H}_3\text{O}^+(aq) + \text{OH}^-(aq)
\]

- Negative electrode:
  - Alcali
    - OH- (Hydroxyde anions)
    - Gaz formation = H2
    - Missing oxygen
    - Increase blood flow
    - Skin turn to Red
    - pH increase (Higher than 7.00)

+ Positive electrode:
  - Acid
    - (H3O+ Hydronium ions)
    - Gaz formation = O2
    - Oxygen overload
    - Decreasing blood flow
    - Skin turn to White
    - pH decrease (less than 7.00)
Ion Transport = Drug movements:

- Repel like charges: Each electrode is either a cathode negative or an anode positive. If positive then the solution containing positive ions is placed under the anode. Conversely, compounds with negative charge are placed under the cathode.
Dosage of Direct Current:

1 mA applied for 1 min = 1 mA.min dose

- Recommended treatment dose is 40 mA.min
  - Meaning 4 mA applied during 10 min but can also be 2 mA during 20 min or 0.5 mA during 80 min...

- Recommended maximum dose is 80 mA.min

- Maximum recommended amplitude is 4 mA
Skin permeability:

- The chief function of the skin is to form a barrier between the external hostile environment and the internal milieu of the host.
- The hydrophobic extracellular lipid matrix provides the barrier to the movement of water and electrolytes.

- Ions pass through the skin barrier primarily via the hair follicles and sweat glands, and between cells of stratum corneum.
- Current flow participate to open pathway into the stratum corneum.

Factors affecting the rate at which compounds pass through the skin:

- Hydratation of the skin
- Vascularization under active electrode
- Age of the patient
Depth efficiency < 2cm

Critical factors related to the drug:

- Size and structure of the molecule (< 5000 Dalton)
  - Small ions (Na+, Cl-) move easily than larger drug molecules such as dexamethasone, lidocaine.
- Electric charge of the molecule (the more the better)
- Drug Solubility (water soluble, Lipo soluble)
- Drug concentration
- pH (should be high or low to suit to the drug being administered)
- Competing ions

Critical factors related to the current flow:

- Total charge (mA-min) = Current (mA) x time (min)
- Recommended dosage 40mA-min to 80mA-min maximum
- Current density: have to be sufficient but not too high because of severe risk of chemical burn!
- Recommended maximum safe current density: is 0,5mA/cm²
Quantity of medication delivered on targeted tissue:

- 1% compare to injection
- x 400 than oral route of administration
Indications

The 3 most common indications are:

- **Acute Tendinitis**
  - 0.4% Dexamethasone Sodium Phosphate

- **Calcific Deposits**
  - 2% to 5% Acetic Acid

- **Local Dermal Anesthesia**
  - 2% Lidocaine HCl, 1:100,000 Epinephrine
  - 4% Lidocaine without Epinephrine
Dangers and Contraindications:

- The main danger from using iontophoresis is of chemical burn (see: polar effect acid base reaction) due to pH changing.
- One reason of using a pH controlled delivery system is to limit risk of burn.
- Iontophoresis shouldn't be apply on:
  - Damaged or denuded skin
  - Recent scar tissue
  - In case of Drug allergies
  - Trans-cranial and orbital region applications
  - Electrically sensitive support systems
  - Pacemakers
  - Metallic implant

Others considerations:
- Diabetes
- Pregnancy
- Over external metal fixation devices
- “Elderly” skin


Practical guide

• pH control
• Electrode’s design
• Drugs
• Treatment Protocol
Controlling pH is of major importance

- To avoid risk of burn
- To suit with the drug being administered
- To ensure proper ions transport through the skin

The choice of pH is a compromise between the risk of skin irritation or damage and the properties of the medication.

2 solutions

**pH stabilized**
Stabilizes pH without using chemical buffers but
Silver–Silver chloride (Ag-AgCl) technology

Optimal for Dexamethasone
But not for Acid acetic an Ketoprophen

**pH buffered**
Adjust pH to ideal target (4.0-5.00) natural acid skin pH) using chemical buffers

Optimal for any kind of drug
Electrode’s Design

Providing comfort, safety, efficiency

Active area: Should allow precise placement on target 6 to 18 cm²

Fill Volume: Should fit with recommended drug concentration 1.5 to 3 cc

Recommended dosage: Should provide efficient ion transport 3:40 mA min

Maximum dosage: Should avoid risk of burn

Skin Interface: Should ensure complete skin contact and uniform current distribution (avoiding “hot spot”) could be gel or fiber matrix

Adhesive: Should stretch and adhere well under stress. Should be hypoallergenic.

Conductive element: Should ensure high conductivity. Can be Silver-Silver Chloride or Carbon

pH control: Should ensure effective treatment and lowering risk of burn
Drugs

- Should be water soluble
- Should be ions, or positively / negatively charged molecule
- Should be small ions or small molecules (<5000 Dalton)
- Should target superficial tissues (0-2cm depth)

QUESTIONS

- How much is delivered? < 60μg
- What’s the effective depth? < 2cm
- What’s the proper dosage? 40-80mA.min
- Does electrode size matter? YES
### Drugs: Top 4

<table>
<thead>
<tr>
<th>ION</th>
<th>Polarity</th>
<th>Condition</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4% Dexamethasone Sodium Phosphate</td>
<td>Negative</td>
<td>Acute Tendonitis</td>
<td>Corticosteroid</td>
</tr>
<tr>
<td>2% to 5% Acetic Acid</td>
<td>Positive</td>
<td>Calcific Deposits</td>
<td>Solubilizer</td>
</tr>
<tr>
<td>2% Lidocaine HCl, 1:100,000 Epinephrine</td>
<td>Positive</td>
<td>Local Dermal Anesthesia</td>
<td>Anesthetic</td>
</tr>
<tr>
<td>4% Lidocaine without Epinephrine</td>
<td>Positive</td>
<td>Local Dermal Anesthesia</td>
<td>Anesthetic</td>
</tr>
</tbody>
</table>
## Ionto Drug List

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Polarity +/-</th>
<th>Percentage %</th>
<th>Mg/ml</th>
<th>Indication/Usage</th>
<th>Drug Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid*</td>
<td>Negative</td>
<td>2% - 4%</td>
<td>20-40mg/ml</td>
<td>Calcification (Heel Spurs, Calcific Tendinitis)</td>
<td>Solubilizer</td>
</tr>
<tr>
<td>Amikacin Sulfate*</td>
<td>Positive</td>
<td>5.0%</td>
<td>50mg/ml</td>
<td>Infections, Gram Negative</td>
<td>Antimicrobial</td>
</tr>
<tr>
<td>Atropine Sulfate</td>
<td>Positive</td>
<td>0.01-0.1%</td>
<td>0.01-1mg/ml</td>
<td>Hyperhydrosis</td>
<td>Anticholinergic</td>
</tr>
<tr>
<td>Biclofen</td>
<td>Negative</td>
<td>0.5%</td>
<td>5mg/ml</td>
<td>Muscle Spasms</td>
<td>Muscle relaxant</td>
</tr>
<tr>
<td>Betamethasone*</td>
<td>Negative</td>
<td>0.4%</td>
<td>4mg/ml</td>
<td>Inflammation</td>
<td>Corticosteroid</td>
</tr>
<tr>
<td>Calcium</td>
<td>Positive</td>
<td>1-2%</td>
<td>10-20mg/ml</td>
<td>Muscle Spasms</td>
<td>Electrolyte Mineral</td>
</tr>
<tr>
<td>Copper Sulfate</td>
<td>Positive</td>
<td>2-4%</td>
<td>20-40mg/ml</td>
<td>Antiseptic, astringent, Fungal Infection</td>
<td>Antiseptic</td>
</tr>
<tr>
<td>Dexamethasone Sodium Phosphate*</td>
<td>Negative</td>
<td>0.2% - 0.8%</td>
<td>2-8mg/ml</td>
<td>Inflammation (Bursitis, Tenosynovitis)</td>
<td>Corticosteroid</td>
</tr>
<tr>
<td>Diclofenac Sodium</td>
<td>Negative</td>
<td>0.5% - 1%</td>
<td>5-10mg/ml</td>
<td>Inflammation (Bursitis, Tenosynovitis)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Flunixin Mepirinate*</td>
<td>Negative</td>
<td>5.0%</td>
<td>50mg/ml</td>
<td>Inflammation</td>
<td>Anti-inflammatory</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Negative</td>
<td>6.0%</td>
<td>60mg/ml</td>
<td>Neuropathic pain</td>
<td>Neuronal modulator</td>
</tr>
<tr>
<td>Gentamicin*</td>
<td>Positive</td>
<td>5-10%</td>
<td>50-100mg/ml</td>
<td>Wounds and Infections, Gram Negative</td>
<td>Antibiotic</td>
</tr>
<tr>
<td>Glycopyronium Bromide</td>
<td>Positive</td>
<td>0.1%</td>
<td>1mg/ml</td>
<td>Hyperhydrosis</td>
<td>Anticholinergic</td>
</tr>
<tr>
<td>Hyaluronidase</td>
<td>Positive</td>
<td>1-2%</td>
<td>10-20mg/ml</td>
<td>Edema (Chronic and Acute)</td>
<td>Permeability modifier</td>
</tr>
<tr>
<td>Idoxuridine*</td>
<td>Negative</td>
<td>0.1%</td>
<td>1mg/ml</td>
<td>Herpes simplex</td>
<td>Antiviral</td>
</tr>
<tr>
<td>Iodine</td>
<td>Negative</td>
<td>2-4%</td>
<td>20-40mg/ml</td>
<td>Scar Tissue and Adhesions</td>
<td>Antiseptic</td>
</tr>
<tr>
<td>Ketoprofen*</td>
<td>Negative</td>
<td>5% - 10%</td>
<td>50-100mg/ml</td>
<td>Inflammation (Chronic and Acute)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Lidocaíne*</td>
<td>Positive</td>
<td>4-5%</td>
<td>40-50mg/ml</td>
<td>Analgesia</td>
<td>Anesthetic</td>
</tr>
<tr>
<td>Lithium</td>
<td>Positive</td>
<td>2-4%</td>
<td>20-40mg/ml</td>
<td>Pain, Muscle Spasm (Chronic and Acute)</td>
<td>Electrolyte</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Positive</td>
<td>1-2%</td>
<td>10-20mg/ml</td>
<td>Pain, Muscle Spasm (Chronic and Acute)</td>
<td>Electrolyte</td>
</tr>
<tr>
<td>Methacholine</td>
<td>Positive</td>
<td>0.3%</td>
<td>3mg/ml</td>
<td>Inflammation (Arthritis, Neuritis)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Naproxen Sodium</td>
<td>Negative</td>
<td>4% - 8%</td>
<td>40-80mg/ml</td>
<td>Inflammation (Bursitis, Tenosynovitis)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Potassium Citrate</td>
<td>Negative</td>
<td>2.0%</td>
<td>10-20mg/ml</td>
<td>Inflammation (Rheumatoid Arthritis)</td>
<td>Electrolyte</td>
</tr>
<tr>
<td>Potassium Iodide</td>
<td>Negative</td>
<td>10.0%</td>
<td>100mg/ml</td>
<td>Scar Tissue and Adhesions</td>
<td>Electrolyte</td>
</tr>
<tr>
<td>Penicillin</td>
<td>Negative</td>
<td>5-10%</td>
<td>50-100mg/ml</td>
<td>Wounds and Infections</td>
<td>Antibiotic</td>
</tr>
<tr>
<td>Prednisolone Sodium Succinate*</td>
<td>Negative</td>
<td>1.5%</td>
<td>5-10mg/ml</td>
<td>Inflammation</td>
<td>Corticosteroid</td>
</tr>
<tr>
<td>Phenylbutazone*</td>
<td>Negative</td>
<td>20.0%</td>
<td>200mg/ml</td>
<td>Inflammation (Chronic and Acute)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Sodium Salicylate</td>
<td>Negative</td>
<td>1-2%</td>
<td>10-20mg/ml</td>
<td>Pain, Analgesia (R.A. Myalgia)</td>
<td>NSAID</td>
</tr>
<tr>
<td>Soroptm*</td>
<td>Negative</td>
<td>20.0%</td>
<td>200mg/ml</td>
<td>Regional Anesthetic</td>
<td>PCD/Pain Management</td>
</tr>
<tr>
<td>Sodium Chloride*</td>
<td>Negative</td>
<td>2%</td>
<td>20mg/ml</td>
<td>Scar Tissue and Adhesions</td>
<td>Electrolyte</td>
</tr>
<tr>
<td>Vincristine</td>
<td>Positive</td>
<td>0.001-0.1%</td>
<td>0.01-1mg/ml</td>
<td>Open Skin Lesions &amp; Allergic Rhinitis</td>
<td>Antineoplastic</td>
</tr>
<tr>
<td>Zinc</td>
<td>Positive</td>
<td>2.0%</td>
<td>20mg/ml</td>
<td>Open Skin Lesions &amp; Allergic Rhinitis</td>
<td>Antibiotic</td>
</tr>
</tbody>
</table>

* Indicates that chemical has also been used with iontophoresis in Veterinary Medicine.
Treatment protocol

- Preparing the patient
- Preparing the skin
- Preparing the electrodes
- Installing the electrodes
- Administering treatment
- Setting current dose
- Treatment plan
Preparing the patient

- Advise the patient that iontophoresis causes mild tingling, prickling and/or a warm sensation. This is normal and should be anticipated by the patient.
- Advise patient that iontophoresis has the potential to cause skin irritation and/or burns. The erythema generally resolves within a few hours to a few days.

Caution – Use caution when treating patients with sensitive skin or who may have difficulty healing.

- Advise patient to immediately report any pain during treatment.
- Advise patient to remove any jewellery that may come in contact with the drug electrode or dispersive pad. (may result in burns)
Preparing the skin

-Clean the treatment and dispersive pad sites thoroughly with alcohol prep by rubbing for six to eight seconds to remove dry skin, oils and other contaminants -DO NOT apply drug electrode or dispersive pad over damaged or denuded skin or other recent scar tissue; skin with ingrown hair, pimples or razor nicks or skin with wounds that have not healed.  

Note – The recommended site for the dispersive pad is over a major muscle.  

caution – Failure to clean skin thoroughly can cause excessive skin irritation or burns.  

NOTE – Clip hair if necessary to improve skin contact. DO NOT shave.  

-Allow both sites to dry completely.
Preparing the electrodes

- Place the drug electrode on a flat surface with the Drug reservoir pad side up.
- Hydrate the Drug reservoir pad thoroughly with a charged water-soluble drug, eliminating any dry spots.

**Note**– To ensure proper electrode hydration and performance:

- DO NOT fill drug electrode on patient
- DO NOT over- or under-fill drug electrode
- DO NOT use drugs that are not water-soluble
- DO NOT use a drug electrode or dispersive pad that appears altered or damaged.
Installing the electrodes

Remove the backing from the dispersive pad and apply over a major muscle, ensuring the entire surface area of the dispersive pad is in good contact with the skin. Apply ground electrode a minimum of 6 inches (20cm) away from the active one.

Note – Avoid placing the dispersive pad over a bony prominence with minimal skin thickness.

Remove the backing from the drug electrode, apply the hydrated electrode on the treatment site and secure it by pressing on the adhesive border.

Caution – DO NOT tape, bind or compress drug electrode during treatment.

Note – Avoid pressing directly on the drug reservoir pad; Excessive pressure can cause drug to leak. If the drug electrode leaks, dry area around the site.
- Attach the dose controller to the drug electrode and dispersive pad using twin leads and the proper polarity for the charged water-soluble drug being delivered (Advise patient to avoid any excessive movement during treatment. Position patient so that there is no pressure put on the drug electrode or dispersive pad during treatment.

- Ensure that nothing is binding or compressing drug electrode and/or dispersive pad during treatment. Start the treatment. At the completion of treatment, remove and discard the single-use drug electrode and dispersive pad.

Caution – DO NOT reuse disposable drug electrode and dispersive pad.

Moisturizing lotion after treatment
- Set the dose controller to deliver dose and current.

Caution If the patient is sensitive to current, use lower current settings.
- DO NOT give additional treatments and consult a physician if there is prolonged skin irritation or a burn.

- DO NOT exceed 80mA-min. or 4.0 mA negative polarity.
- DO NOT exceed 40mA-min. or 4.0 mA positive polarity.
Questions?
- How soon? Not as a last resort, but first
- How often? 2-3 times/week
- Maximum? 5 to 10 sessions (depending on indications)

Best Case Scenario
- Acute condition
- Shallow problem
- Young patient
- Cost effectiveness
- Screen patients properly
- Limit other modalities & procedures
- Use Proven Protocols
- Bill correctly
Products range

- Chattanooga Ionto
- IOMED’s patented technologies
- Companion 80
- Iogel
- TransQ
- TransQFlex
- Optima

pH Stabilized

pH buffered
Chattanooga Ionto™

The dual channel Chattanooga Ionto device delivers a constant direct current no matter the resistance level. By varying the voltage output as resistance changes, the device consistently delivers the programmed dose.

The device’s pause feature lets you check the treatment area without restarting the session.

• 2-channels to treat 2 sites or deliver 2 medications simultaneously.
• Previous dosage can be set as default to maintain frequently used treatment parameters.
• Beeping alerts if electrode fault for open current or high impedance, low battery, treatment completion or power left on.
• Automatic 30 second current ramp up and down during power on/off keeps patient comfortable.
• Constant current provides precise, accurate delivery regardless of skin impedance.
• Current can be set in 0.1 mA increments between 0.5 mA and 4 mA.
## Chattanooga Ionto™

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Specs:</td>
<td>±15% unless noted</td>
</tr>
<tr>
<td>Current Range:</td>
<td>0.5 - 4mA ±10% at 100 to 12k ohm load</td>
</tr>
<tr>
<td>Dose Range:</td>
<td>0 to 160mA/minute</td>
</tr>
<tr>
<td>Dose Accuracy:</td>
<td>±2mA/minute</td>
</tr>
<tr>
<td>Ramp Up/Ramp Down:</td>
<td>30 seconds</td>
</tr>
<tr>
<td>Battery:</td>
<td>9V Alkaline</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>(W x L x H) 6 x 2 x 9 cm</td>
</tr>
<tr>
<td>Medium Capacity:</td>
<td>0ff to 6 Seconds; on/off</td>
</tr>
<tr>
<td>Weight:</td>
<td>77g</td>
</tr>
<tr>
<td>Safety Tests:</td>
<td>EN60601-1-2</td>
</tr>
</tbody>
</table>

Prof price : $370$
IOMED’s patented Technologies

- Provide the greatest comfort
- Decrease set-up time

IOMED’s proprietary Silver-Silver Chloride conductive element prevents water hydrolysis, thereby eliminating the need to add a chemical buffer and minimizing skin irritation.

GelSponge®
- Ensures complete contact between the electrode and the skin surface with low impedance
- Provides a conductive medium similar to ultrasound gel

EZ Fill Window™
- Protects adhesive during hydration and handling
- Provides no-stick handling
Companion 80™

Designed to deliver an 80 mA-minute dose over 24 hours, allowing the patient to tend to normal daily activities while receiving treatment.

**Battery-Powered**
- Internal 1 volt battery - no wires to connect
- Reserve batter capacity compensates for patients with higher skin resistance

**Hypoallergenic Adhesive**
- Adheres well, even in the shower
- Conforms well to treatment areas
- Fits comfortably beneath clothing

**Silver-Silver Chloride pH Stabilizing**

---

5000044  Companion 80  Iontophoresis System = 1.1 cc fill, 6 kits per box
## Companion 80® Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Area</strong></td>
<td>6.45 cm²</td>
</tr>
<tr>
<td><strong>Approx. Fill Volume</strong></td>
<td>1.0 cc</td>
</tr>
<tr>
<td><strong>Maximum Dosage</strong></td>
<td>80 mA-min</td>
</tr>
<tr>
<td><strong>Recommended Wear Time</strong></td>
<td>24 Hours</td>
</tr>
<tr>
<td><strong>Skin Interface</strong></td>
<td>Absorbant Non-woven Fabric</td>
</tr>
<tr>
<td><strong>Adhesive</strong></td>
<td>Hypoallergenic</td>
</tr>
<tr>
<td><strong>Skin Fixation Material</strong></td>
<td>Latex Free, Flexible &amp; Breathable</td>
</tr>
<tr>
<td><strong>Conductive Element</strong></td>
<td>Cathode (-) Silver-Silver Chloride Anode (+)</td>
</tr>
<tr>
<td><strong>Packaging Contains</strong></td>
<td>6 Companion 80® Patches, 6 Saline Vials, 6 Alcohol Preps</td>
</tr>
<tr>
<td><strong>Expiration Date</strong></td>
<td>None</td>
</tr>
</tbody>
</table>

Prof price: **49$ (box of 5)**

Cost/application: **9.8$**
Companion 80™

Current Profile Comparison
(5000 Ohm Load)

- At 15 hours, 80 mAmins delivered and Dose Cutoff Switch activated
- At 24 hours, less than 72 mAmins delivered and power is nearly depleted

* in vitro test data on file at IOMED, Inc.
** 5000 Ohm load simulates skin resistance
Iogel®

Silver-Silver Chloride pH Stabilizing Electrodes. Iogel, a market-leading electrode with features that allow for precise placement, pH stabilization, superior patient comfort and ease of filling.

**Elliptical Shape**
• Follows the line of the tendon

**Clear Adhesive**
• Allows precise placement on target site

**Three Sizes**
• Color-coded small, medium and large for easy identification

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000021</td>
<td>Iogel, small</td>
<td>Disposable electrodes, 1.5 cc fill, 12 kits* per box</td>
</tr>
<tr>
<td>5000022</td>
<td>Iogel, medium</td>
<td>Disposable electrodes, 2.5 cc fill, 12 kits* per box</td>
</tr>
<tr>
<td>5000023</td>
<td>Iogel, large</td>
<td>Disposable electrodes, 3.5 cc fill, 12 kits* per box</td>
</tr>
</tbody>
</table>
## IOGEL® Specifications

<table>
<thead>
<tr>
<th></th>
<th>IOGEL® Small Electrode</th>
<th>IOGEL® Medium Electrode</th>
<th>IOGEL® Large Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Area</strong></td>
<td>7.2 cm²</td>
<td>11.1 cm²</td>
<td>16.3 cm²</td>
</tr>
<tr>
<td><strong>Approx. Fill Volume</strong></td>
<td>1.5 cc</td>
<td>2.5 cc</td>
<td>3.5 cc</td>
</tr>
<tr>
<td><strong>Maximum Current</strong></td>
<td>4 mA</td>
<td>4 mA</td>
<td>4 mA</td>
</tr>
<tr>
<td><strong>Recommended Dosage</strong></td>
<td>40 mA-min</td>
<td>40 mA-min</td>
<td>40 mA-min</td>
</tr>
<tr>
<td><strong>Maximum Dosage</strong></td>
<td>80 mA.min</td>
<td>80 mA.min</td>
<td>80 mA.min</td>
</tr>
<tr>
<td><strong>Skin Interface</strong></td>
<td>Gel Sponge®</td>
<td>Gel Sponge®</td>
<td>Gel Sponge®</td>
</tr>
<tr>
<td><strong>Conductive Element</strong></td>
<td>Silver-Silver Chloride</td>
<td>Silver-Silver Chloride</td>
<td>Silver-Silver Chloride</td>
</tr>
<tr>
<td><strong>pH Control</strong></td>
<td>pH Stabilized</td>
<td>pH Stabilized</td>
<td>pH Stabilized</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
</tr>
<tr>
<td><strong>Expiration Date</strong></td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Prof price**: 96$ (box of 12)  
**Cost /application**: 8$
TransQ®

Designed in a variety of Shapes for Treating many different areas of the body.

**TransQ E**
- Rectangular and circular shapes for various treatment sites
- Adhesive Foam
- Stretches and adheres well under stress

**TransQ Flex**
- Clover Shape
- Surrounds highly contoured treatment area
- Perfect for fingers, hands, feet and ankles
- Superior Adhesion
- Adds more surface area to increase adhesion when under stress

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Electrode Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000033</td>
<td>TransQ Flex</td>
<td>Disposable electrodes, 2.5 cc fill, 12 kits* per box</td>
</tr>
<tr>
<td>5000009</td>
<td>TransQ E, small</td>
<td>Disposable electrodes, 1.5 cc - 2.0 cc fill, 12 kits* per box</td>
</tr>
<tr>
<td>5000008</td>
<td>TransQ E, medium</td>
<td>Disposable electrodes, 2.5 cc - 3.0 cc fill, 12 kits* per box</td>
</tr>
</tbody>
</table>
### TransQ®E Specifications

<table>
<thead>
<tr>
<th></th>
<th>TransQ®E Small Electrode</th>
<th>TransQ®E Medium Electrode</th>
<th>TransQ®FLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Area</strong></td>
<td>10.1 cm²</td>
<td>13.4 cm²</td>
<td>11.2 cm²</td>
</tr>
<tr>
<td><strong>Approx. Fill Volume</strong></td>
<td>1.5 - 2.0 cc</td>
<td>2.5 - 3.0 cc</td>
<td>2.5 cc</td>
</tr>
<tr>
<td><strong>Maximum Current</strong></td>
<td>4 mA</td>
<td>4 mA</td>
<td>4 mA</td>
</tr>
<tr>
<td><strong>Recommended Dosage</strong></td>
<td>40 mA-min</td>
<td>40 mA-min</td>
<td>40 mA-min</td>
</tr>
<tr>
<td><strong>Maximum Dosage</strong></td>
<td>80 mA-min</td>
<td>80 mA-min</td>
<td>80 mA-min</td>
</tr>
<tr>
<td><strong>Skin Interface</strong></td>
<td>Gel Sponge®</td>
<td>Gel Sponge®</td>
<td>Gel Sponge®</td>
</tr>
<tr>
<td><strong>Conductive Element</strong></td>
<td>Silver-Silver Chloride</td>
<td>Silver-Silver Chloride</td>
<td>Silver-Silver Chloride</td>
</tr>
<tr>
<td><strong>pH Control</strong></td>
<td>pH Stabilized</td>
<td>pH Stabilized</td>
<td>pH Stabilized</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
</tr>
<tr>
<td><strong>Expiration Date</strong></td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Prof price: 96$ (box of 12)

Cost/application: 8$
Optima™

pH Buffered Iontophoresis Electrodes. Adjusts the pH to the ideal target of 4.5 to optimize transport when using a carbon conductive element and maintains that ideal pH for better drug delivery.

**pH Defining Agent**
- Adjusts pH to ideal target to optimize transport when using a carbon conductive element

**pH Buffering Agent**
- Maintains ideal pH

**Viscosity enhancing element**
- Creates uniform current distribution for greater patient comfort

**Oval Shape**
- Conforms to a wide variety of treatment sites
- Adhesive Foam
  - Stretches and adheres well when under stress

**Three Sizes**
- Small, medium and large
**OptimA™ Specifications**

<table>
<thead>
<tr>
<th></th>
<th>OptimA™ Small Electrodes</th>
<th>OptimA™ Medium Electrodes</th>
<th>OptimA™ Large Electrodes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Area</strong></td>
<td>8.8 cm²</td>
<td>11.1 cm²</td>
<td>18.0 cm²</td>
</tr>
<tr>
<td><strong>Approx. Fill Volume</strong></td>
<td>1.5 cc</td>
<td>2.0 cc</td>
<td>3.0 cc</td>
</tr>
<tr>
<td><strong>Recommended Dosage</strong></td>
<td>40 mA-min</td>
<td>40 mA-min</td>
<td>40 mA-min</td>
</tr>
<tr>
<td><strong>Maximum Dosage</strong></td>
<td>80 mA-min</td>
<td>80 mA-min</td>
<td>80 mA-min</td>
</tr>
<tr>
<td><strong>Skin Interface</strong></td>
<td>Fiber Matrix</td>
<td>Fiber Matrix</td>
<td>Fiber Matrix</td>
</tr>
<tr>
<td><strong>Conductive Element</strong></td>
<td>Carbon</td>
<td>Carbon</td>
<td>Carbon</td>
</tr>
<tr>
<td><strong>pH Control</strong></td>
<td>pH Buffered</td>
<td>pH Buffered</td>
<td>pH Buffered</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
<td>12 Kits per Carton</td>
</tr>
</tbody>
</table>

Prof price: 96$ (box of 12)

Cost/application: 8$
Thank you for your participation!

This presentation will be available as “eselling book” format. It will be provided to you by our sales teams. It's very valuable for us to get your feedback. You will receive by mail a link that will take you to the questionnaire.