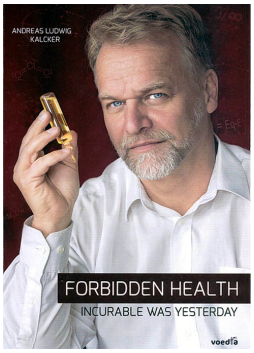


## How to Prepare CDI (Injectable Chlorine Dioxide)

CDI is primarily designed to inject animals when ingestion is hard or impossible. It can also be useful in case of emergency, if we happen to be away from a hospital facility after a poisonous snake or spider bite, scorpion or ray sting, etc.

**Legal warning:**

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**The administration of injections of any chemical in humans is reserved for clinical professionals and should never be done by anyone without the necessary expertise.**

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CDI can also be applied directly on, and around the bites of wild animals, to avoid severe infections, when we are far away from hospitals or medical care facilities. The concentration of CDS to use can be 50 to 100 ppm (0.005%-0.01%). In severe cases of poison by snakebite or similar, we can increase the concentration, depending on the circumstances.

### Ways to prepare CDI

1. Use the same process described for the preparation of CDS to prepare CDI. Simply use saline solution instead of distilled water.
2. If you use CDS, add 1 gram of salt (0.9 g to be exact) for each 100 ml of concentrated CDS solution. Standard salt sachets come in very handy because they contain 1 gram of salt, and when you re away from the city, it's difficult or impossible to find saline solution. You don't need to worry too much about sterilization since concentrated CDS is always 100% sterile by definition.

- We have used CDI in mammals weighing 50-80 kg, injecting 5 ml in a 250 ml saline water bag and administering it to the animal, with

no adverse effects in any cases. The dose could even be increased to 10 ml without major issues. From 15 ml and up, there can be a venous irritation. In order to reduce the risk, we can add 3-5 ml of DMSO.

- Maximum concentration for direct subcutaneous or intravenous parenteral application without damaging the tissues has been established at 100 ppm, that is equivalent to 0.1%.
- Optimal pH is 7.3.
- If the pH is too low, we don't use baking soda. If necessary, we can increase pH with a very small amount of the same sodium chlorite that has a 13 pH, very alkaline. When utilizing the saline solution bag, this isn't an issue because of the higher dissolution. Optimum flow is around three drops per second.

3. Activate CD in a syringe and inject only the gas into a saline solution.

   This method is an easy and fast way to create injectable CDI for an emergency situation anywhere. We need 500 ml of saline solution, a large syringe (10-50 ml), sodium chlorite at 25% and an acid that can be HCl (hydrochloric acid) or citric acid. Since we are just going to use the gas, it doesn't matter which one we use.

   **Procedure 1:**

   1. Insert the needle on the syringe, with the needle cover on.

   2. Pull the plunger all of the way out of the syringe and put 6 drops of chlorite, plus 6 drops of acid in the syringe.

   3. Introduce the plunger just enough to block the tube, leaving room for the creation of the chlorine dioxide gas.

   4. Turn the syringe, with the needle pointing upwards. You can see how the chlorine dioxide is forming in the space above the plunger. Remove the needle cover and stick it into the saline solution bag. Inject only the gas, making sure the fluid doesn't enter the bag.

   5. Leave the needle on, extracting the syringe, letting air in so that more dioxide gas can be generated.

   6. You can then replace the needle and the syringe and introduce the new gas created in the syringe, without adding the fluid.

Repeat this procedure as many times as necessary until you get a solution with a concentration between 50 ppm up to a maximum of 100 ppm, which you can check with the 3002 type strips for chlorine dioxide, La Motte ®.

Add up to 5 ml of DMSO to the solution to avoid venous irritations. DMSO is anti-inflammatory. You can add water to the residual liquid in the syringe and use it to disinfect surface areas and instruments.

**Procedure 2:**

Another way to prepare CDI is to pass it directly from syringe to syringe, with one being the mix reactor and the other one the receptor with the saline solution.

Fig. 54: Passing Chlorine dioxide gas into a saline solution using syringes