

# EQUIPMENT AND INSTRUMENT STANDARDS

In this section I describe the equipment and instruments that are necessary for the various treatments and procedures that I perform. I also describe how I keep everything clean and sanitized.

## ATTIRE

I always wear a clean surgical scrub shirt. The only exception is if the room I am working in is exceedingly cold, then I will wear a flannel shirt over my scrub shirt. I wear a face mask at all times so I'm not inhaling excess feather and beak dust. I wear an optivisor (optical binocular magnifier) for close-up work. I use ear protectors around large screaming birds to help prevent future hearing loss. I wear a modified farrier's leather apron on my legs and waist to prevent injury from a bird's beak and claws and as an aid in catching birds.



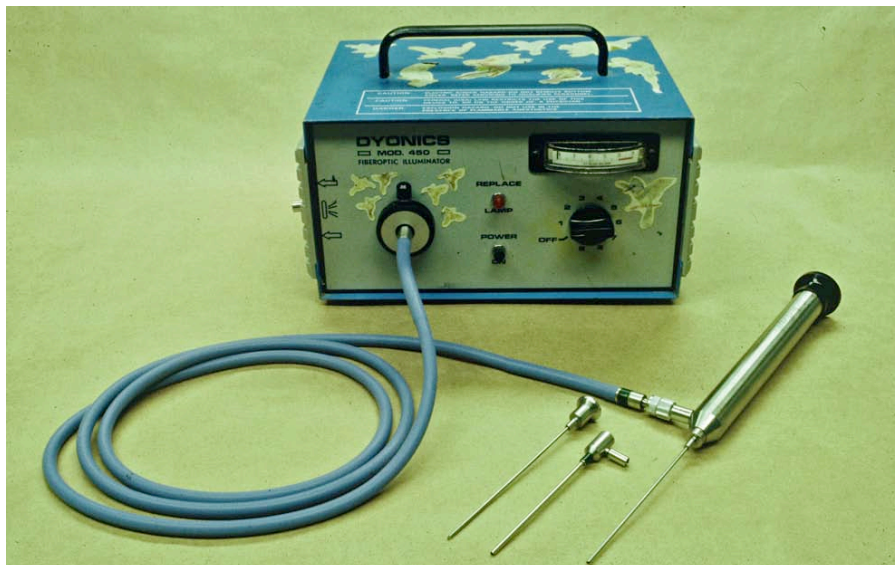
Picture: Dr McDonald in bird clinic attire

## LIGHTING

The room that I will be working in will always have some type of overhead lighting present. In addition I use an “under the cabinet” fluorescent hood light that is positioned on top of my exhaust box. I also use a small LED spot light that is attached to the fluorescent light fixture. Lastly I can also use my endoscope fiber optic cable which is attached to a halogen light source.

## EQUIPMENT FOR SURGICAL SEXING

I use a Dyonics 1.7mm, 100mm length, 0 degrees angle, human arthroscope. I carry four sets of trocar-cannula devices. I always carry a duplicate Dyonics scope in case of breakage. In addition, I carry a larger Richard Wolf, 2.7mm arthroscope and accessories in case I am scoping larger birds (i.e. swans, cranes, or other large zoo birds). The arthroscopes are attached to a halogen light source through an appropriate fiber optic light cable.



Picture: Dyonics Arthroscope and Accessories

## OPERATING TABLE AND SETUP

I use a smooth, plastic, portable table (Lifetime) purchased from an office supply store. It is 4 x 2 feet, which just fits in my car. The tabletop is impervious and

easy to disinfect. I also bring my own folding chair. All procedures are done while seated.

The exhaust box I work under is positioned at one end of the table. Its dimensions are 28" long, 12.5" wide, and 10.5" tall. The front and one side of the box are open on the bottom half to allow placement of the bird and hands under the hood. The box itself is made of lexan plastic but the working surface beneath the hood is safety glass which can be easily disinfected between patients.

A sterile drape with sterile gauze sponges is placed next to the hood. The arthroscope and accessory instruments are placed on this drape when not being used or cold sterilized.

All the other instruments or equipment that I use (or may need quickly) are placed in strategic locations around this drape or on top of my exhaust box.



Picture: Table Setup showing exhaust box, lighting, anesthetic vaporizer, sterile drape, and instruments.

## **CHEMICAL STERILIZATION**

The sterilizing solution I use is Cidex (glutaraldehyde). The four sets of trocar-cannula devices and scalpel blades are soaked continuously in this solution. They are rotated between birds so that any one set is soaking for a minimum of 30 minutes before use. These are the primary instruments that must be sterilized because these instruments are what come in direct contact with internal body tissues.

When a trocar-cannula set is removed from the Cidex, it is placed into a solution of Kennel-sol, which is a tamed quaternary ammonium disinfectant. This acts as a rinse to remove any Cidex from the trocar-cannula device which can be very caustic to tissues.

The arthroscope itself is not totally immersed in Cidex because of damage due to leakage in the past. The working end of the arthroscope is sanitized by wiping the tip and sides with glutaraldehyde before it is inserted into the sterilized cannula between each patient.

All other instruments, which include needle holders with suture, hemostats, forceps, scissors, nail clippers, syringe and needle containing tattoo ink, endotracheal tube, dremel bits are disinfected by placing them or their working ends in various trays or plastic cups filled with Kennel-sol solution.

In addition, the working surface is disinfected with Kennel-sol solution between each bird. This agent or Germ-X (ethyl alcohol) is also used as a hand sanitizer by me and my assistant between each bird.

## **SURGICAL DRAPES, GAUZE PACKS**

At my home office I have a steam autoclave. I prepare gauze packs containing one barrier drape (2' x 1.5') and twenty 3 x 3 gauze sponges. I bring dozens of these sterilized gauze packs with me. The drape is used to place my endoscope on and the gauze sponges are used to clean and dry the endoscope and trocar-

cannula device between birds as well as for disinfecting the surgical area. They are also used to blot any blood if necessary.

I carry an additional set of surgical instruments with me. This may include, but is not limited to 1 carmalt, 2 small curved hemostats, 2 small straight hemostats, 1 metzenbaum scissors, 1 iris scissors, 1 sharp/blunt scissors, 2 different sizes of tissue forceps, 1 needle holder, and 2 towel clamps. These are not steam sterilized. These instruments are placed in a separate, closed metal tray containing glutaraldehyde at each clinic. Therefore, if a situation would arise where they are needed for an emergency or some minor antiseptic procedure, they would be chemically sterile and readily available for immediate use.

I steam sterilize latex, non-powdered exam gloves which I use to hold the arthroscope and other instruments when I sex birds. For grooming procedures or microchips, I use non-sterilized latex, non-powdered exam gloves. Gloves are changed between each bird.

Birds are not clipped or shaved prior to surgery. Feathers are soaked with 70% alcohol and then plucked from the surgical site. For surgical sexing, this is an area about 1 square inch. Betadine scrub is used to clean the site and alcohol is used as a rinse. A surgical drape is not used to cover the bird for surgical sexing.

## **ANESTHETIC EQUIPMENT, COMPRESSED OXYGEN, AND EMERGENCY DRUGS**

Isoflurane inhalation anesthesia is used on all birds being surgically sexed and most of the birds being groomed and microchipped. This is the anesthetic of choice for pet birds. Anesthesia is provided using a precision vaporizer which mixes the gas with compressed oxygen, both of which are part of a portable, one way delivery system. Final delivery of the gas is through an appropriate sized face mask. An endotracheal tube and Dopram (respiratory stimulant) are on hand for emergency use in case of respiratory arrest. A pediatric

**stethoscope is always available to monitor heart rate. I carry several tanks of compressed oxygen with me.**

**I do not carry any drugs that require refrigeration. I do carry several types of antibiotics, steroids, hormones, calcium, and vitamins with me for use as needed.**