Instrument Care & Handling

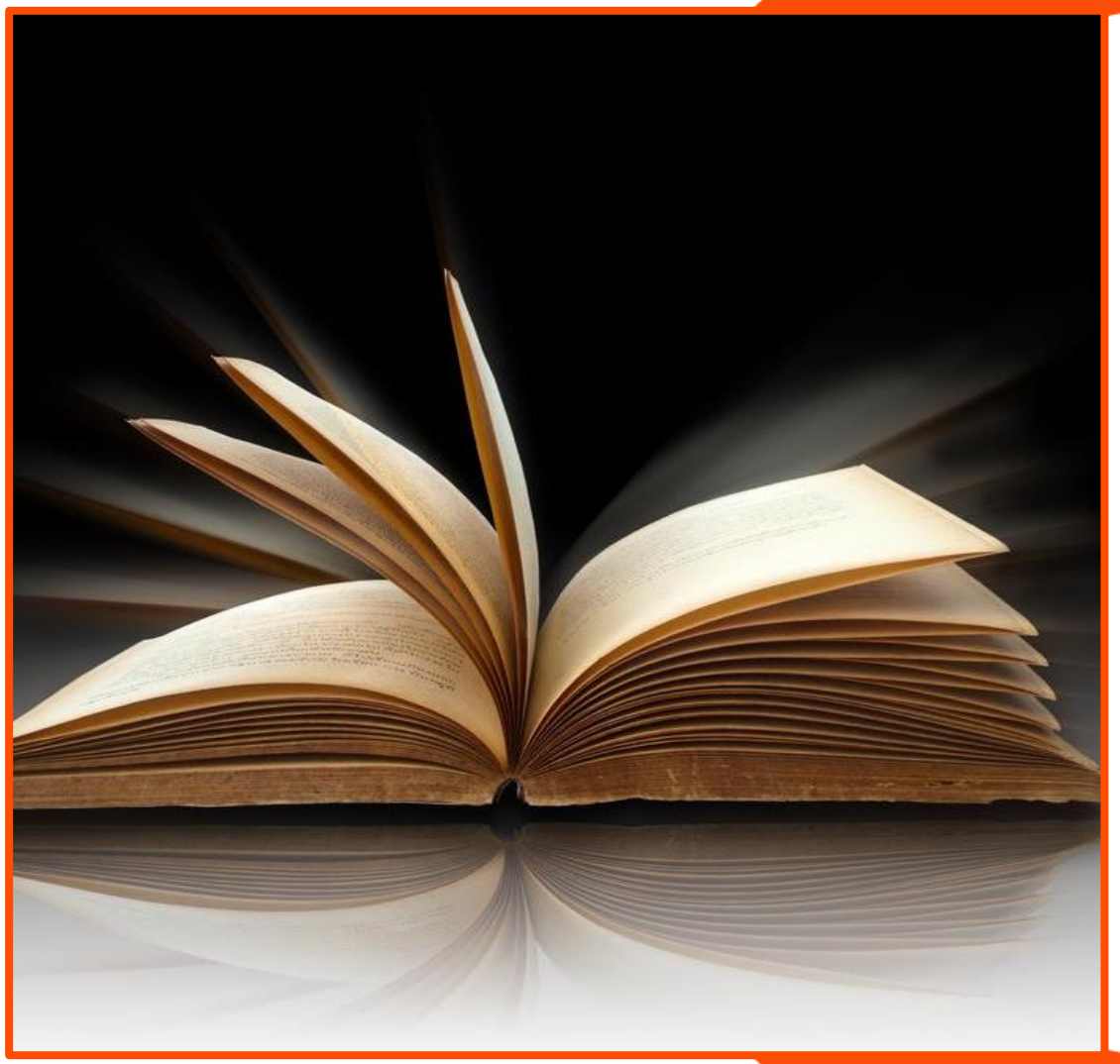
How to Care for Your Microsurgical Instruments in 5 Easy Steps

Educational Objectives

By the end of this session, attendees will be able to:

- Outline how stainless steel interacts with different cleaning processes and solutions;
- Differentiate between “staining” and “rusting” and the method by which each issue can be prevented;
- Define tactics for the organization of instrument IFUs, cleaning instructions and other regulatory resources;
- Model process efficiency for microsurgical instrument cleaning, handling and storage;
- Demonstrate inspection and placement of instruments in trays to prevent damage;
- Explain personal accountability and tracking methods for best practices in patient care.

Step 1
Education



Preventing Corrosion

Katena's stainless steel surgical instruments are made of high-grade specialty steels depending on the instrument's use.

Because stainless steel is an alloy (combination of multiple elements), the metal will "stain less", but is not "stain-proof".

Katena recommends the use of neutral pH "combination" cleaning solutions.

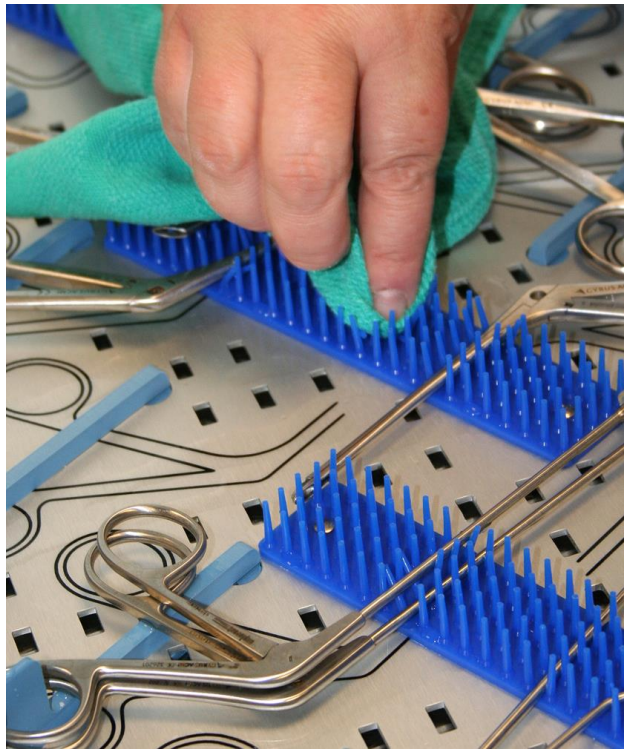
Interpreting "Rust"

Yellow or brown stains/spots on surgical stainless-steel instruments are frequently mistaken for "rust".

But… improperly maintained boilers (used to generate the steam) for steam sterilizers, baked-on blood and solutions or inappropriate detergents can leave behind a film or mineral deposits on the instruments.

What causes RUST?

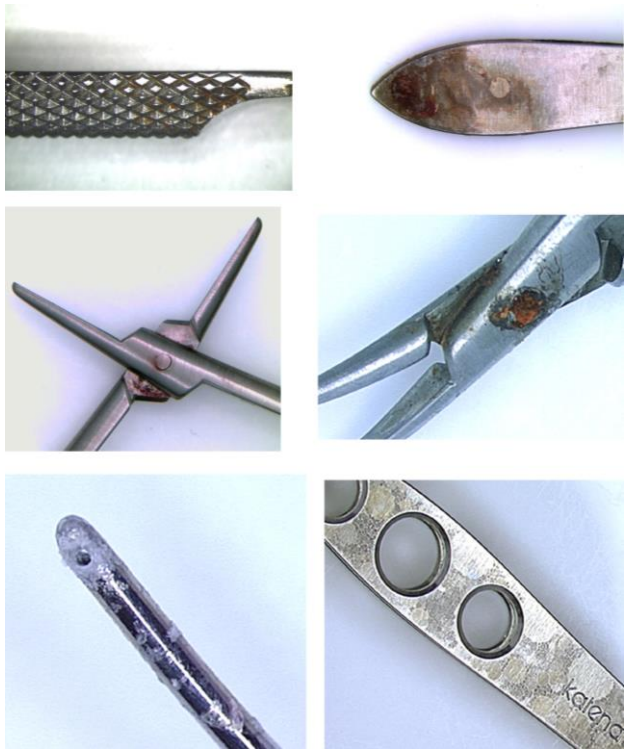
Steel + Water + Air + Time = RUST



Remove <u>any</u> part from the above equation and rusting (oxidation) **will not** occur.

Make sure you…

- ✓ Remove debris during regular cleaning.
- ✓ Do not allow wet instruments to sit for long periods of time.
- ✓ Confirm autoclave dry cycle is complete and effective.



Extra Care in Cleaning

- use neutral pH "combination" cleaning solutions
- dry and cool instruments **ASAP** after cleaning
- use purified water (distilled, demineralized, DI, etc.) to thoroughly clean & rinse instruments
- do not use abrasive products or solutions.
- avoid using agents containing chloride (BSS, Iodides, and Bromides)

Currently, enzymatic cleaners are not recommended for use with eye instruments, especially items with lumens.

Enzymatics maintained below 120° are alive and consume bio-burden. However, the enzymes are indiscriminate and can also digest cornea, iris, etc. without **extra care & copious irrigation.**

Whenever instruments are exposed to enzymatic solutions, it is imperative to validate that sufficient rinsing is performed to remove all residue.

Step 2
Preparation

Keep Instrument and Sterilization Information

On Hand & Available

Tray Contents and Layout

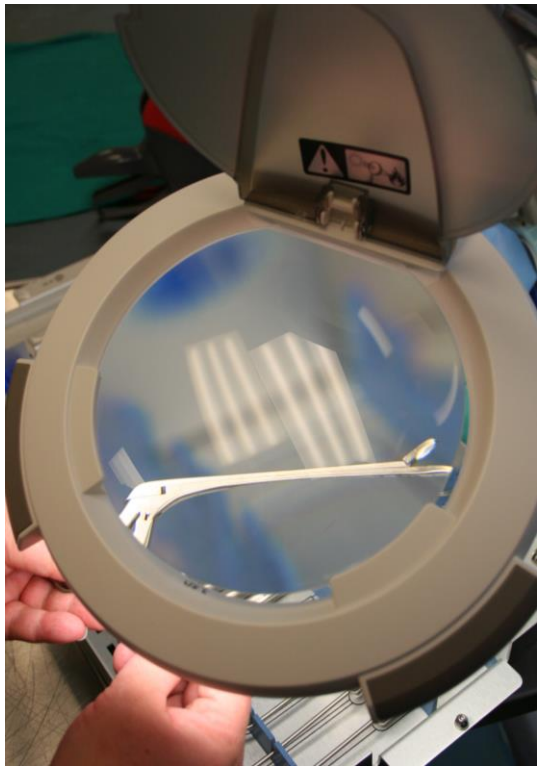
Reference Materials

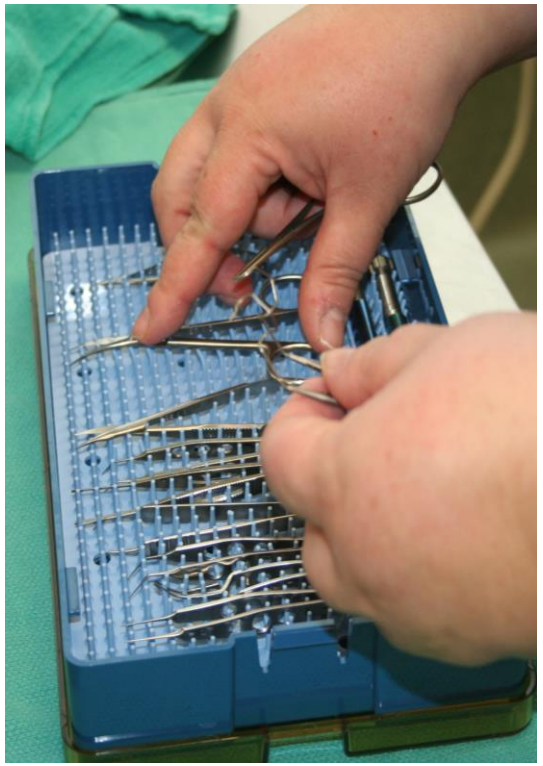
Special Instructions and IFUs

When a new instrument is received at the facility…

#1 INSPECTION

Carefully remove the instrument from packaging and inspect under magnification—inform Katena immediately if you discover any problem.





#2 CLEANING, STERILIZATION & PACKAGING

Even new instruments must be cleaned and sterilized before they are used for the first time.

Step 3
Implementation

In the O.R.

The first step of cleaning ophthalmic microsurgical instruments MUST occur in the Operating Room immediately after use.

Immediately rinse/flush in critical (sterile distilled) water only.

Do not allow blood and debris to dry on the instruments.

If cleaning must be delayed, place groups of instruments in a covered container with neutral pH,
free rinsing detergent.

DO NOT USE TAP WATER

Manual Cleaning

is the <u>prerequisite</u> for disinfecting and sterilizing surgical instruments

Hand washing to remove visible debris is the 1st step when items are received in the decontamination area.

<u>Do not</u> use abrasive pads or cleansers. Use soft instrument brushes designed for this purpose.

Open all hinged instruments and disassemble instruments with removeable parts.

Aspirate/flush cannulated instruments or use special bottle/tube brushes or irrigation/air systems to decontaminate instruments with lumens.

Rinsing Instruments

<u>Copious</u>
amounts of distilled water must be used to rinse and irrigate all cannulated instruments

Ultrasonic Cleaning

Follow manufacturer's recommendations for temperature and detergent selection.

For eye instruments—to prevent TASS (Toxic Anterior Segment Syndrome)—a separate ultrasonic cleaner dedicated to eye surgery is imperative.

Katena also recommends using 2 separate ultrasonic cleaners for specific cleaning and rinsing purposes.

Sort instruments **by similar metal** so that electrolysis will not occur.

Place instruments **in a single layer** (not touching) on a silicone finger mat.

Protect sharp edges or delicate tips from vibrating into the sides or catching on the mesh basket.

Ensure that all items are thoroughly rinsed/flushed after processing in the ultrasonic cleaner.

After rinsing, dry instruments carefully and completely with lint free surgical wipe or blow dry with filtered compressed air.

The ultrasonic cleaner should be emptied when visible debris is seen or (at least) at the end of the surgical day.

Inspection

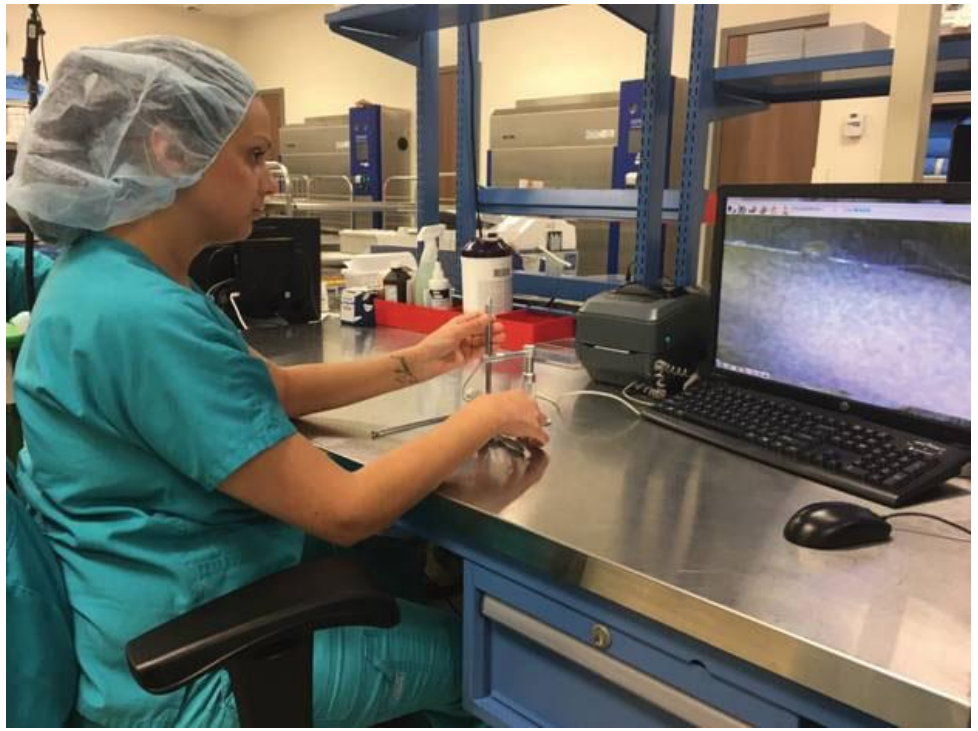
A <u>crucial</u> step in the processing of microsurgical instruments

Inspect **EVERY** instrument after cleaning occurs.

Reprocess any incompletely cleaned items.

Check for: misalignment, cracks, corrosion, loose screws or other damage.

If a problem is observed, label the instrument and set aside for evaluation and repair.

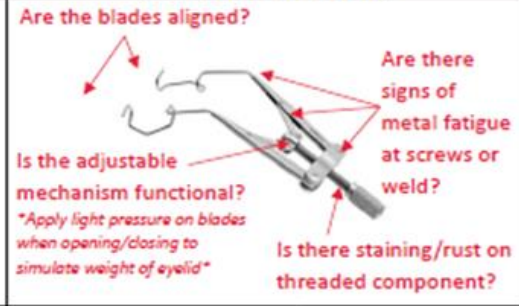


- ✓ Sharp instruments should be tested for sharpness
- ✓ Hinged instruments should be checked for smooth function
- ✓ Forceps should be inspected for tip misalignment
- ✓ Items with channels/lumens should be inspected for obstructions

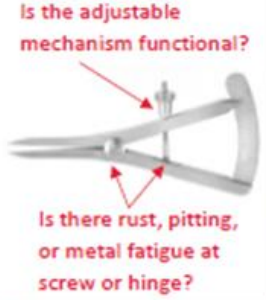
katena® INSTRUMENT INSPECTION POINTS

Wire Speculums

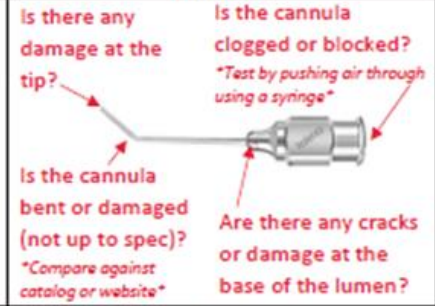
Adjustable Speculums



Calipers



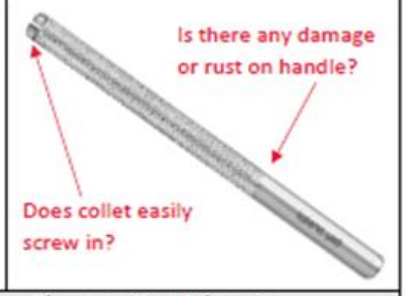
Cannulas



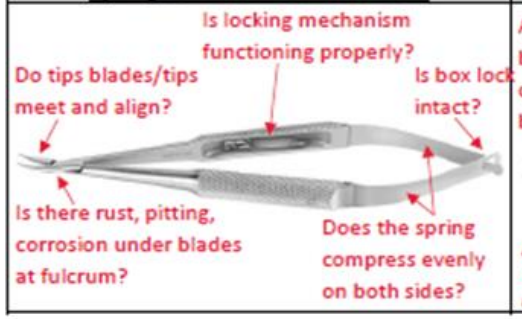
Forceps

Choppers/Manipulators

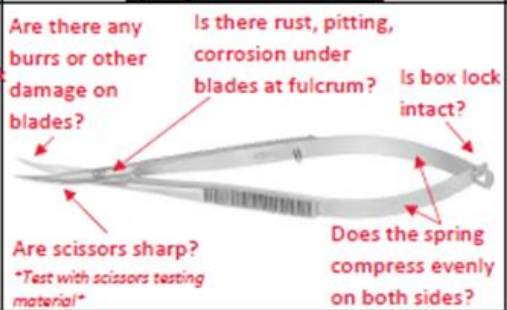
Knife Handles



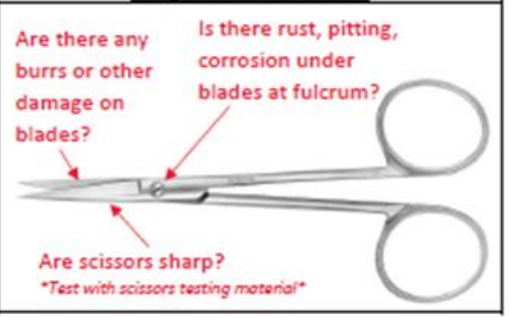
Spring-handled Needle Holders



Spring-handled Scissors

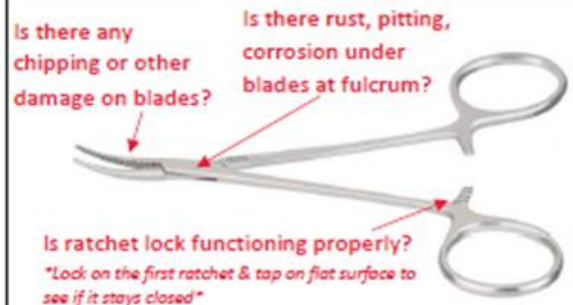


Ring-handled Scissors



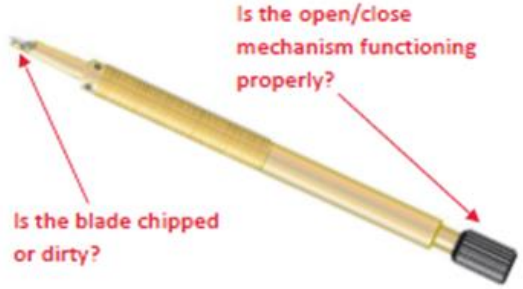
katena® INSTRUMENT INSPECTION POINTS

Mosquito Forceps



Fixation Rings

Diamond Knives



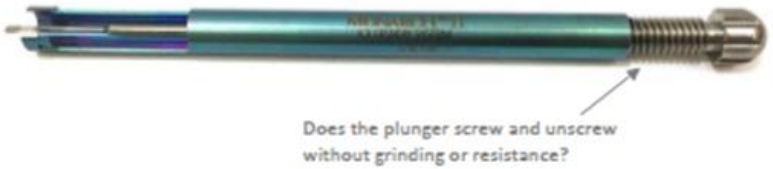
Phaco Handpiece

BASIC VISUAL INSPECTION FOR OBVIOUS DEFECTS

I/A Handpieces

Monarch IOL Loader

BASIC VISUAL INSPECTION FOR OBVIOUS DEFECTS



Assembly & Packaging

Instruments should be assembled into sets according to AAMI standards.

- Ring-handled instruments should be kept open.
- Curved jaws or tips should be pointed in the same direction (inward from sides of tray).
- Cupped or concave instruments should be positioned so as not to collect water.

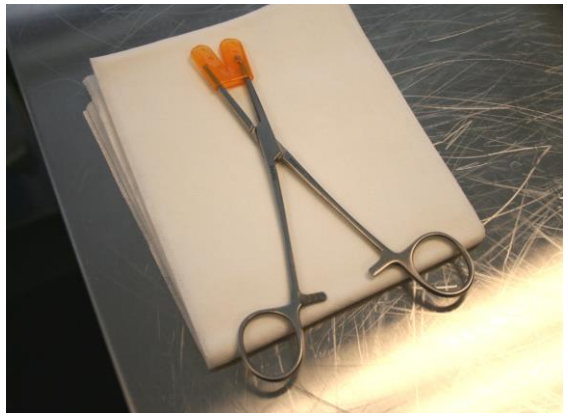
Do not let delicate instrument tips touch other instruments or the sides of the tray. Be aware of tips that might contact the underside of the tray lid.

Wrapping the tray prior to autoclave sterilization "Envelope" Wrap

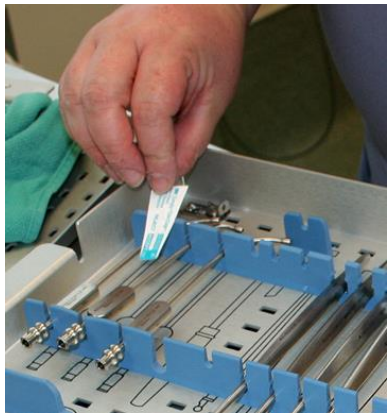
Storing

All instruments should be placed in properly sized trays with protective mats.

Clear vented tips are the current standard for tip protection required by the Joint Commission (if/when used by facility).



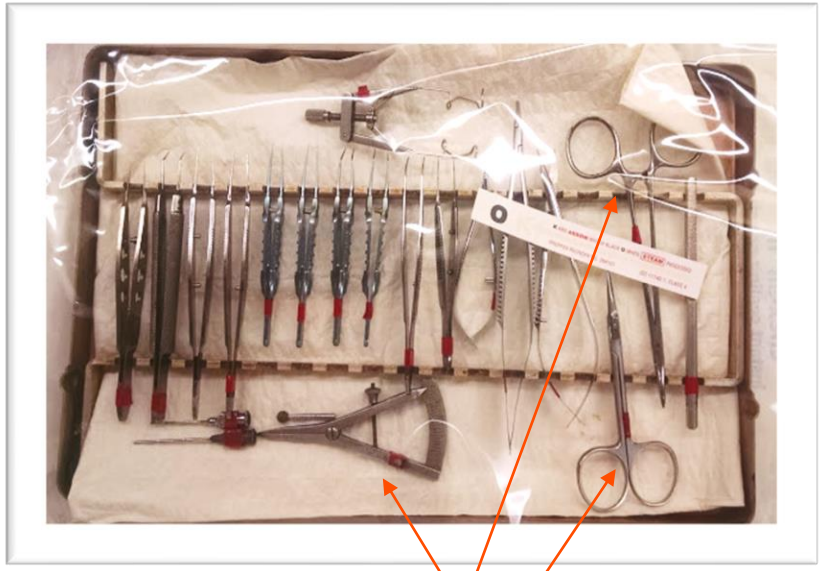
SteriGauge



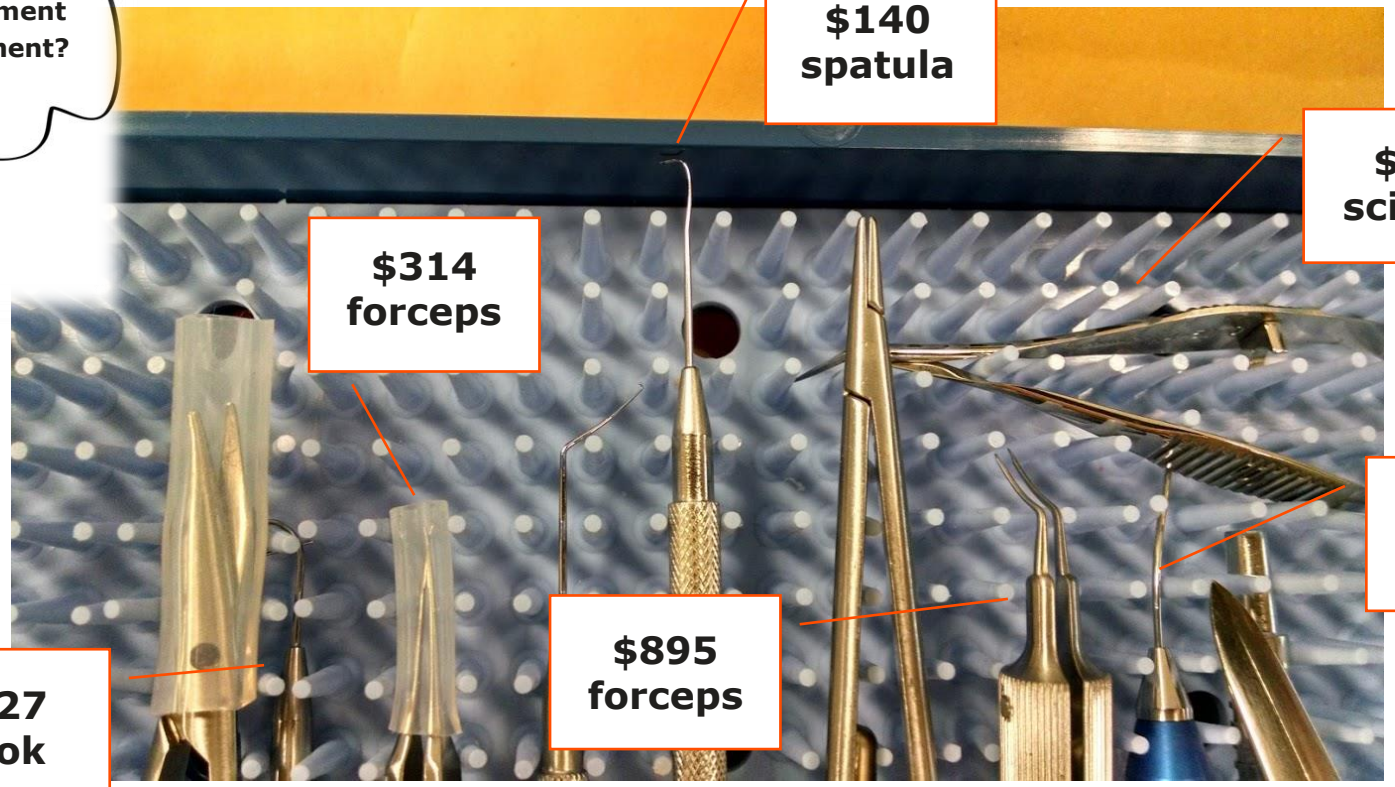
Proper Placement of Instruments in Tray

BEFORE

AFTER



But keep those calipers and ring-handled instruments OPEN!!!

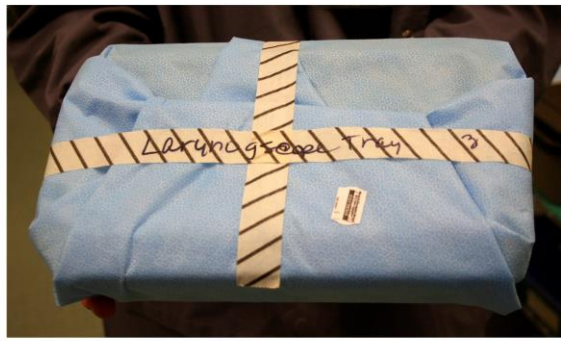


That's just the cost for replacement…
imagine how damaged instruments impact the
surgical procedure and potential complications!!!

Step 4
Sterilization

Sterilization

Sterilize instruments depending on manufacturer's guidelines or sterilizer parameters. (Pre-vac, gravity displacement, etc.)

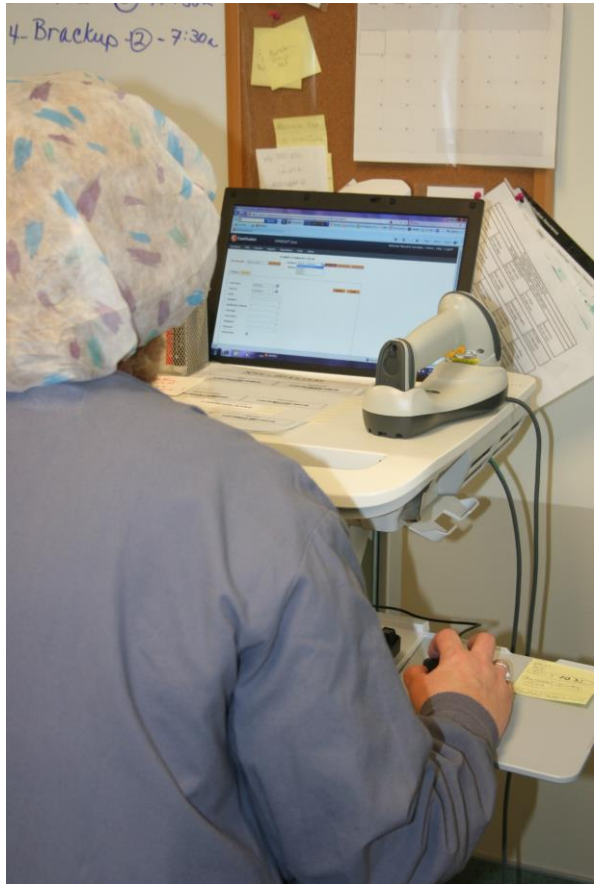


Processing Tips

- ✓Inspect instruments under microscope or magnifier.
- ✓Put fewer instruments in trays to allow better exposure.
- ✓Peel pouch instruments that are not used every case.
- ✓Own enough trays to allow time for proper processing to keep up with caseload.
- ✓Create a task force to frequently evaluate and identify breaches in good instrument care.
- ✓**AVOID IUSS!!!**

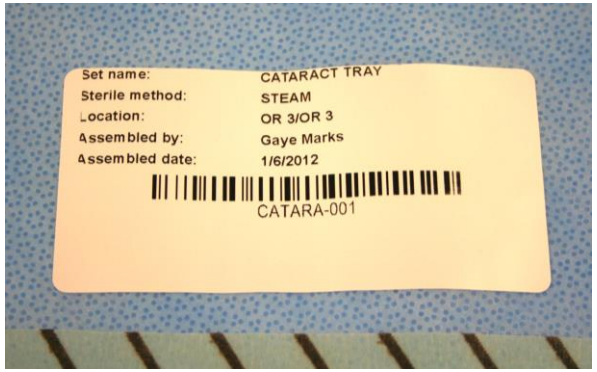
Step 5
Cooperation

Tracking & Personal Accountability

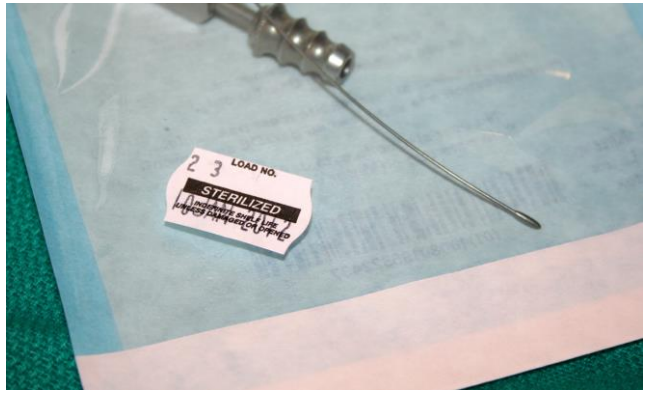


If you
SEE
something
that
doesn't
look right,

SAY
something!

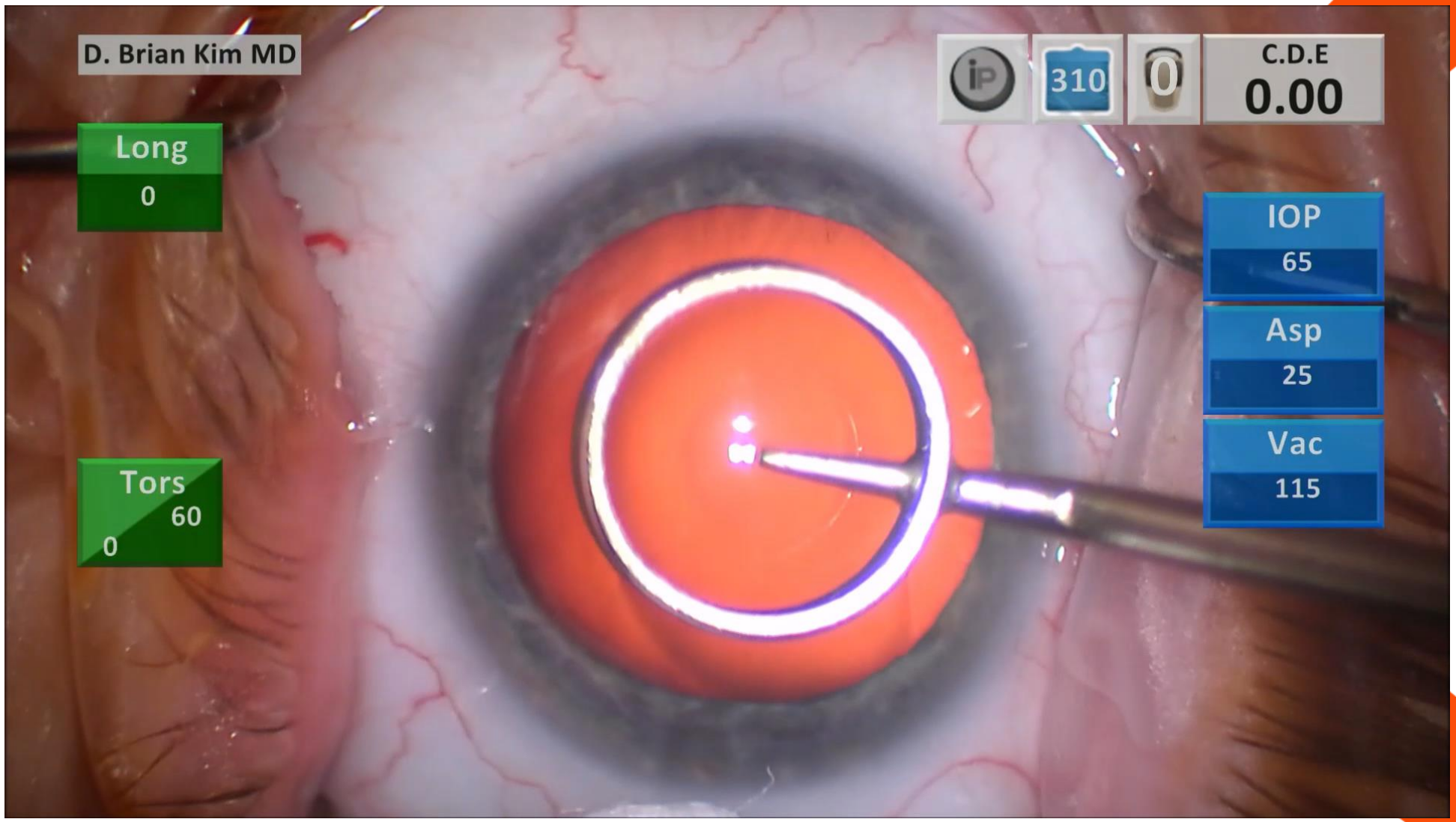


A tracking system is required for audit/inspection purposes as well as best practices for patient care.



It takes a TEAM!

Cataract Surgery Today



Q&A

Thank you!

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