

*Bovie*

# J-PLASMA VS. ELECTROSURGERY



# Introduction

## Overview

For over 85 years the medical profession has turned to electrosurgery to assist with difficult surgical procedures. In its first successful run (Oct. 1, 1926), Dr. Bovie, PhD, and Dr. Cushing, MD, used an electrosurgical generator to assist in the removal of a tumor. Dr. Cushing noted: "...with Dr. Bovie's help I proceeded to take off most satisfactorily the remaining portion of the tumor with practically none of the bleeding which was occasioned in the preceding operation."

Since 1926, the applications and advances of electrosurgery have made the procedure commonplace in hospitals and private practices alike. However, as medical technology has continued to evolve, advances in electrosurgery have paved the way for a new type of procedure: J-Plasma.

## Objectives

- **Understand the differences between electrosurgery and J-Plasma**
- **Develop a better understanding of what J-Plasma is and how it works**
- **And more!**

# Table of Contents

How They Work.....	4
Functionality.....	5
Side Effects vs. Benefits.....	6
Conclusion.....	7

# How They Work

## Electrosurgery

Electrosurgery has two basic functions:

- 1** Cut tissue
- 2** Stop the bleeding

In the cut mode the device is actually blowing apart cells to create an incision not dissimilar from the effect of a scalpel. When the unit is in coagulation or bi-polar mode it is dehydrating the cells to stop the bleeding.

There can be **several** cut and coagulation modes, but all are a **variation** along a **similar theme**.

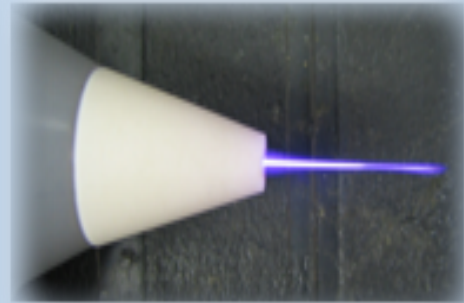
Many times the cutting and coagulation process will leave sections of eschar, or burnt tissue behind. This damaged tissue is one of the unfortunate side effects of electrosurgery.

# How They Work

## ✓ J-Plasma

J-Plasma on the other hand functions differently. Because electro-surgery involves putting an electrical current directly into the patient's body, an electrode (or "return pad") is required to give the electrical current a place to leave the body, during any monopolar procedure.

“ J-Plasma is **entirely** localized.”



The entire procedure is performed by a scalpel-like pencil. The energy delivered in the form of super-heated plasma is concentrated to the tip of the stylus, allowing the physician a greater amount of control over the area affected. Because the energy current is not directed into the body, but into the pencil, there is no need for the return pad.

# Functionality

## ✓ Electrosurgery

**With electrosurgery, the surgeon must decide what type of tool to use when operating on a patient.**



There is the standard monopolar pencil that functions much like a scalpel. The surgeon would use the device to cut away the tissue required and the electrical current would leave the body through the return pad. This method works without incident most of the time, but not always.

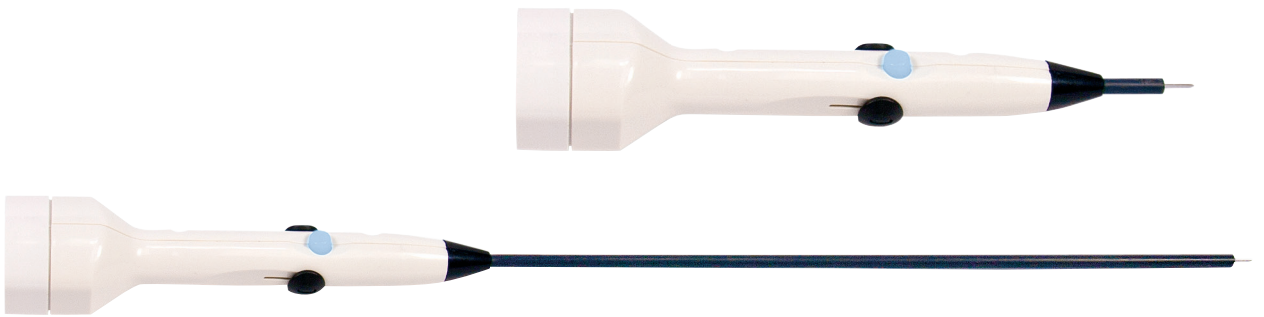
The second option is in bipolar mode. The bipolar instrument has two electrodes in close proximity (like the tips of a pair of forceps) and these tips function in the same capacity as the monopolar tool and return pad. This allows the surgeon to control the travel of the electrical current as it only affects the tissue in the direct area around the electrodes. Unfortunately, while bipolar is good for stopping bleeding in a localized area, it isn't very effective for dealing with a large surface area or as a method for dissecting tissue.

# Functionality

## ✓ J-Plasma

J-Plasma affords the surgeon the opportunity to perform each of **the same operational functions** as electrocauterization, but with the convenience of **one easy-to-use device**.

When the blade is extended, it allows the surgeon to make the incision required with pinpoint accuracy. But if the blade is not extended, then the device can have a broader focus and coagulate small areas of tissue instead of simply the areas touched by the blade.



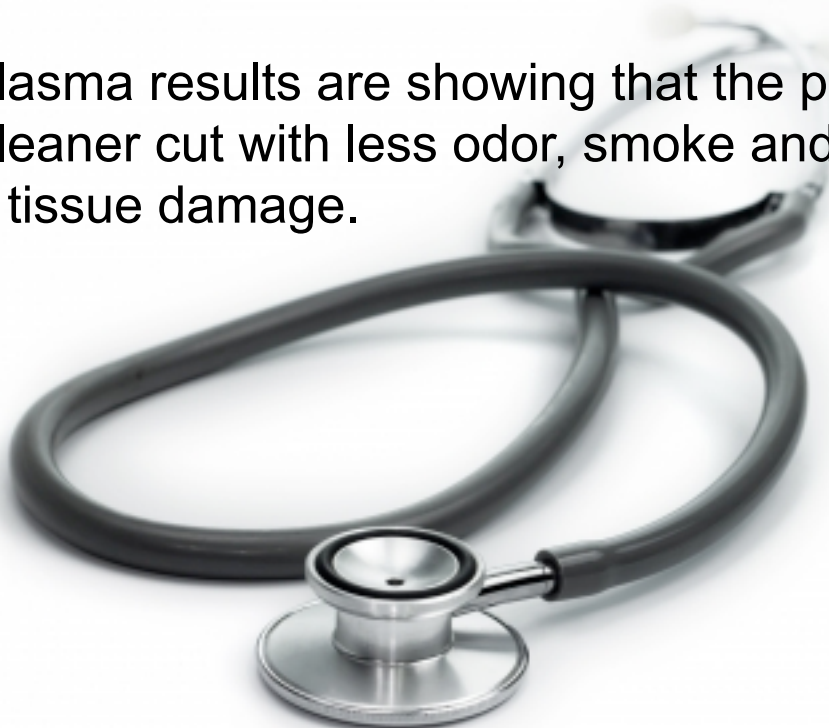
# Side Effects vs Benefits

## ✓ J-Plasma

## ✓ Electrosurgery

One of the unfortunate side effects of electrosurgery is the creation of eschar. When the otherwise healthy tissue is damaged, it can retard the recovery process of the patient. While strides have been taken to minimize and prevent eschar in electrosurgical procedures, because of the nature of electrical currents, it is all but impossible to ensure these unfortunate side effects do not occur.

Early J-Plasma results are showing that the plasma offers a much cleaner cut with less odor, smoke and unintended collateral tissue damage.





# Conclusion

With the **J-Plasma** technology, **easy just got easier.**

Instead of a panel of buttons and dials, all of the cutting and coagulation controls are governed by a simple push button hand activation right on the pencil (or foot pedal if preferred).

Advances in medical technology have led us to the cutting edge of medical research. For 85 years, electrosurgery has continually been seen as the future of surgery. Electrosurgery has come a long way from its origins and performs better today than in years past.

J-Plasma is a big step forward when compared to electrosurgery. That being said, electrosurgery will continue to have its place in a variety of procedures. But when a cleaner cut is needed, or precise depth of penetration is not only desired but critical, then J-Plasma appears to be the logical choice going forward.

# About Us

Bovie Medical is setting the standard for physician office, surgi-center and hospital-based electrosurgical generators and accessories with a range of “state of the art” models: the Aaron 940™, the Aaron 950™, the Aaron 1250™, the Aaron 2250™, and the Aaron 3250™ along with the IDS-200™, IDS-300™, IDS-400, ICON Gi™, and ICON-GP. This full line is the most complete offering of any USA manufactured electrosurgical generator product. The feature-packed generators are designed from the ground up to be extremely reliable, and are UL and Canadian Standards compliant.

We continue to expand our manufacturing capabilities to include a full line of disposable electrosurgical electrodes in blade, ball, needle, loop and laparoscopic form plus PTFE coated electrodes and tungsten needles. The reusable ES pencils, with a full compliment of reusable electrodes and bipolar forceps, enhance our ever-expanding line of products.

In addition to electrosurgery, Bovie Medical is the number-one producer of battery-operated cauteries in the world. Its product lines, distribution channels, and renowned industry reputation continue to grow.

The company also manufactures a line of replaceable battery and tip cauteries, known as Change-A-Tip™. We manufacture a variety of specialty products, such as nerve locators, lighted stylets, and corneal rust ring removers, the bulk of which follow the battery operated, tubular manufacturing process.

Bovie Medical continues to improve and expand its product offerings and services, as well as continuing its excellent record of support to existing customers.

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