minerva™

The Uterine Health Company

THE SCIENCE OF ENDOMETRIAL ABLATION

A comparison of PlasmaSense™ and Classic RF technologies

Minerva ES®

Endometrial Ablation System

PlasmaSense™ Technology

Dynamic power + plasma

Minerva ES uses a revolutionary patented approach to ablate endometrial tissue. Argon gas contained in a silicone array is ionized, creating plasma. The hot plasma heats the array membrane and the uterine cavity fluids.

The hot array membrane ablates the tissue it contacts and the heated fluids ablate areas of the cavity not in direct contact with the array, while the plasma inside the array seeks out the path of least resistance – the least ablated tissue in contact with the array membrane.

Experience a modern device that delivers complete and consistent depth of coverage, without using RF energy alone to ablate tissue.

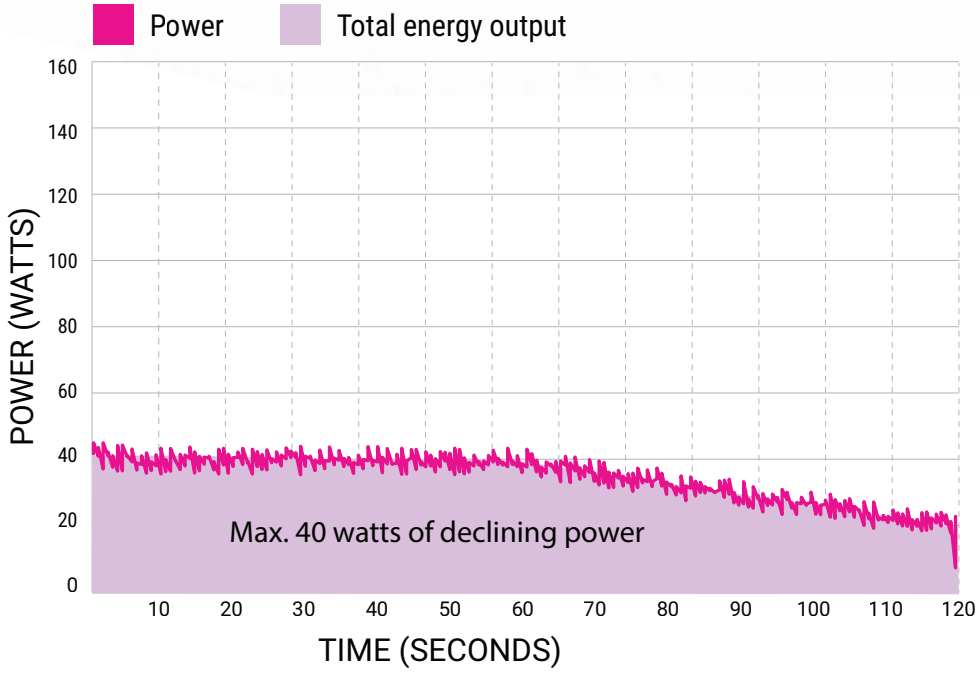
The right dose of power

As the ablation progresses, the area of tissue requiring ablation becomes smaller. Sensing that, the system dynamically reduces the power to an appropriate dosage. This prevents the uterine cavity from being overwhelmed with energy, which could result in an early impedance shut off.

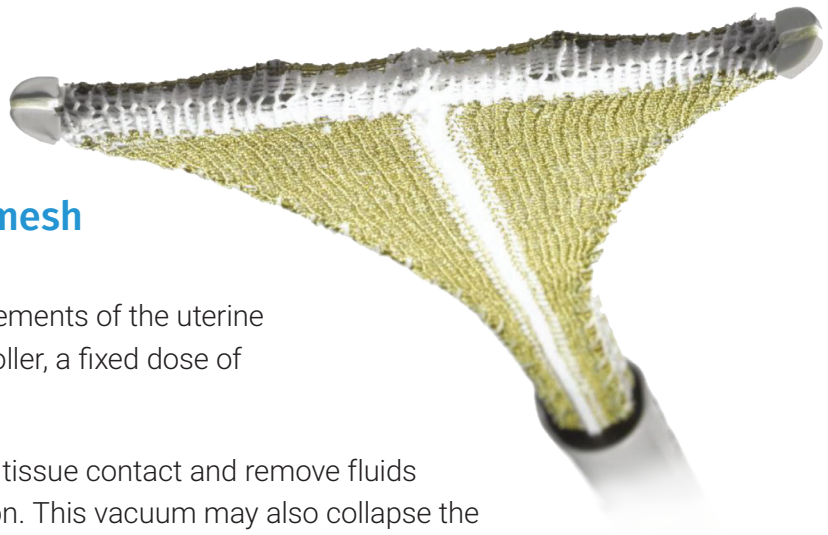
In 120 seconds, a more complete and consistent depth of ablation is achieved.

Minerva ES delivered superior results as compared to the group of all FDA approved endometrial ablation products.

Dynamic power responds to changing conditions unique to each uterine cavity.



Classic RF



Static power + metalized mesh

After taking length and width measurements of the uterine cavity and keying them into the controller, a fixed dose of power is calculated. (L x W x 5.5)

A vacuum is required to ensure direct tissue contact and remove fluids that will cause an uncontrolled ablation. This vacuum may also collapse the endometrium onto itself, inhibiting complete direct tissue contact with the array, resulting in incomplete surface coverage and sub-optimal clinical results.

The metalized mesh array is a conduit for the RF energy. With no barrier between the uterine tissue and the mesh, the array may stick to tissue, making it difficult to open, close and remove.

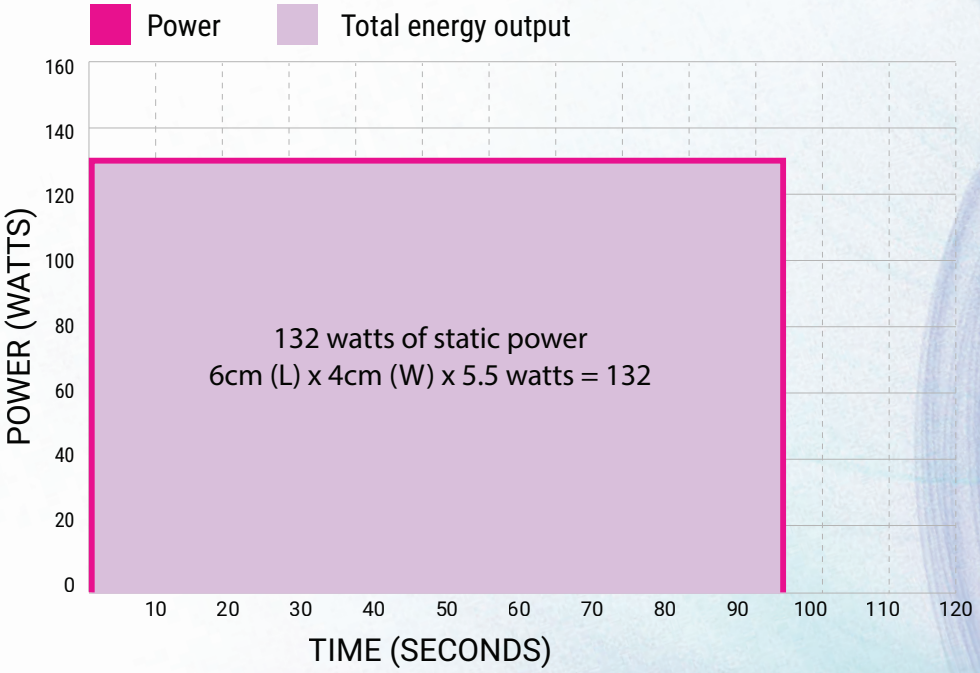
The negative effect of overwhelming power

Because the power level is static and not responsive to changes in the uterine cavity, the system may reach 50 ohms of impedance prematurely and shut off.

Early impedance shut off may prevent a complete ablation.

This is reflected in the results.

Static, high dose power may lead to early impedance shut off and poor depth of ablation.



NOVASURE[1]

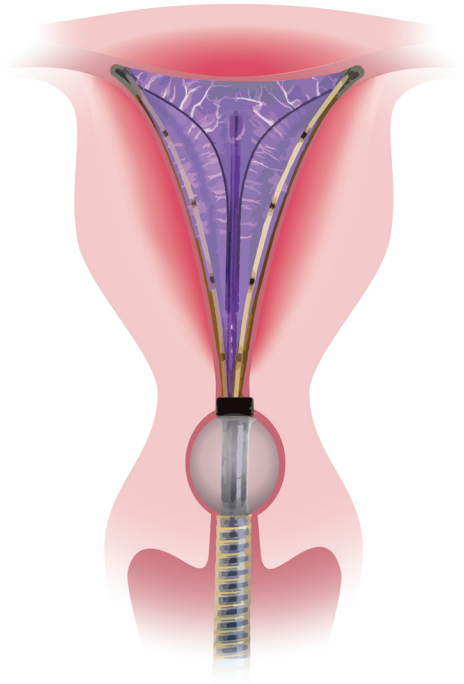
AMENORRHEA RATE AT 1-YEAR

Why dynamic low-dose power matters

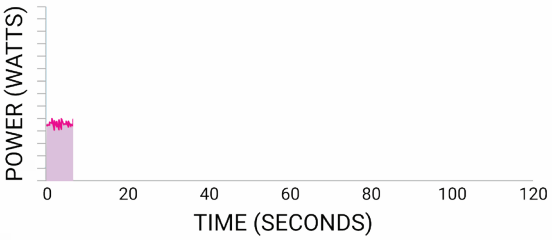
Static power does not respond to changing conditions in the uterus. This may result in an early power shut off due to reaching 50 ohms of impedance in the cavity before the entire cavity is fully ablated.

PlasmaSense™ technology allows for the use of low-dosage power by only targeting less ablated tissue. As the surface area of endometrial tissue decreases, the plasma dynamically delivers less power because it's focused on a less ablated surface area.

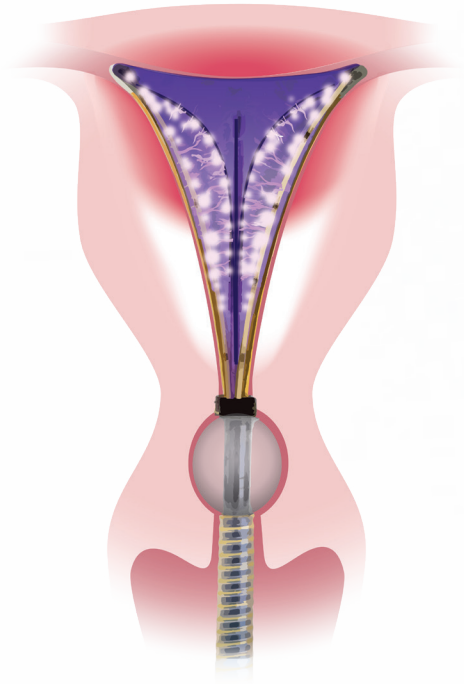
This modulated power dose allows for a uniform depth and complete ablation.



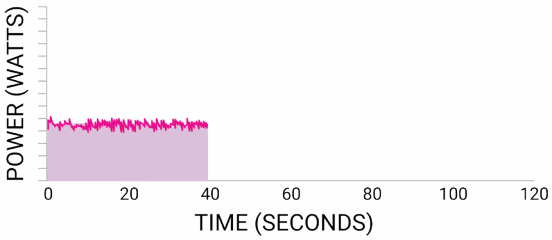
Plasma initiation phase



Dynamic power

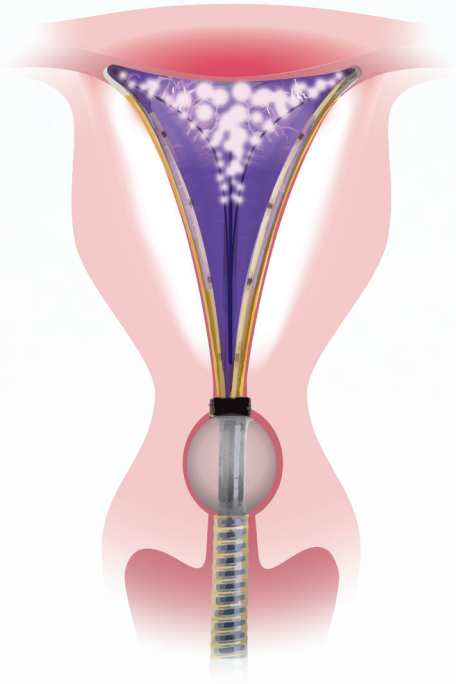


Plasma then heats silicone membrane and surrounding moisture

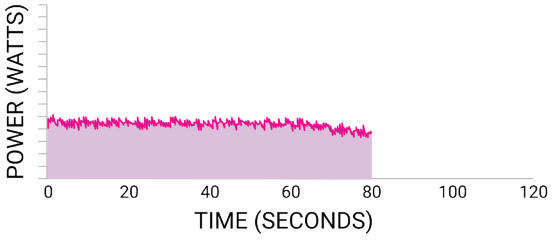


Dynamic power

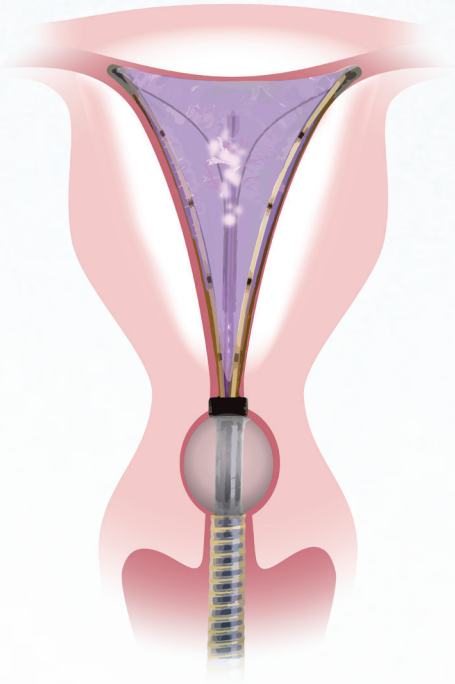
- Measures cavity impedance 6,000 times (50x/sec) during the 120 second treatment cycle
- Power dynamically decreases as ablation progresses
- Energy efficient plasma requires far less power than classic RF ablation
- No early impedance shut off



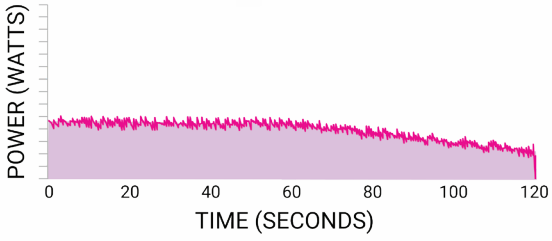
Plasma targets the unablated tissue



Dynamic power



Power decreases as ablated surface area increases



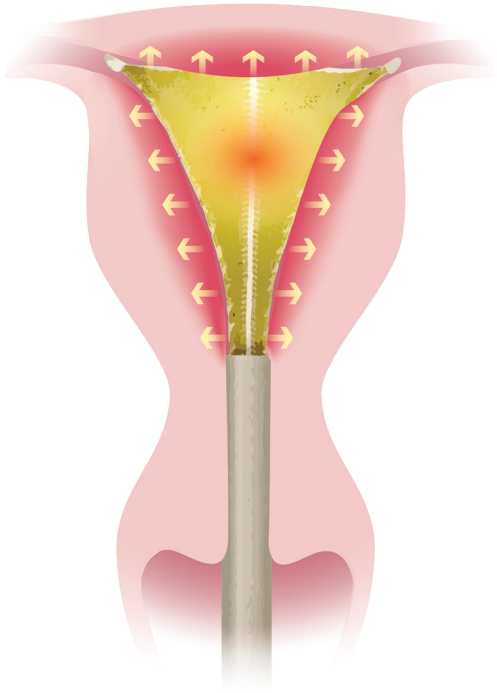
Dynamic power

The limitations of static RF power

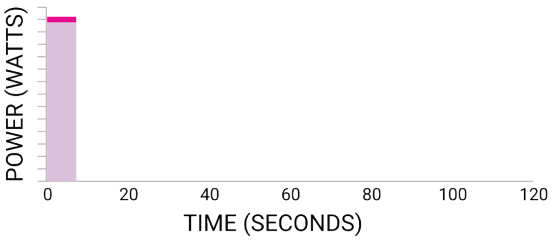
Classic RF ablation sets one power level at the start of the ablation, and the power level remains constant throughout the entire treatment.

This static dose may overwhelm a cavity that becomes partially ablated and may result in an early impedance shut off.

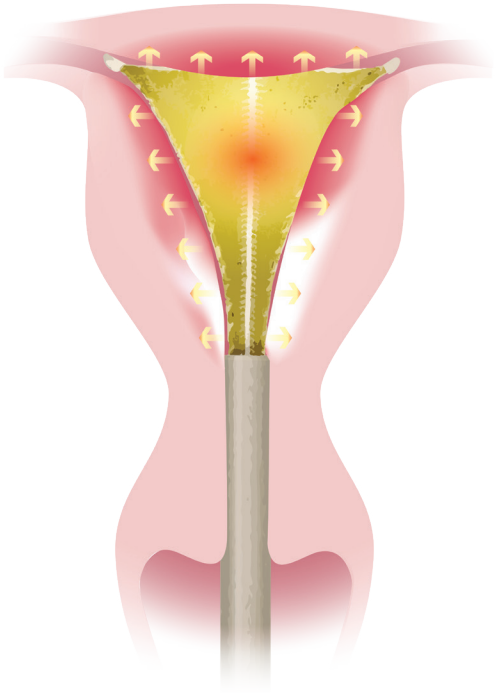
This can lead to an inconsistent and incomplete ablation.



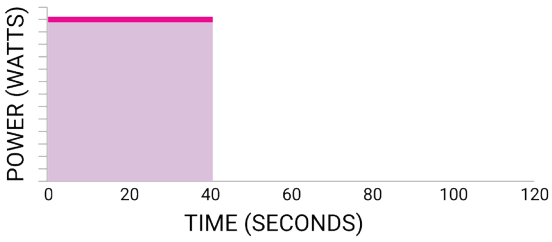
Power is set at the beginning of the ablation



Static power

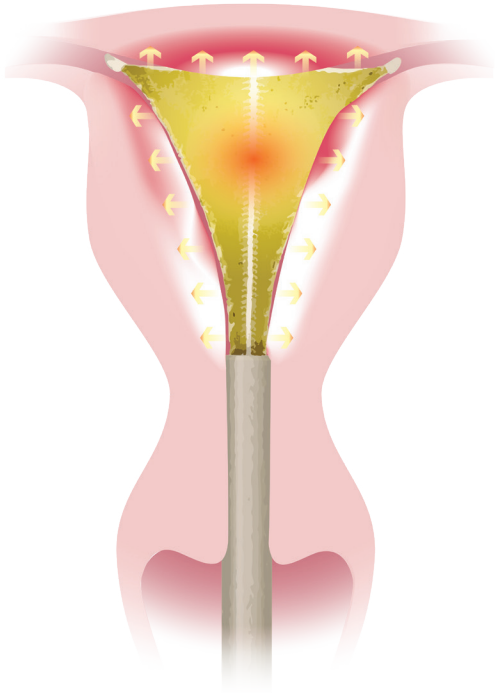


Power remains static throughout the ablation

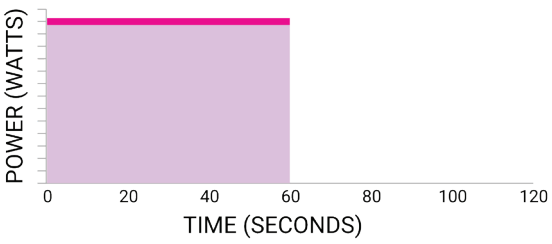


Static power

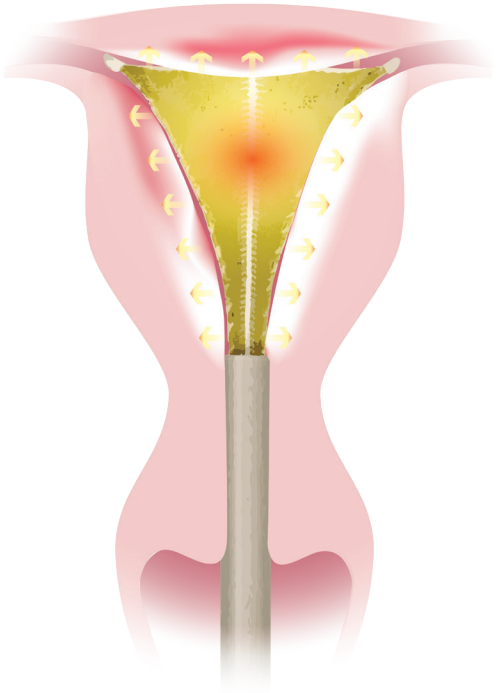
- Static RF power dose is determined by uterine cavity dimensions
  e.g. 6cm (L) x 4cm (W) x 5.5 watts = 132 watts of RF power
- Power is not adjusted downward as ablated surface area increases
- Partially ablated tissue continues to absorb the full dose of power
- High power density (e.g. 132 watts in small area) can trigger early power shutoff (50 ohms impedance), leaving under ablated tissue



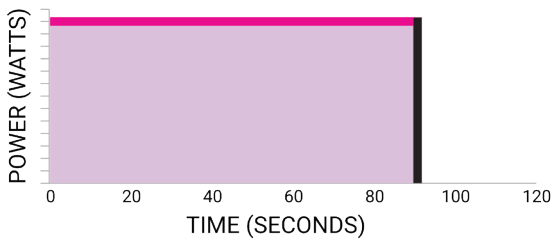
Static power can overwhelm the cavity



Static power



With the potential of early impedence shut off



Static power

The most advanced FDA approved endometrial ablation system with best-in-class clinical results. PlasmaSense™ technology delivered with dynamic power is designed to ensure complete coverage and consistent depth of ablation.

Learn more at www.minervasurgical.com

Visit the **Resource Center** at minervasurgical.com for more information on our complete suite of devices for the treatment of AUB.

You may contact your Minerva sales representative or place your order directly:

Call: **855-646-7874** Fax: **866-465-2875**

Email: **customerservice@minervasurgical.com**

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minerva™
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K0100 Rev. B

1. FDA Approved Labeling: NovaSure Impedance Controlled Endometrial Ablation System [Instructions For Use and Controller Operator's Manual]. Marlborough, MA: Hologic, Inc.; 2014.

2. FDA Approved Labeling: Minerva Endometrial Ablation System [Operator's Manual]. Santa Clara, CA: Minerva Surgical Inc.; L0120, 2020.

Federal law restricts this device to sale by or on order of a physician.