

Innovations in  
Treatments of chronic  
Illness 2023, AARP  
magazine, 10/2023

## **Chronic Pain**

**New technology in Scanning  
and imaging for women's health**

**Cardiovascular disease and clot  
busting**

**New approaches to Diabetes**

**Cancer treatments and the  
Prostate Gland**

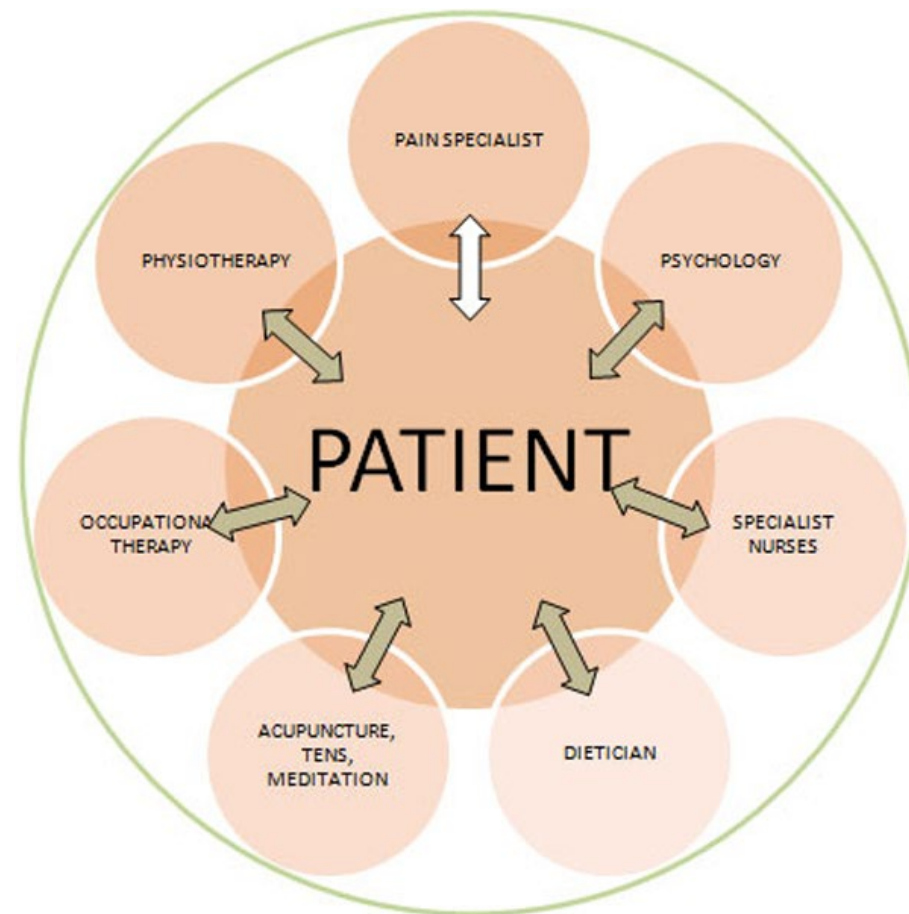
**Nerve stimulation and CVA  
recovery**



# New Investigations into relief of Chronic Pain

- Innovative Prevail Center for Chronic Pain (Prevail for short). A brand new, still being tested, model or approach to pain control.
- Through VAHCS—Veterans Administration
- Multidisciplinary approach to pain relief
- Includes Dietician, Psychologist, Pain control physician, pharmacist and physical therapist, as a care giving team to address chronic pain issues. The plans are individual as far as the nature of approach.
- Part of the approach includes CBT.
- Chronic Pain affects 37.8 million Americans of middle age and older.

# “Whole Health” Relief for Pain Control



# What about new approaches to Diabetic Neuropathy and pain relief?

- FDA approved, 2023, Eterna, Proclaim Plus and Proclaim XR Spinal Cord Stimulation Systems or SCS.
- To relieve lower extremity pain (DPN) caused by DM
- The device is much like the current SPS systems in use already, using electrical signals to reduce pain at the spinal cord



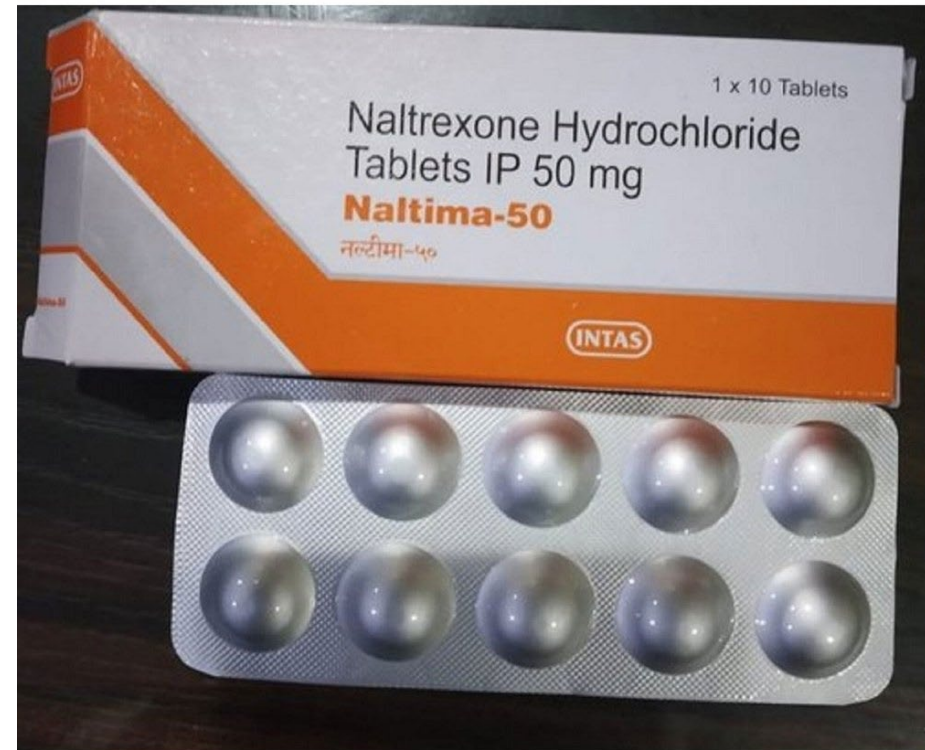
# Virtual Reality for back Pain management

- A program called RelieVRx by AppliedVR, has been successfully used to relieve chronic pain in 46% of its users in some studies.
- It is an 8 week program
- By prescription only/DVA only
- VR headset and CBI used
- Learn deep relaxation techniques and Breathing in session 5 -20 minutes long.



# On the near Horizon.....

- Off label use of a medication to treat Opioid and Alcohol abuse.
- Naltrexone
- Still being examined and tested for success on wider scale
- RA, Fibromyalgia, and Crohn's Disease.
- An off label use of the drug.
- Further study is needed



# What about Women's Health? Middle age and beyond

- Better or more successful at assessing and screening women with dense breast tissue
- Above and beyond the normal Mammogram. 360 degree. Conventional could miss up to 60% of CA.
- 3 dimensional Whole-breast US called SoftVue. Recently FDA approved.
- Cancer risk up in women with dense breast tissue.



# Skeletons in Space!!!!!!!!!!

- The hope is that as they study the way astronauts repair and recover from bone density loss we might find new ways to manage fractures and bone density loss here on earth!
- Disuse, or lack of use in space seems to be the culprit.

## Bone Loss with Spaceflight

- Exposure to the spaceflight causes men and women of all ages to lose up to 1% of their bone mass per month due to disuse atrophy. (height increases by 2+ in! - swelling of vertebral discs)
- Loss of bone mass may continue as long as a person remains in the microgravity environment? Levels off?



Data from Russian Soyuz and MIR missions: only partial recovery of bone mass after 12-18 months of spaceflight



# How about Hot Flashes and Incontinence?

- Night sweats and hot flashes!
- Veozah (fezolinetant) a non-hormonal treatment
- Blocks a specific receptor on brain cells that play a role in temperature regulation.
- Used mainly in severe hot flashes.
- Said to significantly reduce episodes



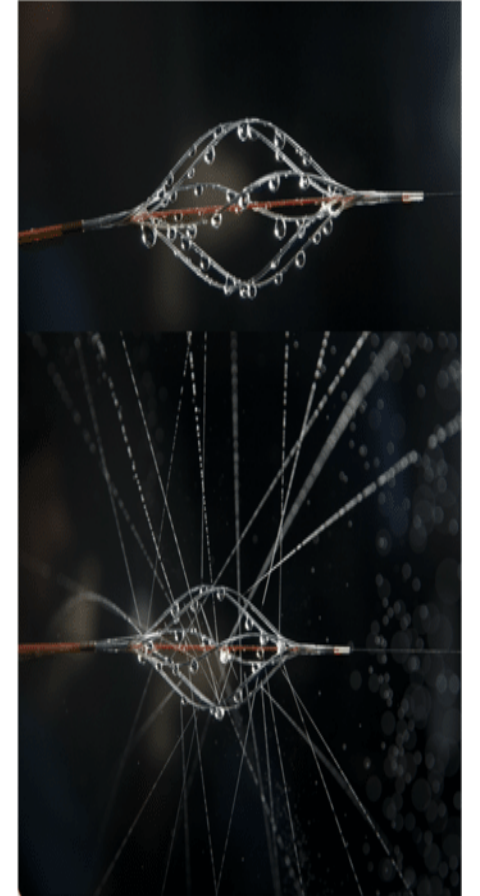
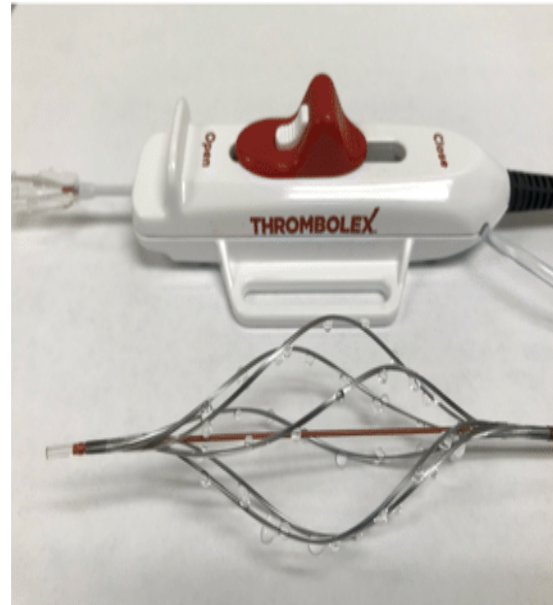
# To be or not to be...incontinent

- Leva Pelvic-floor System
- Delivers feedback to your smartphone
- Pelvic floor training offering feedback as you exercise and mobilize throughout your day
- Prescription only with real time feedback to your phone

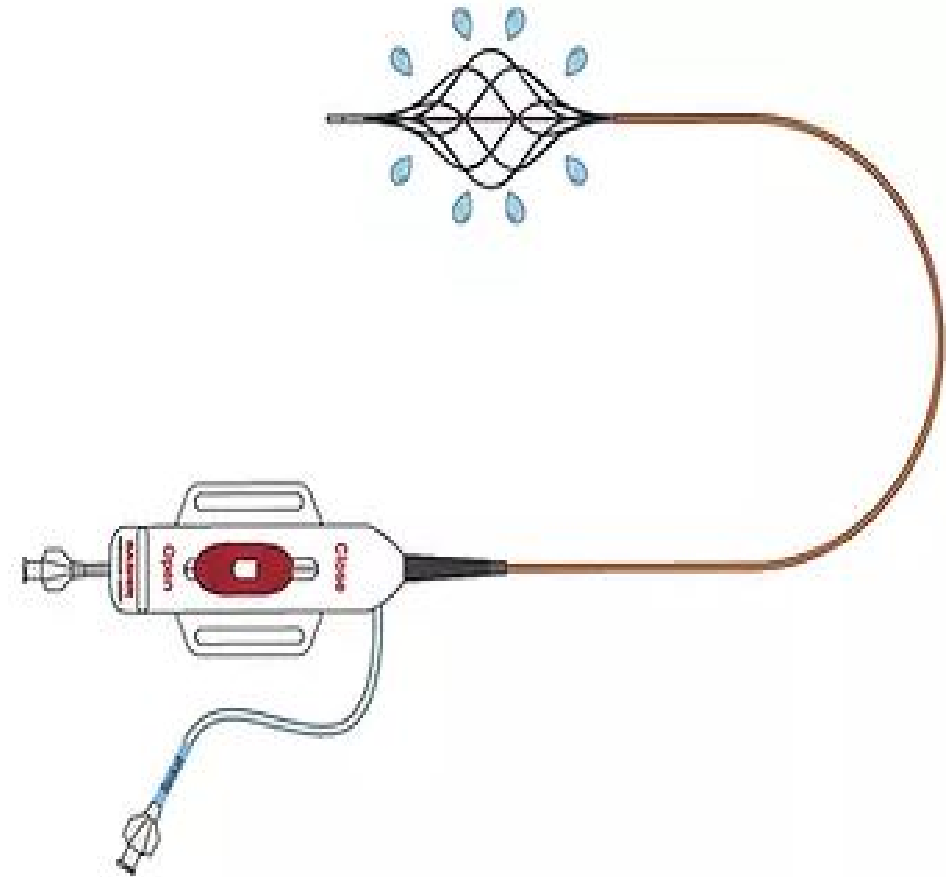
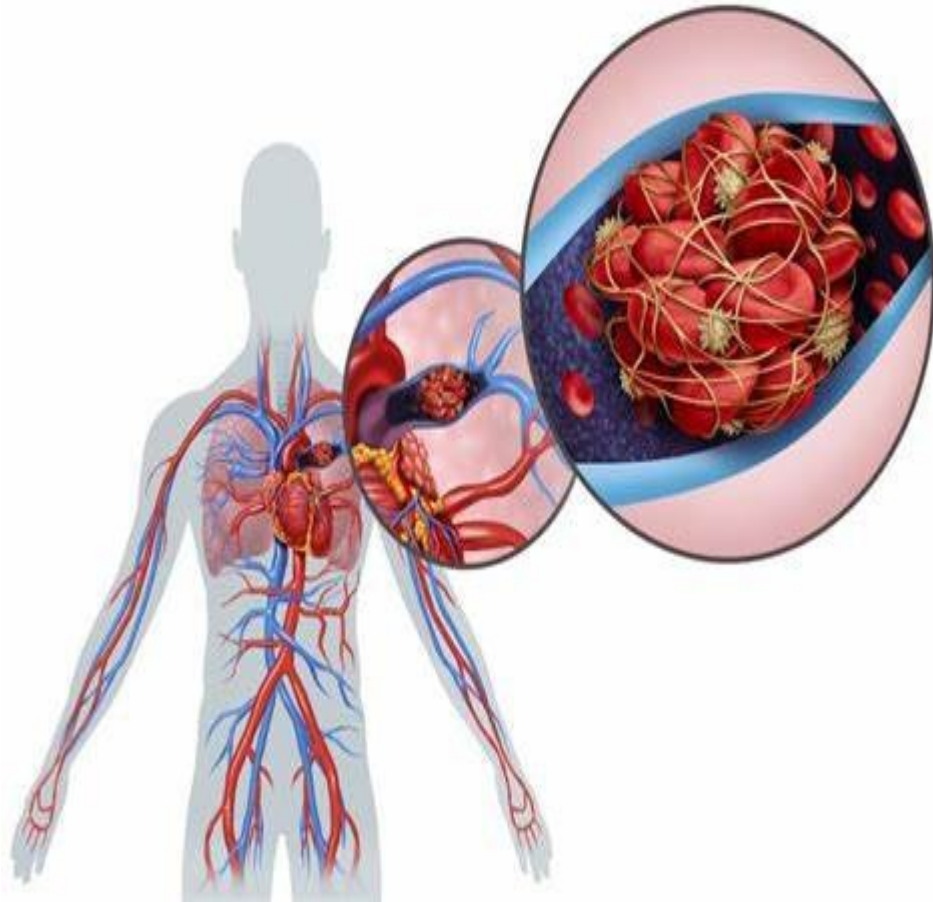


# Let's bust some clots!

- A new breakthrough in treatment of cardiovascular disease
- PE (pulmonary embolism) 3<sup>rd</sup> leading cause of death due to Cardiovascular Disease
- Bashir Endovascular Catheter
- Catheter is threaded into a large blood vessel, expanded, but also allows a clot busting drug to be directly infused into the vessel

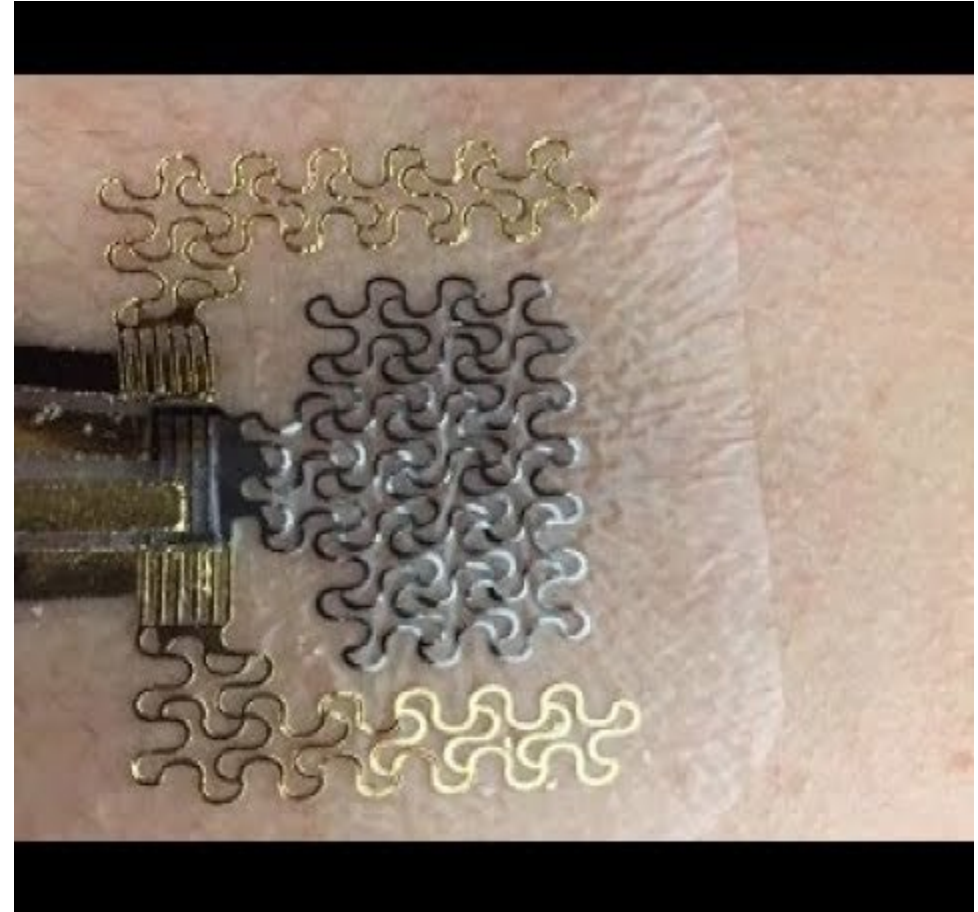


# Bashir Endovascular Catheter



# An experimental Tattoo to monitor Cardiovascular health

- A new innovation still under investigation
- A tattoo like grid used by spreading across the chest of the individual
- Monitors electrical and acoustical signals from your heart
- Downside: hospital stay



# Talk about artificial parts!

- January 2023
- Small British study
- Using an experimental pancreas
- A device that measures Blood sugar continually
- Releases insulin into the bloodstream as needed
- More successful than standard injections in Type II DM



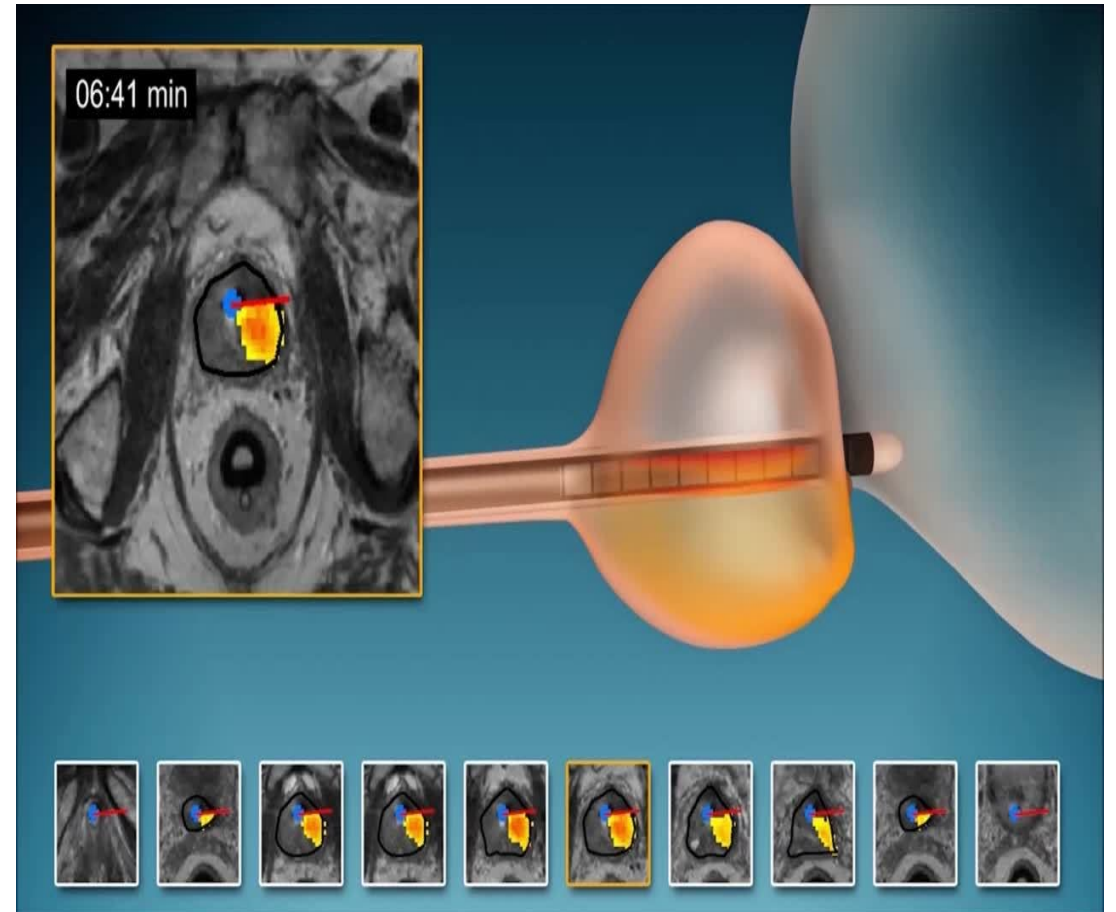
# More about Diabetes innovations:

- CGM ( Continuous Glucose Monitoring)
- App to your smart phone
- Patch to deliver insulin and sense blood sugar changes reflected on your smart phone
- Was used mainly with Type I, but now Type II can benefit from this innovation. A1C improvements and weight loss are big bonuses
- Medicare changes



# I prostate myself before this new innovation

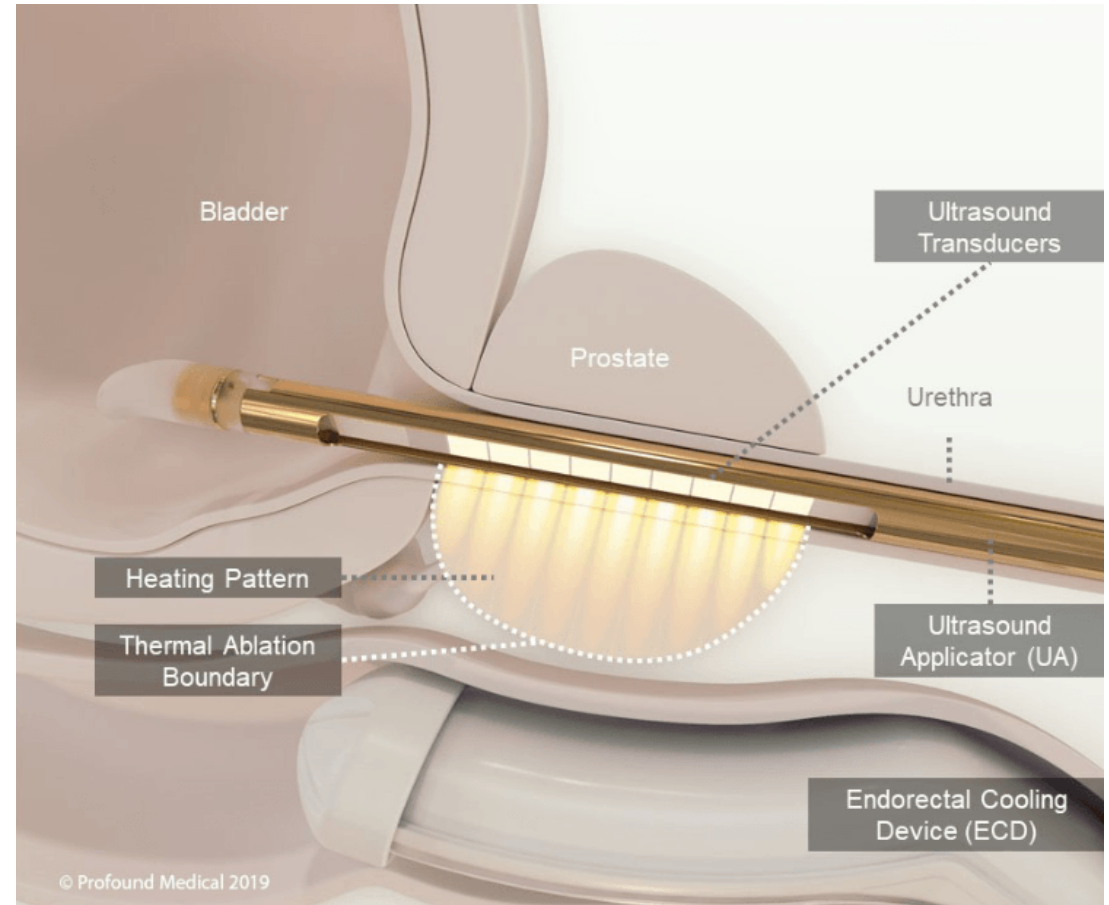
- Prostate CA is the 2<sup>nd</sup> leading cause of CA in men
- Usually treated with surgery and radiation
- TULSA-Pro procedure approved in 2019 by FDA, but becoming more widespread
- Destroys CA from inside the prostate gland with US heat.
- MRI guided procedure





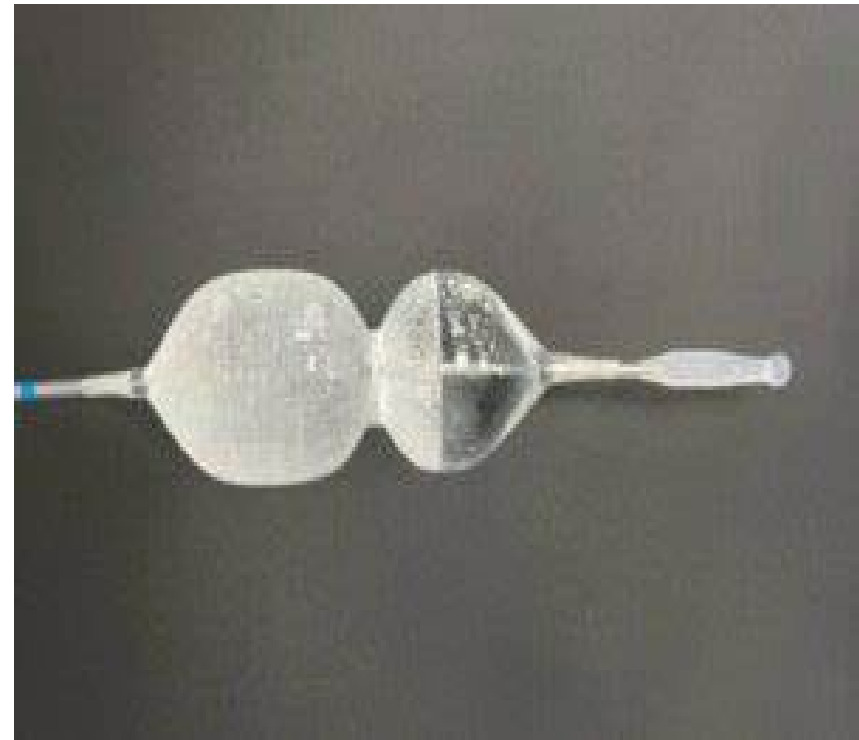
# More on TULSA-Pro

- A robotic procedure
- A cooling catheter is inserted into the rectum to reduce heat radiating to adjacent organs and tissues
- Recovery time is better than conventional methods of treatment and surgery
- Intended for lower to intermediate risk patients, but intended to minimize SE's



# New Treatments for BPH: Benign Hypertrophy

- The Optilume BPH Catheter System with Paclitaxel (helps heal after procedure)
- recently approved by FDA for this treatment
- Treats problems associated with enlarged prostate
- The system uses a drug-coated (Paclitaxel) balloon system that enlarges the prostate gland opening to allow better flow of urine.



# Nerve Stimulation for Stroke Recovery

- Vivistim System (VNS), used to treat epilepsy. Approved by FDA for CVA rehab in 2021
- Implanted under the collarbone
- Wire leads to the Vagus Nerve, and impulses from there to the brain
- Helps the brain build new neural pathways
- Stimulating the Vagus Nerve changes electrical activity and levels of neurotransmitters to brain cells.



# NS for Post Stroke Recovery....contin.

- VNS paired with rehab services has been shown to help with recovery of usage to upper extremities and hands.
- 108 stroke survivors showed improvements according to a study in The Lancet.
- Making possible small improvements up to many years post CVA. Very intense rehab and VNS is required initially (1<sup>st</sup> 6 weeks) and consistent f/u is necessary.



# On the trail of new medical developments, some honorable mentions:

- TMS for Depression, PTSD, Anxiety, and Addiction
- New Gut/Brain connection offers Dementia clues
- CSF tests for Alzheimer's Dementia
- Smart watches that catch early onset Parkinson's Disease
- Lab-grown hair follicles for Baldness
- Over-the-counter help for erectile dysfunction, Eroxon.
- Diabetes drug "Mounjaro" (Tirzapeptide) injectable
- AspyreRx, smart phone app to help track blood sugar