

# (Hot Snare) Polypectomy : Best Practice

Kevin Waschke  
MD.,CM., FRCPC, FASGE  
McGill University Health Center

President Elect  
Canadian Association of Gastroenterology

Tuesday October 2<sup>nd</sup> – 1440 -1515

## CanMEDS Roles Covered

X	<p><b>Medical Expert</b> (as <i>Medical Experts</i>, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centered care. <i>Medical Expert</i> is the central physician Role in the CanMEDS Framework and defines the physician’s clinical scope of practice.)</p>
	<p><b>Communicator</b> (as <i>Communicators</i>, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.)</p>
X	<p><b>Collaborator</b> (as <i>Collaborators</i>, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.)</p>
X	<p><b>Leader</b> (as <i>Leaders</i>, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.)</p>
	<p><b>Health Advocate</b> (as <i>Health Advocates</i>, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.)</p>
X	<p><b>Scholar</b> (as <i>Scholars</i>, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.)</p>
X	<p><b>Professional</b> (as <i>Professionals</i>, physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.)</p>

# Disclosure

Pendopharm

Advisory Board (2018/9)

# Learning Objectives

After attending this session, the learner should be able to

1. Understand the updated recommendations for the management of polyps
  - Cold biopsy polypectomy / Cold snare polypectomy / Hot snare polypectomy
2. Understand the fundamentals of electrosurgical units (ESUs)
3. Be aware of new resources available for training in polypectomy

# SEE™ Program

## Endoscopic Polypectomy Improvement Course (EPIC)

TIME	ITEM	TIME & LOCATION	ITEM
08h00- 08h15	Introduction and plan for day		
08h15- 08h40	Strategies for successful polypectomy	13h00 - 14h40	Hands-on Polypectomy Workstations (5)
08h40 - 09h05	Approach to polypectomy		
09h05 - 09h30	Which Snare(s) should I use?	14h00 - 14h30	Break
09h30 - 10h00	Electrocautery 101		
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11h10 - 11h30	Injection raising; how should you do it & with what?		
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12h00 - 12h30	The sessile polyp		
12h30 - 13h00	Lunch		

# Polypectomy in the era of FIT testing

The majority of polyps seen are still < 1 cm in size, and are typically either sessile or pedunculated.

There are more flat polyps requiring EMR techniques, as well as more malignant polyps and cancers, but these are still small in number.

Recently, there has been a shift in polypectomy management that has implications for your practice.

# Polypectomy technique

1. Cold biopsy polypectomy (CBP)
2. Cold snare polypectomy (CSP)
3. Hot snare polypectomy (HSP)
4. Endoscopic mucosal resection (EMR)
5. Endoscopic submucosal dissection (ESD)

# Essential items for polypectomy

- split dose preparations
- CO<sub>2</sub>
- water irrigator
- digital reporting system with photographs
- a selection of snares (based on choice of strategy)
- lifting solutions (viscous solution, methylene blue)
- modern Electrosurgical unit (ESU)

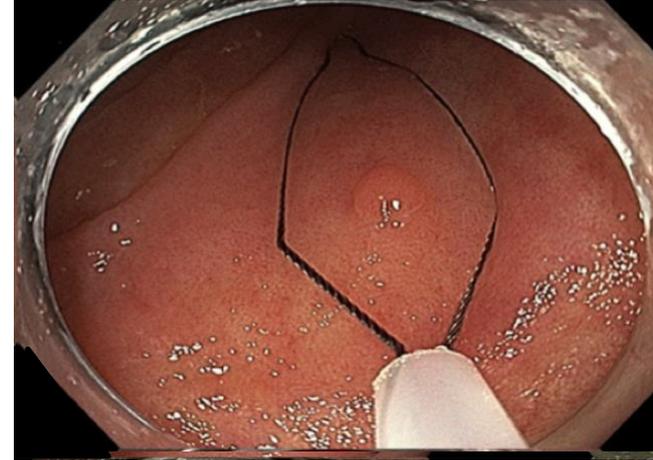
# COLD BIOPSY POLYPECTOMY (CBP)

- Studies have shown higher than expected rates of residual polyp when removing diminutive polyps with CBP
  - studies of CBP sites show as high as 25% have residual polyp!
- CBP should be reserved for polyps < 3 mm in size (i.e. smaller than the size of the bx forceps cup)



# COLD SNARE POLYPECTOMY (CSP)

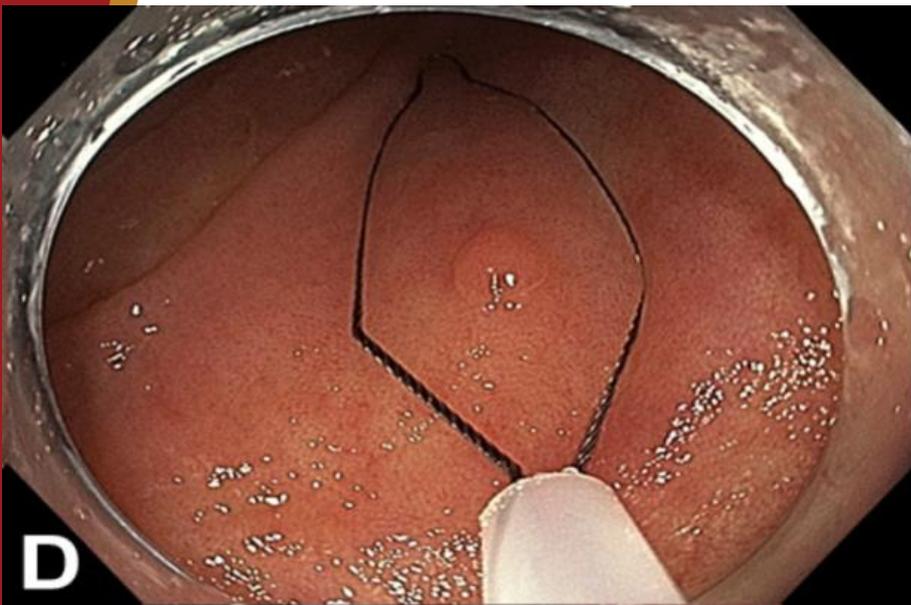
- Has comparable efficacy to hot snare polypectomy with several advantages
  - Saves cost (*no dispersion pad*)
  - Is faster (*less set up*)
  - Less complications (*bleeding, post-polypectomy syndrome, etc.*)



Suggested technique for polyps 5- 9 mm in size

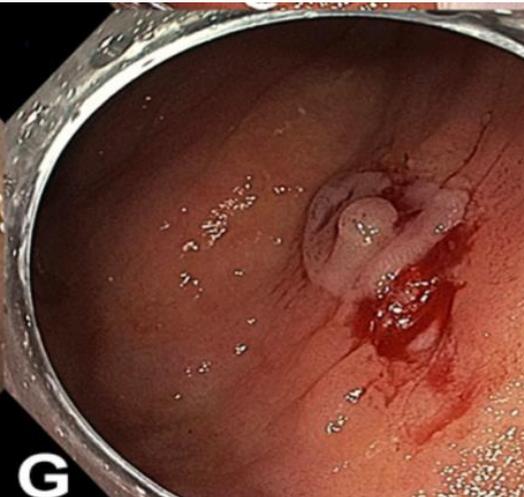
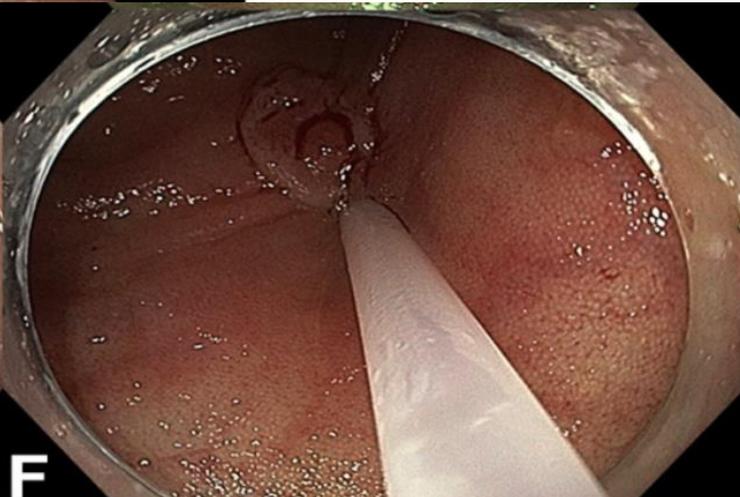
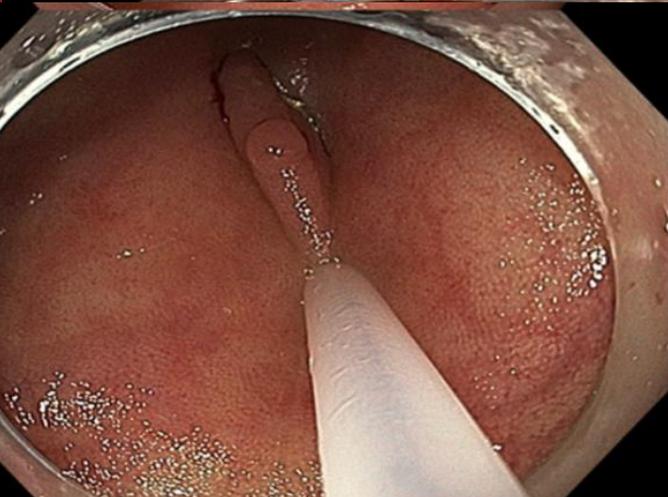
# TIPS FOR COLD SNARE POLYPECTOMY (CSP)

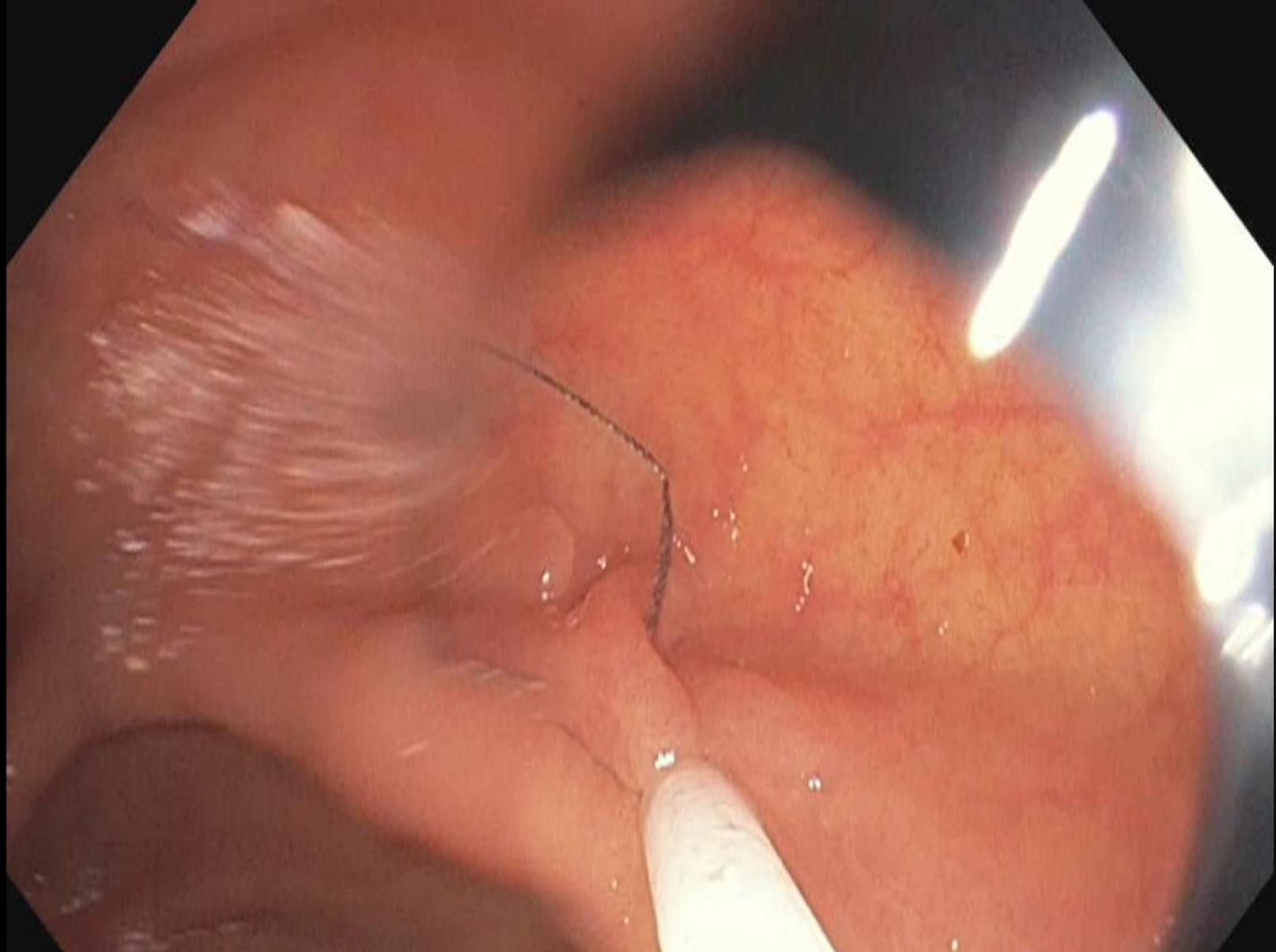
- Use a monofilament snare (thin + stiff)
  - Made by multiple manufacturers
  - Ideally < 15 mm in size; (shape is up to you)
    - Cost issues with different types (read your catalogues!)
- Technique is different but easy to learn



## Cold Snare Technique

Position		5 O 'clock
Margin		At least 2 mm lesion should be centered in snare
Tenting	X	No snare should remain anchored (Down and right)
Snare Closure		Continuous until polyp guillotined
Aspiration	X	No





# TIPS FOR COLD SNARE POLYPECTOMY (CSP)

Make sure to inflate sufficiently and avoid tenting and suctioning during snare closure

- you may notice the snare stalls...

Be comfortable with a bit of oozing at the polypectomy base.

No need to clip!

Wash the base with your irrigator

Helps by enlarging the submucosal layer

Assess for residual polyp

Allows for fast retrieval of specimen (suction up the puddle – watch for gravity)

Ignore the pseudostalk

-no need to biopsy or remove!



# Hot Snare Polypectomy (HSP)

- Best used for polyps 10-19 mm in diameter
- In this category of polyps it is important to customize your approach depending on polyp features because not all polyps are the same...
- more polyps will be flat and require lifting +/- tattooing
- when polyps are complex or > 20 mm, piecemeal EMR should be considered
- the risk of malignancy begins to rise as size increases

1-5 mm

0-0.1% risk of invasive cancer

6-9 mm

0-0.4%

10-20 mm

**2.4%**

20 mm

**up to 19.4%**

*Assess polyp  
morphology  
and pit pattern*

# Snare choice should depend on the polyp morphology

- For routine sessile polyps a 15 or 20 mm snare (regular stiffness) is easiest for
  - laying the snare down / tissue grasping / size relative to polyp
- Flat polyps require stiff/braided snares (and lifting)
  - \*A lot of snares have the same handle and color within the same company but behave very differently – read the catalog!!*

# Expanded indications for tattooing

1. Any polyp > 1 cm (suggested by ESGE guideline)

## RATIONALE:

- Higher rate of malignant polyps in polyps > 1 cm.
- Higher rate of recurrence in piecemeal polypectomy

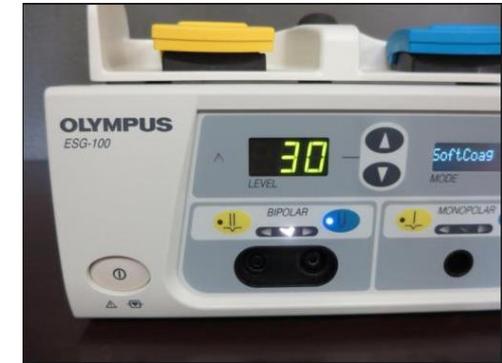
Any polyp requiring EMR should have surveillance including biopsy of polypectomy site–

\*many scars are hard to find during surveillance

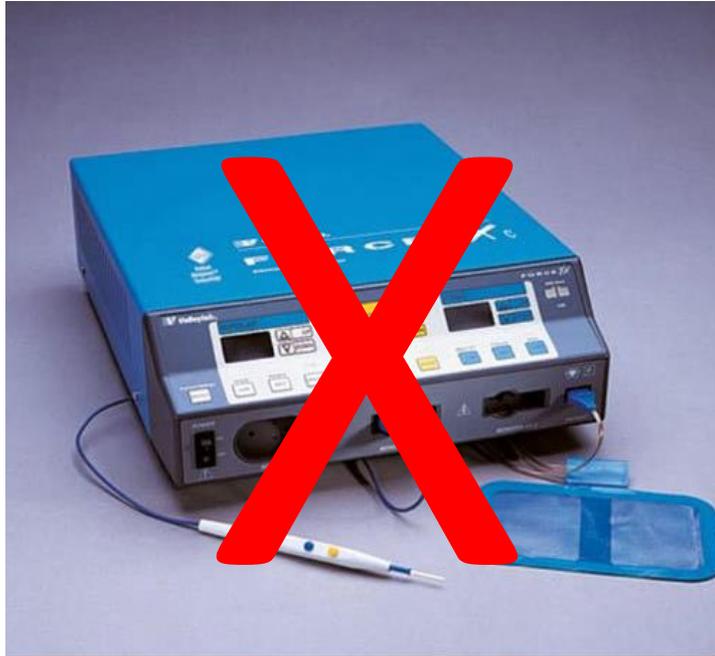
2. Suspected cancer

# Electrosurgical Units (ESUs)

- Modern ESUs have internal processors that permit much better control of current and help limit colonic injury
- You should be familiar with the controls on your ESU

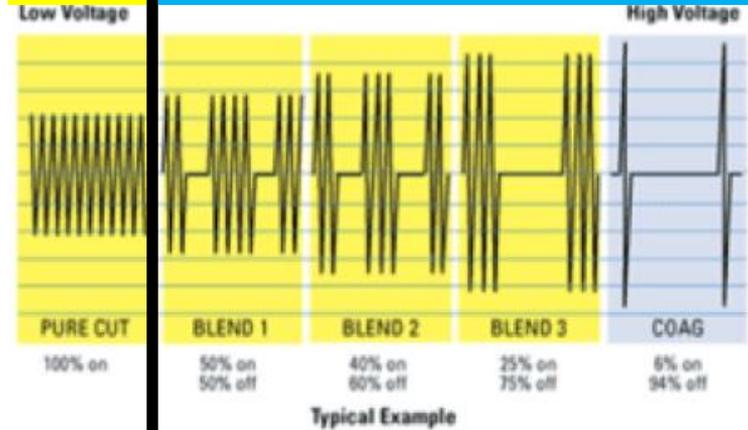


# Older units work differently!



CUT

Different % COAG, but NO CUT



- Blend

- *Constant POWER Generator*
- Blend is NOT a mixture of cut and coag.
- It is a modification of the duty cycle or coag "ON" time.
- Yellow Pedal only for activation

# The names of waveforms are confusing

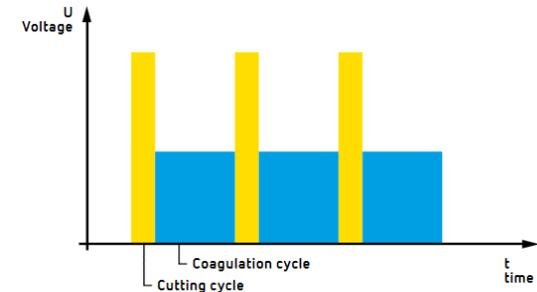
Soft Coag, Touch Soft, Coag, Forced Coag, Blend One, Pulse Cut, Endocut I or Q, Blend Coag, Blend Cut, Swift Coag, Pulse Blend Cut, Fulgurate

**Cut and coagulation are occurring virtually simultaneously**

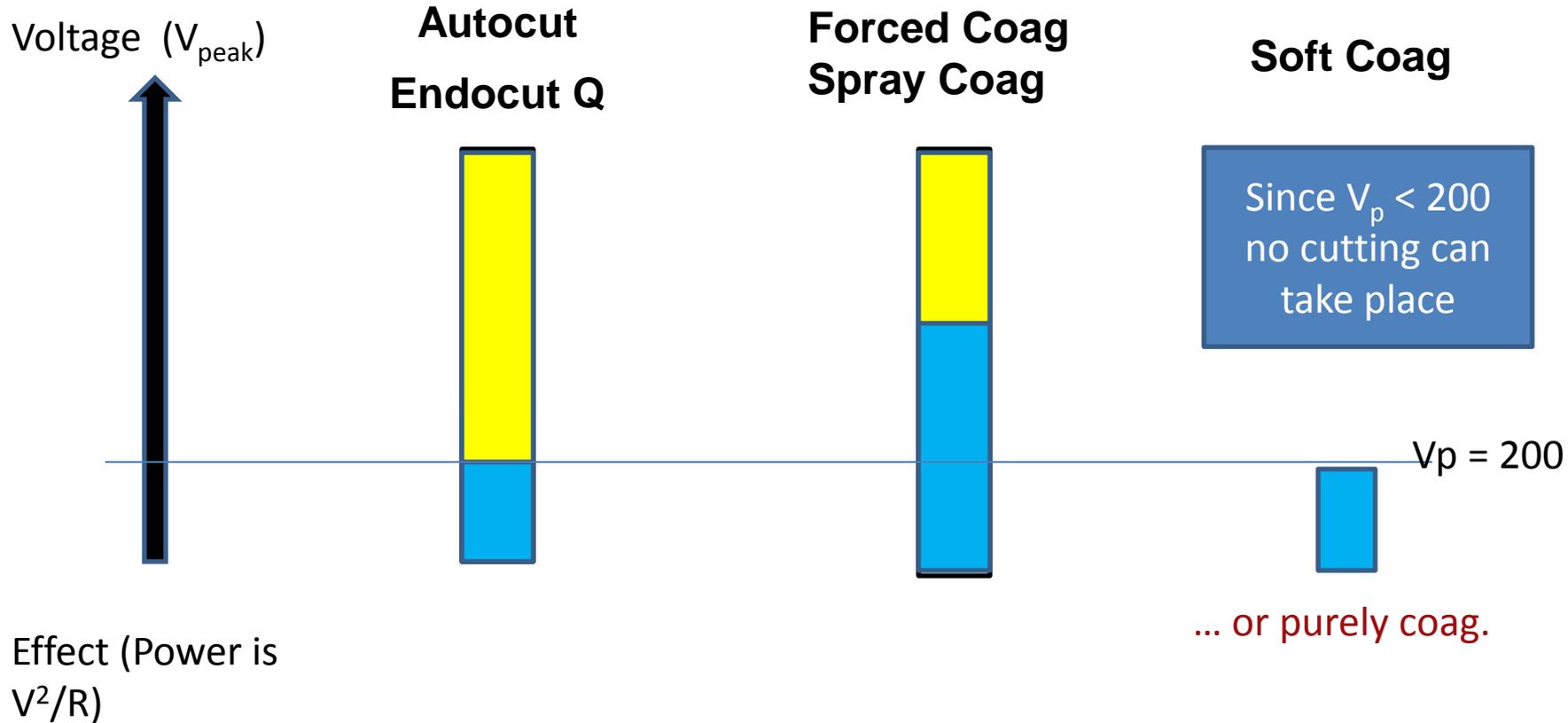
This happens in milliseconds –

*you cannot change it with how long you hold your pedal*

*Each program name is trying to tell you what proportion and strength of cut and/or coag to expect*



# Programs offer different proportions of cut and coagulation



... or purely coag.

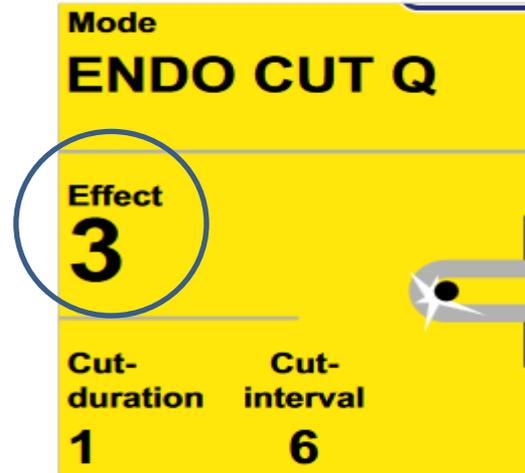
# General concepts

- **Cut:** lots of energy quickly to make a cell burst
- **Coag:** less energy/time than cut - heats up a cell and desiccates it
- **Soft coag:** much less energy, limits cell damage due to lower peak voltage

Always look at the coagulum (the white around the polyp)

- Try to notice if you are delivering energy but you are not seeing an effect locally, it may be causing deep injury.... Delayed perforation risk!
- Be careful if you grab too much tissue with a snare (stalling risk)

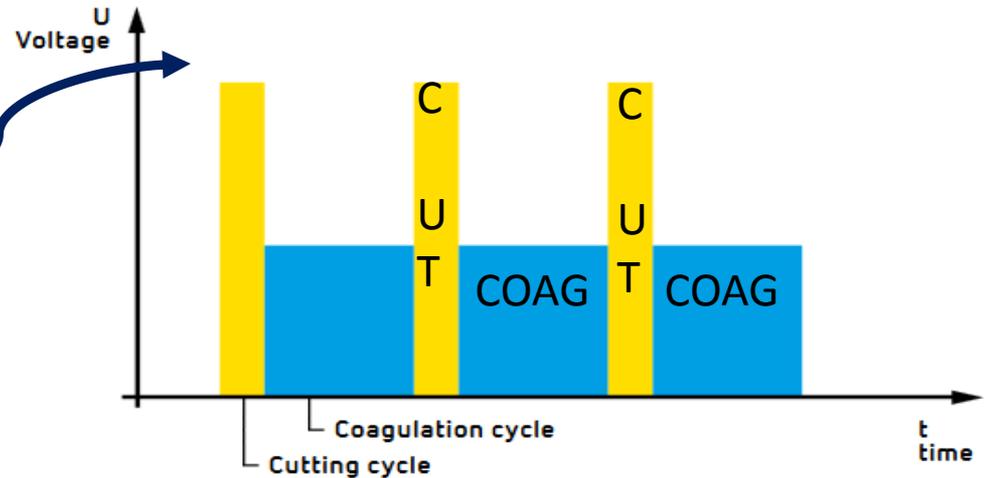
# How to interpret the Electrosurgical unit settings



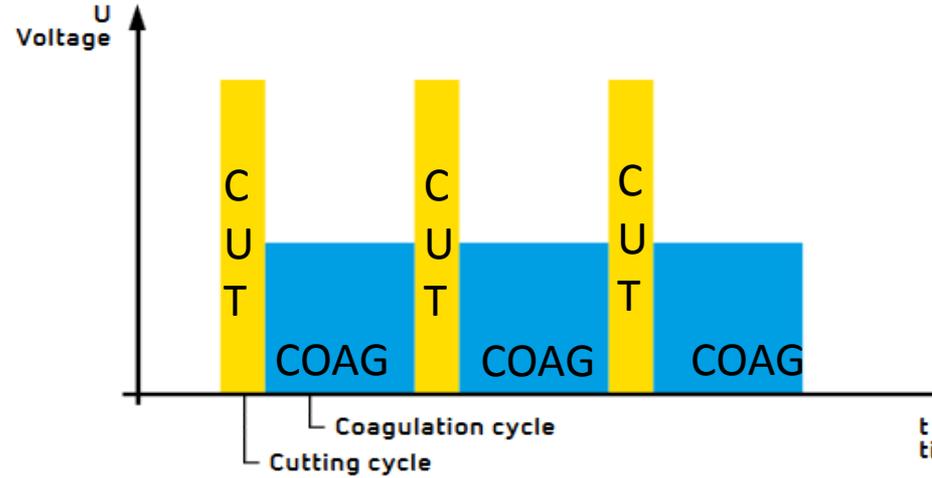
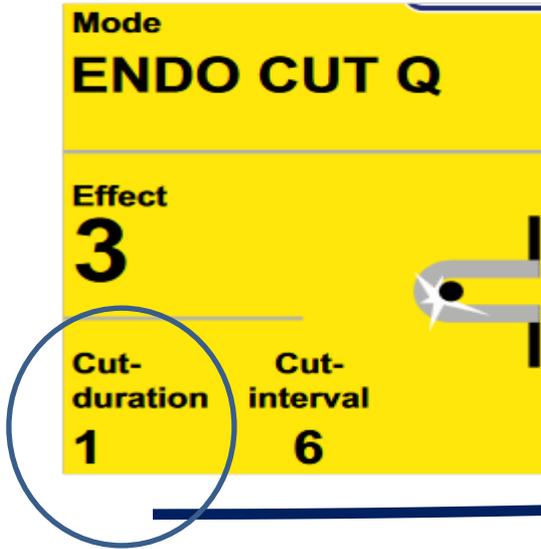
Effect 2-3 for polypectomy

Increasing effect means increasing voltage

$$\text{Effect} = V^2/R$$

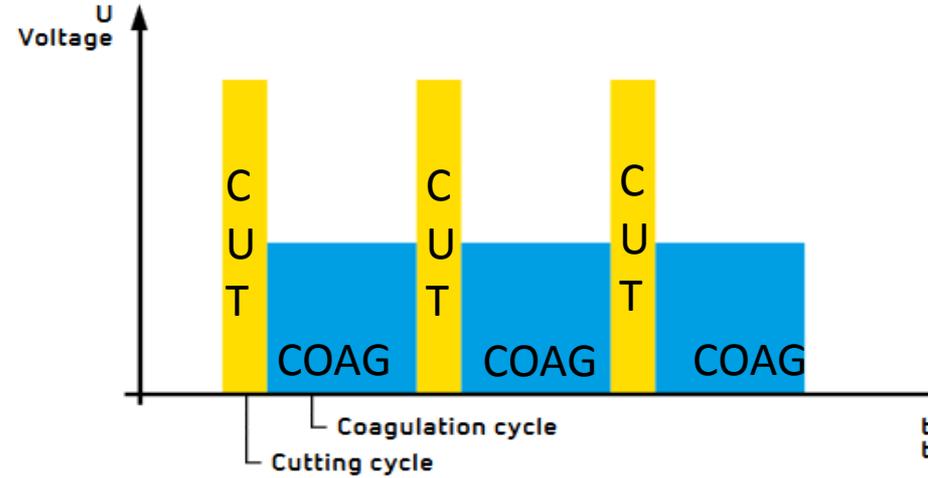
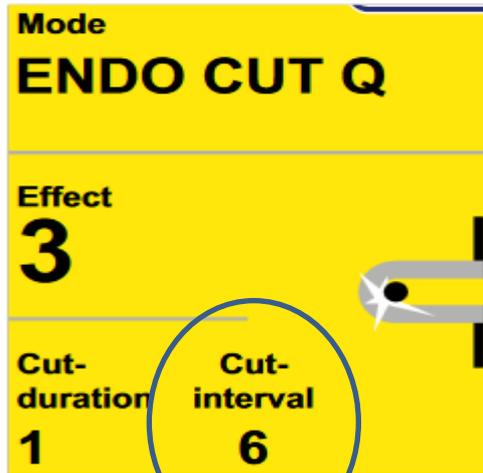


# Cut duration – more cutting time...



cut duration provides more cutting

# Cut interval is time between cutting...



Incr. cut interval means providing more time for coagulation effect

# Tips to remember

- Be familiar with the settings on your ESU.
- Choosing waveforms (Programs) should be done depending on patient (polyp) variables
  - For routine polyps, the standard settings are usually OK...*
- Watch the amount of white that is created
  - Personally I want as much cutting as possible with very little tissue injury or bleeding...
- Squeeze amount and speed of cut can have *more influence than settings* (\*within usual setting ranges)
  - Do you know how much tension your assistant uses?
  - Consider handling the snare during complex polypectomy

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		13h00 - 14h40 Lab W1143	Hands-on Polypectomy Workstations (5)
		14h00 - 14h30	Break
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		15h30 - 16h00 W1106	Wrap-up

# Interactive discussion

# Hands on with animal models

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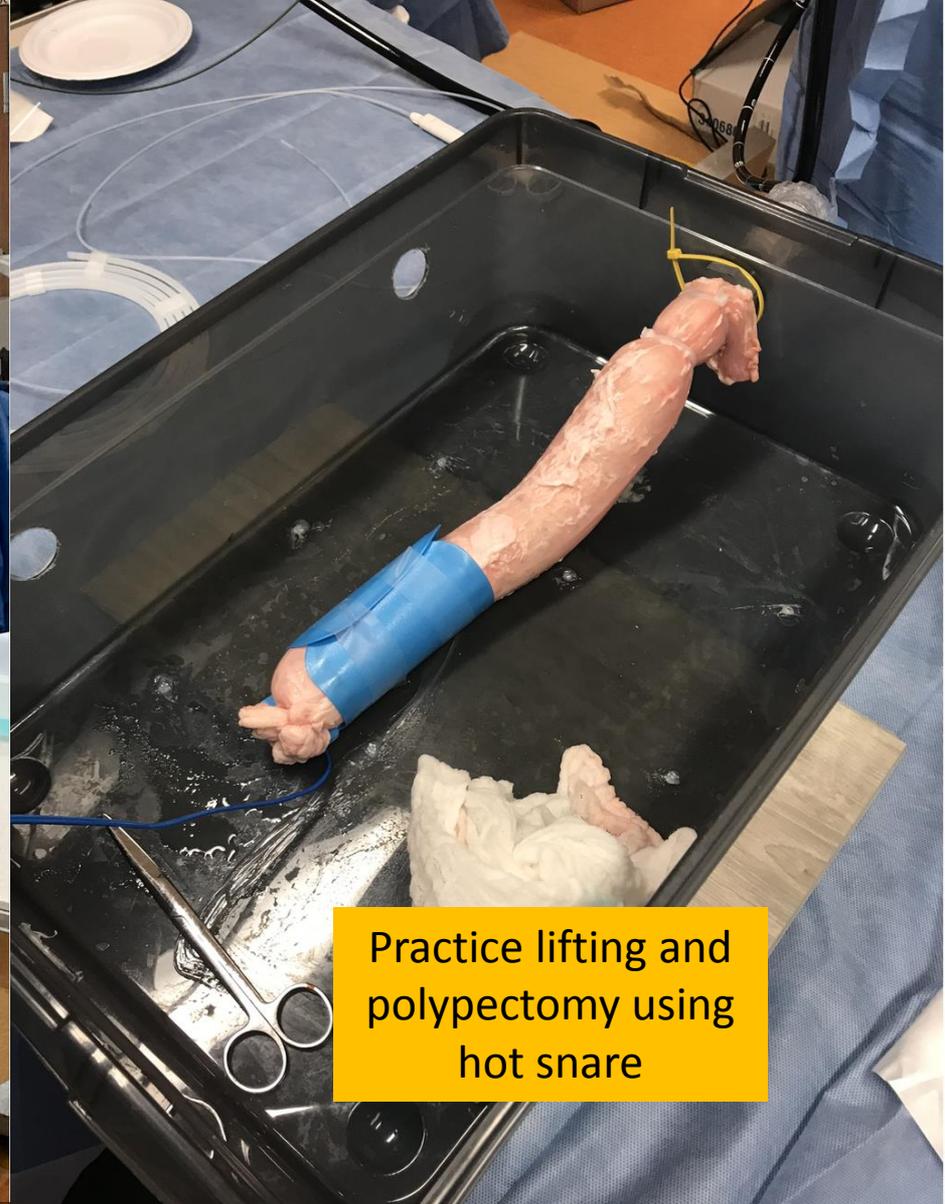
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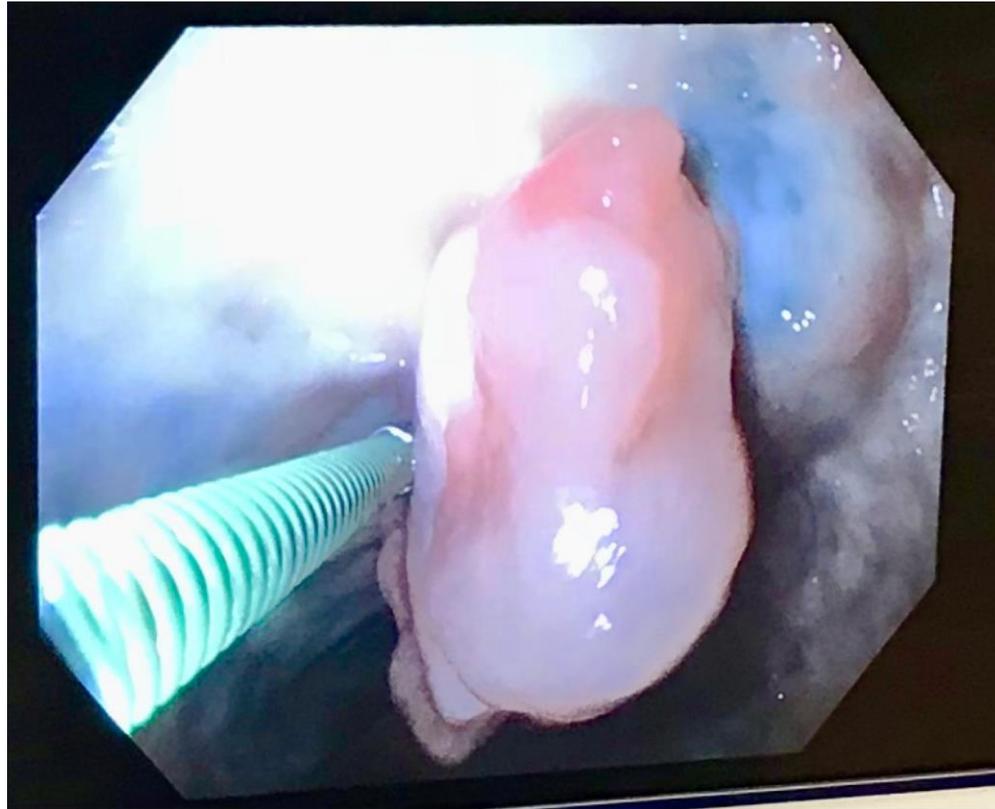
Courses are held on weekends in simulation centers



Try different accessories



Practice lifting and polypectomy using hot snare



On site Performance enhancing Feedback from SEE instructors

# Conclusions

## Approach to polypectomy

Cold biopsy polypectomy – 1-3 mm polyps

Cold snare polypectomy – 5-9 mm polyps

Hot snare polypectomy – 10-19 mm polyps

EMR – flat lesions or > 2 cm

Adjust your snare choice and get to know the basics of your electrosurgical unit



# Pedunculated polyps - Technical aspects

- Snare selection
  - Snare must be able to fit over the head of the polyp and then be maneuvered down to the stalk
  - With mega-polyps this can be difficult
- Type of electrocautery settings
  - Endocut
  - Forced coagulation
    - Higher delivery of thermal injury
      - More potential for deep injury
- *Keep the closed snare away from the colonic wall prior to applying current, to reduce the risk of deep thermal injury*

# The ideal technique for pedunculated polyp removal is underdetermined

## 1. No pretreatment

1. Deal with bleeding if it occurs
2. Grab the stalk with the snare for immediate compression

## 2. Endoloop

1. Infrequently used – retraining is often needed – risk of inadvertent guillotine.

## 3. Hemoclips

1. Often not big enough for the stalk diameter. Can interfere with subsequent polypectomy

## 4. Epinephrine injection

1. May shrink the polyp slightly

# Prophylactic hemostasis

- Risk factors for post-polypectomy bleeding
  - Polyp > 10 mm
  - Polyp stalk > 5 mm
  - Polyp located in R colon
  - Malignant polyp
- Pre-treatment of polyps  $\geq 10$  mm in size is considered beneficial, with the greatest benefit seen in polyps  $\geq 20$  mm
  - Pre-injection with dilute adrenaline
  - Mechanical hemostasis with endoloop or hemostatic clips