Secrets from An Endo Conference Organizer
(and ~25 years Experience)

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Peace River, Alberta
AAPCE Nov 2023

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Who is this Kolber guy?

- UBC – Chilliwack FM program: 1996-98
  - GI Additional Skills Training: 1999
- Peace River, Alberta: 1999 –
  - 2009-2011: MSc Clin Epi
- University of Alberta Academic position: 2011—
  - PEER Team: Associate Director
- Endo Skills Days chair: 2011 –
- I personally:
  - Like helping patients feel better and being resource to my community
  - I am keen on quality endo!
  - Value for health care dollars

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Kolber's Endoscopies Performed in Training

Gastroscopy:	230
Colonoscopy:	91
Sigmoidoscopy:	16

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No colonoscopy privileges, but…

Moved to Beautiful Peace River

"Record your first 25 colons"

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Kept Recording my Outcomes…7 Years later…

- 1178 colons, 667 gastros, 104 sigs
- 27 CRCs, 48 new IBD, 17 celiac
- Adjusted cecal intubation: 92.3%
- ADR: ≥50 years: ♂ 29.8% ♀ 18%
- Adverse events: 1 perforation
  - Naloxone 5 times (most 1st year)


Research

Outcomes of 1949 endoscopic procedures

Performed by a Canadian rural family physician

Can Fam Phys 2009;55:170

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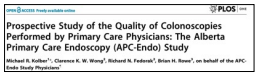
2009 – Kolber Needs a MSc Project…

…"How many of Family Physicians perform endoscopy in Alberta?"


Prospective Study of the Quality of Colonoscopies Performed by Primary Care Physicians: The Alberta Primary Care Endoscopy (APC-Endo) Study

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Kolber: ~25 Years of Endo Quality

- 2009: Quality of 1949 endoscopic procedures
- 2013: Alberta Primary Care (APC)-Endo: 10 FP/GIM; 577 colons
- 2018: Alberta Family Physician (AFPEE): 9 FPs; 1769 colons
- 2023: Alberta North Zone Endo Quality: 16 endos; 6212 colons

Outcomes of 1949 endoscopic procedures
Performed by a Canadian rural family physician

Prospective Study of the Quality of Colonoscopies Performed by Primary Care Physicians: The Alberta Primary Care Endoscopy (APC-Endo) Study

Alberta Family Physician Electronic Endoscopy study
Quality of 1769 colonoscopies performed by rural Canadian family physicians

Research
Evaluation of the quality of colonoscopies performed by Alberta North Zone surgeons, family physicians and internists: a quality improvement initiative

Can Fam Phys 2009;55:170, PLoS ONE 2013; 8(6): e67017. doi:10.1371
Can Fam Phys 2018 64 (12): e555, *CMAJ Open* 2023 DOI:10.9778/cmajo.20210237

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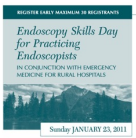
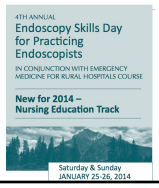
APC-Endo – I toured Alberta Endo Suites

- Many excellent endoscopists: each working in relative silos
- Started Endoscopy Skills Days in 2011
- Added nurses in 2014





www.asep.ca

ASEP

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Learning #1: "It does not matter what badge you wear…"

- FPs with additional training can perform high quality endoscopy

Study	Participants	Time # colonoscopies	ADR (%) or PDR ♂ / ♀ ≥50 years	Adverse events
Kolber 2009	Kolber 7 years	7 years 1749 gastro/colons	29.8 / 18	1 perforation Naloxone 5
APC Endo 2013	8 FP, 2 Internists	2 months 577 colons	46.4/30.2	4
AFPEE 2018	9 FPs	6 months 1769 colons	67.4 / 51.1	2
Alberta North Zone 2023	9 Surgeons, 5 FPs, 2 Internists	2 years 6212 colons	66.1/49.8 (PDR)	NR

Can Fam Phys 2009;55:170, PLoS ONE 2013; 8(6): e67017. doi:10.1371
Can Fam Phys 2018 64 (12): e555, *CMAJ Open* 2023 DOI:10.9778/cmajo.20210237

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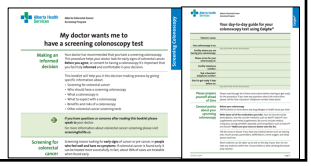
Learning #2: Endoscopist (or designate) meet prior to procedure

- Adverse Events: British Columbia FIT based screening program[1]
  - 96162 colons done by surgeons (70%), gastros (20%), internists/FPs
    - Registered and called @ 14 days
  - AEs (per 10,000): Bleeding 26, CV, perforation 6 → **overall SAE 1 in 200**
  - Perforation rate 1.5% if >20mm[2]
- Bowel Preps, Medications: insulin, DOACs
  - GLP-1s and gastroparesis[3,4]



[1]*CMAJ Open* 2021 DOI:10.9778, [2]Gastroenterology 2020; 158:1095, screenforlife.ca (Alberta), [3]J Diabetes Invest2023; 14: 767
[4]American Assoc of Anaesthesia: https://www.asahq.org/about-asa/newsroom/news-releases/2023/06/american-society-of-anesthesiologists-consensus-based-guidance-on-preoperative

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Suggested Management of Antithrombotic Agents for a Screening-Related Colonoscopy

Antithrombotic Agent	Recommended interval between last dose and procedure	Recommended interval between procedure and next dose	If therapeutic intervention performed*
Anticoagulant agent			
Coumadin® (warfarin)	5 d	<24 hrs	<24 hrs
Low molecular weight heparin (LMWH)**	24 hrs	<24 hrs	48 hrs
Pradaxa® (dabigatran) *(Predominantly renal excretion. Assessment of renal function is essential)*	48 hrs GFR ≥60 mL/min 5 d GFR 30-59 mL/min GFR <30 mL/min=NOT ELIGIBLE FOR SCREENING COLONOSCOPY	1 d	48 hrs
Xarelto® (rivaroxaban)	48 hrs	1 d	48 hrs
Eliquis® (apixaban)	48 hrs	1 d	48 hrs
Antiplatelet agent			
Aspirin® (81 mg or 325 mg)	continue		N/A
Plavix® (clopidogrel)	5 d	1 d	1 d
Effient® (prasugrel)	5 d	1-2 d	1-2 d***
Brilinta® (ticagrelor)	5 d	1-2 d	1-2 d***
Aggrenox® (dypiridamole/ASA)	7-10 d (consider starting Aspirin bridge)	1 d	1 d

GFR-glomerular filtration rate mL/min. In the absence of kidney damage, a GFR ≥60 mL/min/1.73sq.m is considered normal. Please see http://www.akdn.info/index.php for more information regarding GFR.
*Restarting antithrombotics is dependent on endoscopic intervention performed during the procedure. When large polyps (≥1cm) have been removed with electrocautery, use caution if restarting NOACS – therapeutic anticoagulation occurs within a few hours of restarting the drug.

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Learning #3: Team Huddle to begin the day

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Procedural Improvements
"We can all get better"

Don MacIntosh MD FRCPC, circa 2016

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Procedural Improvements #1: Holding the scope

- It is not a gastro!
- C curve (like a sail)

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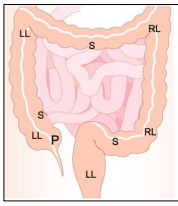
Procedural Improvements #2: Dynamic Position Changes

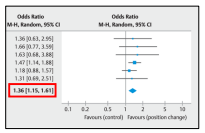


Easy in light sedation

Optimal position
S supine
LL left lateral
P Prone
RL right lateral

Courtesy Mactintosh SEE/CSI Course 2016

Easier and Improves ADR!



Endo International Open 2020; 08: E1842

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Dynamic Position Changes = Less Sedation
Less sedation --> dynamic position changes

- Consider unsedated colons:
  - Kolber: ~5%...Farmers, physicians
  - North Zone: 1%

And your nurses will love you!

CMAJ Open 2023 DOI:10.9778

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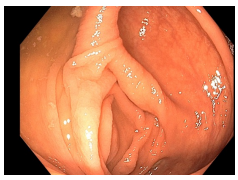
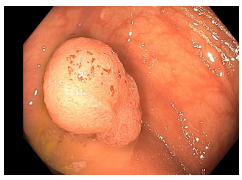
Dynamic position change: two looks in cecum!





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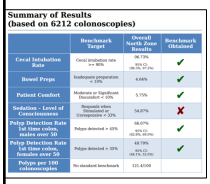
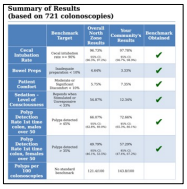
New quality metric: Sedation – Level of Consciousness



Summary of Results
(based on 6212 colonoscopies)

	Benchmark Target	Overall North Zone Results	Benchmark Obtained
Cecal Intubation Rate	Cecal intubation rate >= 90%	96.73% (96.3%, 97.1%)	✔
Bowel Preps	Inadequate preparation < 25%	4.66%	✔
Patient Comfort	Moderate or Significant Discomfort < 10%	5.75%	✔
Sedation - Level of Consciousness	Responds when Stimulated or Unresponsive < 25%	54.67%	✘
Polyp Detection Rate 1st time colon, males over 50	Polyps detected > 45%	66.07% (65.5%, 66.6%)	✔
Polyp Detection Rate 1st time colon, females over 50	Polyps detected > 35%	49.79% (49.1%, 50.5%)	✔
Polyps per 100 colonoscopies	No standard benchmark	111.4/100	

Overall



Summary of Results
(based on 721 colonoscopies)

	Benchmark Target	Overall North Zone Results	Your Community's Results	Benchmark Obtained
Cecal Intubation Rate	Cecal intubation rate >= 90%	96.73% (96.3%, 97.1%)	97.78% (96.7%, 98.9%)	✔
Bowel Preps	Inadequate preparation < 25%	4.66%	3.33%	✔
Patient Comfort	Moderate or Significant Discomfort < 10%	5.75%	7.35%	✔
Sedation - Level of Consciousness	Responds when Stimulated or Unresponsive < 25%	54.67%	12.36%	✔
Polyp Detection Rate 1st time colon, males over 50	Polyps detected > 45%	66.07% (65.5%, 66.6%)	72.66% (69.1%, 76.1%)	✔
Polyp Detection Rate 1st time colon, females over 50	Polyps detected > 35%	49.79% (49.1%, 50.5%)	57.39% (53.9%, 61.0%)	✔
Polyps per 100 colonoscopies	No standard benchmark	111.4/100	143.8/100	

Peace River

Summary of Results
(based on 224 colonoscopies)

	Benchmark Target	Cohort North Zone Results	Your Results	Benchmark Obtained
Cecal Intubation Rate	Cecal intubation rate >= 90%	96.73% (96.3%, 97.1%)	99.54% (97.5%, 99.9%)	✔
Bowel Preps	Inadequate preparation < 25%	4.66%	3.57%	✔
Patient Comfort	Moderate or Significant Discomfort < 10%	5.75%	3.48%	✔
Sedation - Level of Consciousness	Responds when Stimulated or Unresponsive < 25%	54.67%	5.36%	✔
Polyp Detection Rate 1st time colon, males over 50	Polyps detected > 45%	66.07% (65.5%, 66.6%)	74.07% (69.1%, 79.0%)	✔
Polyp Detection Rate 1st time colon, females over 50	Polyps detected > 35%	49.79% (49.1%, 50.5%)	72.73% (68.2%, 77.3%)	✔
Polyps per 100 colonoscopies	No standard benchmark	111.4/100	152.7/100	

Your Start Date: 2018-06-13
Study End Date: 2020-03-16

Kolber

CMAJ Open 2023 DOI:10.9778

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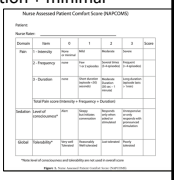
PICI: Performance Indicator of colonic intubation

- Performance Indicator of colonic intubation (PICI): intubation + minimal sedation (midaz ≤ 2mg) + NAPCOM 1-3
  - Older, ♂, adequate prep, FOBT+→ ↑likelihood of PICI[1]
- North Zone PICI: overall: 40%
  - Range ~1 - 89.7%


Nurse-Assessed Patient Comfort Score (NAPCOMS)

Bottom Line: LESS is more (for many things in endoscopy - especially sedation)

Endoscopy 2018; 50: 40

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Procedural Improvements: Water insufflation

- Water immersion or exchange
  - Straightens L colon
- Increases CIR, ADRs [OR: 1.40 (1.22-1.62)], SSL [RR 1.63 (1.24, 2.13], likelihood of performing unsedated colon

J Clin Gastroenterol 2021;55:520

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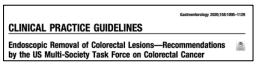
Procedural Improvements #3: Rise of the cold snare


CLINICAL PRACTICE GUIDELINES

Endoscopic Removal of Colorectal Lesions—Recommendations by the US Multi-Society Task Force on Colorectal Cancer

- We recommend cold snare polypectomy to remove diminutive (5 mm) and small (6–9 mm) lesions due to high complete resection rates and safety profile.
- We suggest cold or hot snare polypectomy (+/- submucosal injection) to remove 10-19-mm non-pedunculated lesions.
- **Should be used in >95% of polyps**
- Take a few mms of normal tissue!

Gastroenterology 2020;158:1095

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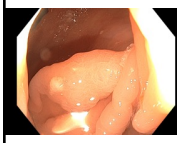
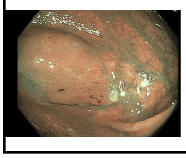
Procedural Improvements #4: Ancillary lights





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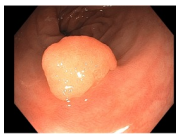
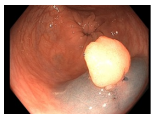
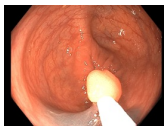
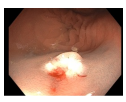
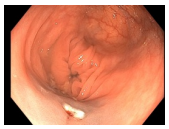
Procedural Improvements #5: Inject prior to snaring for many sessile lesions











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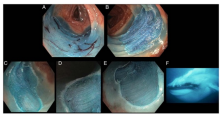
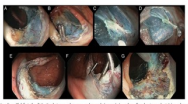
Sydney Classification Blue is Good!

Sydney Classification of Deep Mural Injury (DMI) following EMR

Type 0	Normal defect. Blue mat appearance of obliquely oriented intersecting submucosal connective tissue fibres.
Type I	MP visible, but no mechanical injury.
Type II	Focal loss of the submucosal plane raising concern for MP injury or rendering the MP defect uninterpretable.
Type III	MP injured, specimen target or defect target identified
Type IV	Actual hole within a white cautery ring, no observed contamination
Type V	Actual hole within a white cautery ring, observed contamination



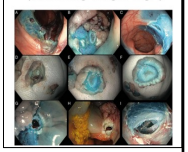
Type 0-1 Injury



Type 2 Injury

Type 3-5 Injury

(Including Target Sign)



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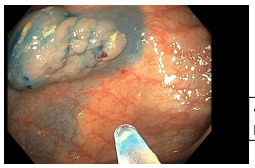
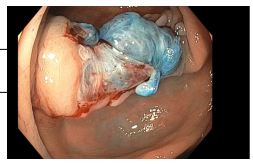
Procedural Improvements: Injections



→ Advanced Endoscopist



I think this is a Type 2 Injury

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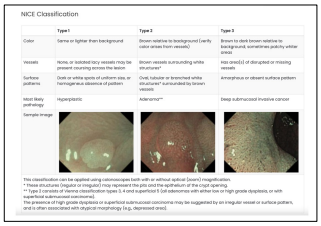
Procedural Improvements #5
Slow down and take "optical biopsies"

- 3 Pictures: far, near, near focus



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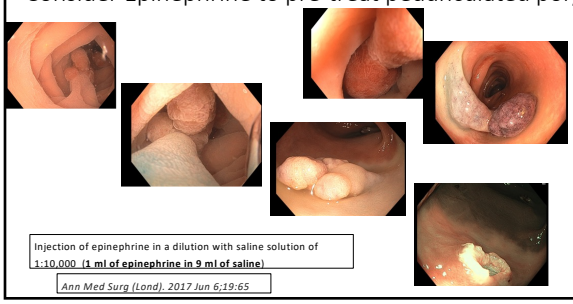
Procedure #6:
Consider Epinephrine to pre-treat pedunculated polyps



Injection of epinephrine in a dilution with saline solution of 1:10,000 (1 ml of epinephrine in 9 ml of saline)

Ann Med Surg (Lond). 2017 Jun 6;19:65

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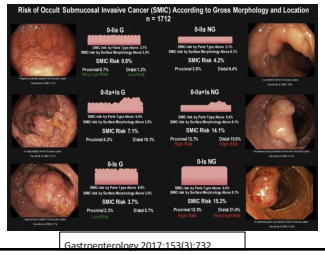
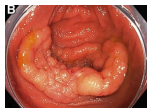
Procedure #6:
Advanced Endoscopist or Surgeon or Is this a cancer?

- **Granular is Good, Proximal preferred (less chance of SMIC)**
- Disorganized, Dimples = ↑ risk SMIC



Gastroenterology 2017;153(3):732



Gastroenterology 2020; 158:1095

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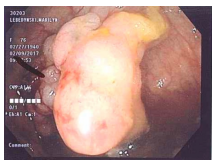
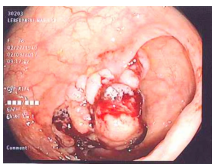
Procedural #7: Don't start what you cannot finish!

- 2016: Obstructing (T2N0M0) sigmoid cancer.
- Colon 2017: large granular cecal lesion.





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Where else can you learn all these improvements in a short time? Take a course

Skills Enhancement for Endoscopy™

ASGE STAR CERTIFICATE PROGRAM

Or Direct Observation with your Peers

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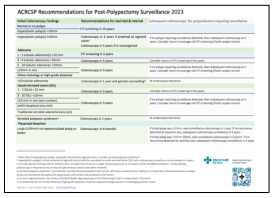
Programmatic Improvements

- Nurses can perform your routine consults
- One colon does not beget future colon



https://screeningforlife.ca/wp-content/uploads/ACRCSP-Recommendations-for-Post-Polyp-Surveillance_Table_-April-2023.pdf

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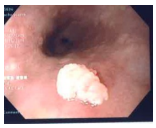
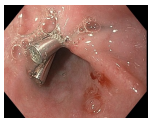
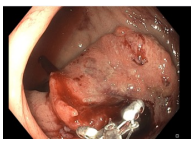
Most Important Point I have learned:
Mutually respectful relationships is so important!

CLINICAL HISTORY:
Squamous papilloma, esophagus biopsy. Endoscopic appearance:
Endoscopic mucosal resection

FINAL DIAGNOSIS:
ESOPHAGUS AT 32 CM, 6:00 POSITION, ENDOMUCOSAL RESECTION
Squamous papilloma, benign

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Refer to Advanced Endoscopist is not a failure!

- I use a few advanced endoscopists in the province:
  - >20 mm flat or sessile lesions (especially R sided)
  - Polyps within appendix or diverticula
- Any lesion I do not feel I can get off with my 1st attempt
- Non-malignant polyps are still being sent to surgery w/o adv endo trial
  - USA: 5.9 per 100,000 patients (2000) to 9.4 /100,000 patients (2014)
  - 90% successful EMR, 20% recurrence --> treat with EMR again
  - Send to advanced endoscopist → ↓ likelihood of surgery (and morbidity/mortality)

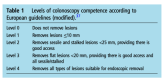
Table 1 Levels of colonoscopy competence according to European guidelines (modified)[7]

Level 0	Does not remove lesions
Level 1	Removes lesions ≤10 mm
Level 2	Removes sessile and stalked lesions <25 mm, providing there is good access
Level 3	Removes flat lesions <20 mm, providing there is good access and all uncluttered
Level 4	Removes all types of lesions suitable for endoscopic removal

Gastroenterology 2018 April ; 154(5): 1352.
World J Gastro 2022 December 21; 28(47)

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Summary

- You (or designate) meet patient prior to endo suite
- Procedural Advancements (we can all get better)
  - Less sedation, dynamic position changes, water insufflation
  - Rise of the cold snare
  - Epi injection for thick stalks
  - Don't start what you cannot finish
  - Is this a cancer or not?
- Non gastroenterology endoscopists can perform high quality colonoscopy
  - Leave the challenging /advanced lesions to our "McDavids"
- Relationships are so important

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Thank you!

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