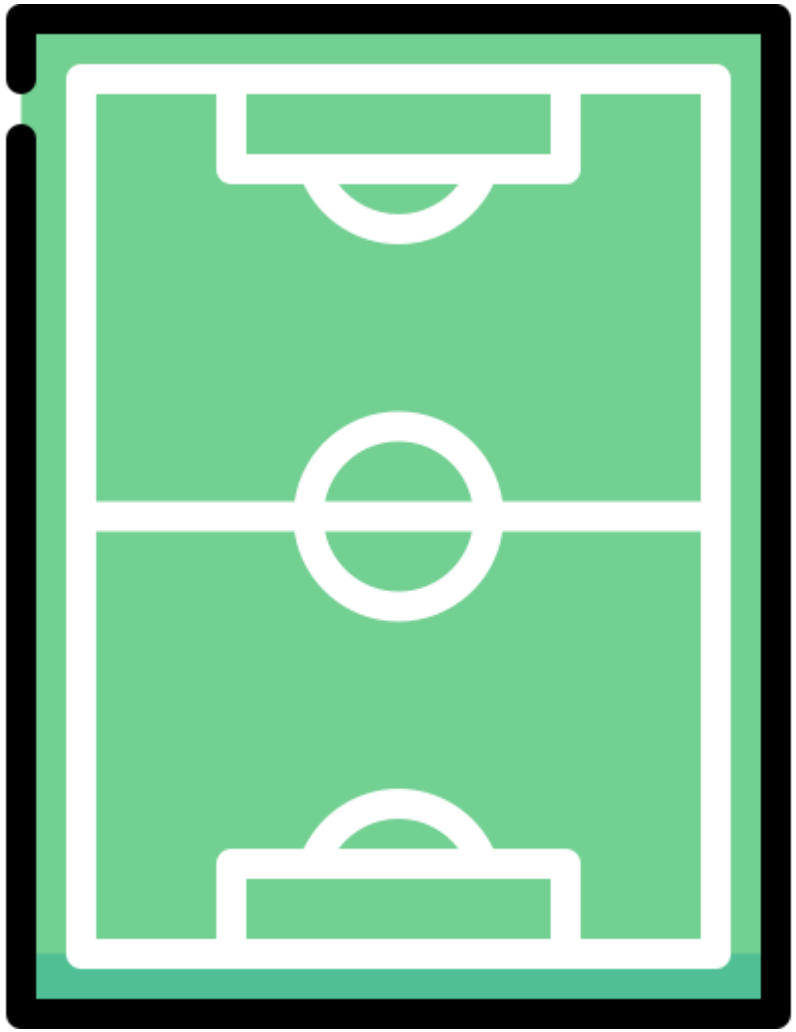
ESD TIPS AND TRICKS



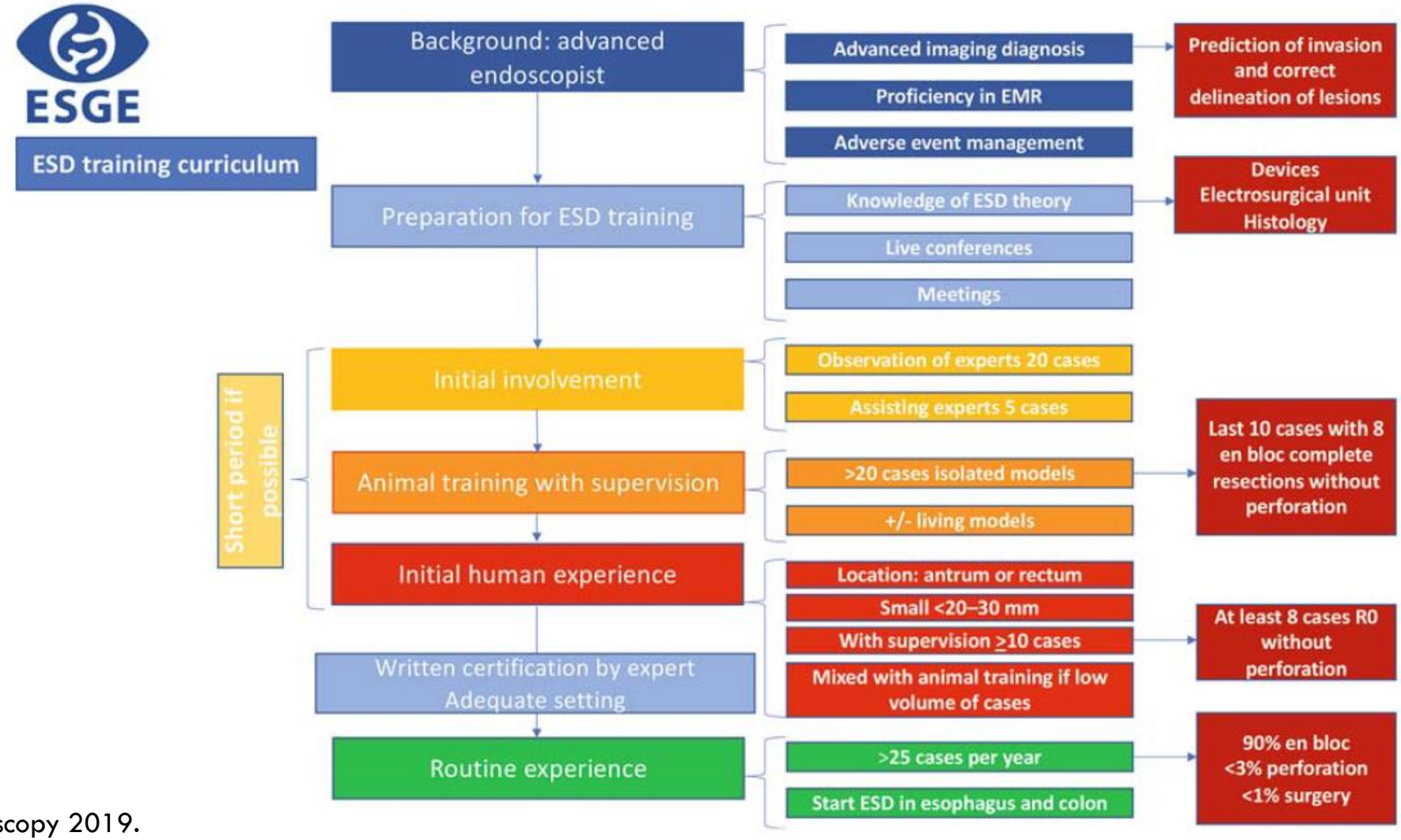
IFRED
Institut de Formation et de Recherche en Endoscopie Digestive

romain.legros@chu-limoges.fr

CHU Centre hospitalier universitaire Limoges

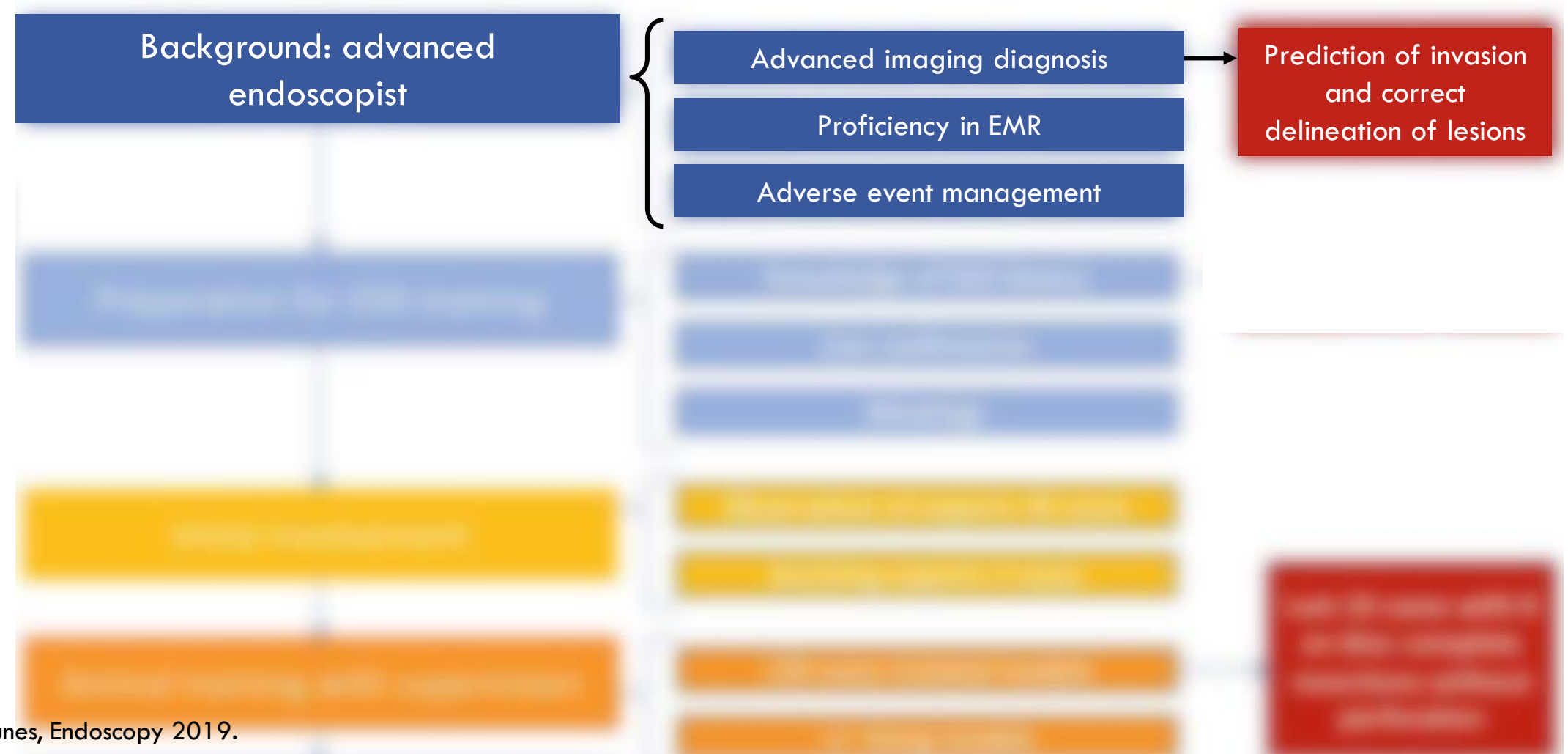
LA FORMATION

CURRICULUM



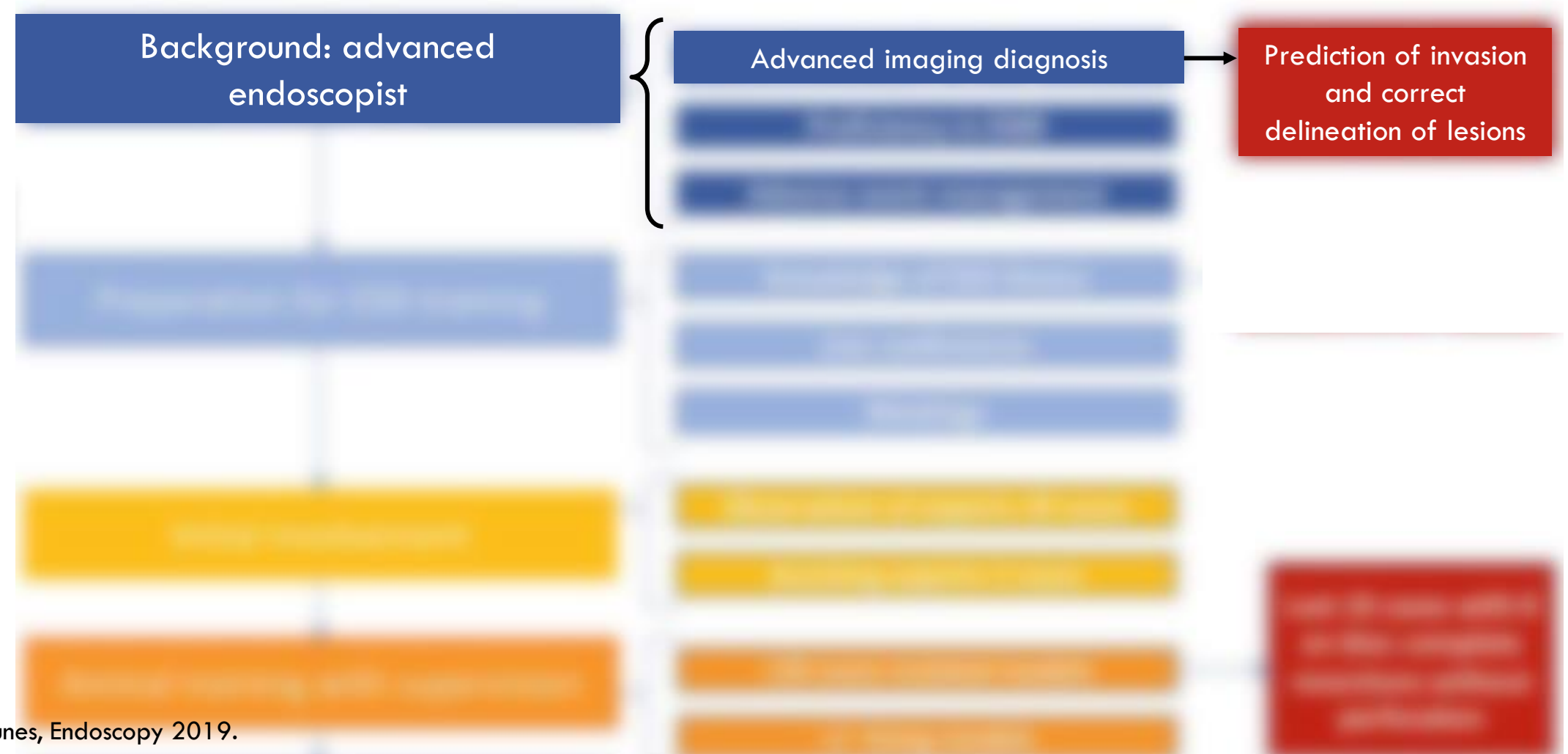
Pimentel-Nunes, Endoscopy 2019.

LA FORMATION



Pimentel-Nunes, Endoscopy 2019.

LA FORMATION



Pimentel-Nunes, Endoscopy 2019.

LES INDICATIONS

Guideline

Thieme

Endoscopic submucosal dissection for superficial gastrointestinal lesions: European Society of Gastrointestinal Endoscopy (ESGE) Guideline – Update 2022

Pedro Pimentel-Nunes et al., *Endoscopy* 54, n° 06 (juin 2022): 591-622,
https://doi.org/10.1055/a-1811-7025

Authors

Pedro Pimentel-Nunes[1,2,*], Diogo Libânio[1,3,*], Barbara A. J. Bastiaansen[4], Pradeep Bhandari[5], Raf Bisschops[6], Michael J. Bourke[7], Gianluca Esposito[8], Arnaud Lemmers[9], Roberta Maselli[10,11], Helmut Messmann[12], Oliver Pech[13], Mathieu Pioche[14], Michael Vieth[15], Bas L. A. M. Weusten[16], Jeanin E. van Hooft[17], Pierre H. Deprez[18], Mario Dinis-Ribeiro[1,3]

ŒSOPHAGE CARCINOME ÉPIDERMOÏDE: INDICATION

Indication → Caractérisation (+/- EUS) → Extension

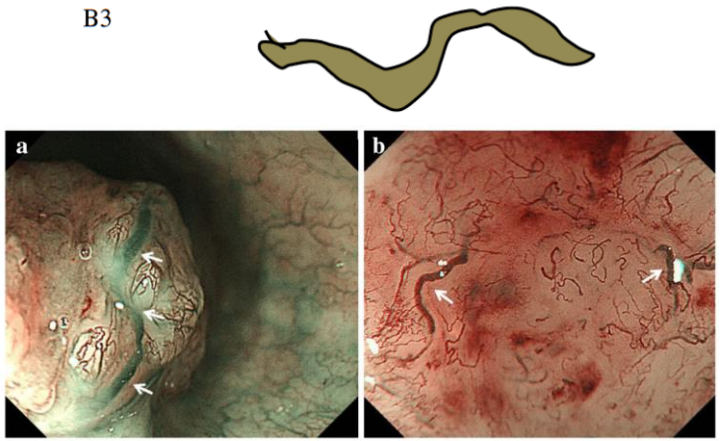
- ✓ Zoom
- ✓ Chromo
- ✓ Lugol

Lésion 0-II

- cT1m1/m2 → B1 → Non circonférentiel
- cT1m1/m2 → B1 → Circonférentiel <5cm

27 à 55% si <75% circonférence

- cT1m3/sm1 → B2 → Non circonférentiel



Ishihara R, Dig Endosc. 2020;32(4):452–93.
Oyama T, Esophagus. 2017;14(2):105–12
Pedro Pimentel-Nunes et al., *Endoscopy* 54, nº 06 (juin 2022): 591-622, https://doi.org/10.1055/a-1811-7025.
Katsunori Matsueda *Esophagus* 18, nº 3 (juillet 2021): 585-93 https://doi.org/10.1007/s10388-021-00814-4.

ŒSOPHAGE BARRETT: INDICATION

Indications

- ✓ Lésion visible
- ✓ DHG
- ✓ Cancer

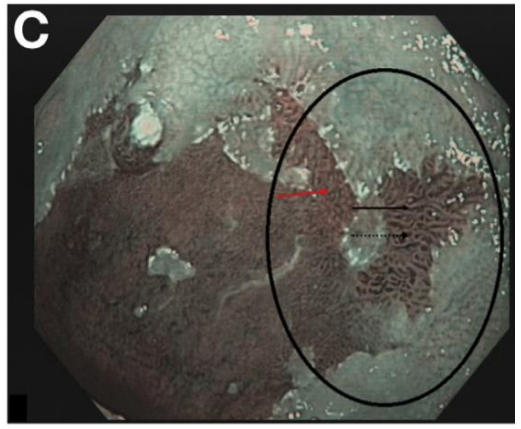
- ✓ PREDICT
- ✓ BING

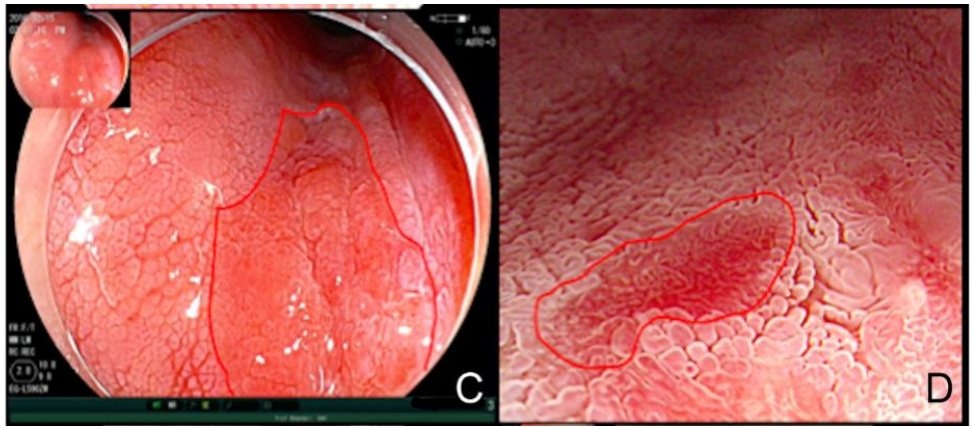
Caractérisation

- ✓ Pas de classification pour risque sm
- ✓ Si DHG 25 à 40% de cancer associé
- ✓ Plus de cancer si 0-Is ou 0-IIa-IIc

Extension

- ✓ Zoom
- ✓ Chromo
- ✓ Acide acétique
- ✓ Biopsies si EBO>3cm





Ishihara R, Dig Endosc. 2020;32(4):452–93.
Weusten B,. Endoscopy 2017
Pedro Pimentel-Nunes et al., *Endoscopy* 54, n° 06 (juin 2022): 591-622, https://doi.org/10.1055/a-1811-7025.

ESTOMAC: INDICATIONS

Indications

- ✓ Lésion visible
- ✓ DHG
- ✓ Cancer

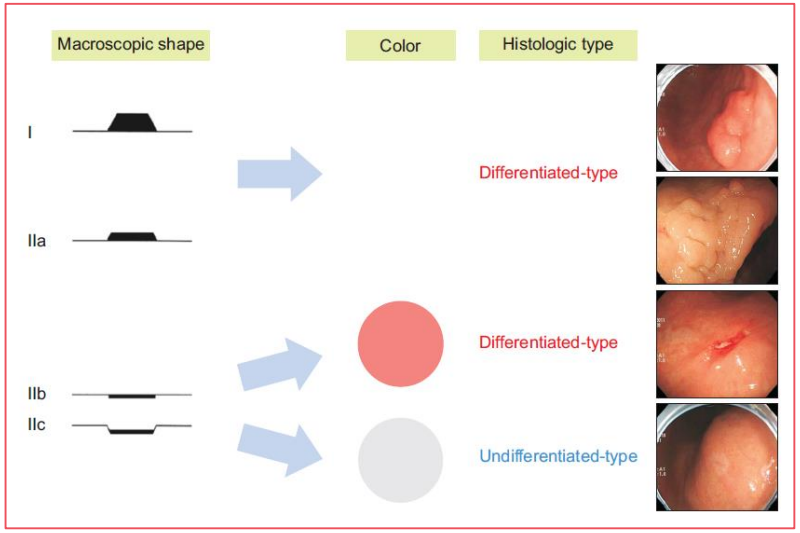
Pfdeur	Ulcération	Différencié		Indifférencié	
cT1a (m)	UL 0	Toute taille		≤2cm	>2cm
	UL 1	≤ 3cm	> 3cm	Toute taille	
cT1b (sm)	UL 0	≤ 3cm		> 3cm	

Indications formelles

Indications étendues

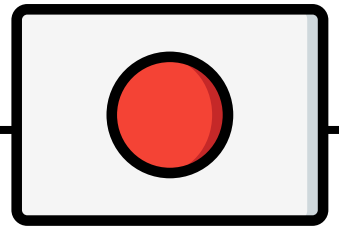
Non indiqué

Macroscopic shape	Suggesting mucosal cancer	Suggesting submucosal cancer
I	· ≤2 cm · Pedunculated	· >2 cm · Sessile · Uneven surface with nodules · Deep depression · Subepithelial tumor-like elevation
IIa	· ≤2 cm · Steep elevation	· >2 cm · Strong redness · Uneven surface with erosions · Deep depression · Nodular elevation
IIb	▶ Almost all cases are mucosal cancer	
IIc		
Ulceration (–)	· ≤2 cm · Shallow depression · Smooth surface · Minute nodules	· >2 cm · Strong redness · Deep depression · Loss of mucosal surface pattern · Large nodules · Subepithelial tumor-like elevation · Hardness during air inflation
Ulceration (+)	· Tapering of a fold tip · Abrupt cutting of a fold	· Clubbing of a fold · Fusion of folds · Hardness during air inflation
III	▶ Difficult to estimate the depth of invasion due to accompanying edema	



Pedro Pimentel-Nunes et al., *Endoscopy* 54, n° 06 (juin 2022): 591-622, https://doi.org/10.1055/a-1811-7025.
Ono H, Dig Endosc. 2021;33(1):4–20.

COLON ET RECTUM : INDICATIONS



Lésions suspectes

- LST NG surtout pseudo déprimée
- Lésion Vi
- Volumineuse lésion déprimée
- Lésion sessile avec risque de K (LST G + macronodule)

EMR difficiles

- Lésion inaccessible en monobloc en EMR (20mm)
- Fibrose sous muqueuse
- Récidive de résection antérieure
- Dysplasie sur MICI

Monobloc toujours souhaitable

Tanaka S, Dig Endosc. 2020;32(2):219–39.

COLON ET RECTUM: INDICATIONS

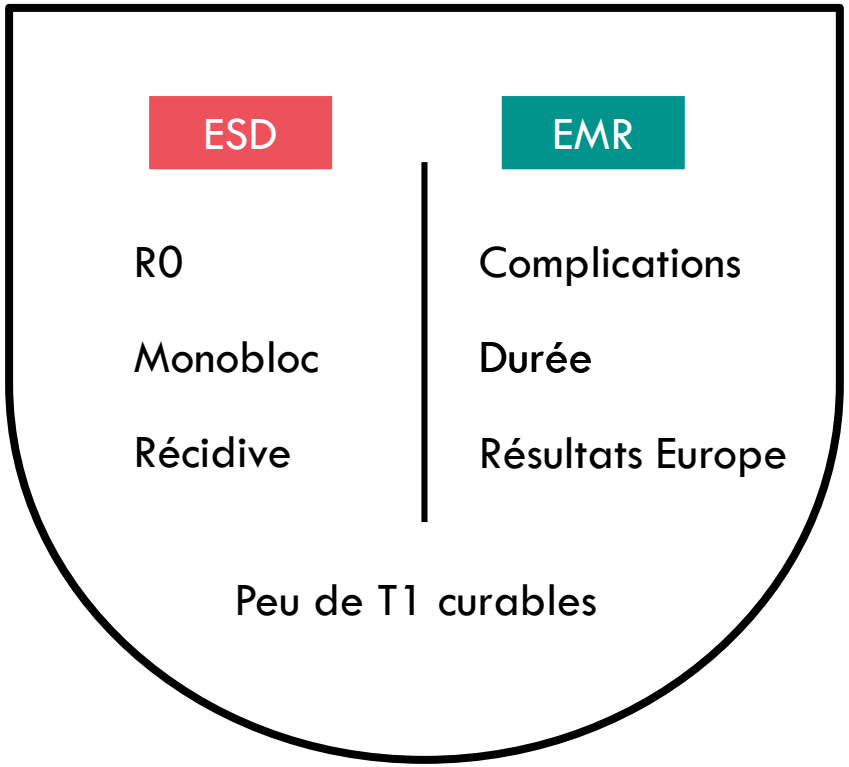
1

EMR est le traitement de référence pour les lésions coliques superficielles

2

ESD à considérer si
- ✓ Suspicion invasion sous muqueuse
- ✓ Surtout rectum
- ✓ Surtout si >20mm
- ✓ Ou échec de l'anse

Caractérisation +++



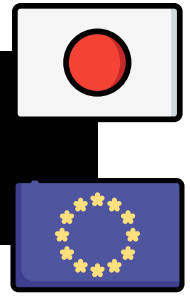
Pedro Pimentel-Nunes et al., *Endoscopy* 54, nº 06 (juin 2022): 591-622, https://doi.org/10.1055/a-1811-7025.
Ferlitsch, Endoscopy 2017, 49(3), 270–297

DUODENUM

- Espace étroit
- Endoscope boucle
- Muscle fin
- Clips perforent le muscle
- Perforations secondaires sur bile et pancréas

- Jusqu'à 30% de perforation
- Perforations retardées

- Non indiqué
- Patients sélectionnés
- Experts sélectionnés



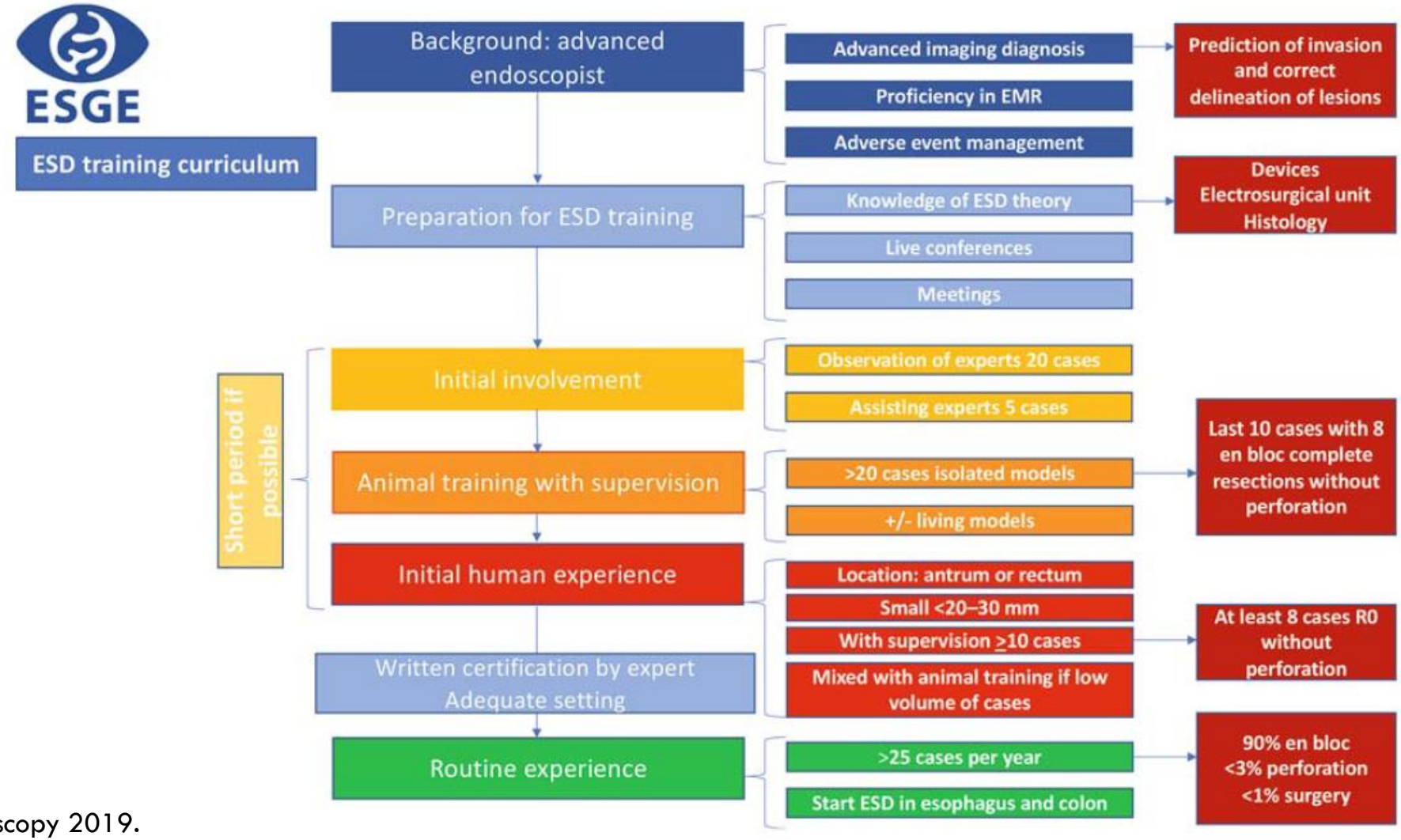
- Taux de monobloc acceptable
- Dans séries japonaises !

First author, year		EMR, n/N (%)	ESD, n/N (%)	*P* value
Na, 2020 [61]	Complete resection	48/59 (81.4%)	8/11 (80%)	>0.99
	Morbidity	7/59 (11.9%)	5/11 (45.5%)	**0.03**
	Recurrence	0	0	1
Esaki, 2020 [83]	Complete resection	20/28 (71.4%)	25/28 (83.3%)	0.18
	Morbidity	1/28 (3.6%)	5/28 (17.9%)	0.19
	Recurrence	1/28 (3.6%)	0/28 (0)	1
Yahagi, 2018 [75]	Complete resection	123/146 (82.2%)	148/174 (85.1%)	0.65
	Morbidity			
	• Delayed bleeding	2/146 (1.4%)	9/174 (5.2%)	0.072
	• Perforation	1/146 (0.68%)	27/174 (15.5%)	**<0.001**
	Recurrence	NA	NA	–
Pérez-Cuadrado-Robles, 2018 [20]	Complete resection	43/129 (35.5%)	7/37 (19.4%)	
	Morbidity			
	• Delayed bleeding	12/129 (9.3%)	3/37 (8.1%)	0.823
	• Perforation	3/129 (2.3%)	6/37 (16.2%)	**0.001**
	Recurrence	17/129 (16.7%)	5/37 (14.7%)	0.788
Hoteya, 2017 [77]	Complete resection	33/55 (60%)	65/74 (87.8%)	
	Morbidity	5/55 (9%)	22/74 (29.7%)	NA
	Recurrence	2/55 (3.6%)	0/74 (0)	NA

NA, not available.

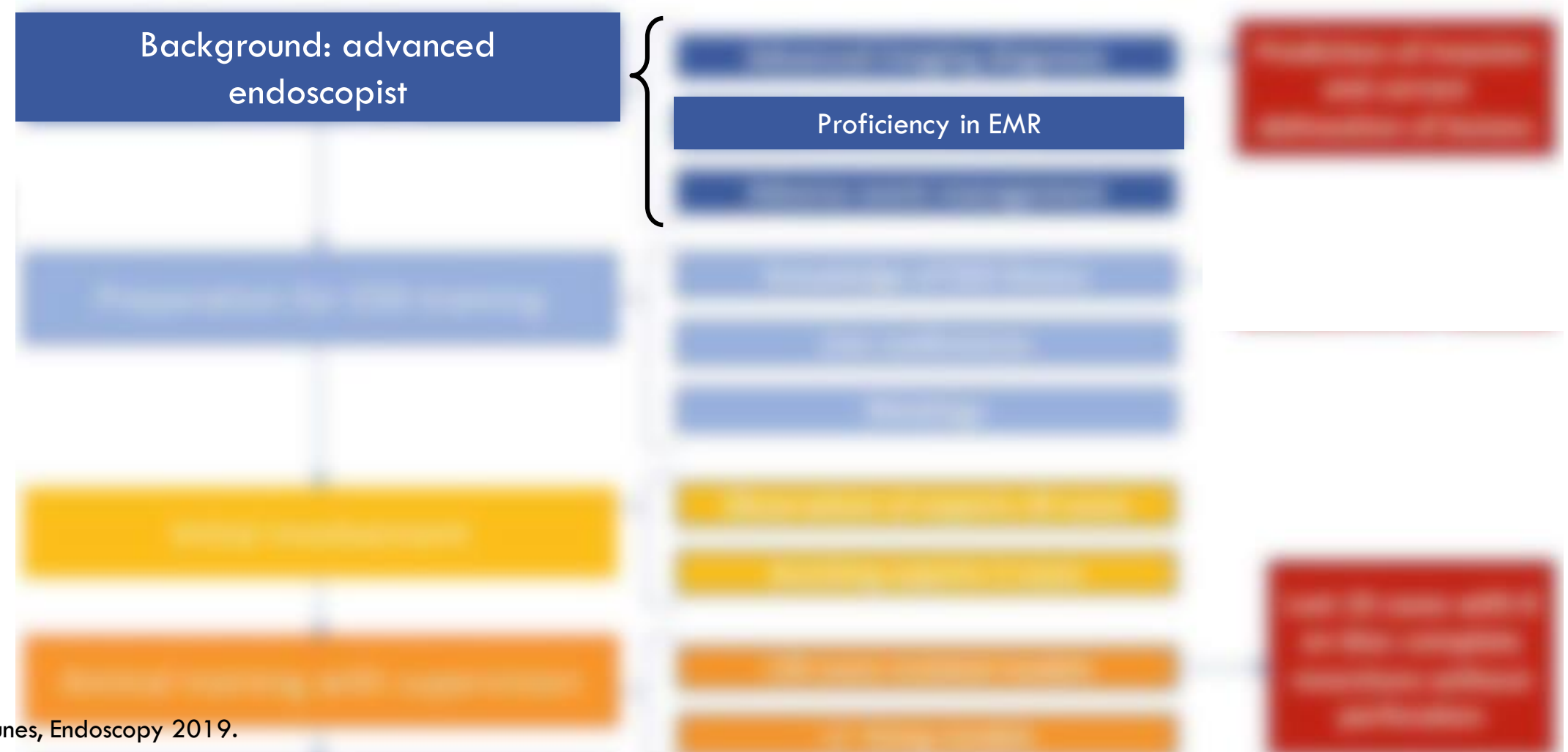
Ochiai Y, Digestion 2019; 99: 21–26
Vanbiervliet G, ESGE guidelines 2021;522–34.
Pedro Pimentel-Nunes et al., *Endoscopy* 54, nº 06 (juin 2022): 591-622, https://doi.org/10.1055/a-1811-7025.

CURRICULUM



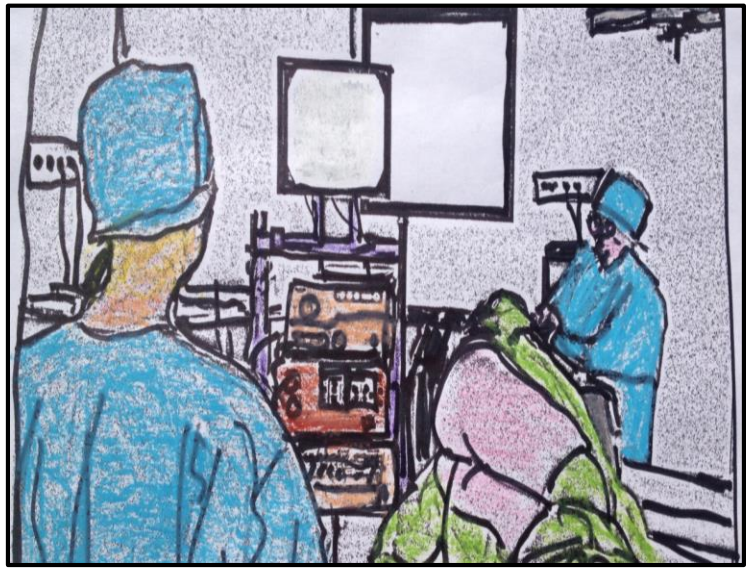
Pimentel-Nunes, Endoscopy 2019.

LA FORMATION

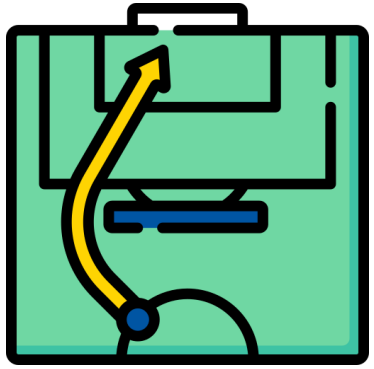


Pimentel-Nunes, Endoscopy 2019.

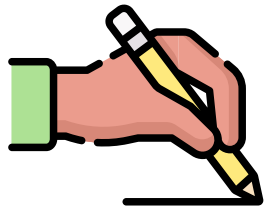
GESTION ENDOSCOPE



JC Letard

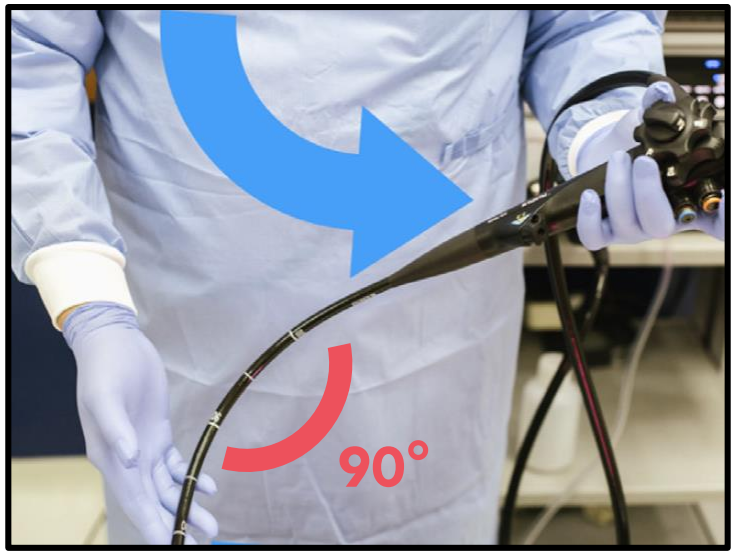


R. Soetikno, Techniques in Gastrointestinal Endoscopy 21 (2019) 124132

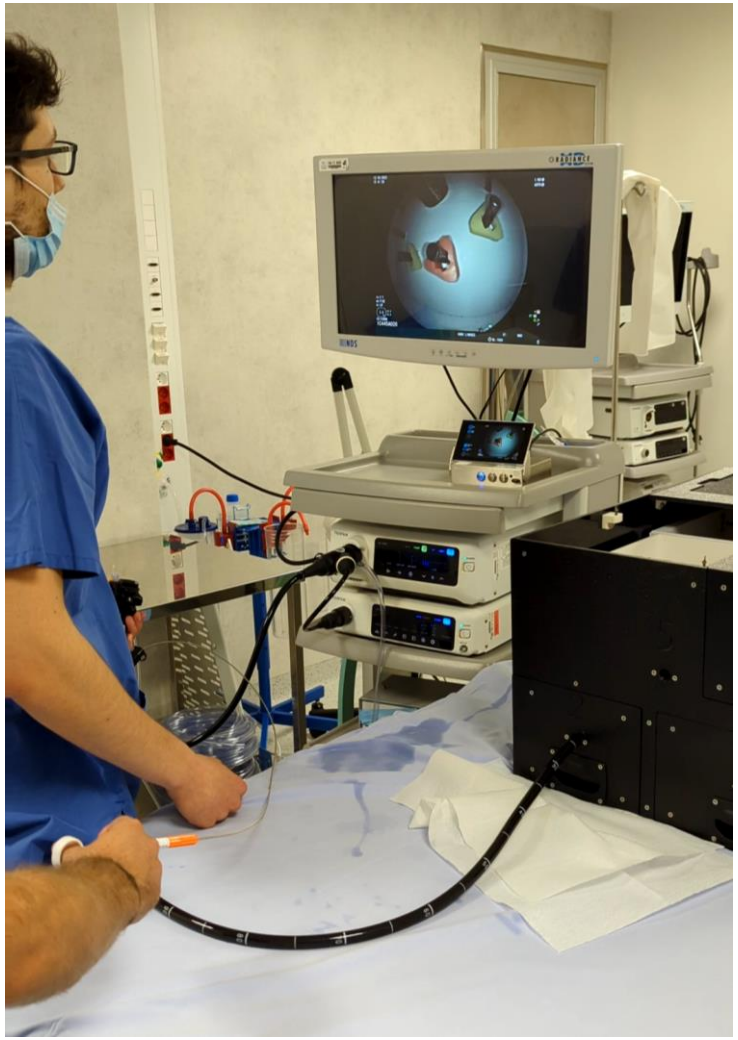


GESTION ENDOSCOPE

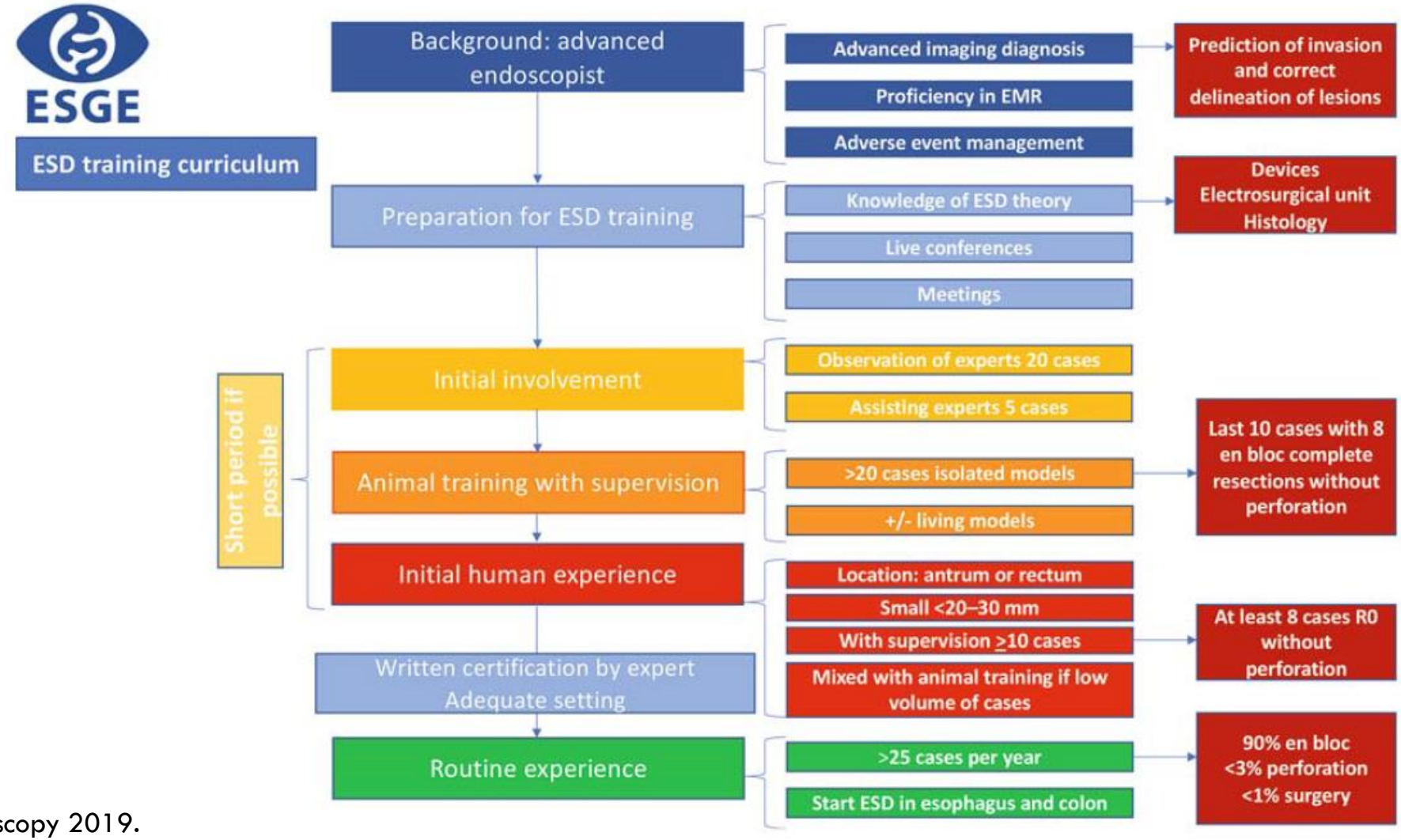
GESTION ENDOSCOPE



R. Soetikno, Techniques in Gastrointestinal Endoscopy 21 (2019) 124132

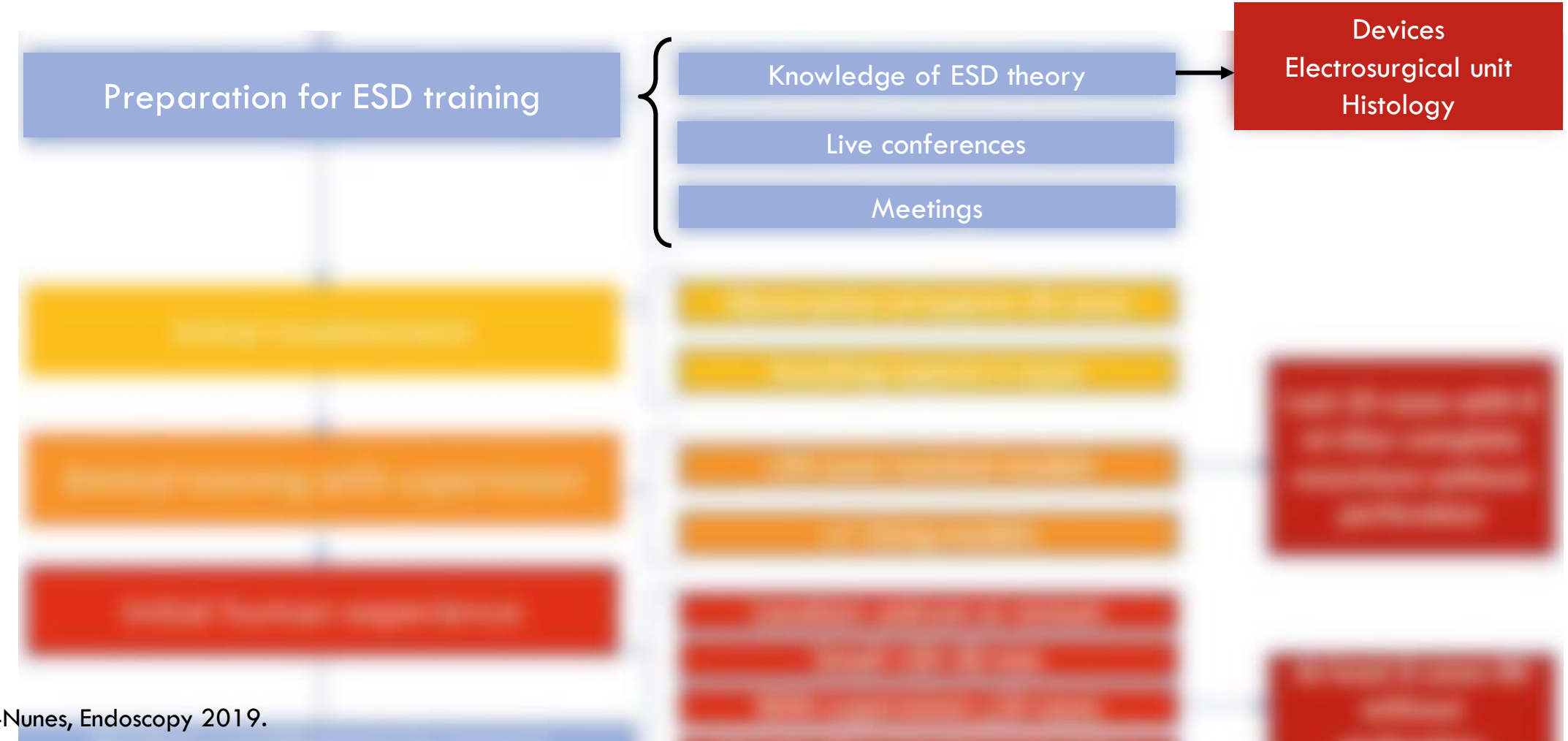


LA THÉORIE ET LE MATERIEL



Pimentel-Nunes, Endoscopy 2019.

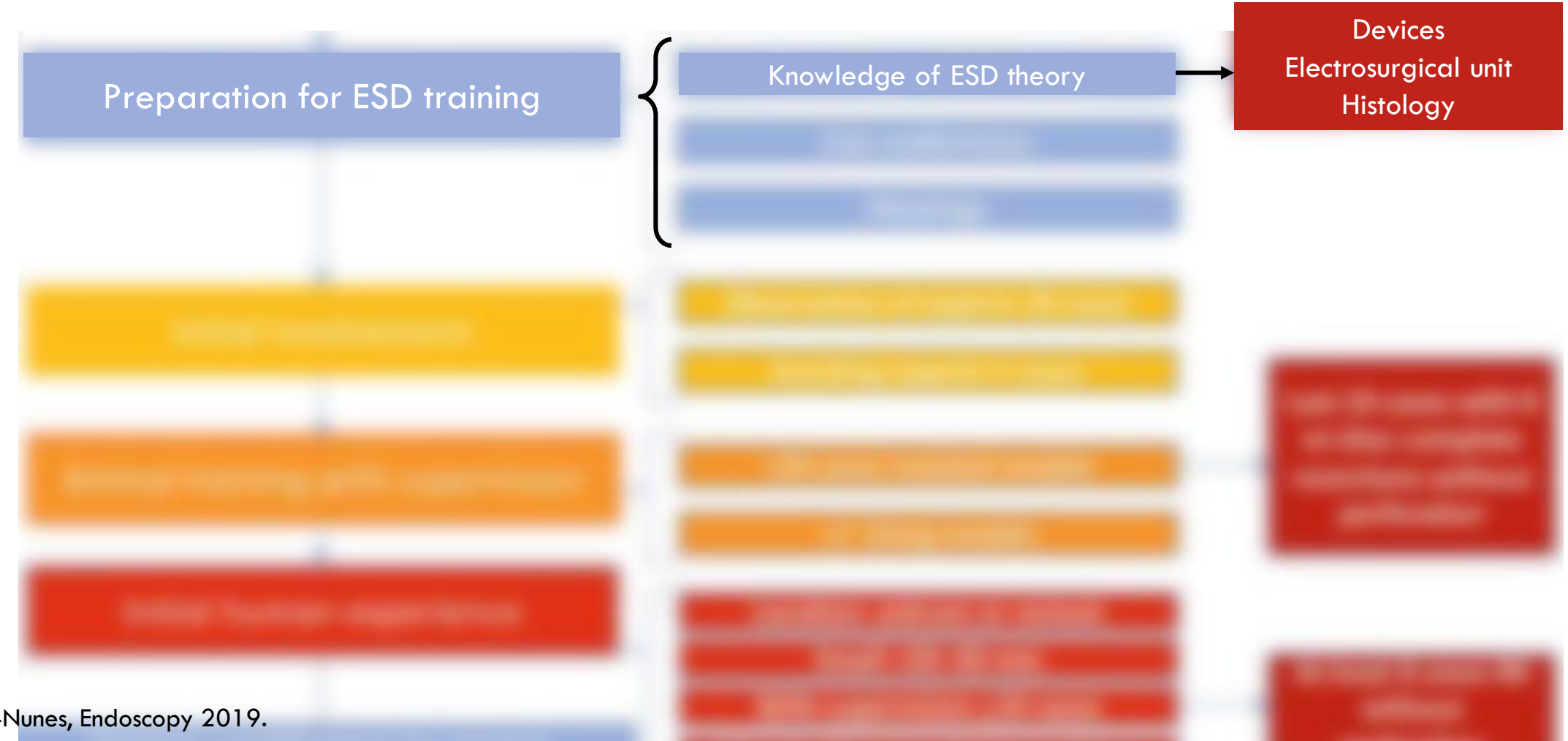
LA THÉORIE ET LE MATÉRIEL



Pimentel-Nunes, Endoscopy 2019.

ENDOGASTROLIVE.COM

LA THÉORIE ET LE MATÉRIEL



Pimentel-Nunes, Endoscopy 2019.

LE MATÉRIEL

CO_2

Clips

Endoscope

Capuchon

Pompe

Instrument

Coag grasper®

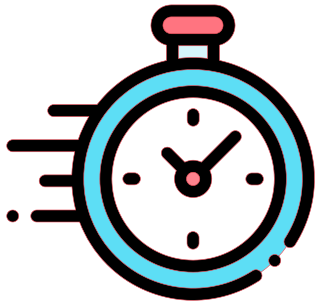
Bistouri

GÉNÉRALITÉS

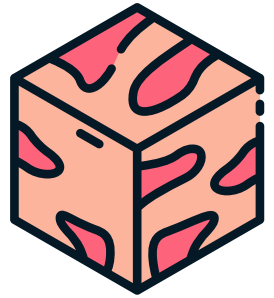
Unité électrochirurgicale

Instrument

Temps



Tissu



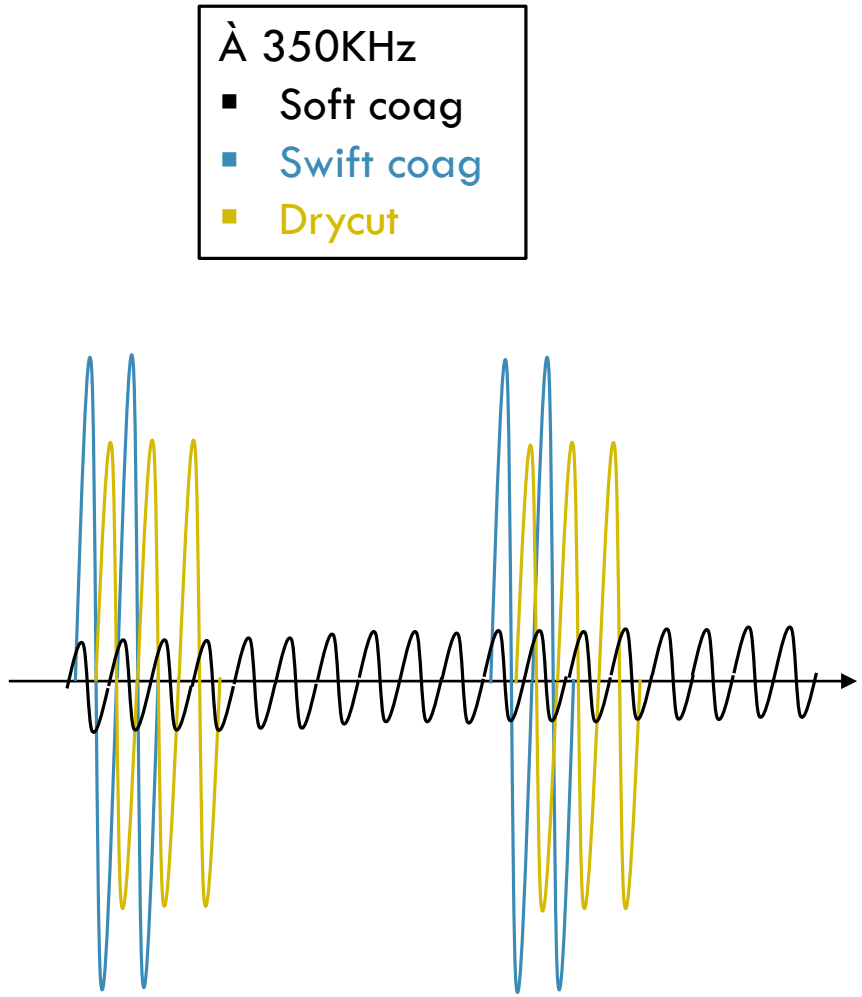
COUPE/COAGULATION

Coupe

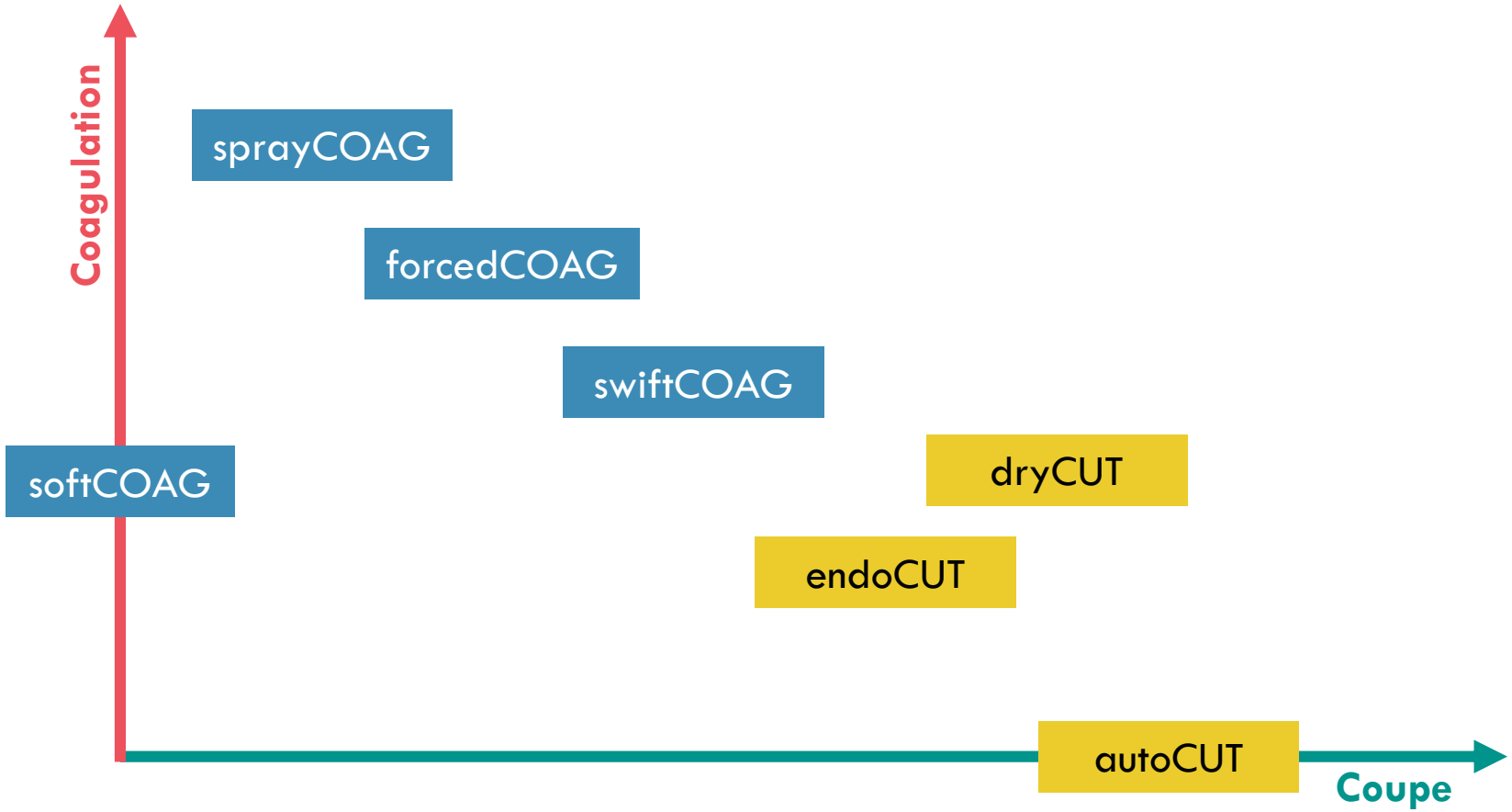
Coagulation

LES DIFFÉRENTS COURANTS

Activation du courant	Facteur de crête	Tension maxi	Courant (ERBE vio3)
100%	1,52	200 V	softCOAG(QS à 450V)
100%	1,62	750 V	autoCUT
100%	1,54	1100 V	highCUT
100%	1,54	700 V	endoCUT I
100%	1,63	800 V	endoCUT Q
30%	3,1	500-800 V	dryCUT 0,1-4,9
30%	3,38	800-1000 V	dryCUT 5-7,9
30%	3,8	1400 V	dryCUT 8-10
~	4	1800 V	preciseSECT
8%	5,8	1800 V	forcedCOAG
8%	6	2500 V	swiftCOAG
4%	7,74	4300 V	sprayCOAG



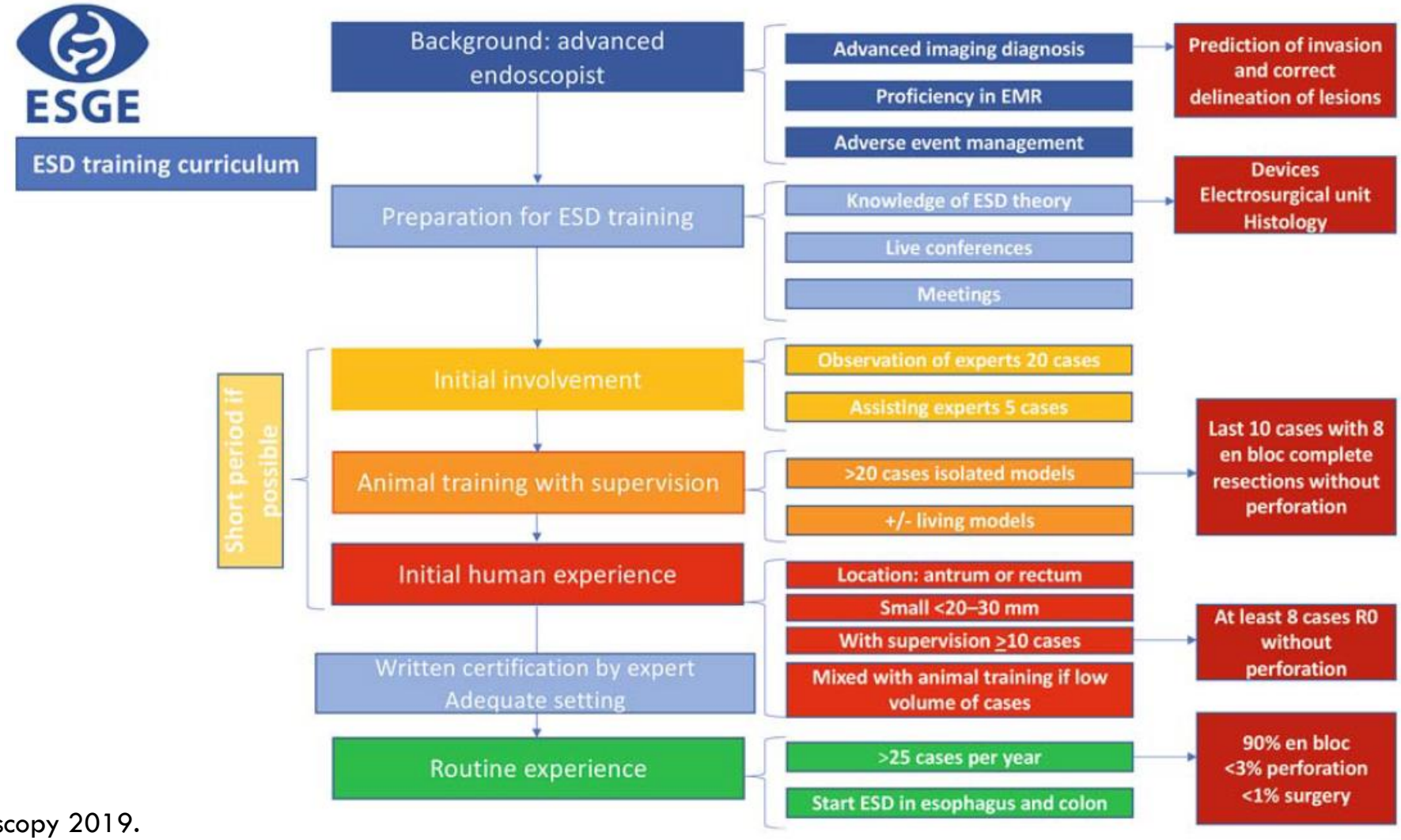
LES DIFFÉRENTS TYPES DE COURANT



Matsui N, World J Gastrointest Endosc 2012 Apr 16 [cited 2013 Jun 26];4(4):123–36

LA PRATIQUE

LA PRATIQUE EN SÉQUENCE RAPIDE



Pimentel-Nunes, Endoscopy 2019.

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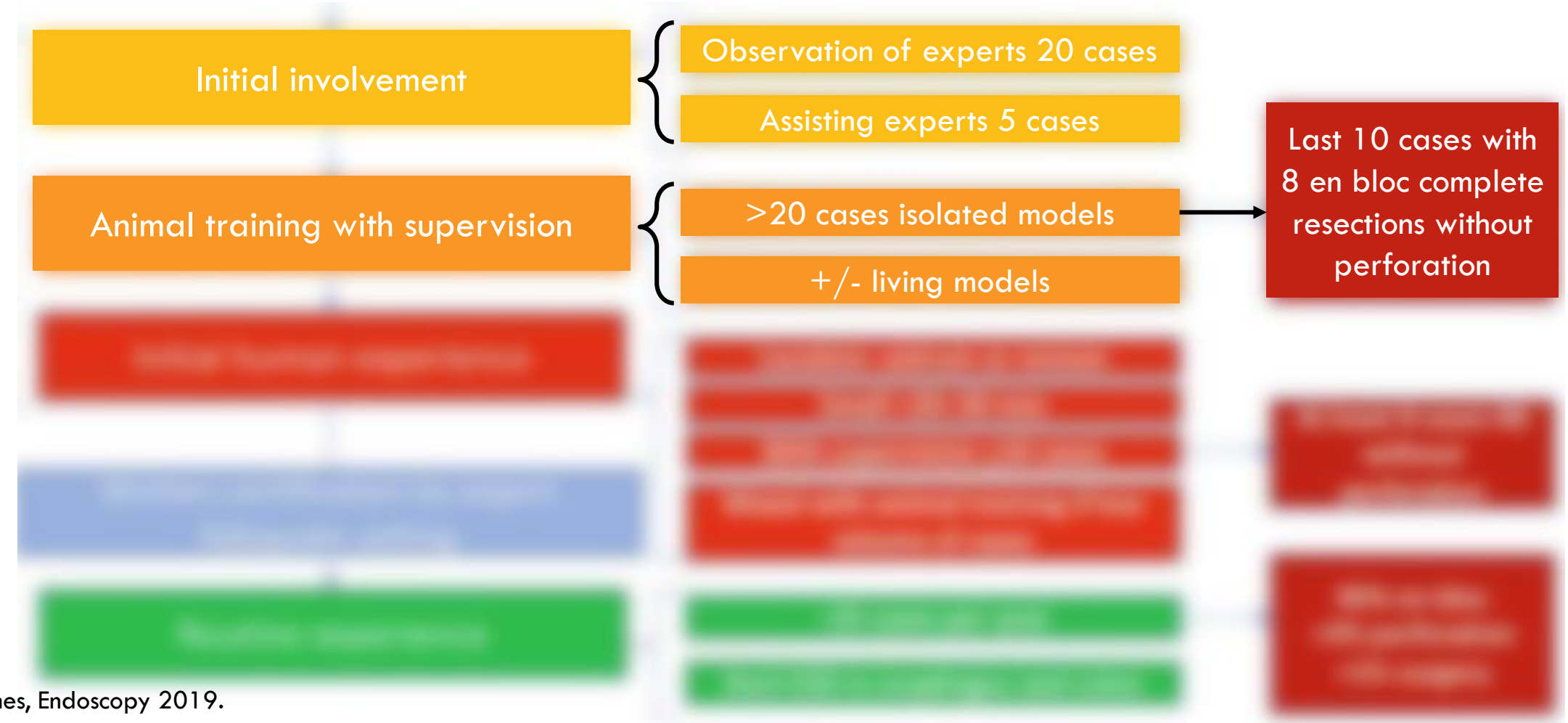
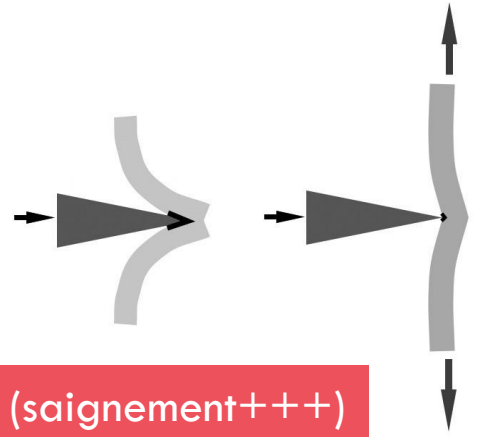


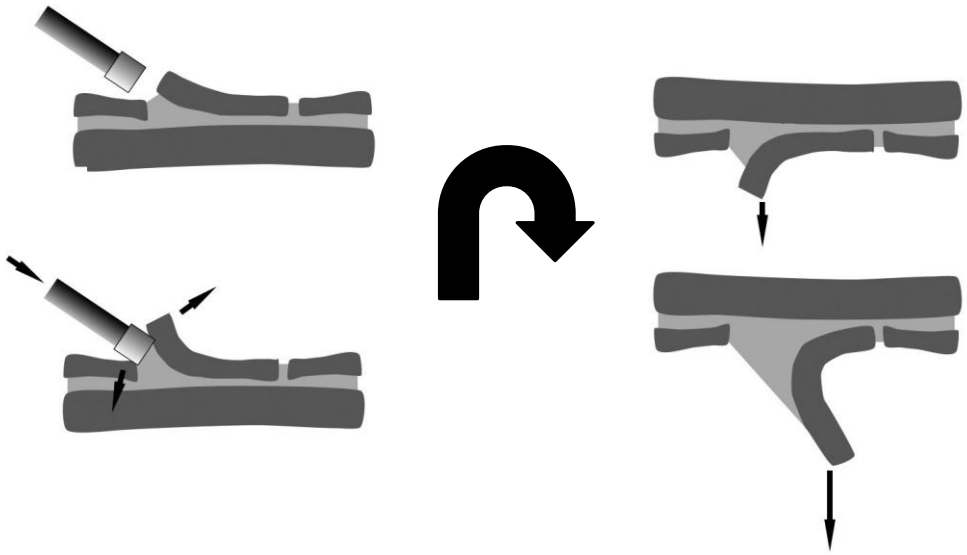
Pimentel-Nunes, Endoscopy 2019.

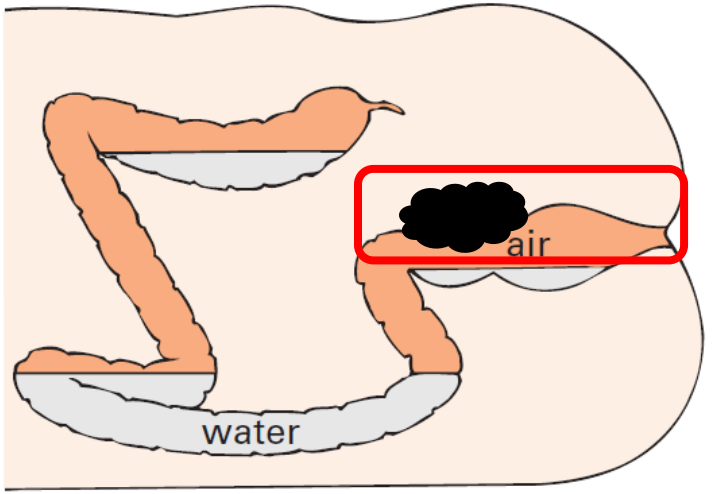
AVANT DE COMMENCER



Une bonne exposition
- ✓ Se servir de la déclivité
- ✓ Méthodes de traction

- ✓ Pas de liquide (saignement+++)
- ✓ Mise en tension des fibres
- ✓ Section plus efficace
- ✓ Espace sous muqueux plus large
- ✓ Plus rapide
- ✓ Plus sûre

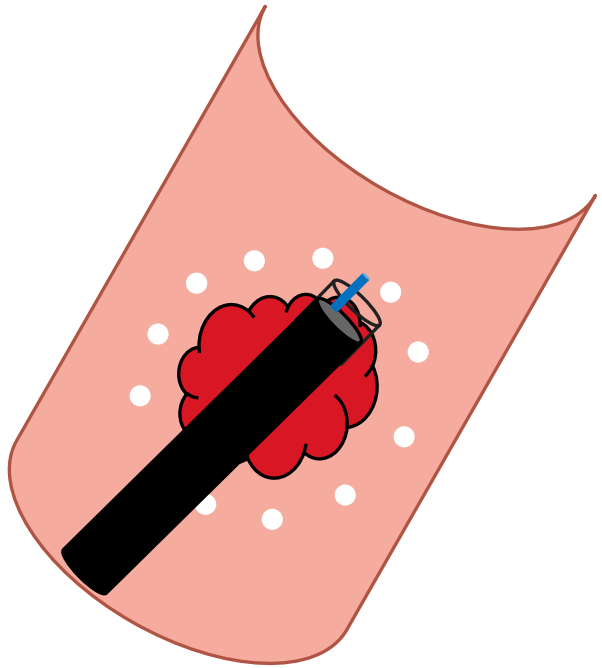




Lee, Clinical Endoscopy 2013, 46(5), 467–471
Yamamoto, Nature Reviews. Gastroenterology & Hepatology 2012, 9(9), 519–29.

MARQUAGE

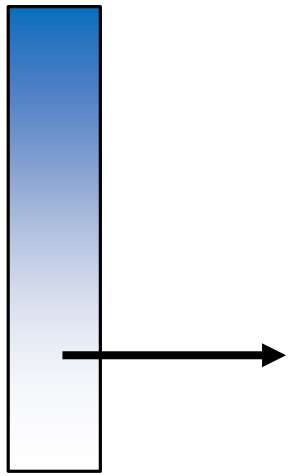
- ✓ Chromoendoscopie
- ✓ 5-10 mm de marge
- ✓ Une des étapes les plus importante



INJECTION

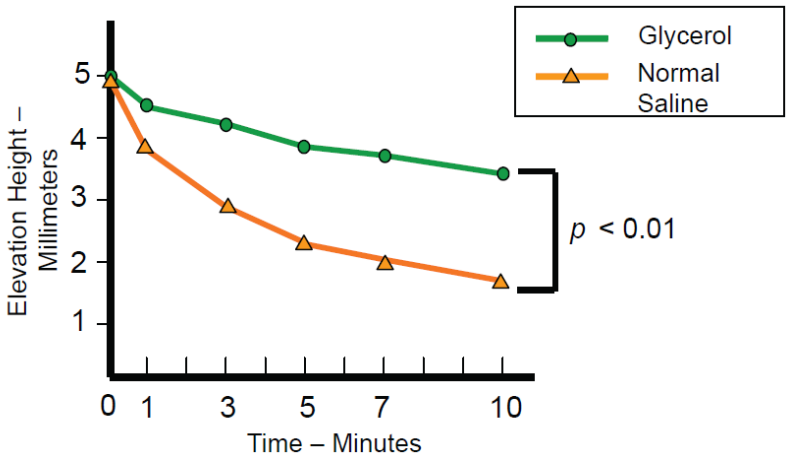
Solutés d'injection

- Coût
- Efficacité
- Toxicité



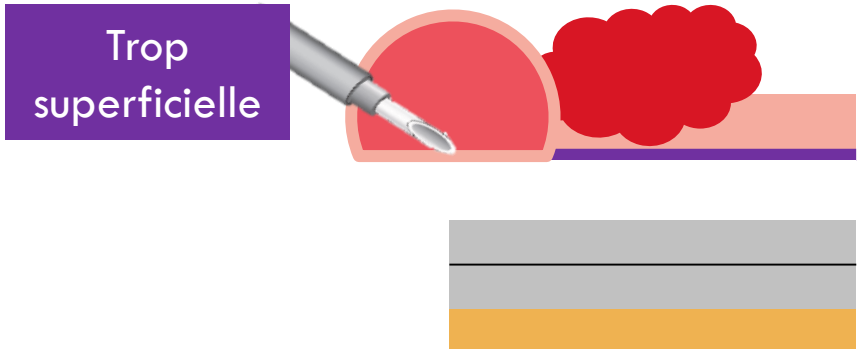
Indigo carmin
0,1mL pour 100mL

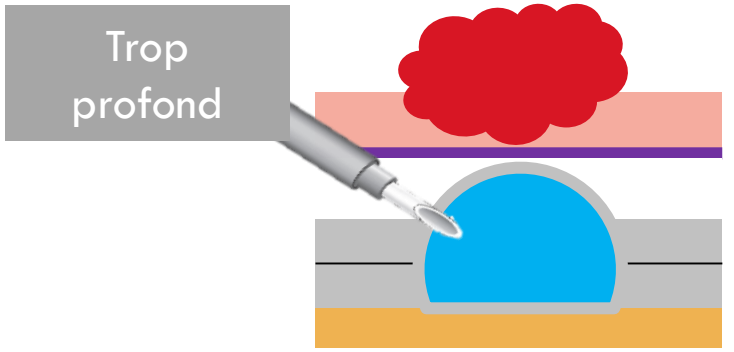
Meilleure visualisation
- ✓ Vaisseaux
- ✓ Muscle

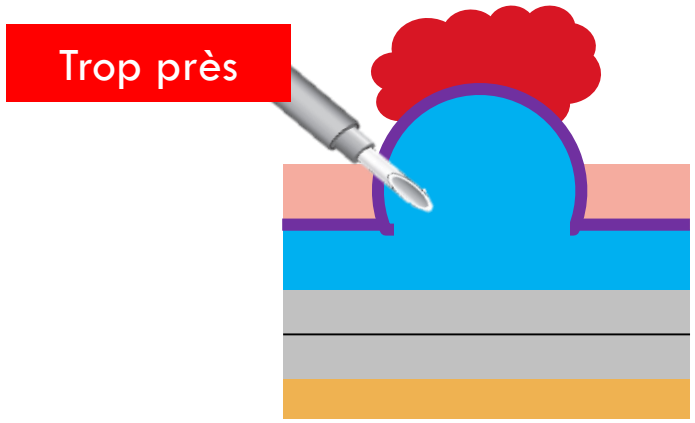


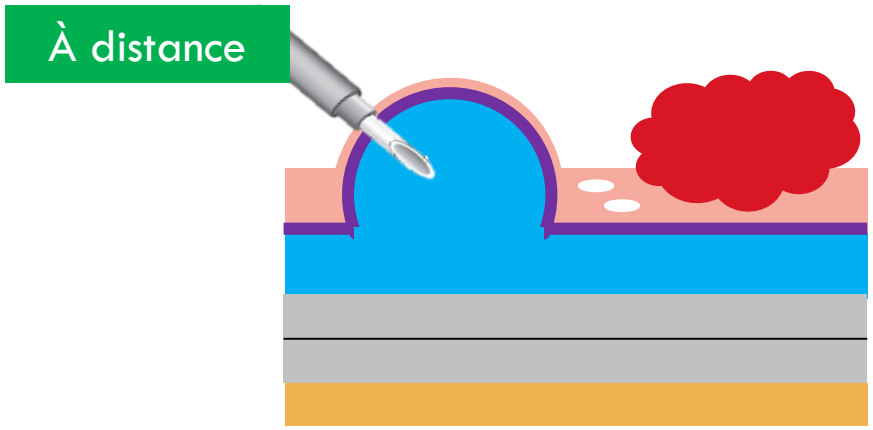
Fukami, *Gastrointestinal endoscopy* *2011, 73*(6), 1246–53

INJECTION

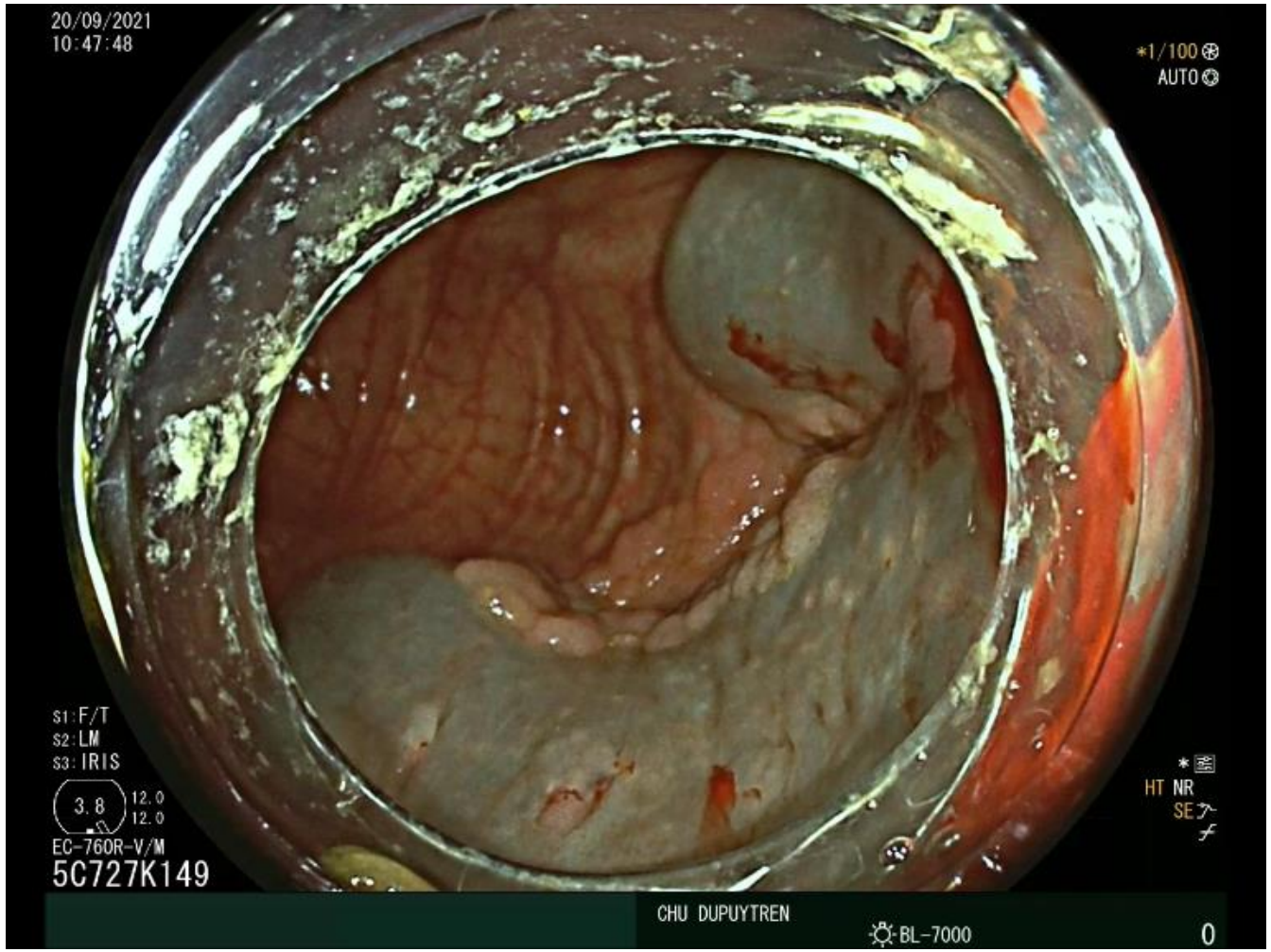








INJECTION


20/09/2021
10:47:48
*1/100
AUTO
S1:F/T
S2:LM
S3:IRIS
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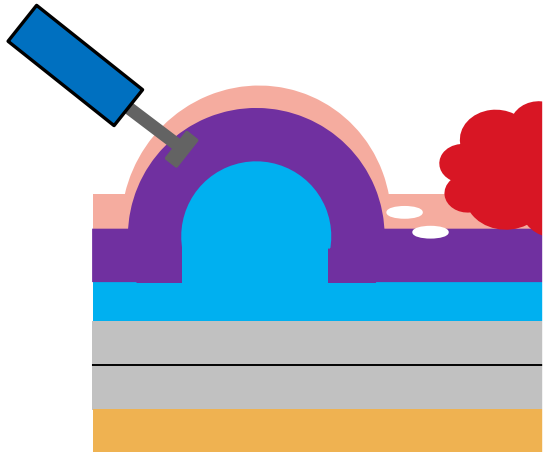
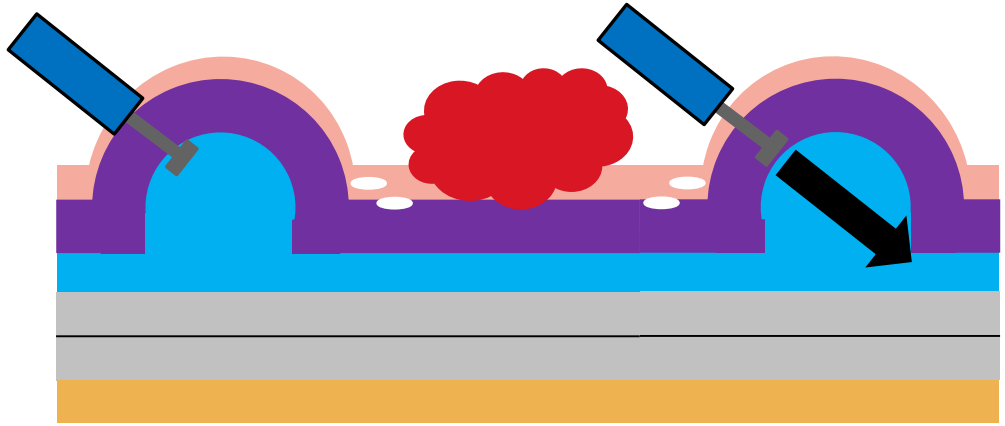
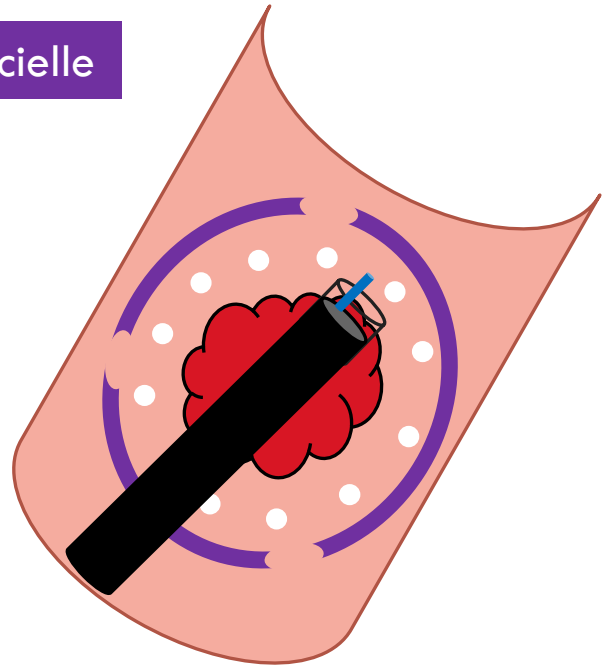
INCISION

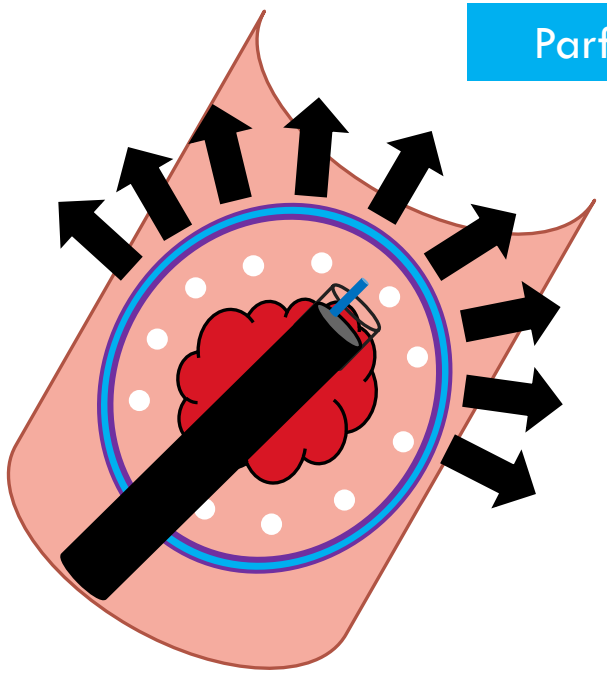




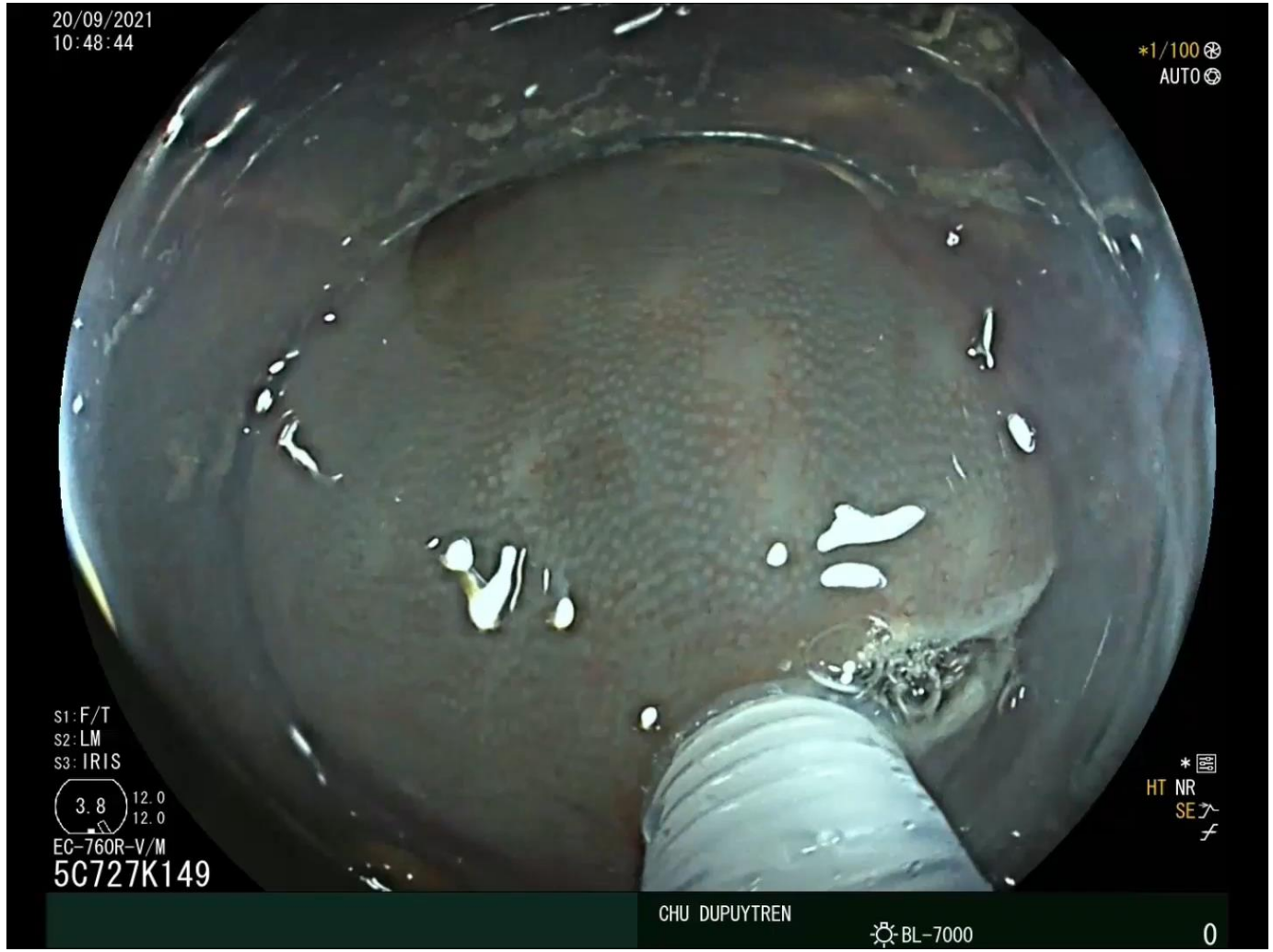
Superficielle



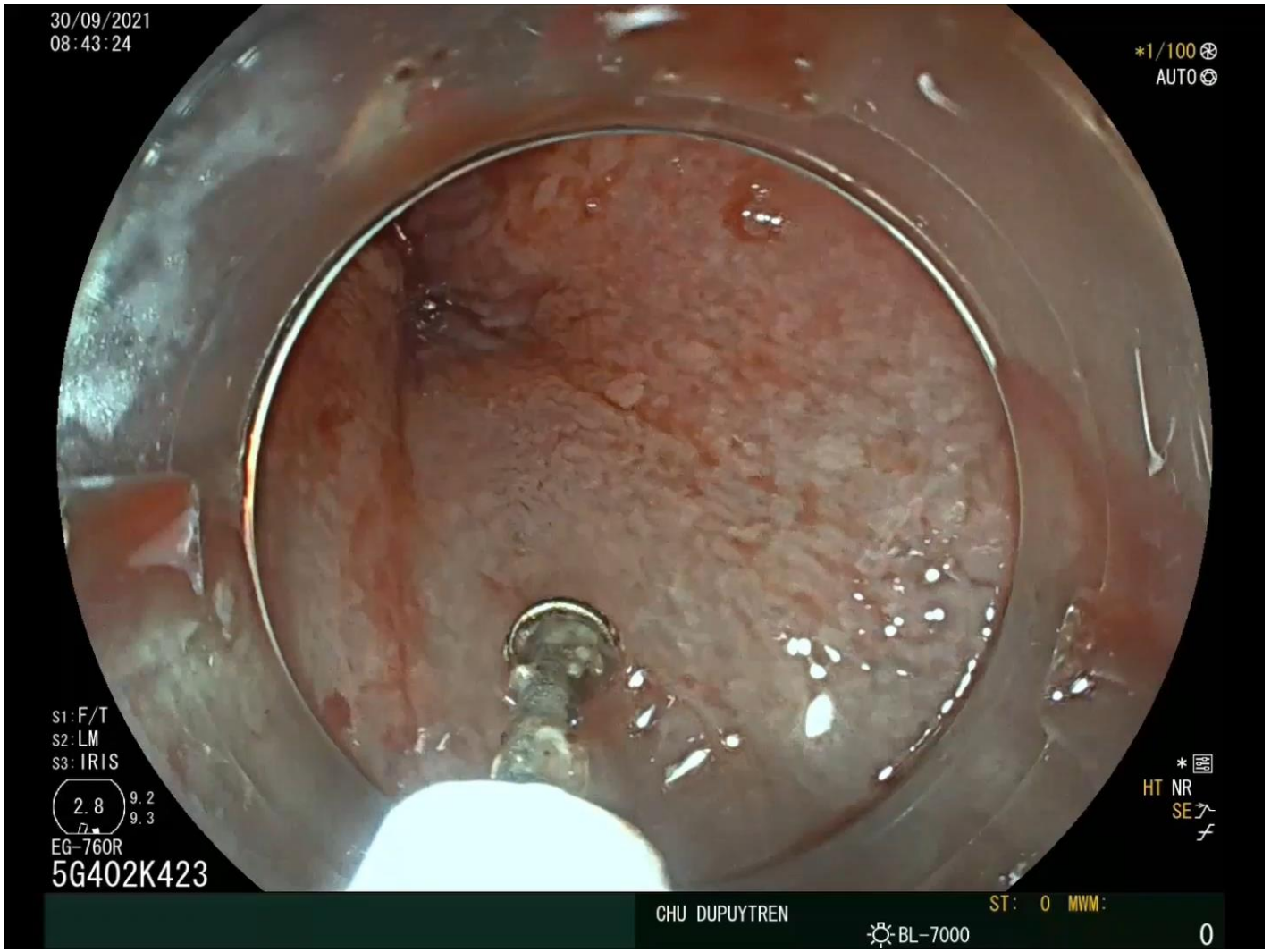
Parfaite



INJECTION ET MARQUAGE… PUIS INCISION



INJECTION ET MARQUAGE… PUIS INCISION



DISSECTION

Tangentiel proche du muscle

- ✓ Pour couper les vaisseaux à leur sortie
- ✓ Moins de risque d'invasion tumorale
- ✓ Moins de saignement
- ✓ Moins de fibrose

Technique

- ✓ Tangentiel:

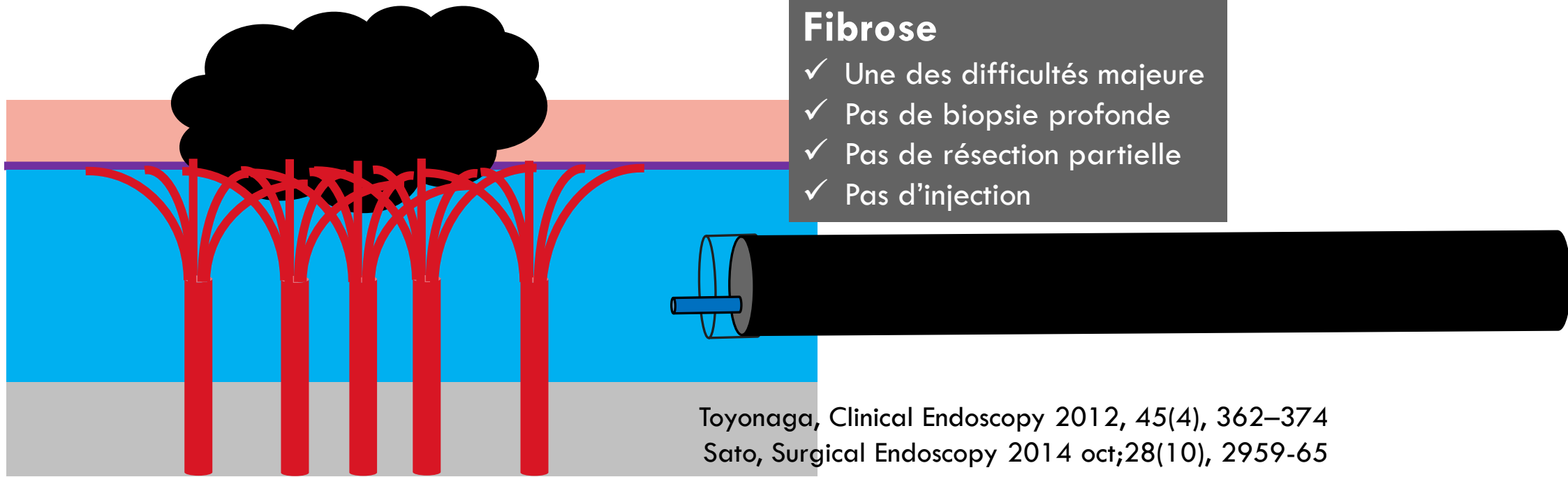
En avançant avec l'endoscope

- ✓ Perpendiculaire:

En traction avec couteau

Fibrose

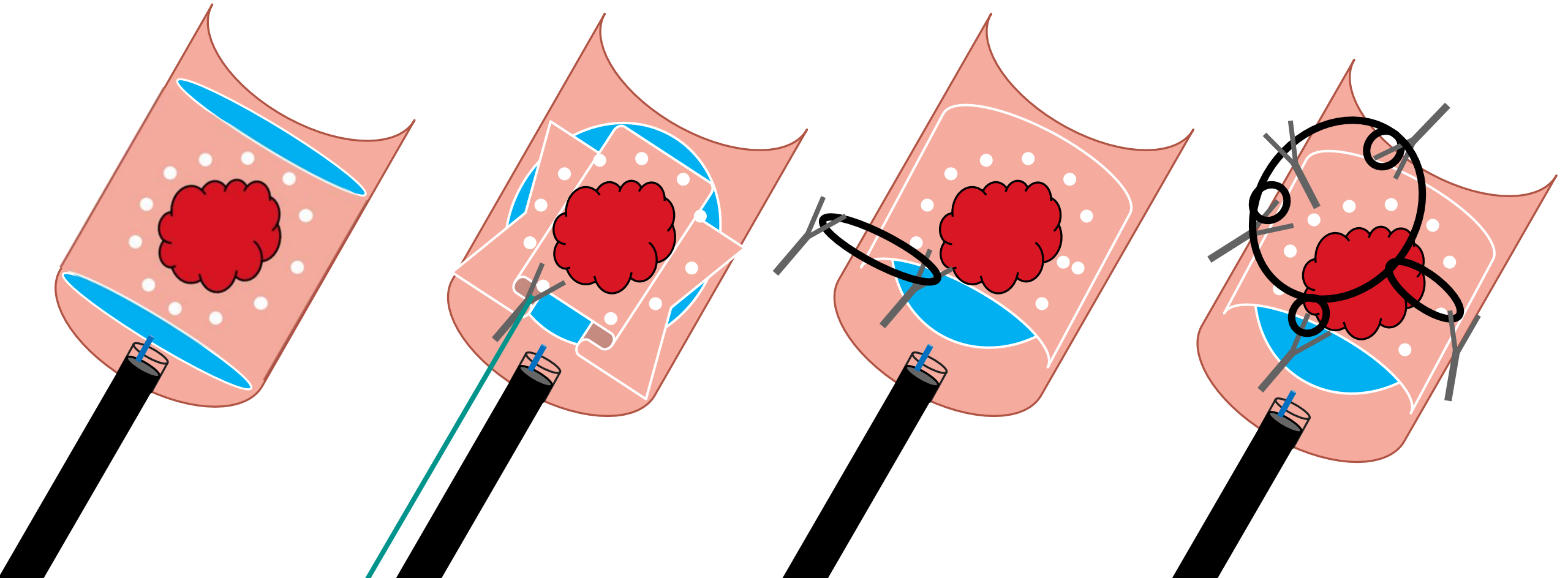
- ✓ Une des difficultés majeure
- ✓ Pas de biopsie profonde
- ✓ Pas de résection partielle
- ✓ Pas d'injection



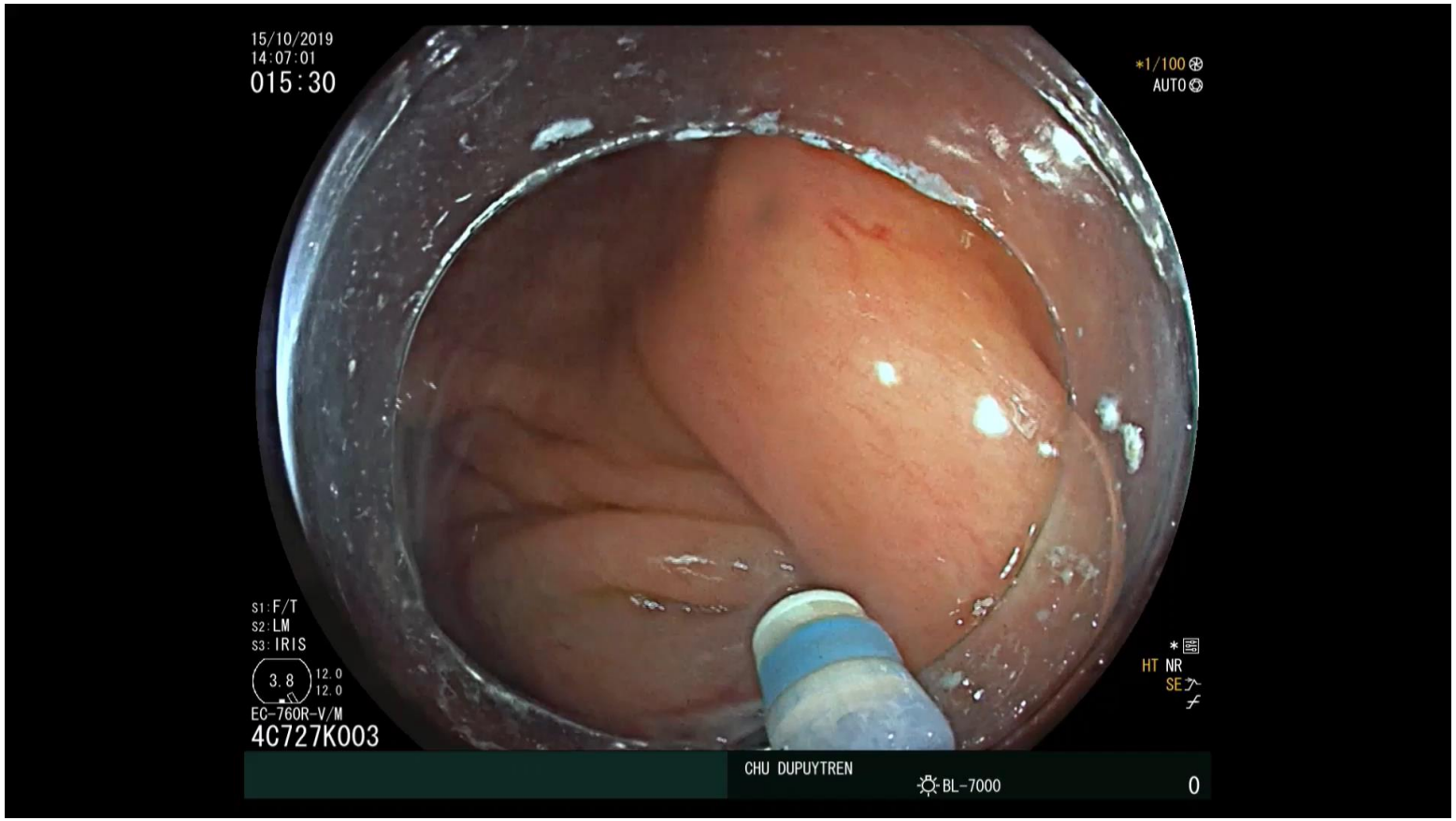
Toyonaga, Clinical Endoscopy 2012, 45(4), 362–374
Sato, Surgical Endoscopy 2014 oct;28(10), 2959-65

MÉTHODES DE TRACTION

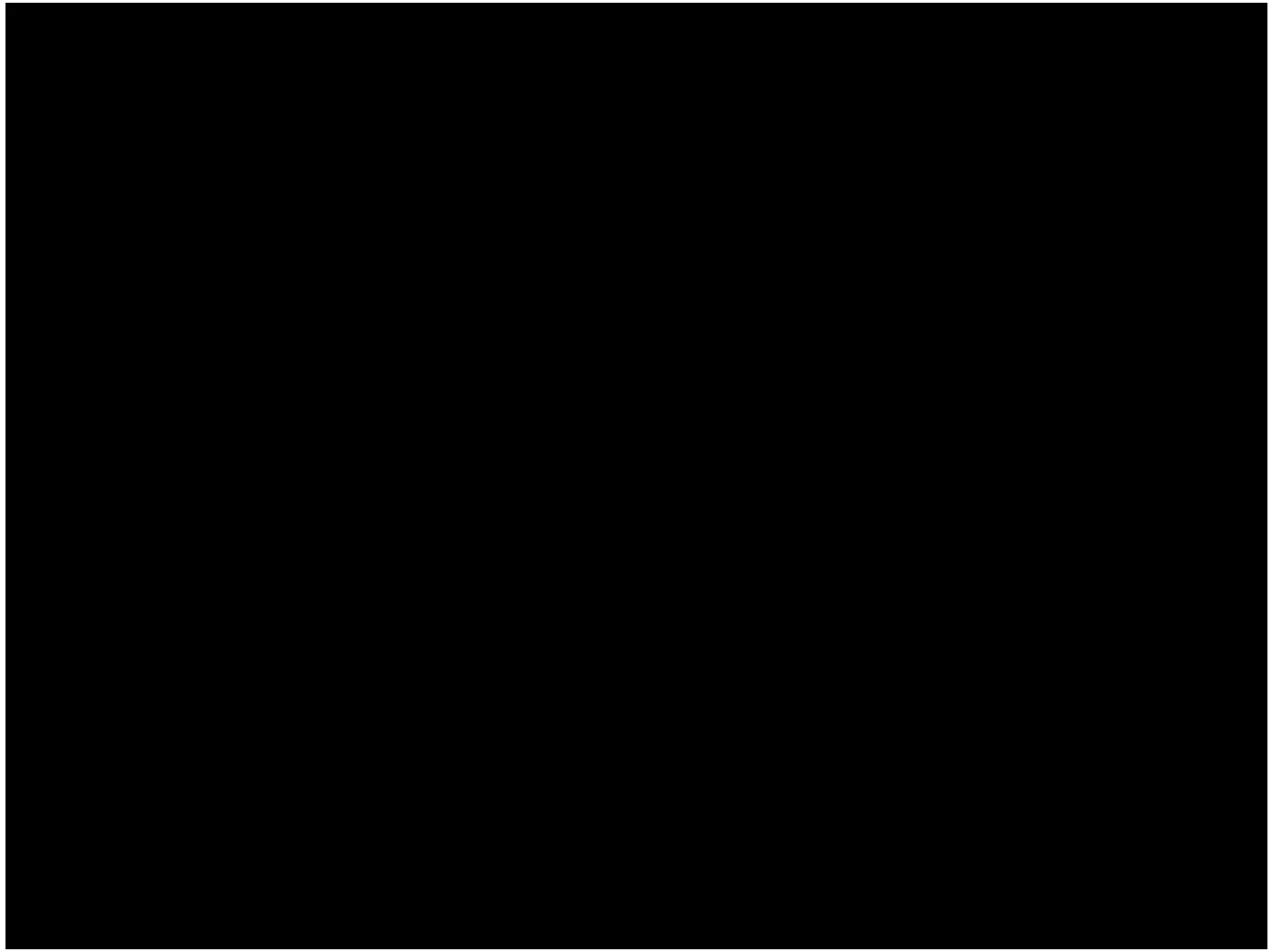
✓ Traction +++



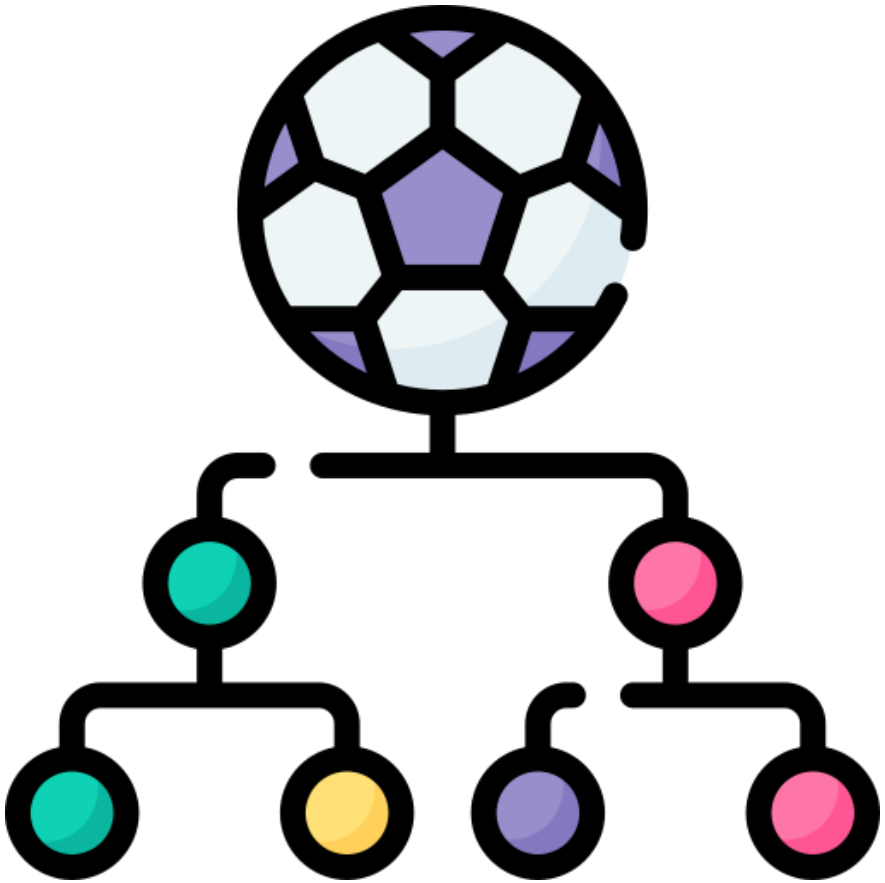
DISSECTION PAR TRACTION



DISSECTION PAR TRACTION

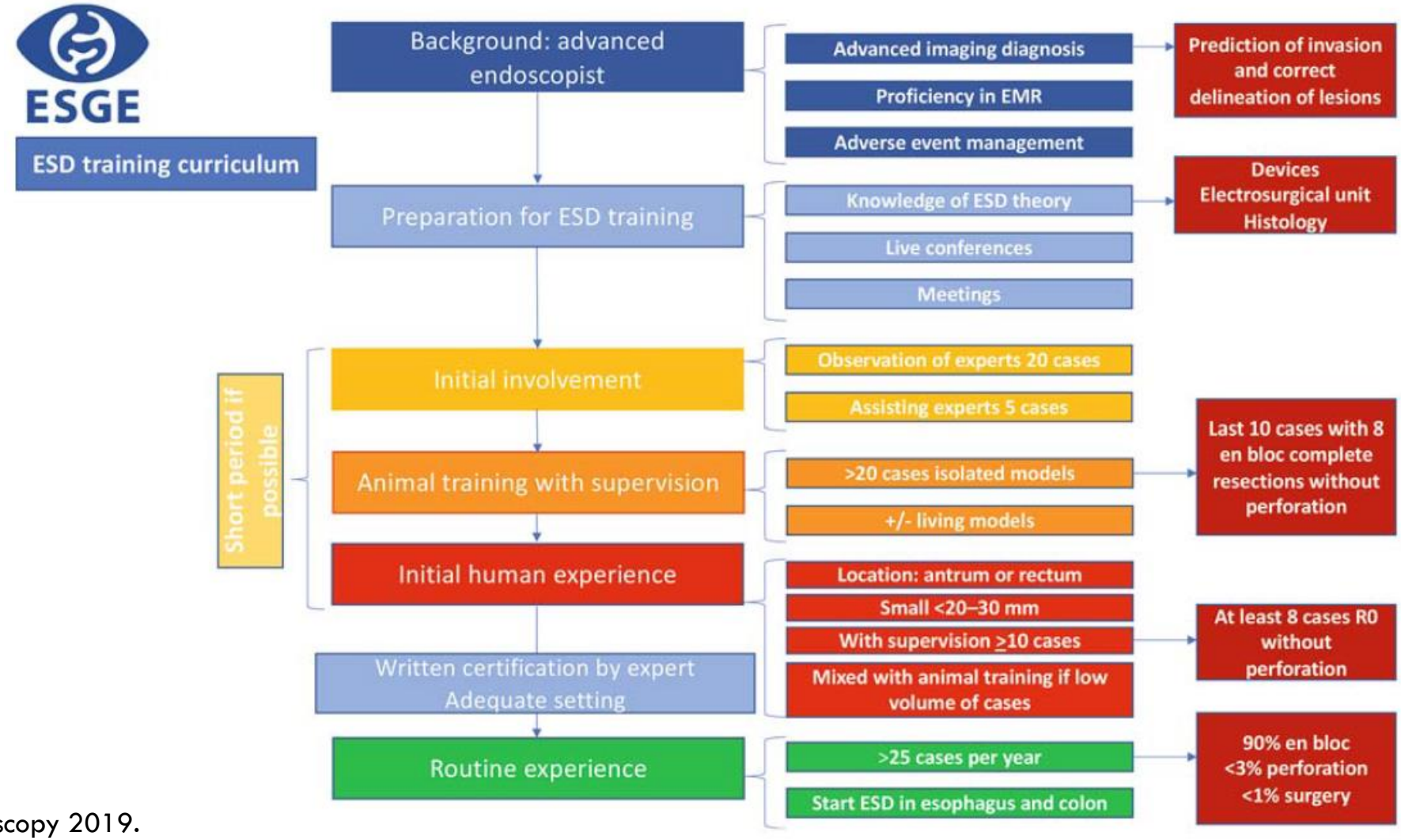


TUNNEL + CLIP



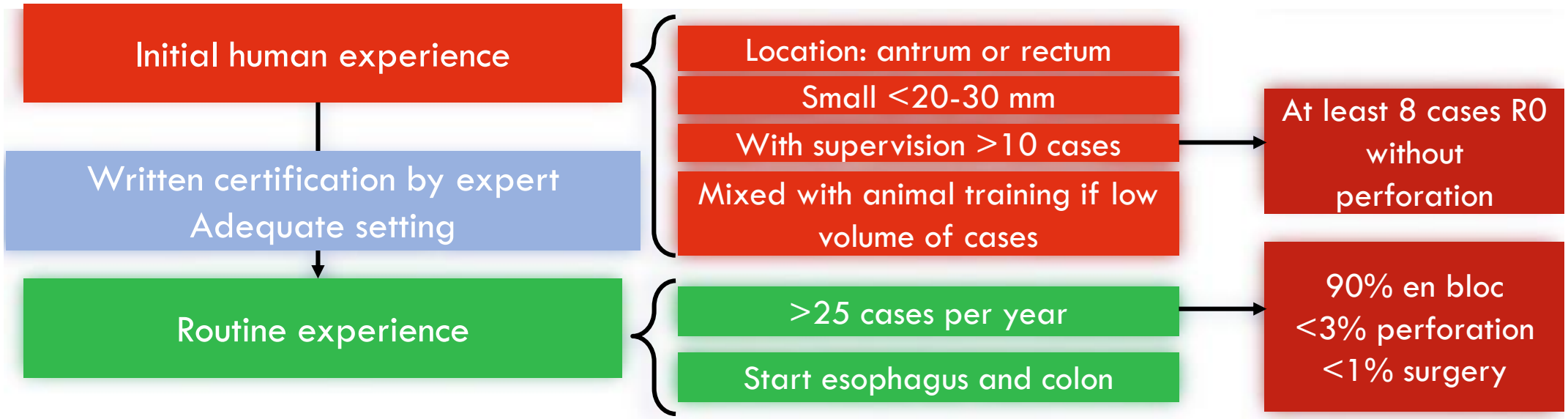
L'AUTONOMIE

LA PRATIQUE EN SÉQUENCE RAPIDE



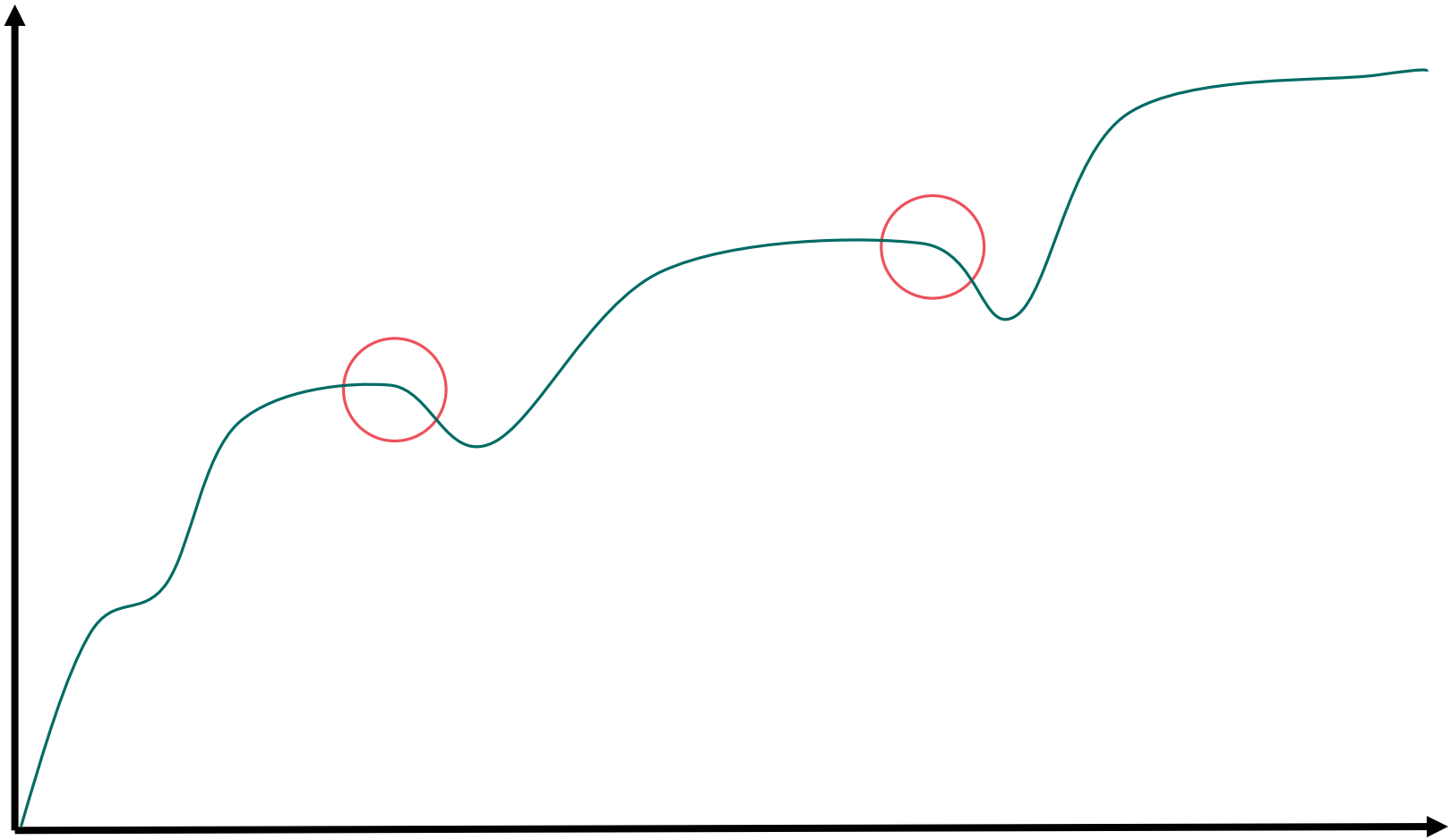
Pimentel-Nunes, Endoscopy 2019.

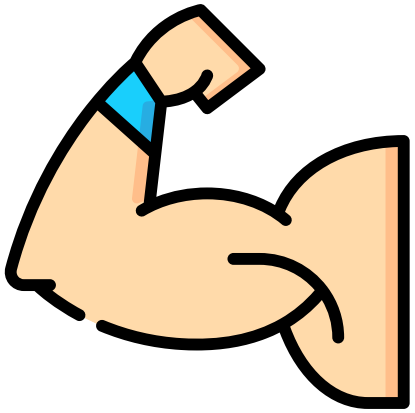
LA PRATIQUE EN SÉQUENCE RAPIDE



Pimentel-Nunes, Endoscopy 2019.

S'ÉVALUER, CHANGER, RÉGRESSER, PROGRESSER

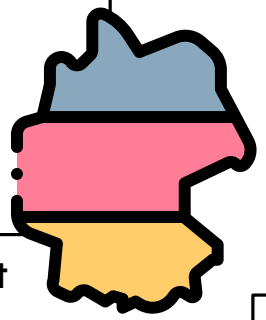


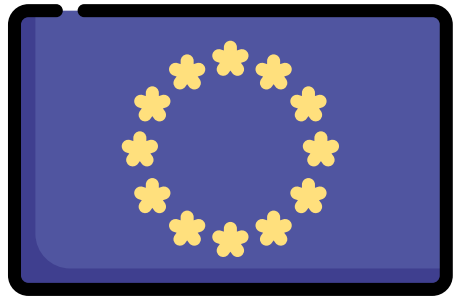


ŒSOPHAGE BARRETT

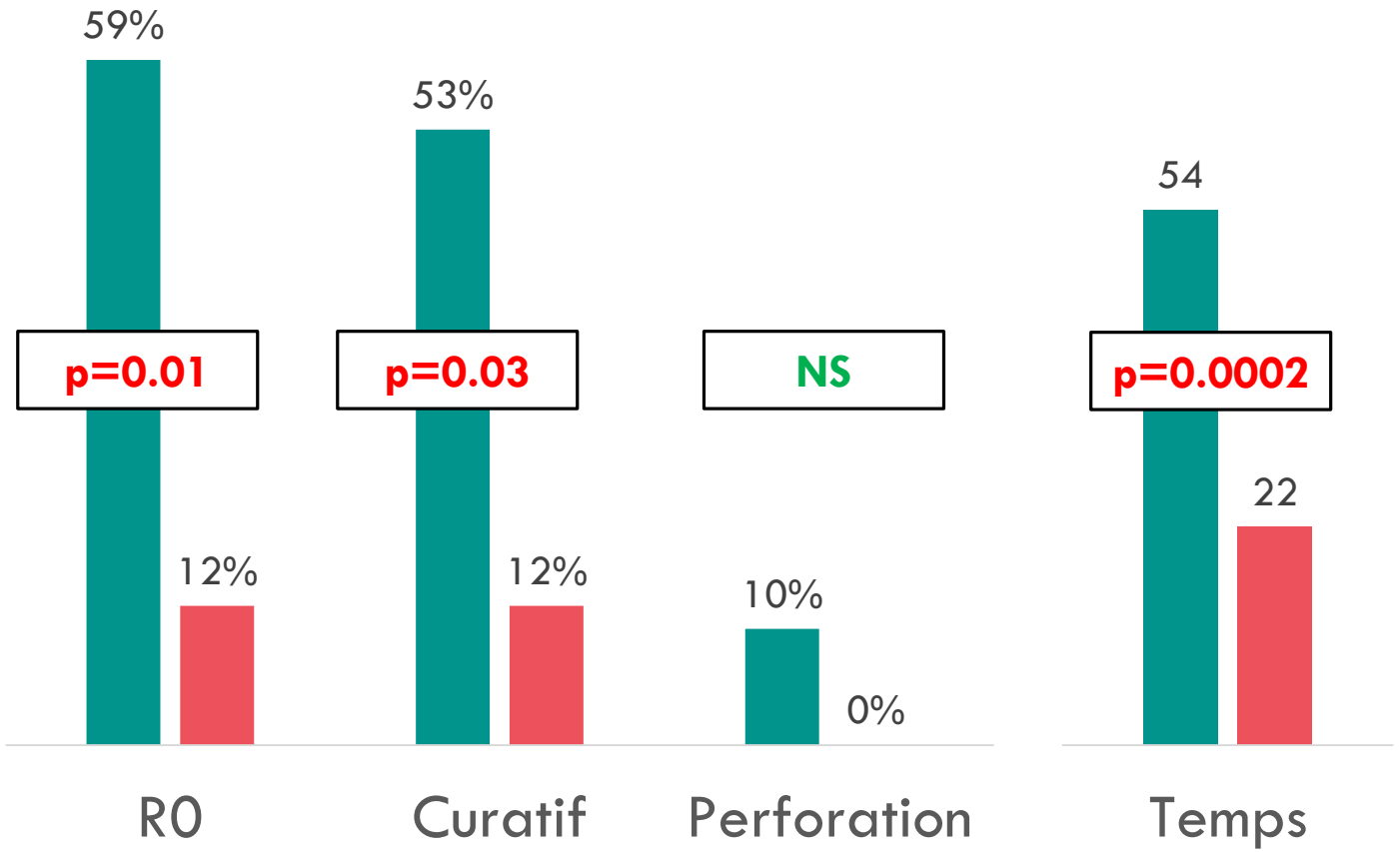
- Monocentrique allemand
- Randomisé
- 20 **ESD**
- 20 **EMR**
- 2012 à 2014

Terheggen G, et al. Gut 2016;0:1–11





- Pas de différence ds suivi
- Même PEC chirurgicale
- Même rémission
- Même récidive



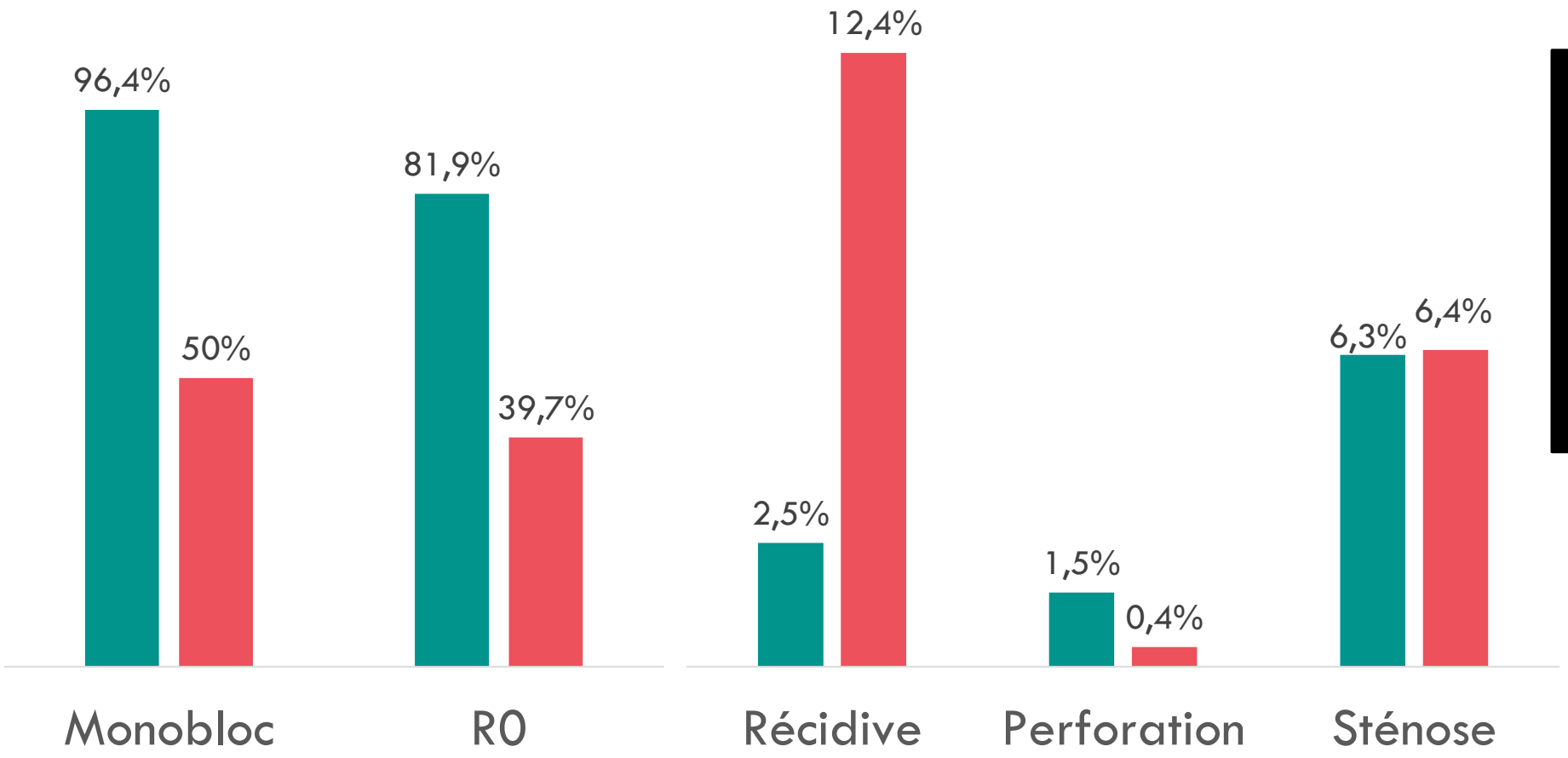
Discussion

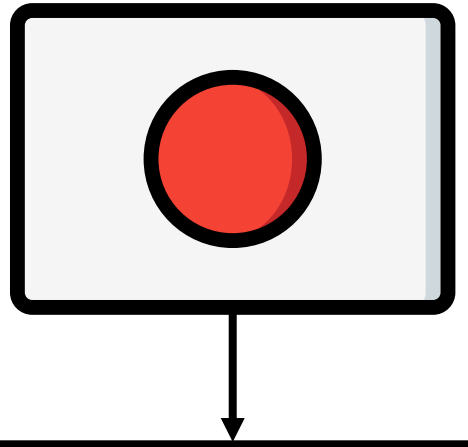
- Pas de différence sur le long terme
- Plus long et plus de complications pour ESD
- Évoque la possibilité de perte d'info histologique
- Pas de traction

ŒSOPHAGE BARRETT

- 26 articles
- **ESD** vs **EMR**

Ishihara R, Dig Endosc. 2020;32(4):452–93.

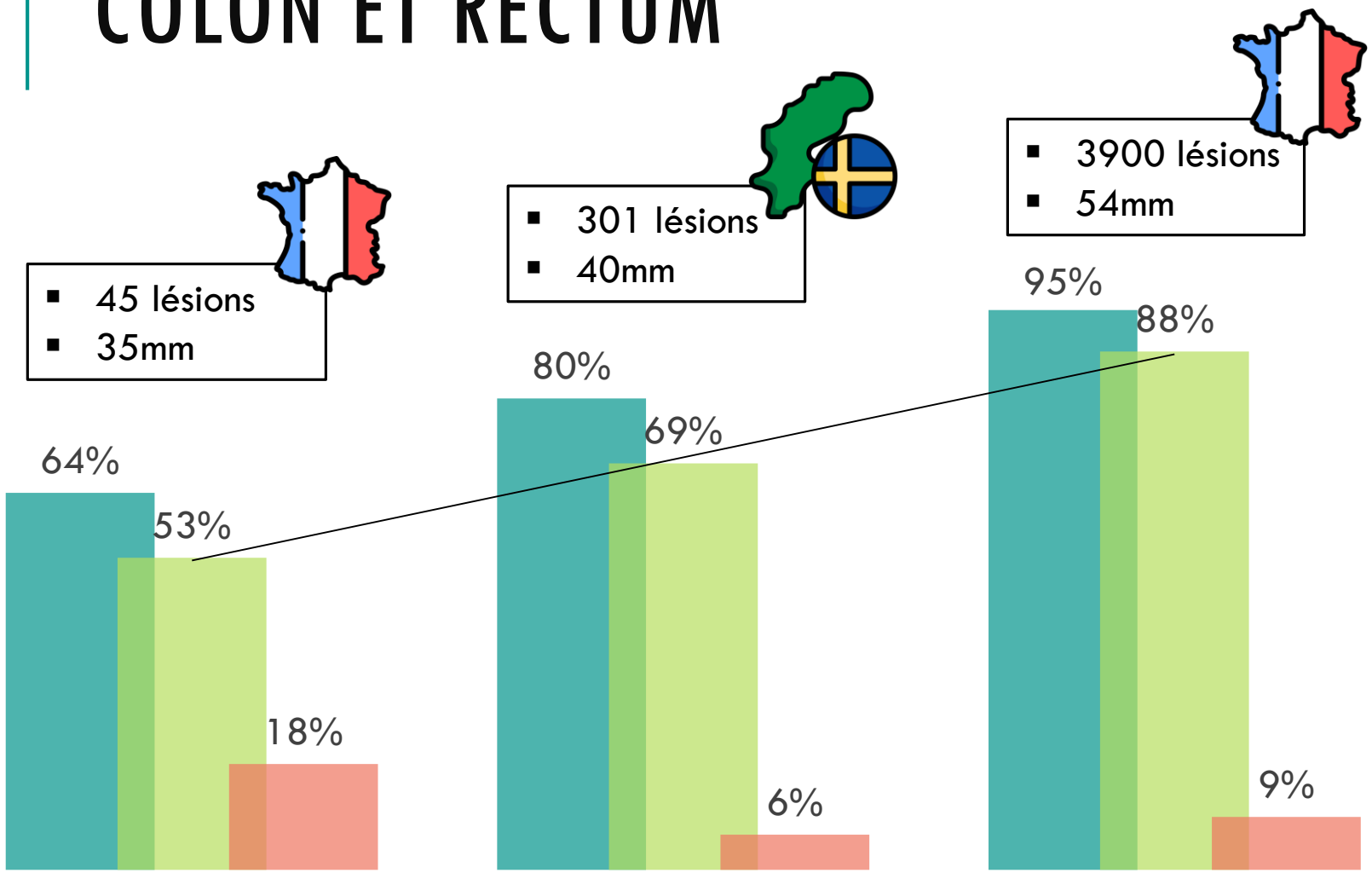




Discussion

- ESD plus de monobloc
- ESD plus de R0
- ESD moins de récidive
- RFA ?
- Complications identiques
- Donc ESD recommandée

COLON ET RECTUM



Rahmi G. Endoscopy 2014; 46: 670–676

Ronnow CF, Endosc Int Open 2018; 6: E1340E1348

FECCO 2023

Mono Bloc

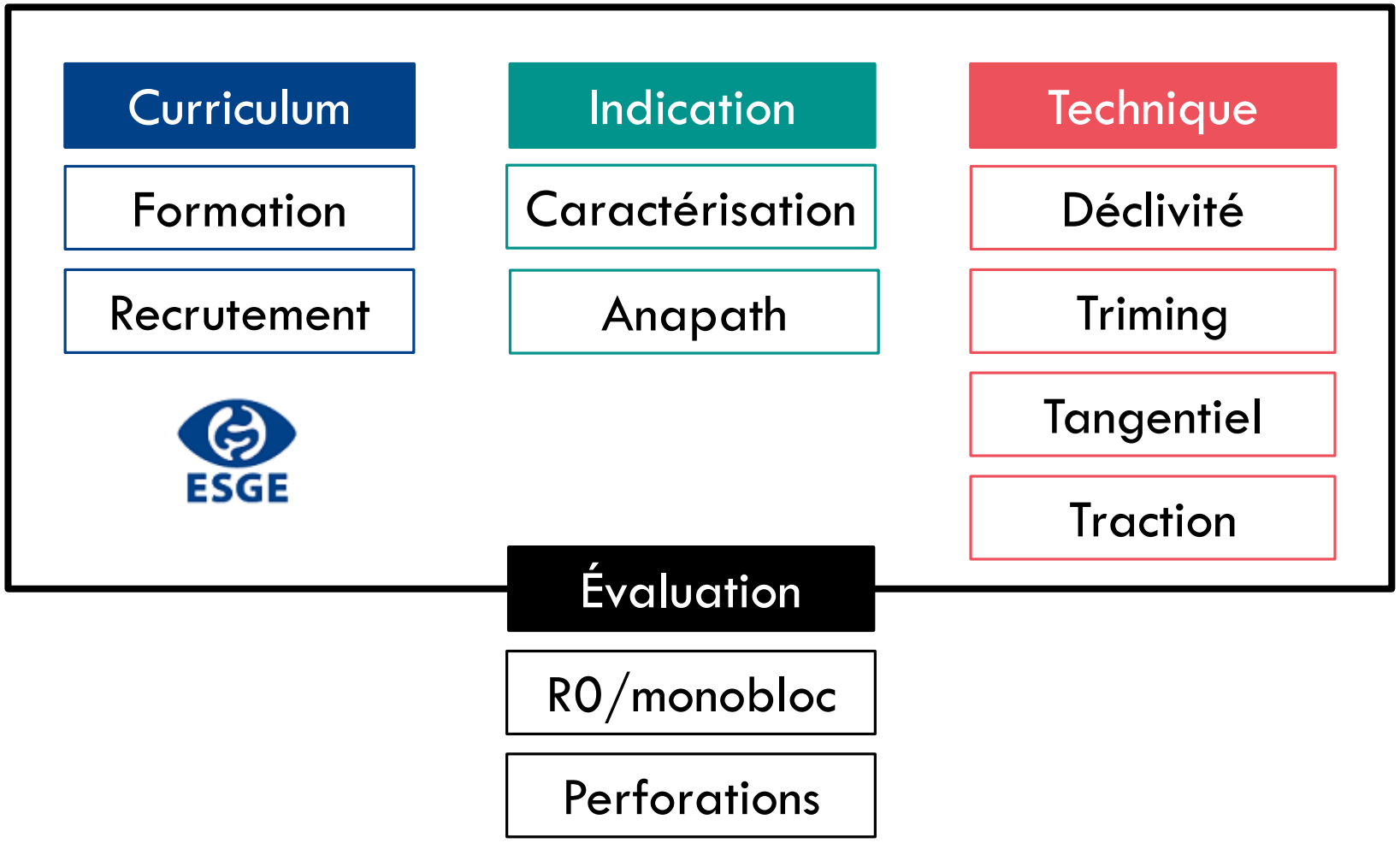
R0

Perforation

Résultats « japonais »

Savoir s'évaluer

CONCLUSION


Curriculum
Formation
Recrutement
ESGE
Indication
Caractérisation
Anapath
Technique
Déclivité
Triming
Tangentiel
Traction
Évaluation
R0/monobloc
Perforations