



*Course*

## **Training in optical diagnosis of early colorectal cancer. What you need to know**

Work plan

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## Presentation

**Training in optical diagnosis of early colorectal cancer (TOD early CRC)** is a training platform created by the [Althaia GOES research group](#), with the collaboration of world-leading endoscopists.

Scientific evidence of optical diagnosis with zoom or magnification in Japanese reference centres has shown high effectiveness in predicting the histology and, therefore, selecting the indication for advanced endoscopy treatments (such as submucosal endoscopic dissection, piecemeal, endoscopic mucosal resection) and surgery.

**TOD early CRC** aims to improve optical diagnosis of early colorectal cancer and estimate the histology in lesions found during a colonoscopy so that, based on the colonoscopy report, the endoscopist and a multidisciplinary committee may make a treatment decision considering other patient-related and local factors.

The content of the platform is aligned with the recommendations of international guidelines such as ESGE, ASGE, and JGES. This might help homogenise and centralise advanced procedures to offer optimal treatment to each patient.

**TOD early CRC. What you need to know** is the platform's main programme. It is a highly specialised virtual training course that provides theoretical knowledge and multiple tips and tricks to implement optical diagnosis of early CRC in clinical practice.

Please, read the Work plan below to get familiar with the programme.

I hope you enjoy the course!

Ignasi Puig  
Director  
TOD early CRC



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## Objectives

### General objectives

As all the courses and activities of the **TOD early CRC platform**, this programme aims to improve optical diagnosis of early colorectal cancer and estimate the histology in lesions found during a colonoscopy so that, based on the colonoscopy report, the endoscopist and a multidisciplinary committee may make a treatment decision considering other patient-related and local factors. More specifically, **TOD early CRC. What you need to know** aims to provide theoretical knowledge and multiple tips and tricks to implement optical diagnosis of early CRC in clinical practice.

### Modules objectives

Module 1. Decision-making in the treatment of colorectal polyps. Is there room for improvement?

Raise awareness that optical diagnostics may help to overcome the limitations of current clinical practice:

- Unnecessary surgery in patients without risk of lymph node metastasis.
- Unnecessary endoscopic treatments in unsuspected (and non-tattooed) lesions with deep submucosal invasion or risk of lymph node metastasis.
- Inadequate endoscopic treatment choice such as piecemeal EMR and poorly-orientated specimens do not allow submucosal invasion and resection margins to be measured.
- Unnecessary ESD in low-grade dysplasia.
- Scheduling colonoscopies to attempt removal of deeply invasive cancer.
- Making decisions based on biopsies, which can have sampling error.
- Inadequate diagnosis and referral to a tertiary centre.
- Treatment decisions that vary by centre.

Module 2. Understanding the pathologist's perspective

- To know how to identify the layers of the colon in histological slides.
- To know the risk factors for lymph node metastasis on which the indication for salvage surgery in endoscopically resected colorectal T1 is based.
- To understand the limitations that prevent the correct evaluation of colorectal T1s (piecemeal resection and poor orientation of the specimen).



- To know a checklist of endoscopic quality measures that should be performed when endoscopic suspicion of sm invasion is raised to facilitate pathological assessment.

#### Module 3. Image-enhanced endoscopy

- To present the available image-enhanced endoscopy systems used to evaluate early cancer in colorectal lesions:
  - Virtual chromoendoscopy: NBI and BLI.
  - Dye based chromoendoscopy: indigo carmine and crystal violet.
  - Magnifying endoscopy.
- To know the anatomy of the glandular crypt, recognise pits and vessels with each modality.
- Learn to systematically assess a lesion in clinical practice with each modality.

#### Module 4. Assessment with white-light imaging

- To know the risk of sm invasion according to location and size.
- To recognise each morphology type according to the main classifications for superficial lesions, and their risk of sm invasion:
  - Paris classification.
  - Lateral Spreading Tumour (LST) classification.
- To recognise the main gross morphological malignant features and their risk of sm invasion.

#### Module 5. Dye-based chromoendoscopy with indigo carmine

- Know what the endoscopist should look for when assessing a lesion with indigo carmine.
  - Delimit the lesion by identifying its margins.
  - Confirm morphology (Paris or LST classification).
  - Learn the key points to differentiate polypoid and non-polypoid growths and interpret their clinical significance.
  - Learn how to confirm or rule out the presence of a demarcated area and its clinical significance.

#### Module 6. Virtual chromoendoscopy without magnifying endoscopy

- Learn to assess lesions with virtual chromoendoscopy without magnifying endoscopy using the NICE classification. More specifically, learn how to assess:
  - Colour.
  - Vascular pattern.
  - Surface pattern.



- Know the most likely histology for each subtype of the NICE classification.
- Combine the NICE classification with some specific features assessed with white-light imaging for predicting the probability of deep sm invasion.
- Know the recommended diagnostic or therapeutic approach for each condition.

#### Module 7. Virtual chromoendoscopy with magnifying endoscopy

- To know the classifications that have been validated for predicting early colorectal cancer with virtual chromoendoscopy and magnifying endoscopy.
- To learn how to assess lesions according to the Japanese NBI Expert Team (JNET) classification.
- To ascertain the recommended approach for each type of lesion according to the JNET classification:
  - Piecemeal EMR.
  - En bloc resection.
  - Surgery.
  - Further investigation evaluating the Kudo pit pattern with crystal violet and magnifying endoscopy.

#### Module 8. Dye-based chromoendoscopy with crystal violet and magnifying endoscopy

- Learn how to assess the Kudo pit pattern with crystal violet and magnifying endoscopy.
- Learn the definition of the invasive pattern:
  - V irregular (Vi) severe in a demarcated area.
  - V non-structural (Vn).

#### Module 9. Special cases and limitations

- Raise awareness of limitations of optical diagnosis and special cases that will be discussed in the exercises.

#### Module 10. Summary of invasive pattern

- Learn to systematically characterise lesions and predict histology based on the optical diagnosis.
- To know how to describe this characterisation clearly and concisely in the colonoscopy report.
- Understand how to make treatment decisions based on the optical diagnosis (e.g. piecemeal EMR, ESD or biopsies and surgery), either alone or as part of a multidisciplinary team.



## Content

The following information is given in the headings of the platform:

- **Announcements.** This is the way the Faculty will announce any new information.
- **Work plan.**
- **Welcome video (Director) and Welcome video (Deputy Director).**
- **Key steps in the optical diagnosis of early colorectal cancer.** A useful figure shown in Module 3 that shows 5 steps in the evaluation of lesions.
- **Reminder on Responsibility acceptance agreement.**

### Before you start

This section contains:

- **Responsibility acceptance agreement.** A declaration stating that any decisions the participants might take during or after taking this course are their own responsibility. This is a requirement for the course to be displayed.
- **Work plan.**
- **Course introduction.** Welcome videos of the course Director and Deputy Director highlighting the main points of this training programme.
- **Participant characteristics.** Please, fill this information for internal purposes, so we will better understand course results and feedback according to participants' characteristics.
- **Initial test.** Test on 20 lesions assessed with magnifying endoscopy. Once the test is submitted, answers cannot be changed. As the participants repeat the same test at the end of the course, correct answers are shown after submitting the final test.

### Modules

The topics of the modules are:

1. **Decision-making in the treatment of colorectal polyps. Is there room for improvement?**
2. **Understanding the pathologist's perspective**
3. **Image-enhanced endoscopy**
4. **Assessment with white-light imaging**
5. **Dye-based chromoendoscopy with indigo carmine**
6. **Virtual chromoendoscopy without magnifying endoscopy**
7. **Virtual chromoendoscopy with magnifying endoscopy**
8. **Dye-based chromoendoscopy with crystal violet and magnifying endoscopy**
9. **Special cases and limitations**
10. **Summary of invasive pattern**

Each module contains the following sections:



## Introduction

- Objectives. The aims of the module are concisely listed.
- Before you start. In this short video, a tutor introduces the topic and explains the main theoretical points.

## Learning by reading

- Theoretical knowledge. This section systematically presents all the theoretical content related to the module topic.
- Key literature. Contains the main references on this topic.

## Learning by doing

- Exercises. This section presents multiple questions and feedback based on examples of colorectal lesions. Each question addresses different interest matters so the participants can learn to implement the theoretical knowledge and form their understanding based on experience.

## Test your knowledge

Test yourself on the main points of this module! Short self-assessment (multiple choice) about the main theoretical points that should have been learnt. All answers must be correct before moving on to the next module (multiple attempts are allowed).

## Calendar

This course has an estimated duration of 19.5 hours. It can be done asynchronously at any time and does not include any scheduled activities. User access to the content will expire 3 months after the subscription. Below is a time estimation for each module, to help participants follow their own pace of work.

Section	Minutes
Module 1	90
Module 2	120
Module 3	90
Module 4	180
Module 5	120
Module 6	120
Module 7	90
Module 8	150
Module 9	90
Module 10	120

## Final evaluation

The section contains:

- **Final test.** The same 20 lesions assessed in the initial test will be evaluated after completing the course. After submitting the test, questions with a wrong answer will be pointed out. A second attempt will be allowed to increase the final grade. See criteria to get the certificate in the section below.

## Certification

The section contains:

- **Global feedback.** A questionnaire to provide course organisation with your feedback.
- **Certificate.** It will be available for those participants who 1) have answered correctly 100% of the *Test your knowledge* questions at the end of each module (multiple attempts are allowed), 2) have answered correctly 80% of the final test with 20 images (two attempts are allowed), and 3) have completed the Global feedback.

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