

ONCOLOGY KNOWLEDGE HUB · TEACHING SLIDES

Colorectal Cancer

A mini review for clinicians

For postgraduate residents, medical students and practising clinicians

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Learning objectives

- Recognise how colorectal cancer presents, and the traps that delay diagnosis in India
- Use FIT and colonoscopy for screening and symptomatic patients
- Stage colon cancer with CT and rectal cancer with MRI pelvis
- Use MMR, RAS, BRAF and HER2 to choose treatment
- Plan surgery, radiotherapy and systemic therapy by stage (no doses)
- Manage liver metastases with curative intent when possible; plan survivorship

Roadmap

- 1 Burden and biology
- 2 Presentation and traps
- 3 Screening and genetics
- 4 Staging
- 5 Biomarkers
- 6 Colon cancer: surgery and adjuvant therapy
- 7 Rectal cancer: MRI, TME, TNT, organ preservation
- 8 Metastatic disease
- 9 Survivorship
- 10 Evidence and cases

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Burden and biology

Colorectal cancer in India

- Third commonest cancer worldwide; second commonest cause of cancer death
- India: roughly 65,000 new cases a year (GLOBOCAN 2022), rising in cities
- More rectal cancers and more patients under 50 than in Western series
- More signet-ring and mucinous histology in young patients
- No organised screening programme: most present with symptoms

Three working sites

Approximate share by site; Indian hospital series often report a larger rectal share and more patients under 50 than Western series.

Right colon · ~30%

Left colon & sigmoid · ~30%

Rectum · ~40%

Right colon

Caecum to transverse colon

- Anaemia, fatigue, a mass; bleeding is occult
- Older, more often women; more MSI-high and BRAF
- Poorer prognosis when metastatic

**Metastatic, RAS/BRAF wild-type:
doublet + bevacizumab**

Left colon & sigmoid

Splenic flexure to sigmoid

- Change in bowel habit, bleeding, obstruction
- Chromosomal-instability type; HER2 more often
- Better prognosis when metastatic

**Metastatic, RAS/BRAF wild-type:
doublet + anti-EGFR**

Rectum

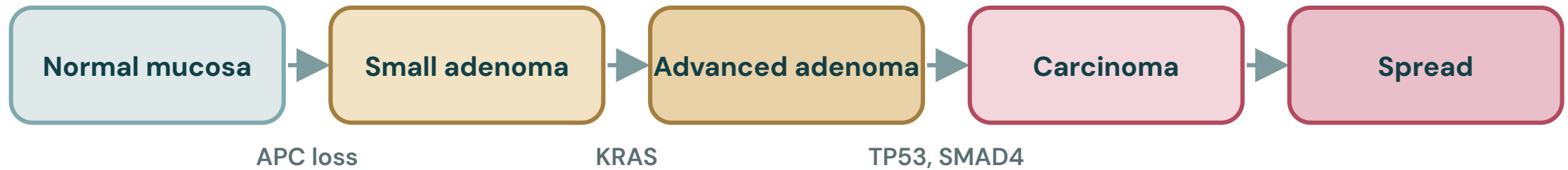
Up to 15 cm from the anal verge

- Bleeding, tenesmus, mucus; often called “piles”
- Staged locally by MRI pelvis
- Pelvic recurrence risk: radiotherapy matters

**Total neoadjuvant therapy; organ
preservation for some**

Site changes symptoms, staging, radiotherapy and biological choice

How colorectal cancer develops



About 10 years on average: the window in which screening and polyp removal prevent cancer

Chromosomal instability · ~70–80%

- Classic adenoma route (APC → KRAS → TP53)
- Mostly left colon and rectum
- Microsatellite stable (pMMR)

Serrated route · ~15–20%

- Sessile serrated lesions, flat, right colon
- BRAF V600E; MLH1 silenced by methylation
- Sporadic MSI-high; easily missed at colonoscopy

Lynch syndrome · ~3%

- Germline MLH1, MSH2, MSH6, PMS2 or EPCAM
- Young age; MSI-high; faster progression
- Family cascade testing; colonoscopy every 1–2 years

A visible polyp stage over about 10 years: the window for prevention

Risk factors

Raise risk

- Age; family history; Lynch, FAP, MUTYH
- Inflammatory bowel disease (long, extensive)
- Processed and red meat, obesity, inactivity
- Smoking, alcohol, diabetes
- Previous adenoma or colorectal cancer

Lower risk or not causes

- Fibre, whole grains, calcium, physical activity
- Aspirin in Lynch syndrome (CAPP2)
- Spicy food: not a recognised cause
- Vegetarian diet does not give immunity
- Polypectomy does not spread cancer

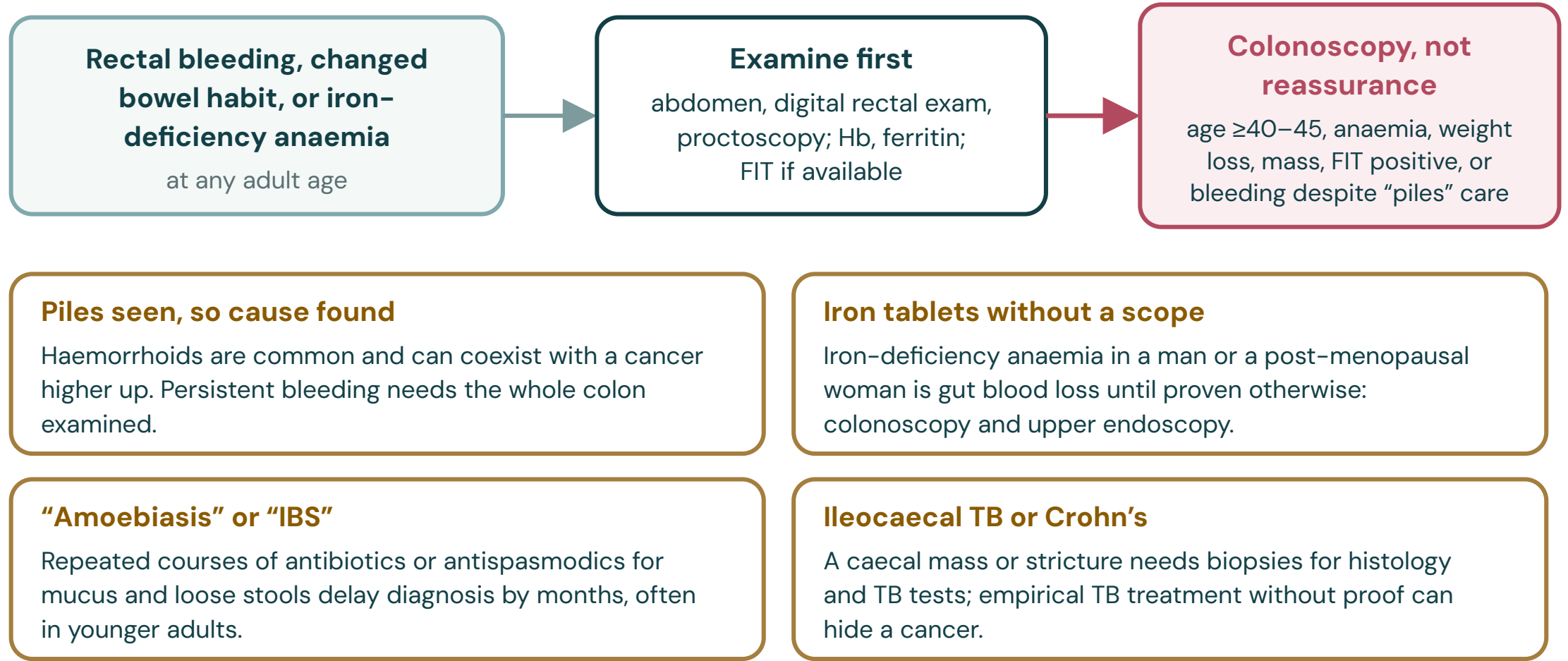
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Presentation and traps

Presentation by site

Site	Typical symptoms	Missed clue
Right colon	Anaemia, fatigue, mass	Iron deficiency treated with tablets alone
Left colon	Changed habit, blood, obstruction	Labelled as “gas” or IBS
Rectum	Bleeding, tenesmus, mucus	No digital rectal examination
Emergency (~1 in 5)	Obstruction, perforation	Repeated enemas instead of CT

Piles or cancer?



Examine first; persistent symptoms, anaemia or a positive FIT need colonoscopy

Urgent referral triggers

- Rectal bleeding with a change in bowel habit
- Unexplained iron-deficiency anaemia (man or post-menopausal woman)
- Rectal or abdominal mass
- Positive FIT in a symptomatic person
- Persistent change in bowel habit over 40–45
- Same day: obstruction, perforation, heavy bleeding

Indian traps

- “Piles” seen, so cause found: piles and cancer coexist
- Iron tablets without endoscopy
- Repeated courses for “amoebiasis” or IBS in young adults
- Ileocaecal mass treated as TB without biopsy
- CEA used to “rule out” cancer

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Screening and genetics

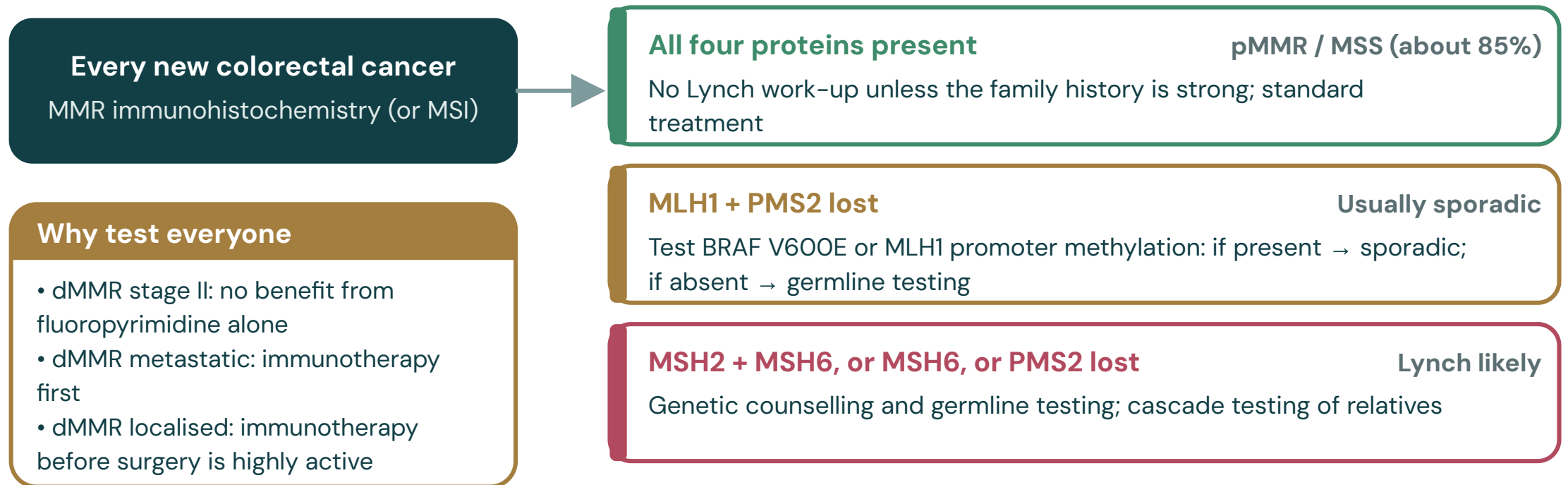
Screening tests

Test	Evidence	Use
FIT (1–2 yearly)	Stool testing cut deaths by a third (Minnesota)	Practical first step in India
Colonoscopy (10-yearly)	Polypectomy halved deaths; NordICC limited by uptake	Diagnostic and therapeutic
CT colonography	Sensitive for ≥ 10 mm polyps	Incomplete or refused colonoscopy
Blood / stool DNA tests	Lower sensitivity for adenomas	Not substitutes

Who starts when

- Average risk: 45–75; individualise 76–85; colonoscopy 10-yearly or FIT yearly
- First-degree relative: from 40 (or 10 years earlier), colonoscopy every 5 years
- Lynch: every 1–2 years from 20–25 (MLH1/MSH2); 1–3 years from 30–35 (MSH6/PMS2)
- FAP: from 10–12 years; colectomy planned
- IBD: 8 years after onset, chromoendoscopy

Universal MMR testing



Family history alone misses about half of Lynch carriers. Somatic “double hits” (two tumour mutations) explain many unexplained dMMR cases, but germline testing still comes first.

One test: treatment at every stage, and the screen for Lynch syndrome

Beyond Lynch: PSC, MUTYH and PPAP

- PSC with colitis: colonoscopy at diagnosis, then yearly
- MUTYH (biallelic): colonoscopy 1–2-yearly from 25–30; thyroid ultrasound
- Single MUTYH carriers: screen as the general population
- POLE/POLD1 (PPAP): colonoscopy from 25–30; IO for cancers
- Germline panel for everyone under 50 (about 1 in 6 positive)
- A VUS changes nothing: manage by family history

Hereditary syndromes

Syndrome	Gene	Clue
Lynch	MLH1, MSH2, MSH6, PMS2	dMMR; young; endometrial cancer in family
FAP	APC	>100 adenomas from teens
MUTYH polyposis	MUTYH, biallelic (recessive)	Up to 100 adenomas; siblings; single carriers = population
PPAP	POLE / POLD1 (dominant)	30–100 adenomas; tumours respond to IO
Peutz–Jeghers	STK11	Lip pigmentation; hamartomas

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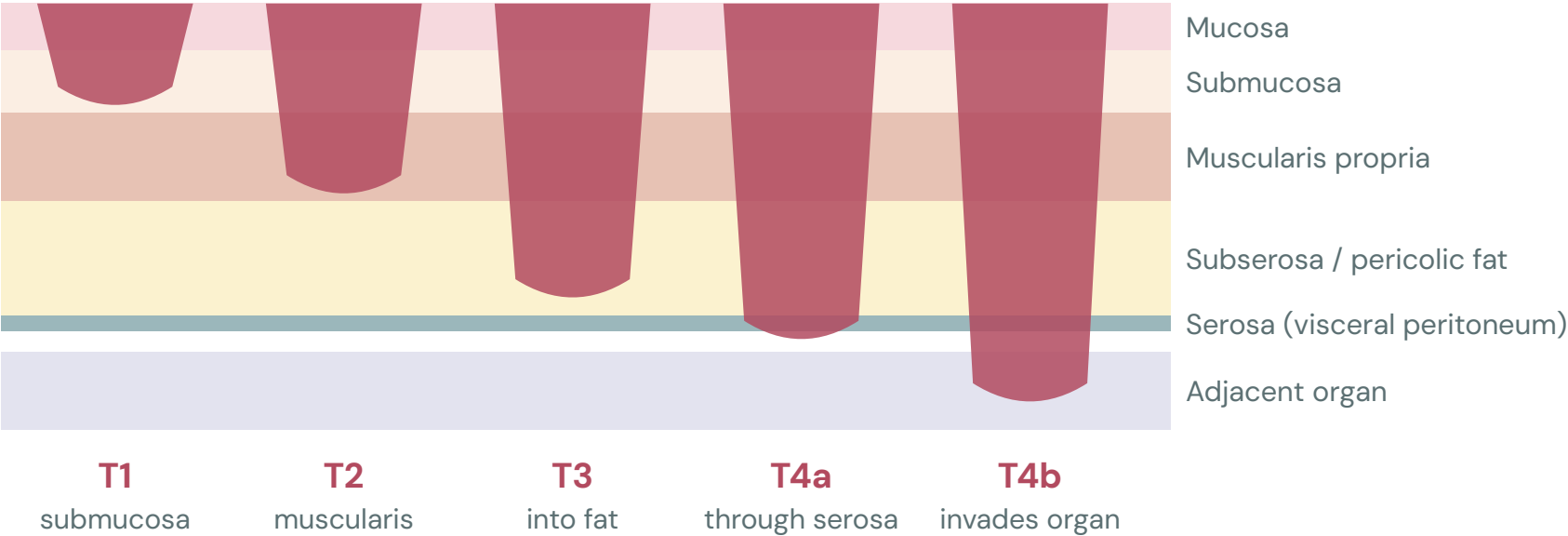
Staging

Workup checklist

- Complete colonoscopy with biopsies and tattoo
- CT chest, abdomen and pelvis with contrast
- MRI pelvis for every rectal cancer, before treatment
- MRI liver if lesions are indeterminate or resectable
- CEA baseline; MMR status on the biopsy
- PET only before metastasectomy or for unexplained rising CEA

TNM at a glance

Depth of invasion (T)



N (regional nodes; examine ≥ 12)

N1a: 1 node · N1b: 2–3 nodes
N1c: tumour deposits, nodes negative
N2a: 4–6 nodes · N2b: 7 or more

M (distant)

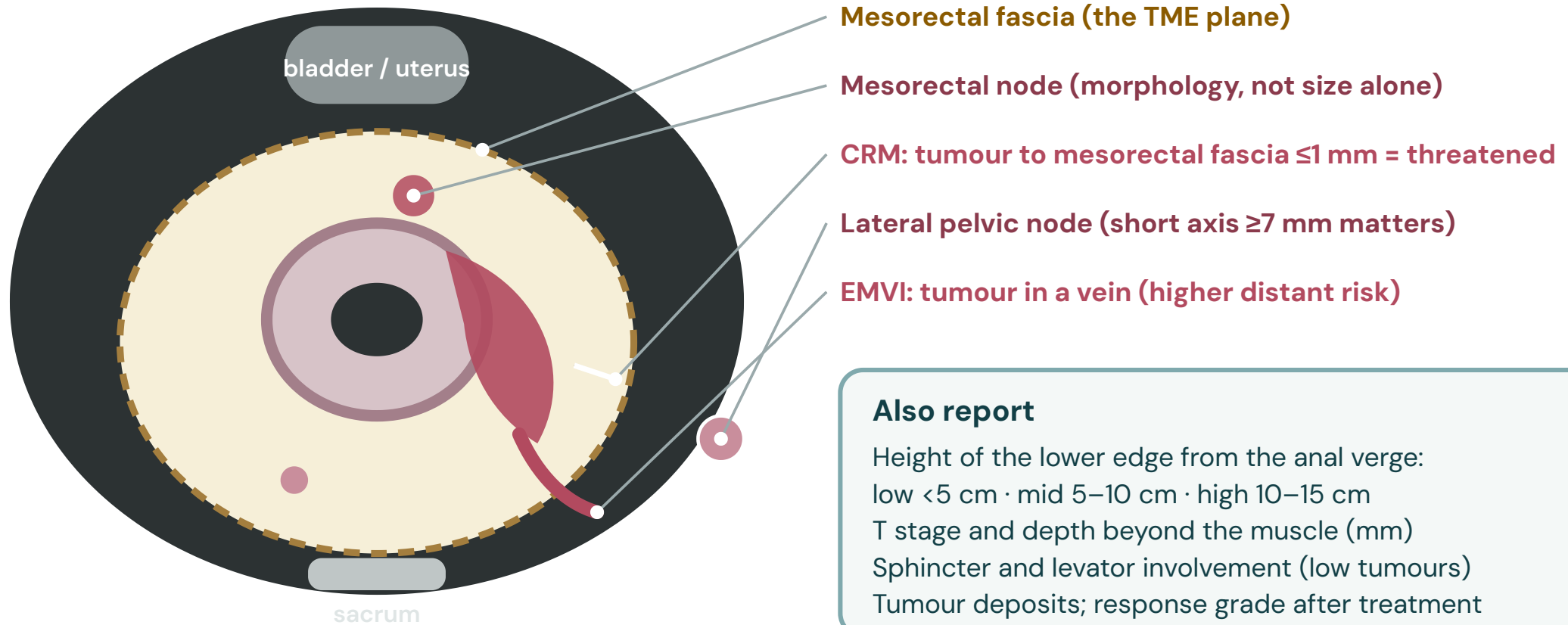
M1a: one organ
M1b: two or more organs
M1c: peritoneum ($\pm$ organs)

Stage groups

I: T1–2 N0 · IIA T3 · IIB T4a · IIC T4b
III: any T, N1–2 (IIIA–C)
IV: any M1 (IVA–C)

Depth through the wall; ≥ 12 nodes; tumour deposits = N1c

Rectal MRI: what to report



Also report

Height of the lower edge from the anal verge:
low < 5 cm · mid 5–10 cm · high 10–15 cm
T stage and depth beyond the muscle (mm)
Sphincter and levator involvement (low tumours)
Tumour deposits; response grade after treatment

*Schematic axial MRI of the mid rectum (not a patient image).
CRM, EMVI, nodes, lateral nodes, height, sphincter*

Malignant polyp

- Removed en bloc with clear margin (≥ 1 mm)
- Grade 1–2, no lymphovascular invasion, low budding
- → surveillance only
- Any adverse feature → resection with nodes
- Always tattoo the site

5 Biomarkers

Biomarkers that change treatment

Approximate frequency in metastatic colorectal cancer (overlaps exist; NTRK, RET and others are each under 1%).

RAS mutant ~45–50%

BRAF ~8%

MSI-H ~4%

HER2 ~3%

RAS/BRAF wild ~35%

RAS (KRAS, NRAS)

- Extended RAS test before any anti-EGFR
- Mutant: anti-EGFR harms or does not help
- KRAS G12C: sotorasib or adagrasib + anti-EGFR (later line)

BRAF V600E

- Aggressive; right-sided; peritoneal spread
- First line: encorafenib + cetuximab + FOLFOX
- Later: encorafenib + cetuximab

dMMR / MSI-high

- Immunotherapy first line (pembrolizumab, or nivolumab + ipilimumab)
- Localised: neoadjuvant IO trials, organ sparing in rectum

HER2 amplified

- IHC 3+ or ISH; usually RAS wild-type, left-sided
- Tucatinib + trastuzumab, or trastuzumab deruxtecan
- Predicts anti-EGFR resistance

All patients

- Sidedness + RAS/BRAF choose anti-EGFR vs bevacizumab
- NGS: KRAS G12C, NTRK, POLE (IO), PI3K (aspirin in stage I–III)
- DPYD and UGT1A1 where available

Test early

At diagnosis of metastatic disease: RAS, BRAF, MMR/MSI, HER2 (NGS panel preferred). Tissue first; plasma ctDNA if tissue is scant. MMR for every new cancer.

Each result points to, or away from, a specific drug

Biomarker → consequence

Biomarker	Frequency	Consequence
dMMR / MSI-H	15% overall; 4% metastatic	IO; no 5-FU alone in stage II
RAS mutant	45–50%	No anti-EGFR
BRAF V600E	8–10%	Encorafenib + cetuximab (+ FOLFOX)
HER2 amplified	3–5%	Tucatinib + trastuzumab; T-DXd
KRAS G12C	~3%	KRAS inhibitor + anti-EGFR

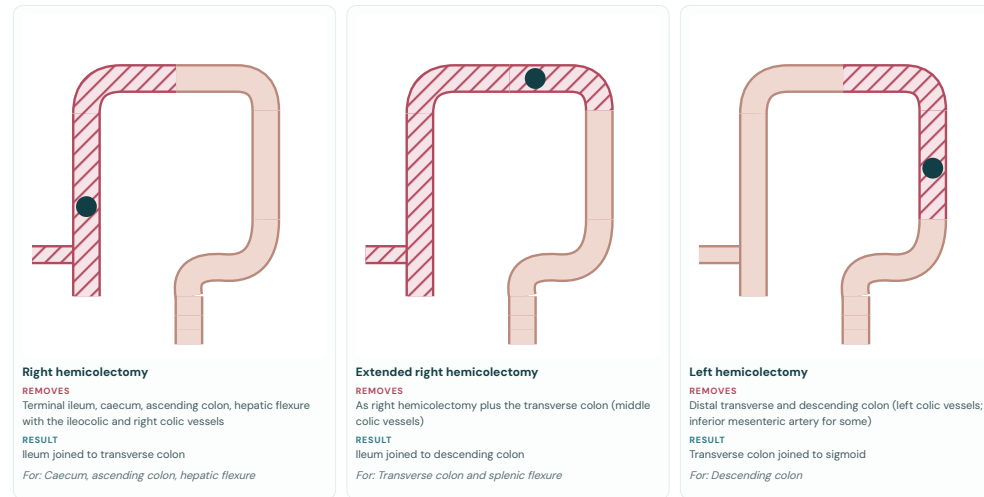
Testing in practice

- MMR on every new cancer, at diagnosis
- RAS, BRAF, HER2 (NGS panel) at diagnosis of metastatic disease
- Plasma ctDNA if tissue is scant; for anti-EGFR rechallenge
- DPYD before fluoropyrimidines; UGT1A1 for irinotecan
- Sidedness acts as a biomarker for anti-EGFR benefit

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Colon cancer: surgery and adjuvant therapy

Types of resection



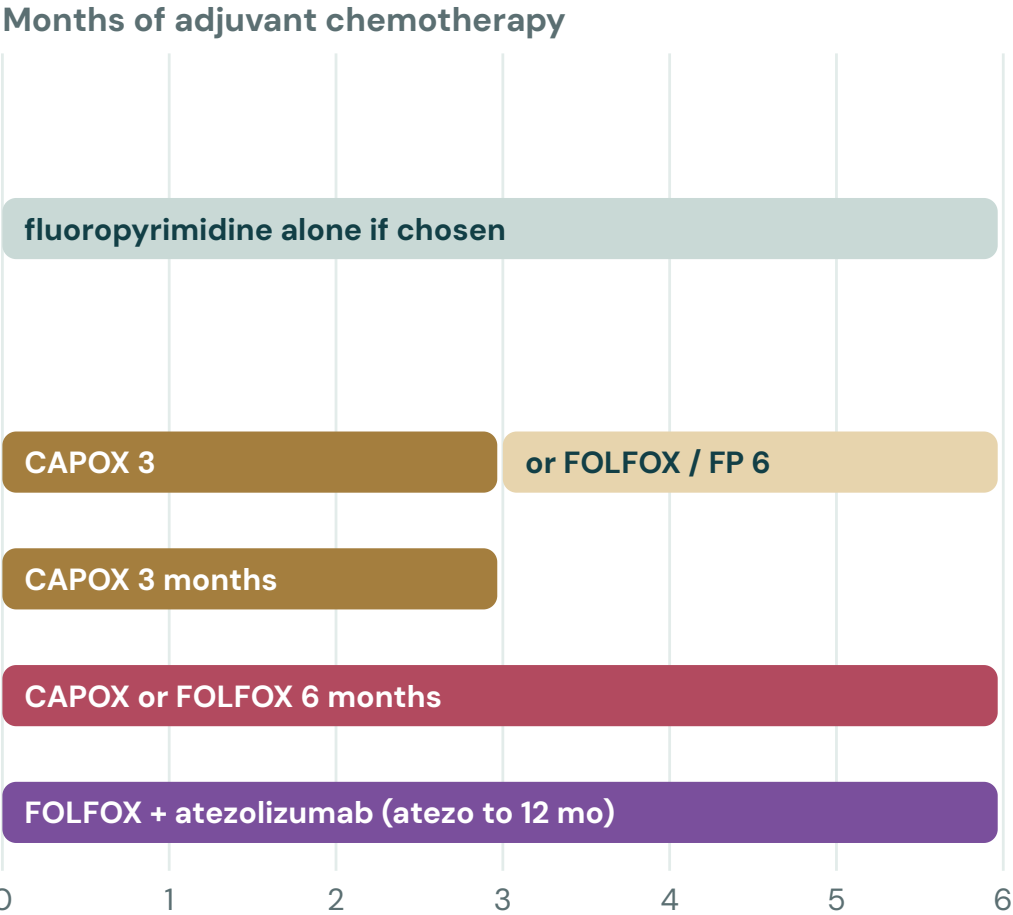
Bowel with its blood supply and nodes; laparoscopic is equivalent

Colon surgery principles

- Segmental resection with ≥ 12 nodes; margins usually ≥ 5 cm
- CME / central vascular ligation increases node yield
- Laparoscopic = open for cancer outcomes (COST, COLOR)
- T4b: en bloc resection; consider neoadjuvant chemotherapy
- Obstruction: resection or stent as a bridge (expert centres)

Adjuvant therapy by stage

- Stage I**
Surgery alone
- Stage II, low risk, pMMR**
Discuss; often observation (absolute gain $\leq 3\text{--}5\%$)
- Stage II, dMMR**
No chemotherapy (fluoropyrimidine alone gives no benefit)
- Stage II, high risk**
T4, <12 nodes, obstruction/perforation, LVI/PNI, close margin
- Stage III, low risk (T1–3 N1)**
IDEA: 3 months CAPOX is enough
- Stage III, high risk (T4 or N2)**
Six months preferred; 3 months CAPOX if toxicity
- Stage III, dMMR**
FOLFOX + atezolizumab (ATOMIC), where available



*Start within 6–8 weeks of surgery. Over 70: oxaliplatin adds little; DPYD testing before fluoropyrimidines where available.
Duration follows risk; 3 months CAPOX for low-risk stage III*

Adjuvant evidence

Trial	Question	Result
MOSAIC	Add oxaliplatin?	6-yr OS +4 points in stage III
X-ACT	Capecitabine vs 5-FU?	At least equivalent
IDEA	3 vs 6 months?	3 months CAPOX enough for T1–3 N1
QUASAR	Stage II benefit?	About 3–4% absolute
ATOMIC	dMMR stage III + atezolizumab?	Recurrence risk about halved

Stage II: who gets chemotherapy?

- High-risk: T4, <12 nodes, obstruction/perforation
- LVI/PNI, close margin, high budding, poor grade (pMMR)
- Low-risk pMMR: discuss; often observe
- dMMR: no fluoropyrimidine alone
- ctDNA-guided approach (DYNAMIC): promising, not yet standard

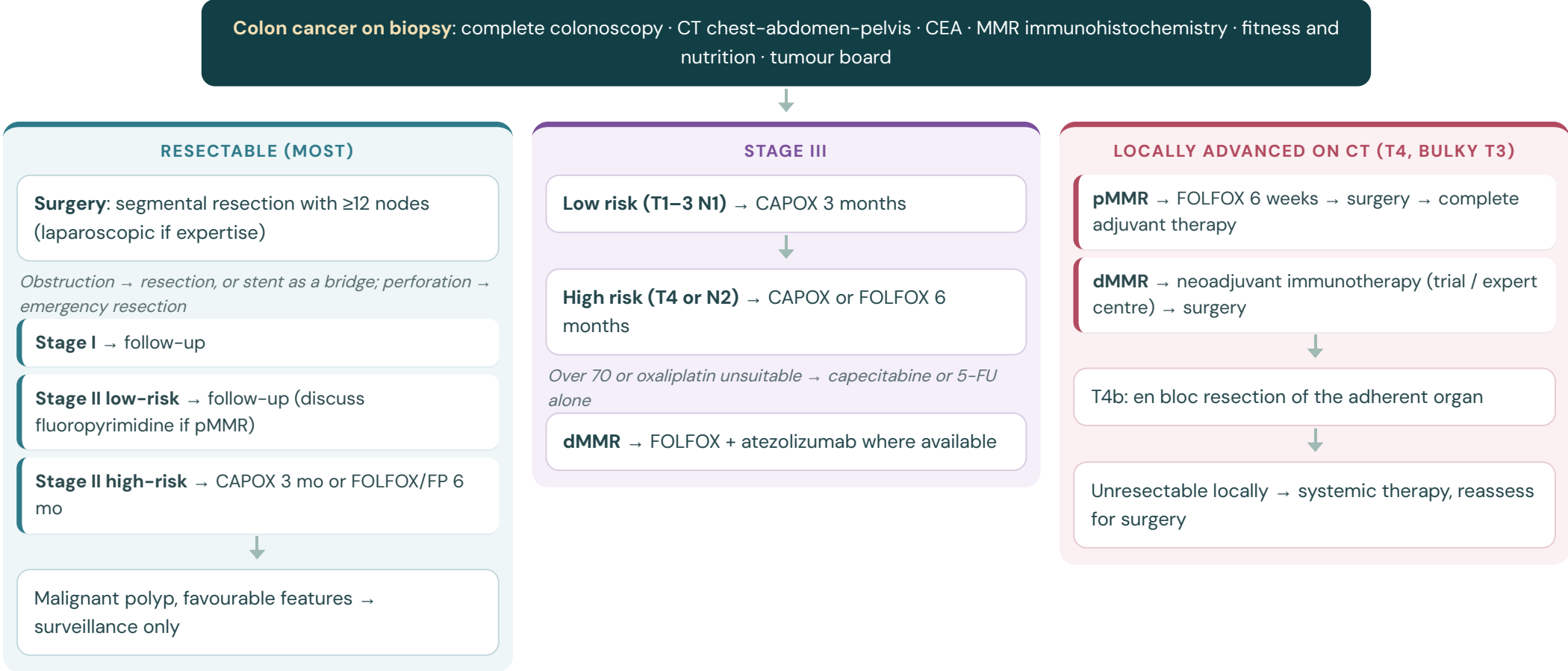
Adjunctive aspirin and vitamin D

- Unselected patients: aspirin and celecoxib trials negative (ASCOLT, 80702)
- PI3K-pathway altered stage I–III: low-dose aspirin for 3 years (ALASCCA)
- Recurrence about 8% vs 14–17%
- NGS on the resected tumour where affordable
- Vitamin D: replace if below 20 ng/mL; survival benefit unproven

Treating before colon surgery

- Radiological T4 or bulky T3, pMMR: FOLFOX 6 weeks first (FOxTROT)
- dMMR: 2 cycles nivolumab + ipilimumab → 95% major response (NICHE-2)
- Test MMR on the biopsy, before surgery
- Older patients: oxaliplatin adds little over 70
- Start adjuvant therapy within about 8 weeks

Algorithm: non-metastatic colon cancer



All patients: Lynch work-up if dMMR without BRAF V600E or MLH1 methylation (Lynch: consider total colectomy with ileorectal anastomosis) · start adjuvant therapy within about 8 weeks · DPYD testing where available · PI3K-pathway alteration on NGS → low-dose aspirin for 3 years · replace vitamin D if below 20 ng/mL · colonoscopy at 1 year · exercise and weight advice from the first visit.

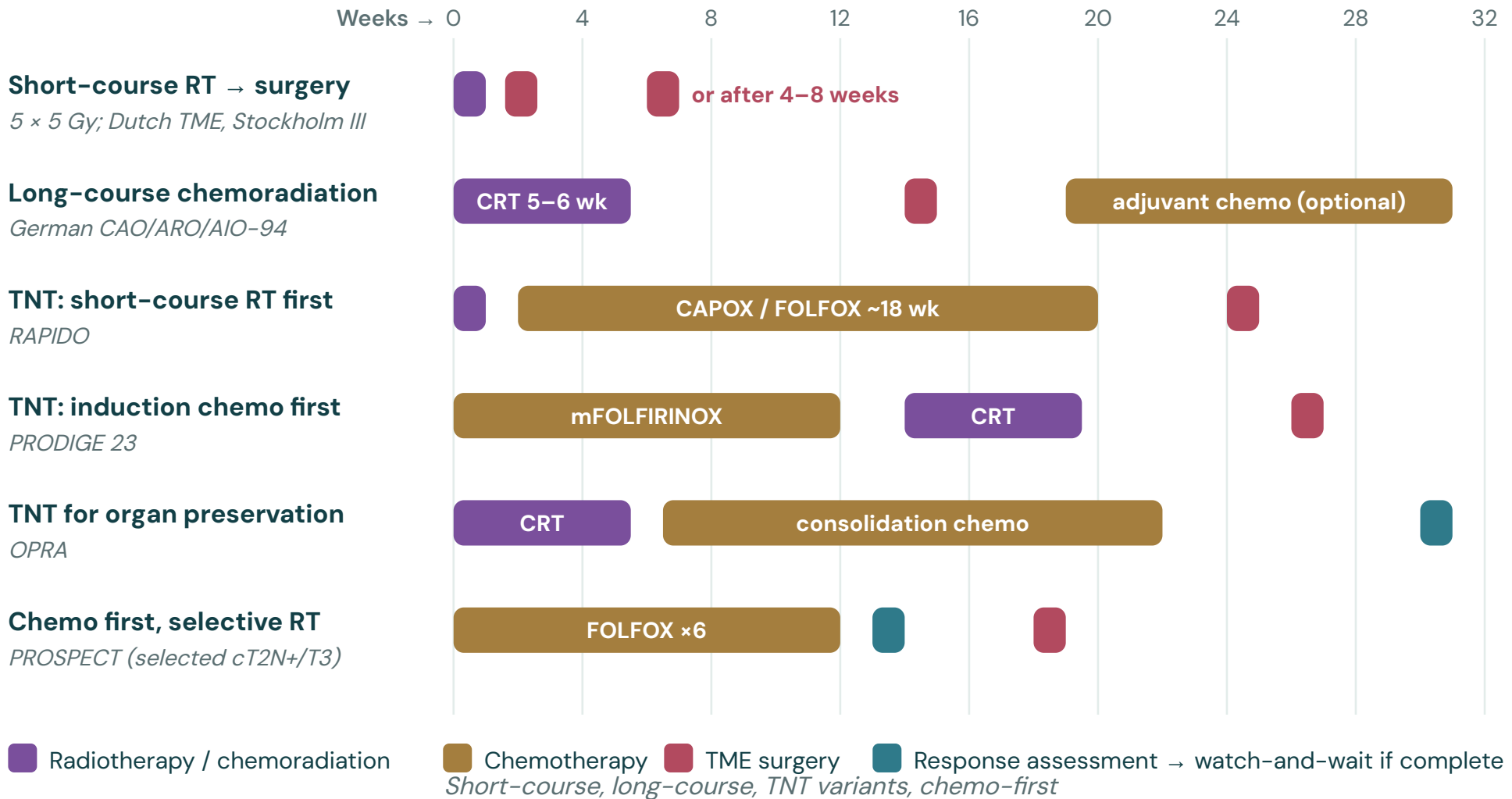
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Rectal cancer

TME: the foundation

- Sharp dissection outside the mesorectal fascia
- Local recurrence fell from 20–30% to under 10%
- Pathologist grades the mesorectum and CRM
- Laparoscopic TME equivalent in experienced hands (COLOR II)
- Lateral nodes ≥ 7 mm: boost or lateral dissection

Neoadjuvant sequences



Rectal trials

Trial	Strategy	Key result
Dutch TME	SCRT → TME	Local recurrence 2% vs 8%
German CAO/ARO	Pre- vs postoperative CRT	Less recurrence and toxicity
RAPIDO	SCRT → chemo → TME	pCR 28% vs 14%; fewer failures
PRODIGE 23	FOLFIRINOX → CRT → TME	Better DFS and OS
OPRA	CRT → chemo → W&W	About half keep the rectum
PROSPECT	FOLFOX → selective CRT	Most avoid pelvic RT

Who needs what

Risk group

- Early cT1–2 N0: TME alone (or local excision)
- Intermediate cT3/N+, CRM clear: SCRT, CRT, or FOLFOX–first
- High risk (T4, N2, CRM $\leq$ 1 mm, EMVI, lateral nodes): TNT
- Upper rectum, early T3, clear MRF: surgery alone acceptable

Before you start

- MMR status: dMMR → anti-PD-1 alone
- Fertility: sperm/egg storage before pelvic RT
- Ask: does keeping the rectum matter?
- Experienced rectal surgeon and MRI radiologist

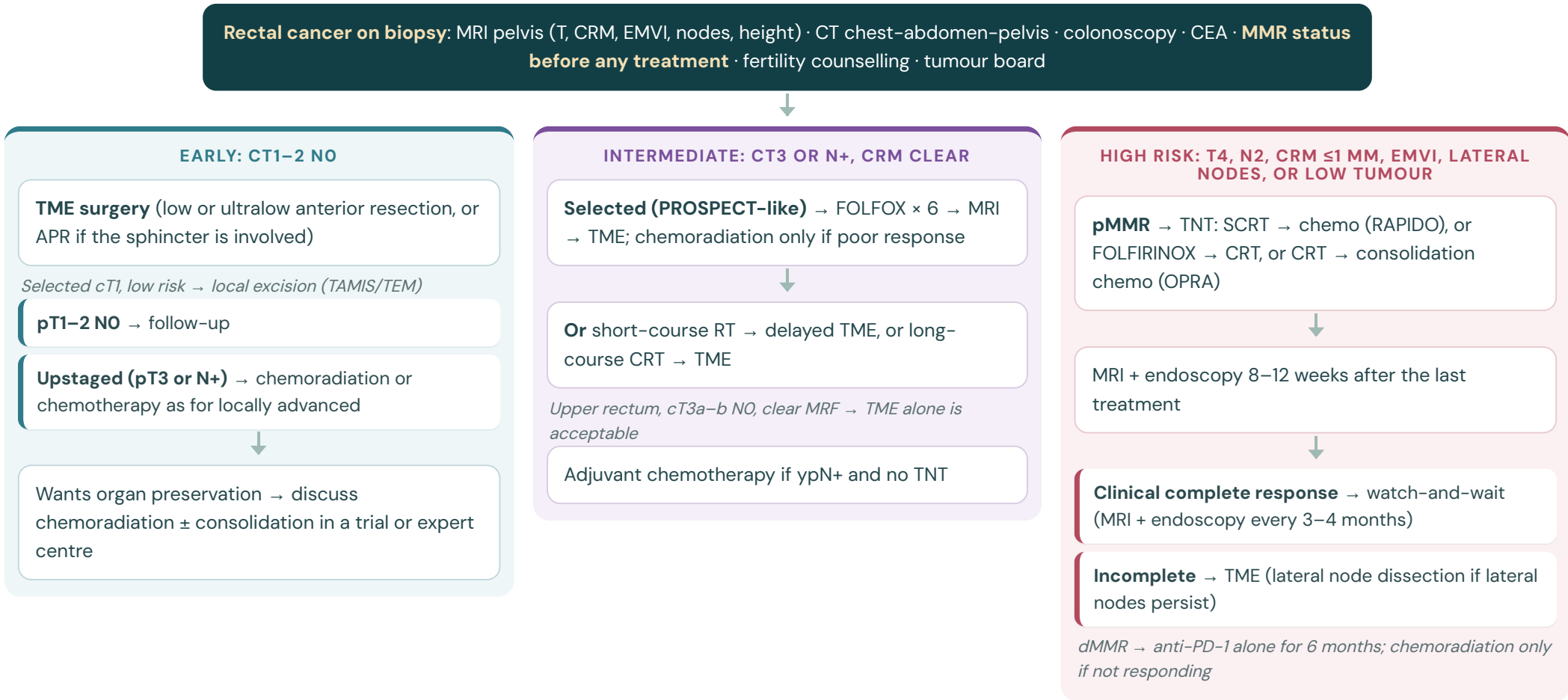
Organ preservation

- Clinical complete response: flat white scar, no mass, no MRI tumour
- Watch-and-wait: MRI + endoscopy every 3–4 months for 2 years
- About a quarter regrow, mostly within 2 years
- Most regrowths are salvageable by surgery
- dMMR: anti-PD-1 gave complete responses in all of the first patients

Function after rectal surgery

- Low anterior resection syndrome in up to half
- Temporary ileostomy; reverse at about 3 months
- Urinary and sexual dysfunction
- Infertility and early menopause after pelvic RT
- Stoma nurse before and after surgery

Algorithm: non-metastatic rectal cancer

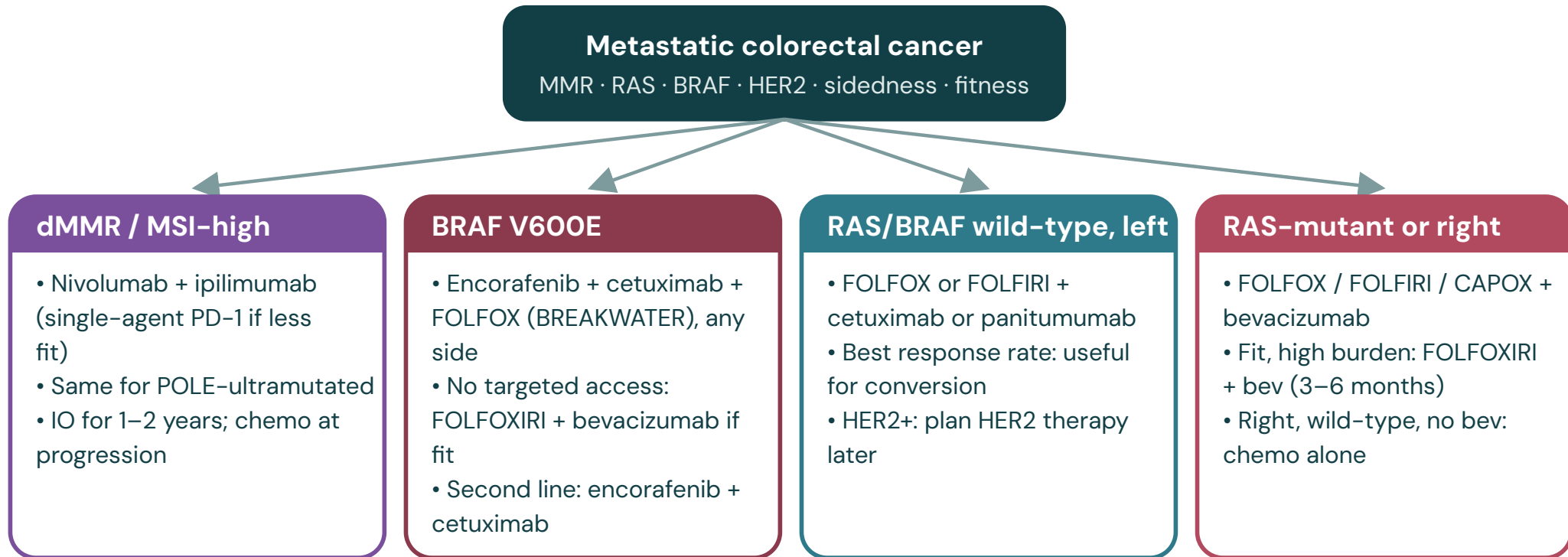


All patients: confirm MMR status before chemoradiation · TME by an experienced rectal surgeon · temporary ileostomy after low anastomosis, reverse at about 3 months · counsel about LARS, sexual and urinary function · regrowth after watch-and-wait is usually salvageable if found early.

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Metastatic disease

Choosing first-line therapy



After 4–6 months of induction

Responding or stable: de-escalate to fluoropyrimidine ± biological maintenance (CAIRO3); reassess for surgery, ablation or SBRT at every scan. Later lines: switch backbone; trifluridine–tipiracil + bevacizumab, regorafenib or fruquintinib; anti-EGFR rechallenge if ctDNA shows RAS wild-type again.

Biomarkers first, sidedness second, fitness and goals third

First-line evidence

Trial	Population	Result
CheckMate 8HW	MSI-high	Nivo + ipi beat chemo and nivo: preferred
KEYNOTE-177	MSI-high	PFS 16.5 vs 8.2 months (if less fit)
PARADIGM	RAS wt, left	Panitumumab > bevacizumab for OS
BREAKWATER	BRAF V600E	OS about 30 vs 15 months
TRIBE	Fit, any	FOLFOXIRI + bev: better response and OS

Liver metastases

Resectable now

- RO resection keeping inflow, outflow and biliary drainage
- Future liver remnant >20% (>30% after chemotherapy liver injury)
- Low risk (≤ 4 lesions, one lobe, RAS/BRAF wild-type): surgery first; higher risk: chemotherapy first
- Ablation for ≤ 3 cm (COLLISION); SBRT if unsuitable

5-year survival up to 50–60%

Potentially resectable

- RAS/BRAF wild-type: oxaliplatin doublet/triplet ($\pm$ anti-EGFR if left); mutant: FOLFOXIRI + bevacizumab
- Fiducials for small, deep lesions; re-image every 6–8 weeks; operate as soon as resectable
- Portal vein embolisation or two-stage hepatectomy to grow the remnant

About 15–30% convert

Never resectable

- Systemic therapy for control
- Ablation, SBRT, TACE or Y-90 for limited or refractory liver-predominant disease
- No radioembolisation added to first-line chemotherapy
- Selected liver-only disease: transplant in expert centres (TRANSMET)

Median survival now often 2–3 years

Decide in a liver multidisciplinary meeting with a hepatobiliary surgeon, before chemotherapy starts.

Extrahepatic disease limited to the lungs does not exclude cure.

Resectability is judged by what remains

Liver surgery: the details

- Remnant $>20\%$ (healthy) or $>30\%$ (after chemotherapy injury)
- Low risk (≤ 4 lesions, one lobe, RAS/BRAF wt): surgery first
- Higher risk: ≤ 4 cycles first; re-image every 6–8 weeks
- Fiducials for small, deep lesions before chemotherapy
- Margins >10 mm ideal, >1 mm acceptable
- Ablation for ≤ 3 cm (COLLISION); 5-year survival up to 50–60%

Local therapy for metastases

- Liver resection ± perioperative FOLFOX (EPOC)
- Ablation ≤ 3 cm; SBRT; SIRT in selected cases
- Lung metastases: resection or SBRT
- Peritoneum: complete cytoreduction; HIPEC adds nothing (PRODIGE 7)
- Asymptomatic primary: no upfront resection (JCOG1007)
- Transplant for selected liver-only disease (TRANSMET)

Later lines

Setting	Option	Evidence
Second line	Switch backbone ± anti-VEGF	Standard
BRAF V600E	Encorafenib + cetuximab	BEACON
HER2+	Tucatinib + trastuzumab; T-DXd later (or if RAS-mutant)	MOUNTAINEER, DESTINY-CRC01/02
KRAS G12C	Sotorasib + panitumumab	CodeBreak 300
Third line	FTD-TPI + bev; regorafenib; fruquintinib	SUNLIGHT, CORRECT, FRESCO-2

Side effects by drug

	5-FU / cape	Oxaliplatin	Irinotecan	Bevacizumab	Anti-EGFR	Regorafenib	FTD-TPI	Encorafenib	IO
Diarrhoea	●	○	●		○	○	○	○	○
Neutropenia	○	○	●				●		
Neuropathy (cold-triggered, cumulative)		●							
Hand-foot skin reaction	●					●		○	
Acneiform rash, paronychia				●					
Low magnesium				●					
Hypertension, proteinuria				●		●			
Bleeding, perforation, poor wound healing				●		○			
Chest pain (coronary spasm)	○								
Infusion / allergic reaction		○			○				
Liver injury		○	○			●			○
Colitis, thyroid, hepatitis (immune)									●

● Common or signature ○ Occasional but important

*DPYD variants → severe fluoropyrimidine toxicity; UGT1A1*28 → irinotecan neutropenia.*

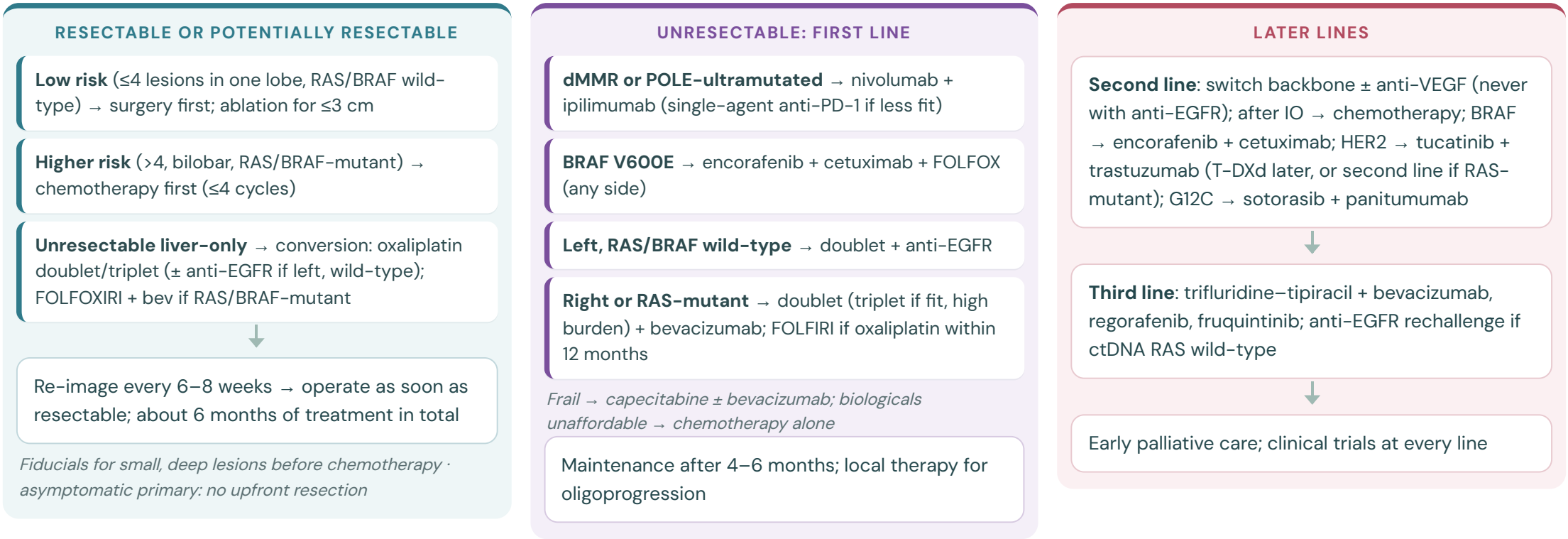
Signature toxicities guide counselling

Toxicity essentials

- Oxaliplatin: stop for function-limiting neuropathy, keep the fluoropyrimidine
- DPD deficiency: severe cycle-1 toxicity — stop and test
- Capecitabine chest pain: coronary spasm
- Anti-EGFR: rash, paronychia, low magnesium
- Anti-VEGF: BP, proteinuria, bleeding, wound healing, perforation

Algorithm: metastatic colorectal cancer

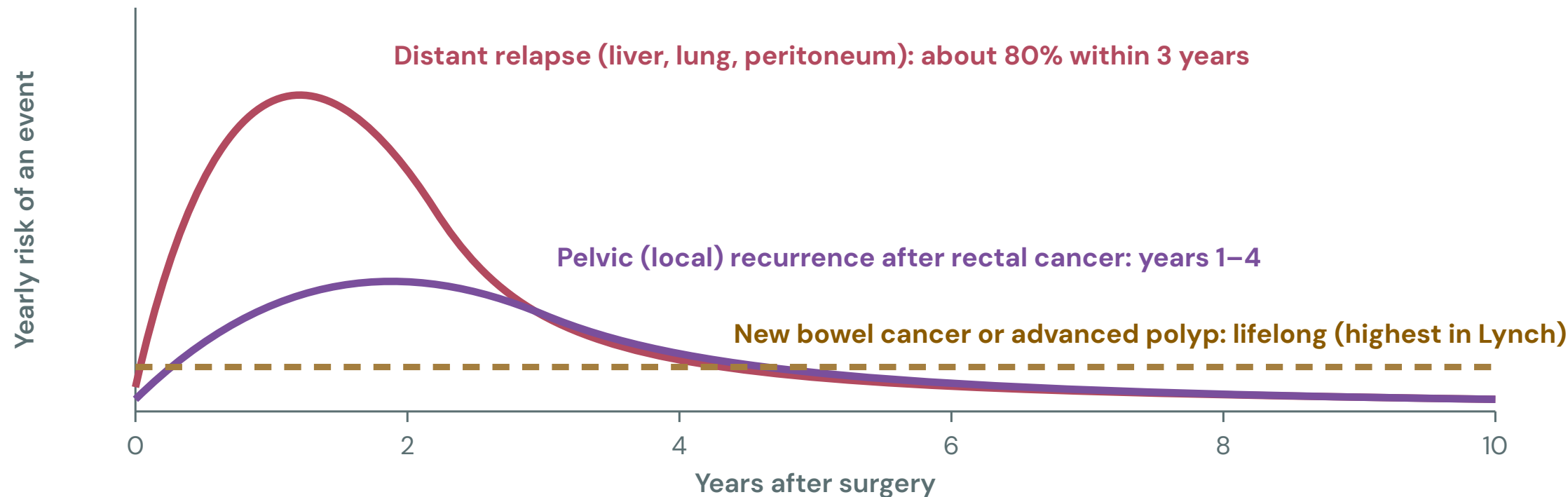
New stage IV: CT ± MRI liver (PET only before metastasectomy) · **MMR, RAS, BRAF, HER2** (NGS) · DPYD · sidedness · fitness and goals · hepatobiliary/thoracic surgeon at the first MDT



All patients: discuss goals early · obstruction → stent or diversion (avoid stents with bevacizumab) · peritoneal disease → expert-centre opinion on cytoreduction · selected unresectable liver-only disease → transplant evaluation in specialised programmes.

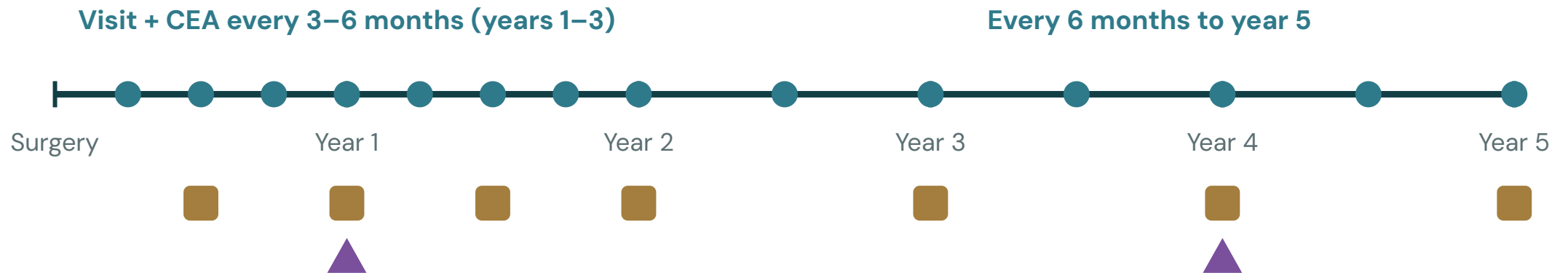
9 Survivorship

When relapses happen



About 80% of distant relapses occur within 3 years

Follow-up rhythm



- Clinic visit + CEA: symptoms, weight, bowel and bladder function, neuropathy, stoma and LARS, mood
- CT chest and abdomen (± pelvis) every 6–12 months to 5 years, or at least yearly for 3 years (stage II–III)
- ▲ Colonoscopy at 1 year; again at 1 year if advanced adenoma, otherwise every 3–5 years

Rectum: watch-and-wait/local excision → MRI + endoscopy 3–4-monthly (2 years); LAR without RT → endoscopy + EUS/MRI 6-mon
Not routine when well: PET-CT, other tumour markers. A rising CEA needs CT (± PET) and an MDT review for a curable relapse.

CEA, CT and colonoscopy; more is not better (FACS, COLOFOL)

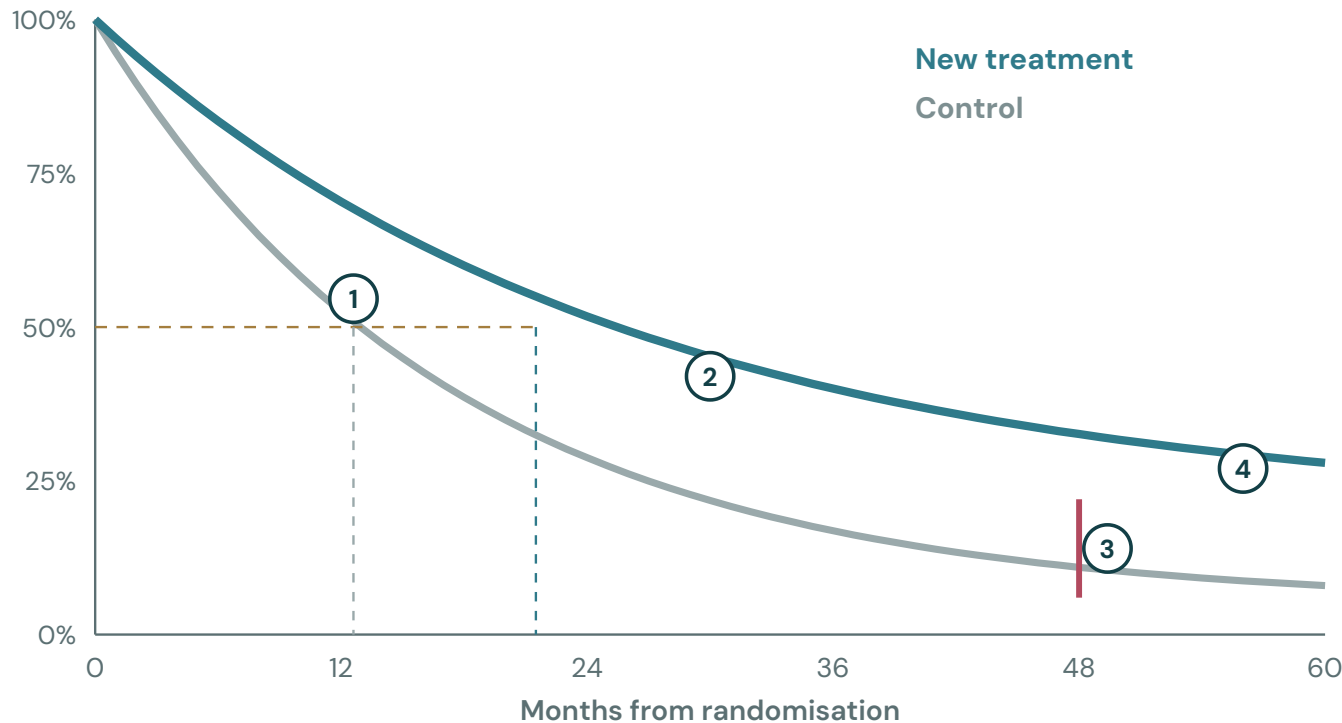
Reducing recurrence

- Structured exercise: 5-year DFS 80% vs 74% (CHALLENGE)
- Healthy weight; no tobacco; little or no alcohol
- Low-dose aspirin 3 years if PI3K-altered (ALASCCA); Lynch carriers
- Colonoscopy for first-degree relatives from 40
- Cascade genetic testing in Lynch families

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Evidence and cases

Reading a survival curve



- 1 Median**
The time at which half the patients have had the event. A median gain of a few months can hide a long tail of survivors.
- 2 Hazard ratio**
Relative risk of the event at any moment (0.70 = 30% lower risk). It is not an absolute difference.
- 3 Absolute difference**
The vertical gap at a fixed time (here about 20 points at 4 years).
 $NNT = 100 \div \text{gap}$.
- 4 The tail**
A plateau suggests some patients gain long-term control: the typical immunotherapy pattern.
- 5 Crossover and PFS**
If control patients get the new drug later, overall survival differences shrink; a PFS gain alone may not mean longer life.

Median, HR, absolute gap, tail, crossover

Case 1: anaemia at 34

- Iron tablets twice; caecal cancer at colonoscopy
- MSH2/MSH6 loss → Lynch
- Right hemicolectomy; pT3 N1b
- FOLFOX + atezolizumab (ATOMIC) where available
- Cascade testing; gynaecological risk reduction

Case 2: obstruction at 72

- CT: obstructing sigmoid cancer
- Stent as bridge → elective resection
- pT4a NO: high-risk stage II
- CAPOX 3 months or fluoropyrimidine alone
- Earlier colonoscopy would have helped

Case 3: “piles” with threatened CRM

- cT3c N2, EMVI+, CRM 0.5 mm
- Sperm banking before RT
- TNT: SCRT → chemo, or FOLFIRINOX → CRT
- TME after response; ileostomy reversal
- No further chemotherapy after surgery

Case 4: low tumour, no stoma wish

- cT2 N1, 4 cm from verge
- CRT → consolidation chemotherapy (OPRA)
- Clinical complete response
- Watch-and-wait every 3–4 months
- Salvage TME if regrowth

Case 5: dMMR rectal cancer at 29

- Chemoradiation booked; MMR shows MLH1/PMS2 loss
- BRAF and methylation negative → germline test
- Anti-PD-1 alone for 6 months
- Complete response; organ, fertility preserved
- Cascade testing

Cases 6 and 7: metastatic

- Left RAS/BRAF wt, 6 liver lesions → anti-EGFR doublet → conversion → two-stage hepatectomy
- Right BRAF V600E with peritoneal disease → encorafenib + cetuximab + FOLFOX
- Liver surgeon before chemotherapy
- Early palliative care alongside
- Test BRAF at diagnosis

Practice pearls for Indian clinics

- Anaemia and persistent bleeding need colonoscopy, whatever the age
- Digital rectal examination for every rectal bleed
- Biopsy ileocaecal masses before any ATT
- MMR on the first biopsy; MRI before any rectal treatment
- Biosimilar bevacizumab + doublet is affordable and evidence-based

Take-home messages

- Colonoscopy prevents as well as finds cancer
- Site + stage + MMR (+ RAS/BRAF/HER2 when metastatic) decide treatment
- Three months of CAPOX for low-risk stage III
- Rectal cancer is risk-adapted: TNT, organ preservation, chemo-first
- Liver metastases can be cured
- Exercise is part of treatment

THANK YOU

Questions and discussion

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Full mini review, algorithms, MCQ bank and case vignettes: drharitha.co.in/professionals

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