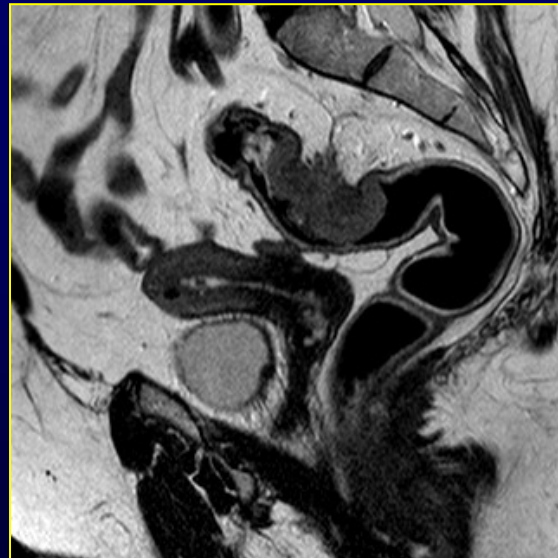


# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

Stadiazione TAC Toraco-addominale  
Stadiazione RM 'T' e 'N'



A. Zanello



U.O. Radiologia  
Humanitas Castelli-Gavazzeni  
Bergamo

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022



National  
Comprehensive  
Cancer  
Network®

## NCCN Guidelines Version 1.2022 Rectal Cancer



National  
Comprehensive  
Cancer  
Network®

## NCCN Guidelines V Rectal Cancer

### CLINICAL PRESENTATION<sup>a,b</sup>

### WORKUP

Rectal cancer  
appropriate for  
resection<sup>j,k</sup>

- Biopsy
- MMR/MSI testing<sup>f</sup>
- Pathology review
- Colonoscopy
- Consider proctoscopy<sup>i</sup>
- Chest CT and abdominal CT or MRI<sup>c</sup>
- CBC, chemistry profile, CEA
- Pelvic MRI with or without contrast<sup>c</sup>
- Endorectal ultrasound (if MRI is contraindicated, inconclusive, or for superficial lesions)<sup>c</sup>
- Enterostomal therapist as indicated for preoperative marking of site, teaching
- PET/CT scan is not indicated<sup>c</sup>
- Multidisciplinary team evaluation, including formal surgical evaluation
- Fertility risk discussion/counseling in appropriate patients

**CHEST/ABDOMINAL/PELVIC CT\***

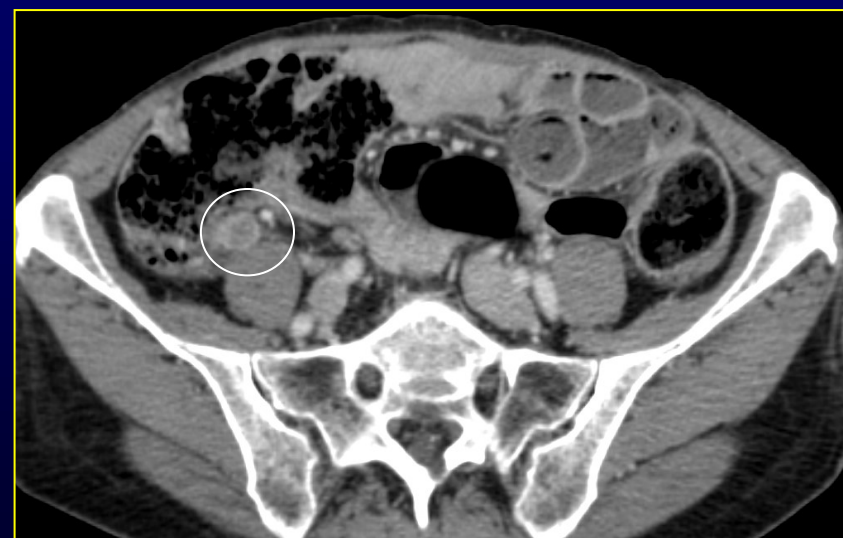
\*CT should be with IV contrast

**PELVIC MRI** with or without contrast

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

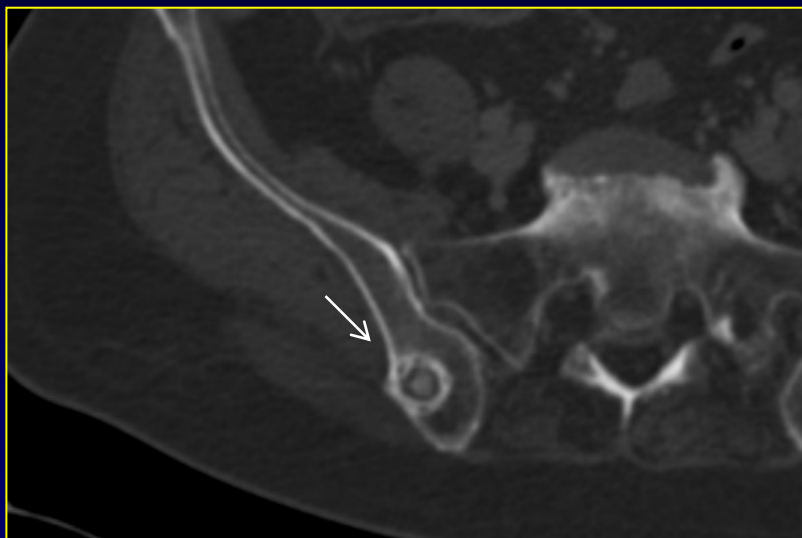
## Perché la TC ?

### METODICA PAN-ESPLORANTE

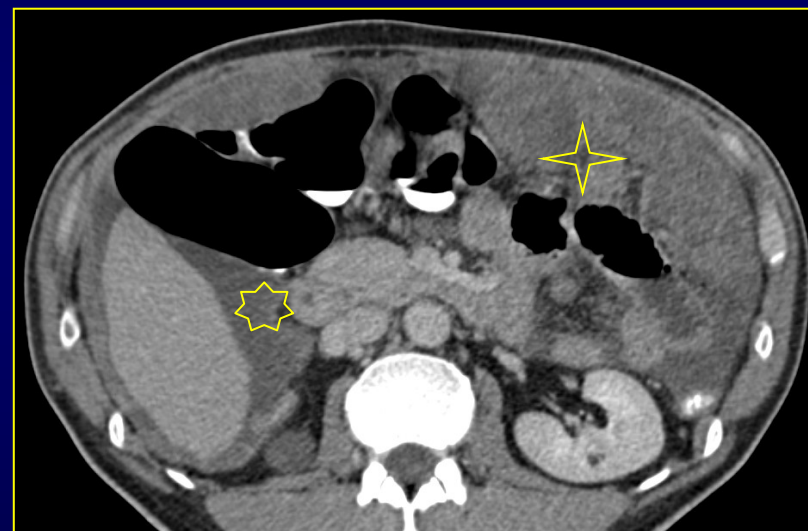


Non esiste solo il fegato !

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022



Metastasi ossee



Carcinosi peritoneale:  
Ascite (☆) e ispessimento omentale(★)

## TCMS

CENTINAIA/MIGLIAIA DI IMMAGINI (>1000/TC TORACE)

INCREMENTO DELLA **FATICA** E DELL'**ERRORE UMANO**



SISTEMI  
DI DIAGNOSI  
AUTOMATICI  
(CAD)

Pulmonary Nodules on Multi-Detector Row CT Scans:  
Performance Comparison of Radiologists and Computer-aided Detection  
Radiology 2005;234:274-283

# METASTASI POLMONARI

MANCATA DIAGNOSI

K colon/retto giugno 2017



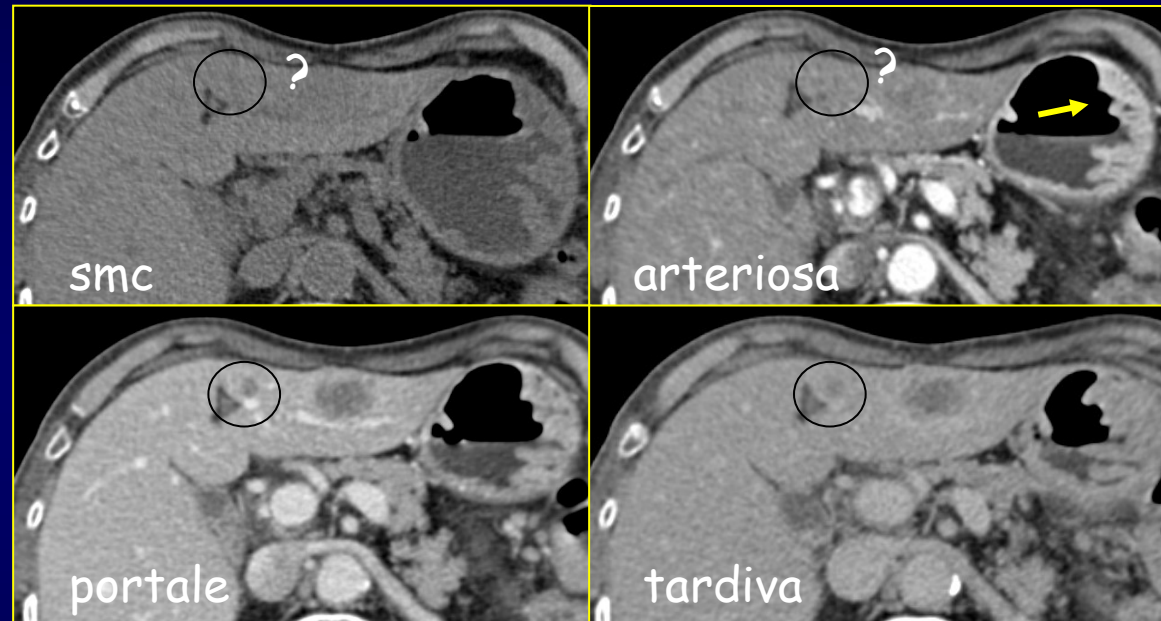
Dic 2017  
M+ epatiche



Marzo 2018

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

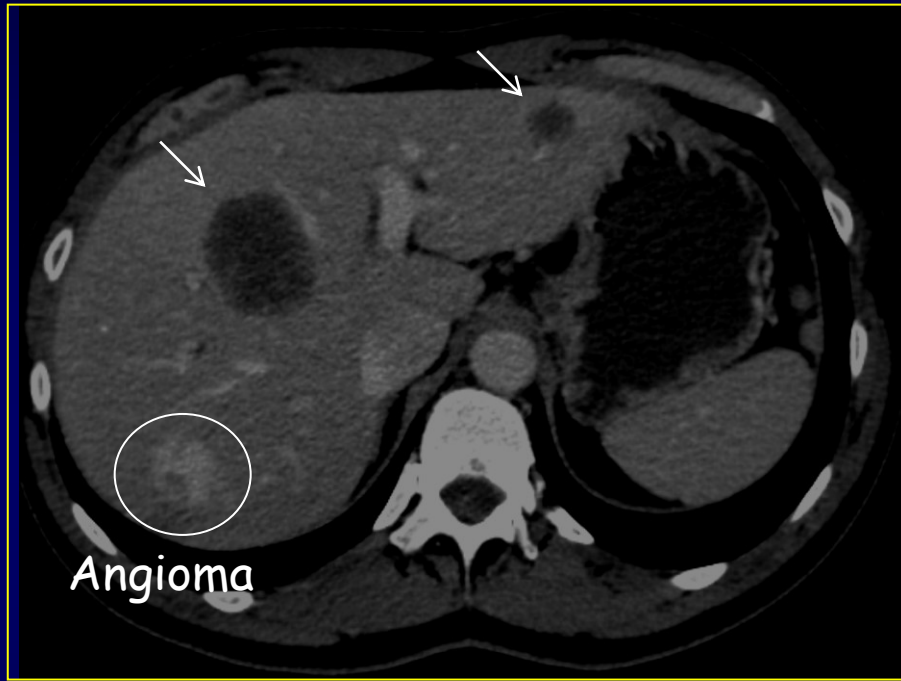
PERCHE' IL MEZZO di CONTRASTO EV ?



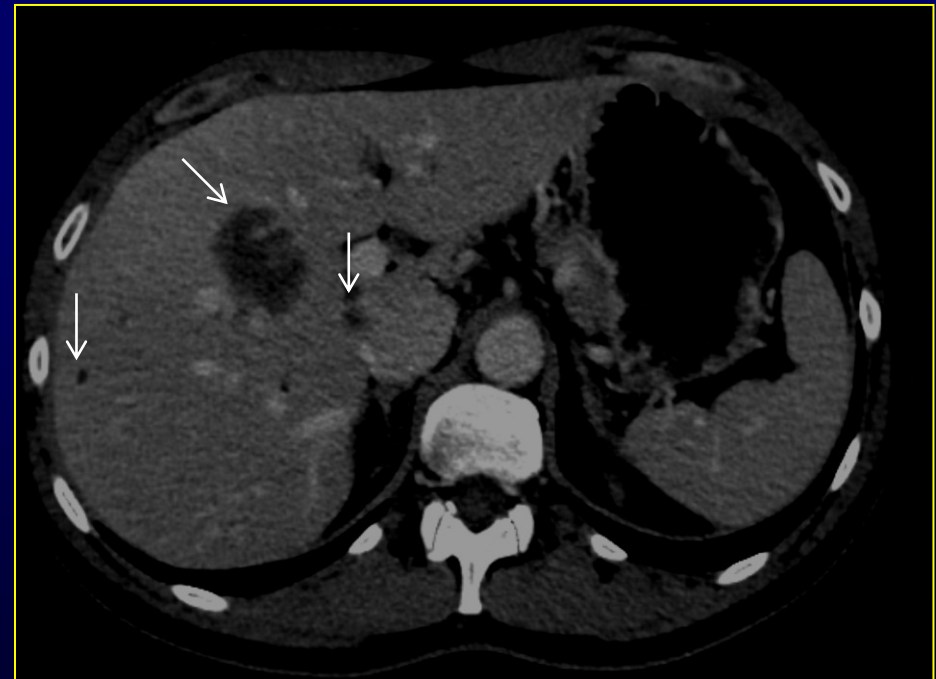
MDC nella **GIUSTA** QUANTITA' - ACQUISIZIONE NELLA **FASE** CORRETTA

Tetsuya Fujigai et al  
Optimal dose of contrast medium for depiction of.....  
European Journal of Radiology 81 (2012) 2978- 2983

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022



↑ = Metastasi epatiche



## VANTAGGI TC

ACCURATEZZA  
DISPONIBILITA'  
RIPRODUCIBILITA'

## LIMITI TC

NECESSITA' M.D.C. (sempre spt per il fegato)  
STEATOSI  
LESIONI DI PICCOLE DIMENSIONI

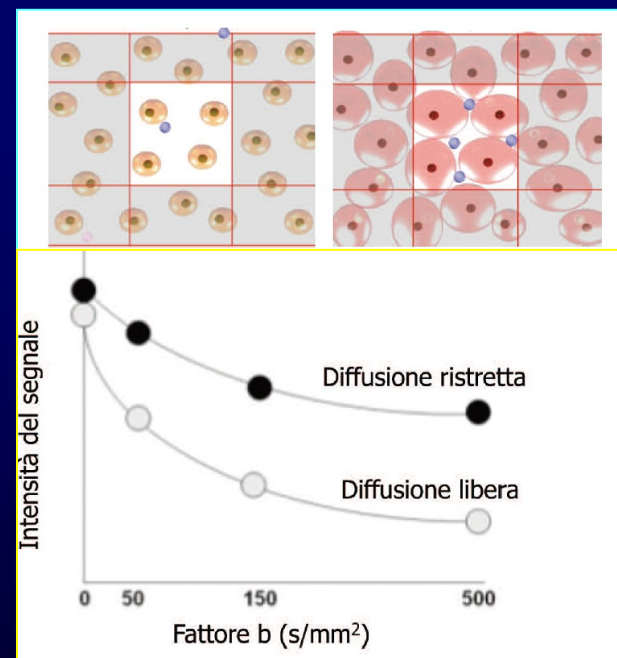
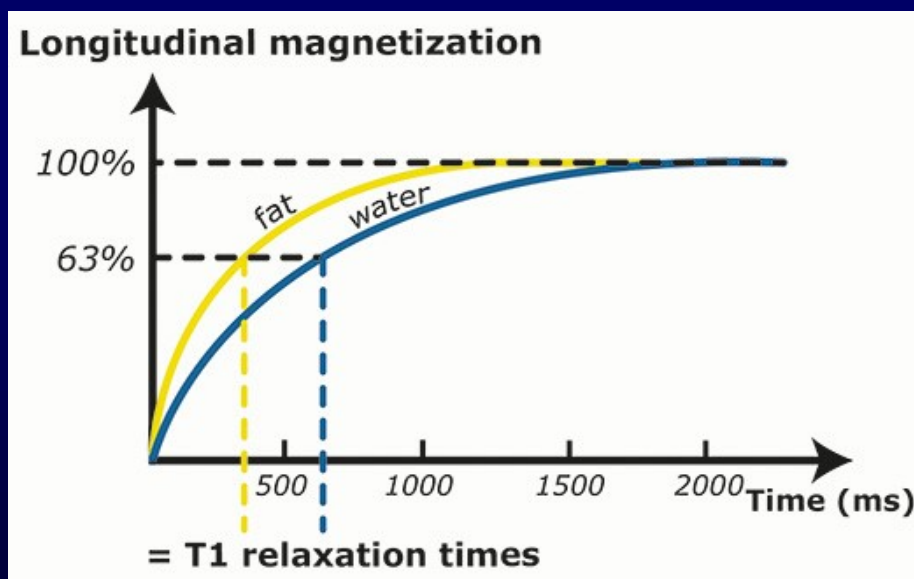


# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

## RM: Indagine Multiparametrica



Sequenze morfologiche  
Sequenze in diffusione (DWI)



SIRM 2008

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

RM: Indagine Multiparametrica

Sequenze con mdc

Chelati di Gadolinio epato-specifici

Gd-BOPTA (Multihance®)

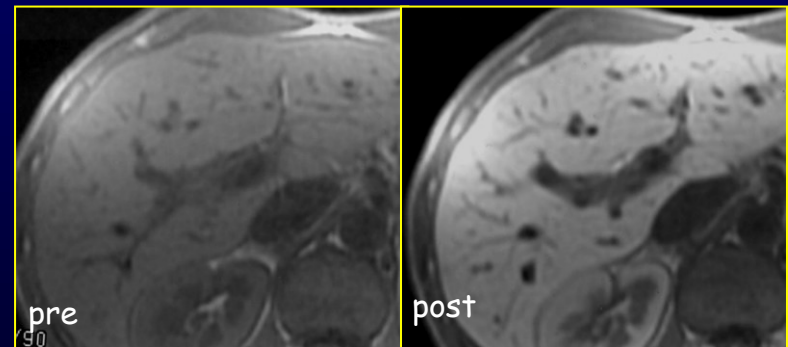
Gd-EOB-DTPA (Primovist®)

Distribuzione intravascolare  
Distribuzione interstiziale

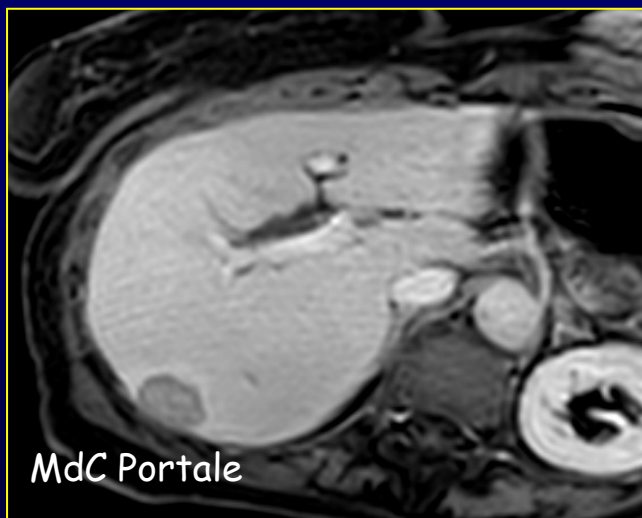
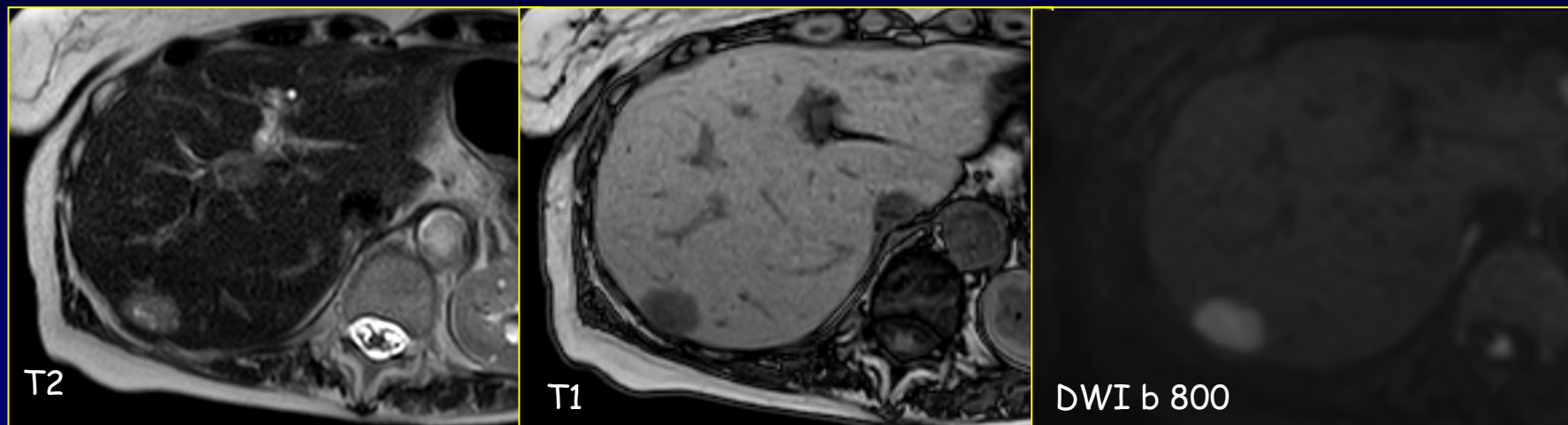


Analoga mdc iodati

Fase epatocitaria

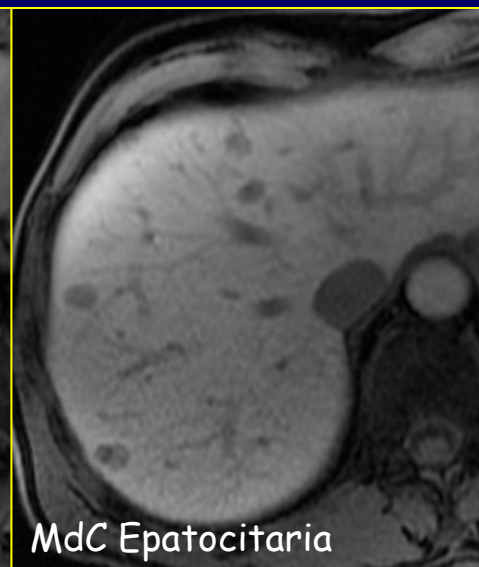
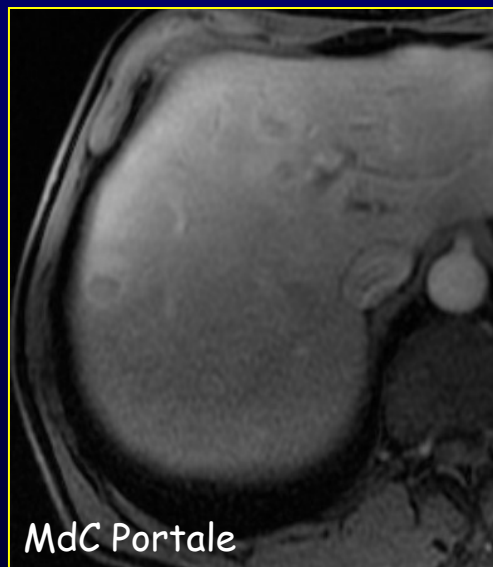
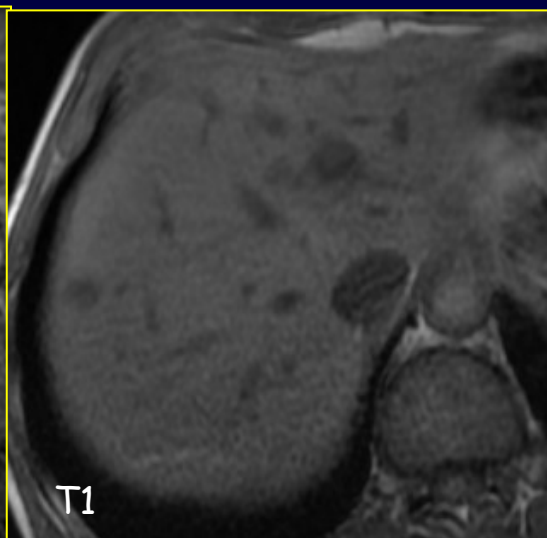
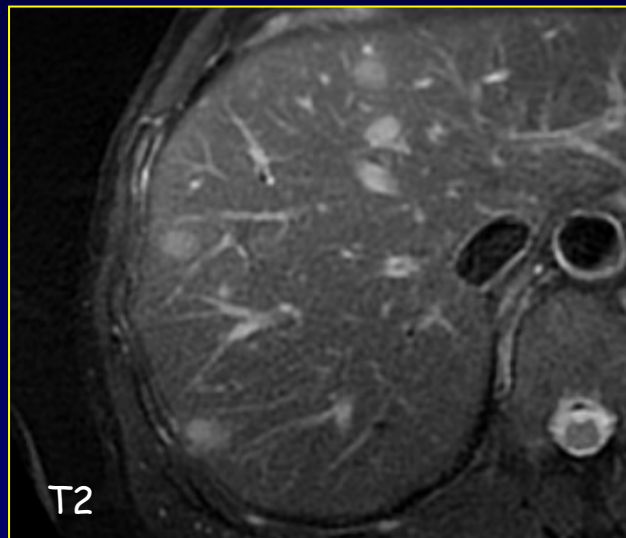


# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022



# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

## RM: Indagine Multiparametrica



## VANTAGGI RM

ACCURATEZZA

RIPRODUCIBILITA'

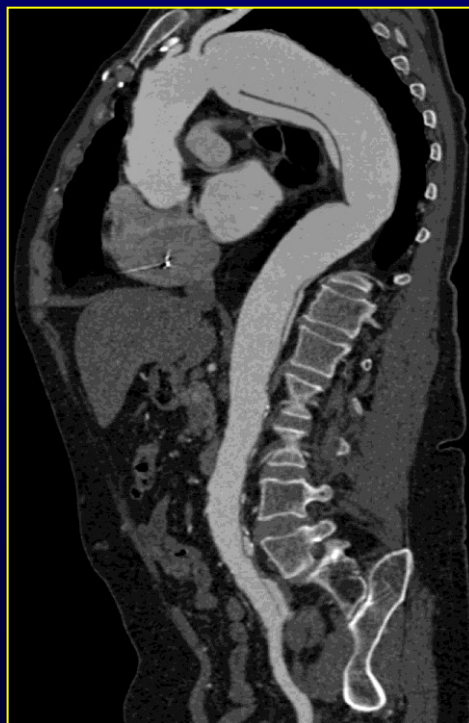
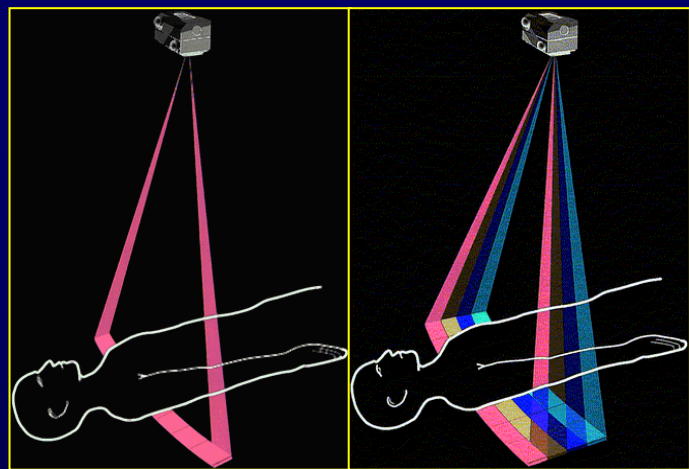
## LIMITI RM

DISPONIBILITA'

COMPLESSITA' (interpretativa - durata esame)

## MSTC

La TC Multistrato (MSTC) consente acquisizioni veloci a strato sottile e permette di ottenere ricostruzioni multiplanari di buona qualità



# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

## Workstation dedicate

Review

Marker

Index	Set in View	Dist. f. Rectum
M00	Luminal	327.62 mm
M01	Luminal	528.20 mm

Remove Active    Remove All

Diagnosis

Lesion     Diverticulum  
 Polyp     Stool  
 Tumor     Artefact

Comment:  
<Enter your marker description here>

View in Letter

Anterior Wall     Posterior Wall  
 Luminal     Both Walls

Axial

Sagittal

Frontal

Oblique

Anterior wall

Posterior wall

Luminal

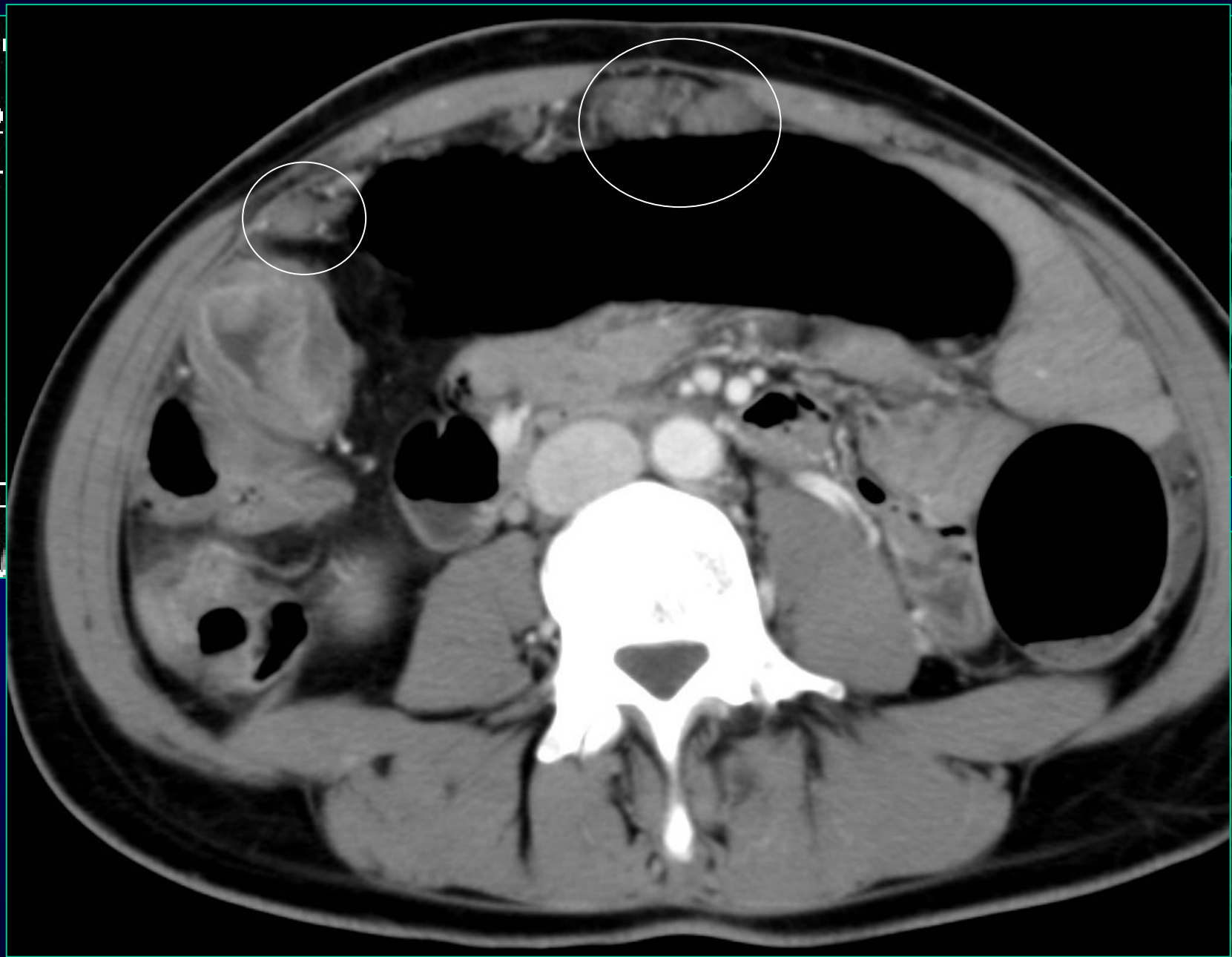
Unrolled

Topogram

Extended Topogram

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

39 y  
ay 2  
0:13.  
  
120  
300  
c:100  
:300  
1. par



## TC con MdC + Colon TC



## COLON-TC vs CLISMA OPACO D.C:

### Colon-TC > Clisma Opaco

Colon-TC: informazioni diagnostiche superiori

Colon-TC: consente valutazione organi adiacenti

Colon-TC: esecuzione più facile per medico e Paziente

### Colon-TC = Clisma Opaco

Dosimetria e incidenza complicanze sono simili

### Colon-TC < Clisma Opaco

Costo: 209,54 Colon-TC; 109,26 Clisma Opaco

Clisma opaco da utilizzare sempre meno (**MAI!**)

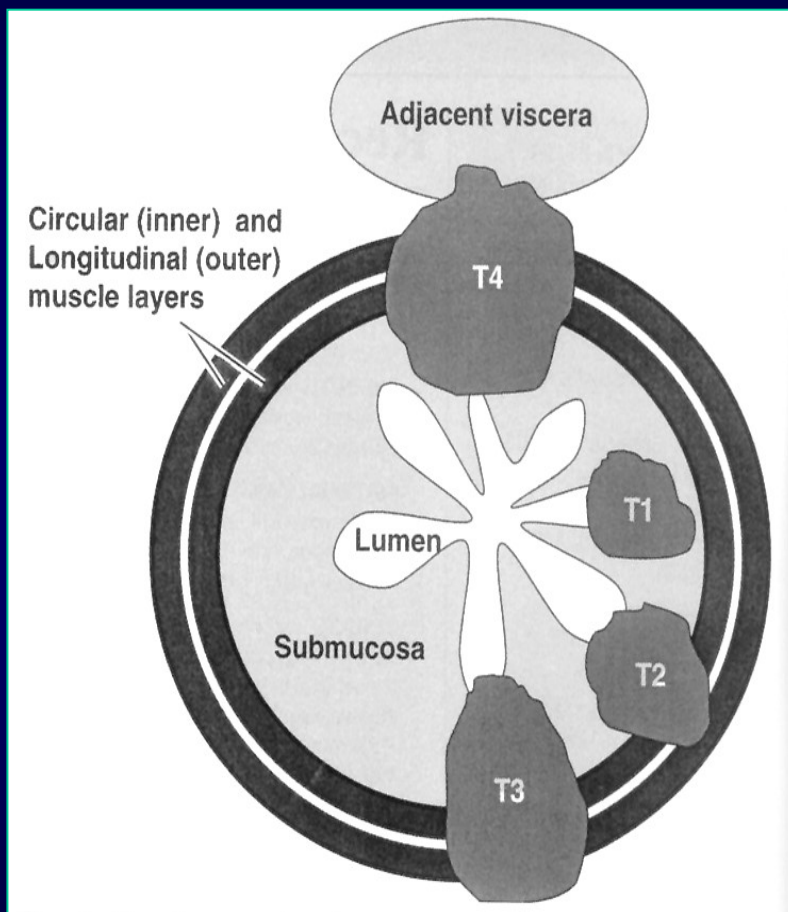


# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

## Ca del RETTO:STADIAZIONE LOCALE

**TABLE 1**  
**TNM Staging of Rectal Cancer**

Stage	Definition
Tis	Carcinoma in situ
T1	Tumor invades submucosa
T2	Tumor invades the circular or longitudinal muscle layers
T3	Tumor invades through muscularis propria into subserosa or into non-peritonealized perirectal tissues
T4	Tumor directly invades other organs or structures or perforates visceral peritoneum
N0	No regional lymph node metastasis
N1	Metastasis in one to three perirectal lymph nodes
N2	Metastases in four or more perirectal lymph nodes
M0	No distant metastases
M1	Distant metastases present



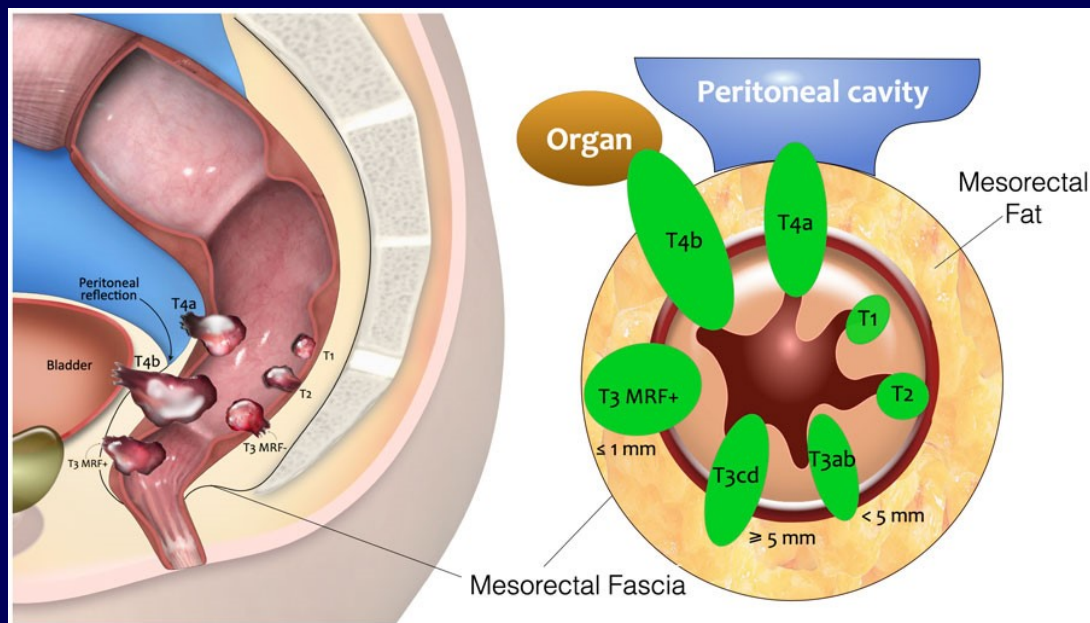
Brown G. and Coll. Rectal Carcinoma:Thin section MR Imaging for staging. Radiology 211:215-222, 1999

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

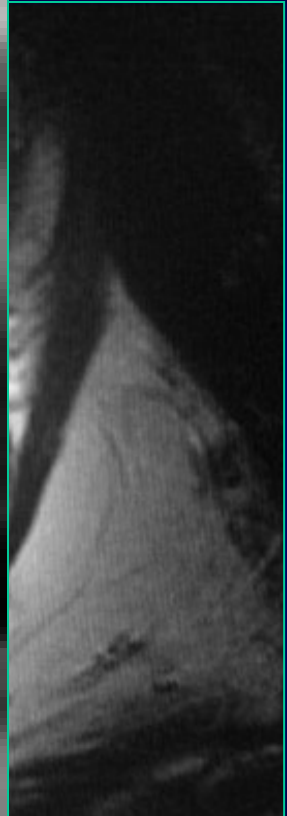
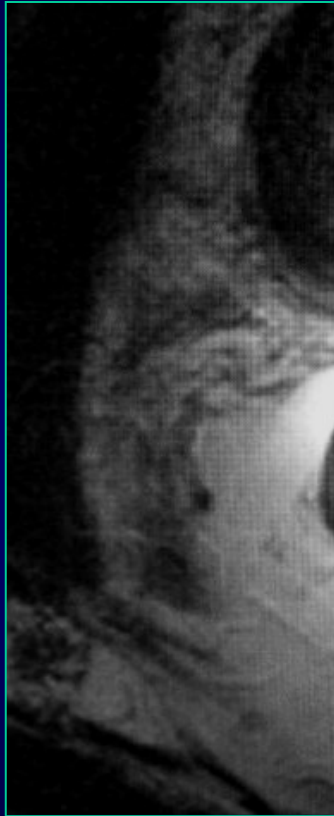
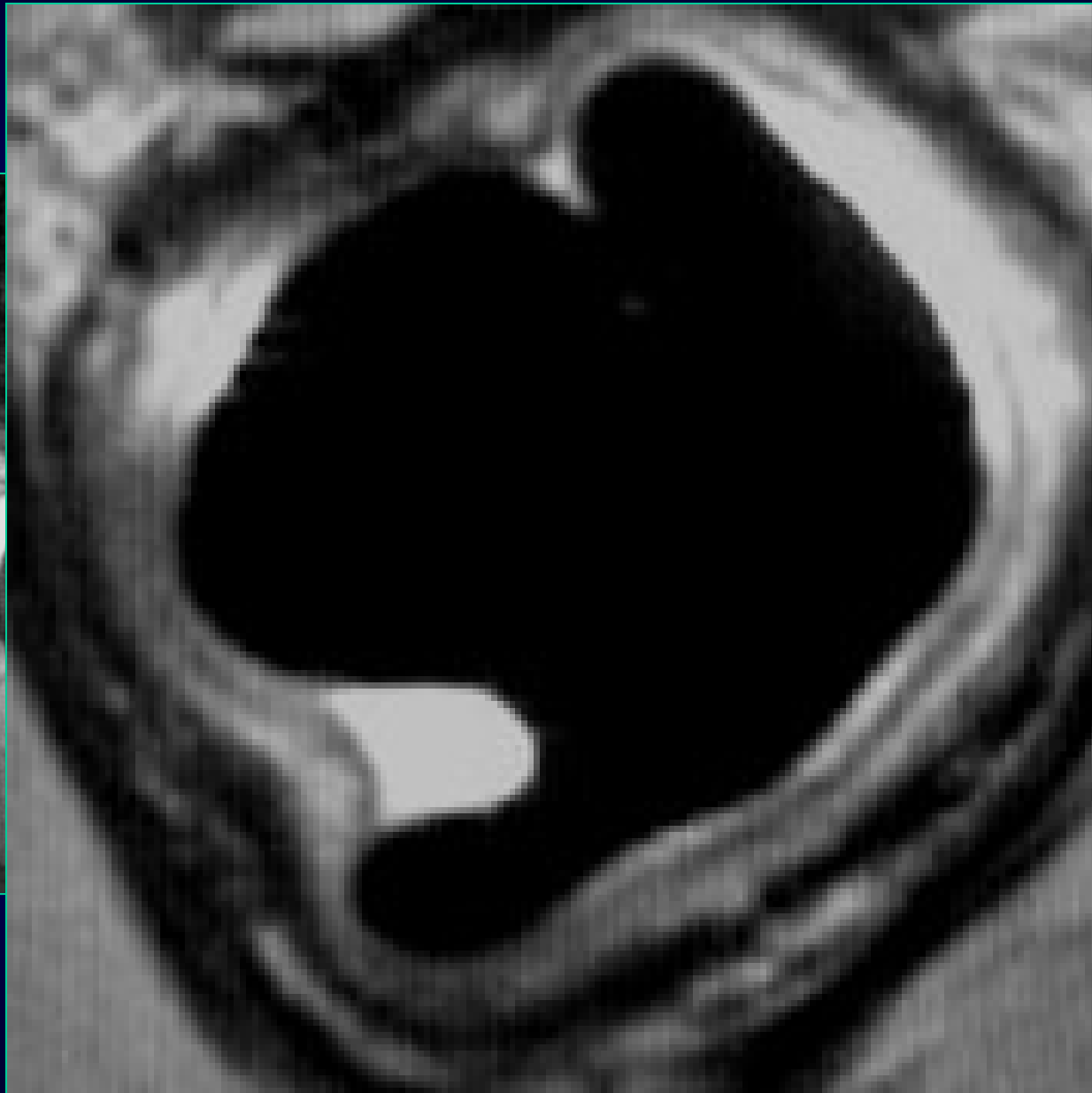
## Ca del RETTO: STADIAZIONE LOCALE

### T-stage of Rectal Cancer

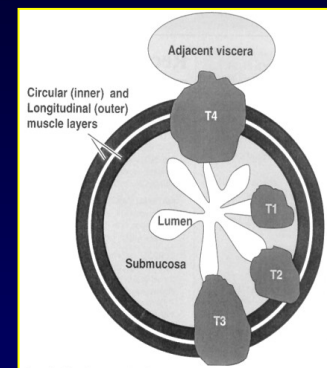
<b>T1-2</b> Confined to the rectal wall	<ul style="list-style-type: none"><li>- T1 invade submucosa</li><li>- T2 invade muscularis propria (the outer layer of the rectal wall)</li></ul>
<b>T3</b> Extend beyond the bowel wall into the mesorectal fat.	<ul style="list-style-type: none"><li>- T3a: &lt; 1 mm extension of infiltration</li><li>- T3b: 1-5 mm extension</li><li>- T3c: 5-15 mm extension</li><li>- T3d: &gt; 15 mm extension</li></ul>
Note: low risk T3: T3ab MRF- high risk T3: T3cd and/or MRF+	
<b>T4a</b> invade the peritoneum or peritoneal reflection	
<b>T4b</b> invade other organs or structures outside the meso-rectum:	
<ul style="list-style-type: none"><li>- pelvic organs (incl. uterus, ovaries, vagina, prostate, seminal vesicles, bladder)</li><li>- bone</li><li>- striated/skeletal muscle (incl. external anal sphincter, puborectalis and levator ani, obturator, piriformis, and ischiococcygeus)</li><li>- ureters and urethra</li><li>- sciatic or sacral nerves</li><li>- sacrospinous/sacrotransverse ligaments</li><li>- any vessel outside the mesorectal compartment</li><li>- any loop of small or large bowel in the pelvis (separate from the primary site from which the tumor originates)</li></ul>	



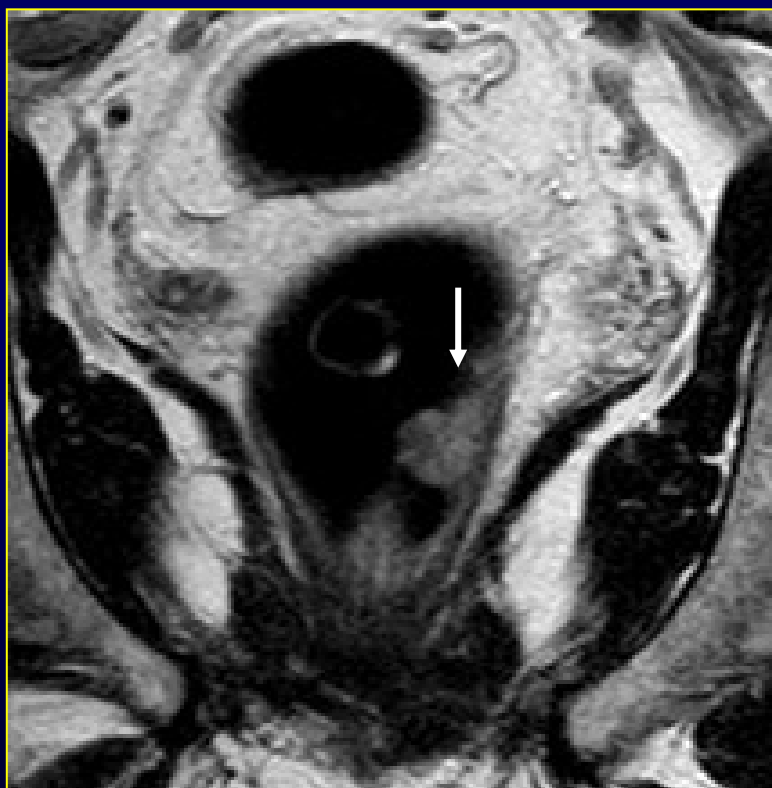
# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022



## STADIAZIONE LOCALE



T1



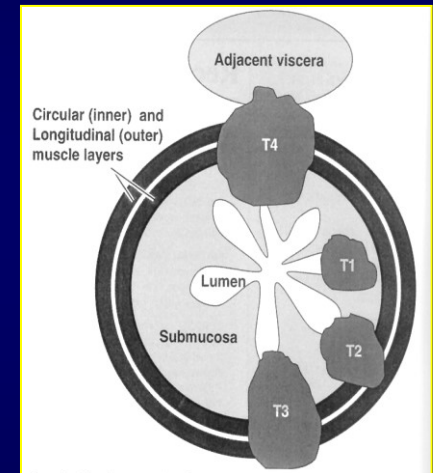
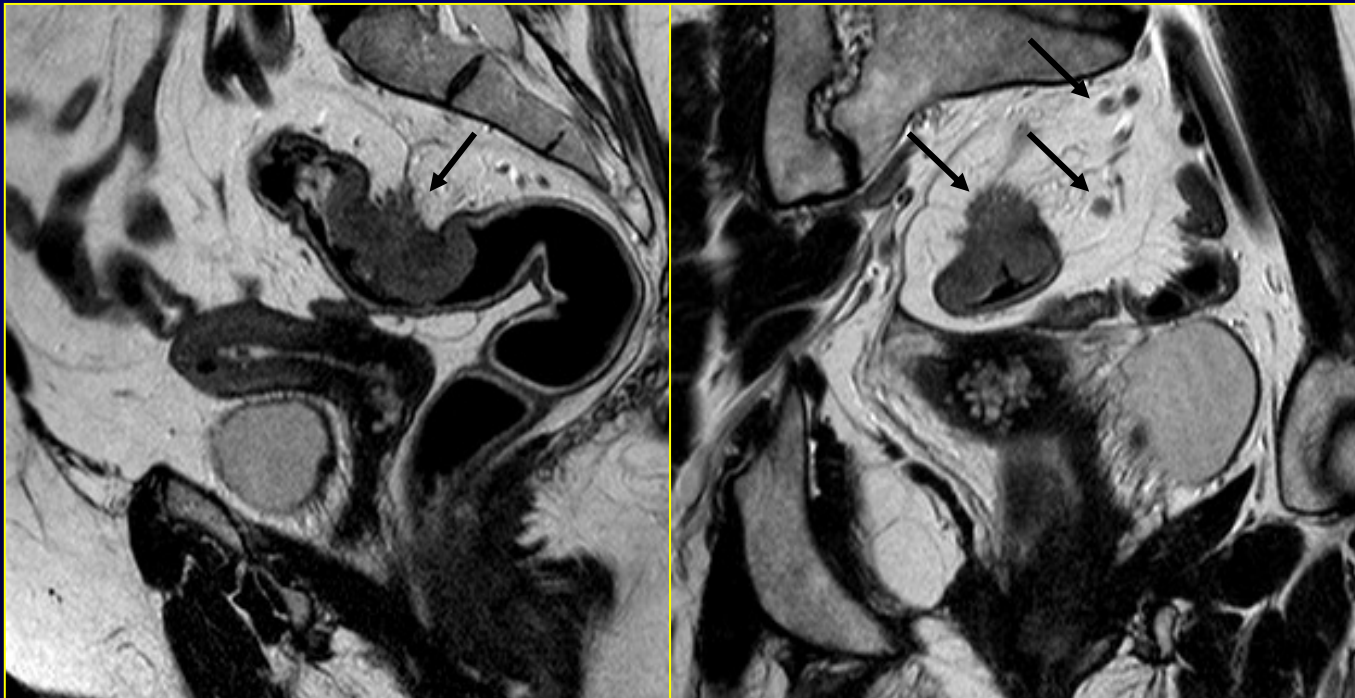
T2



## STADIAZIONE LOCALE

### T3 INFILTRAZIONE DEL TESSUTO ADIPOSO

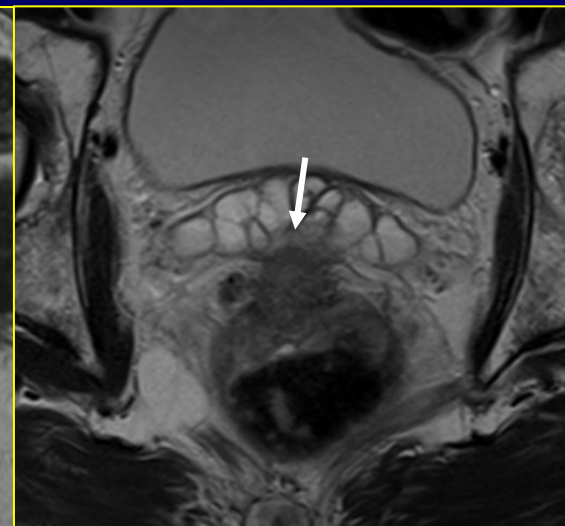
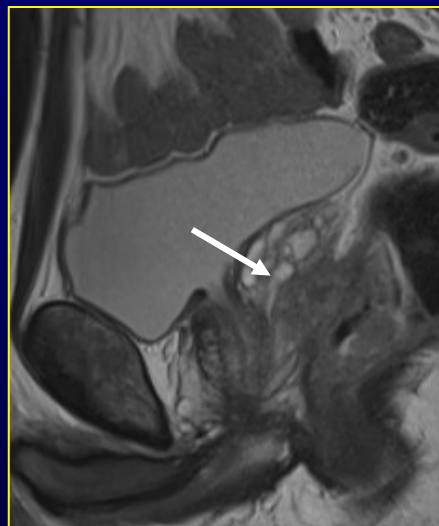
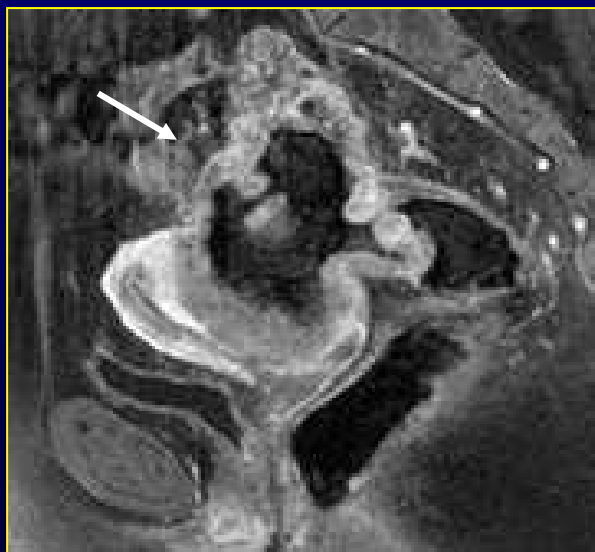
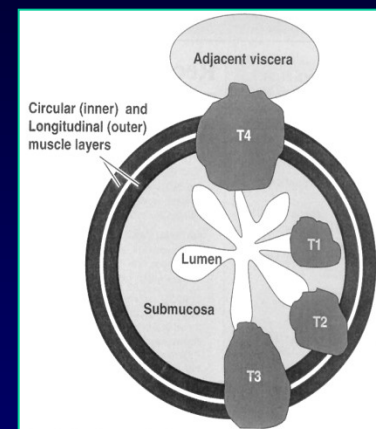
T3 N+



## STADIAZIONE LOCALE

T4

INFILTRAZIONE ORGANI ADIACENTI



# LETTERATURA : RISULTATI

	ACCURATEZZA %
PARAMETRO "T"	79-100
PARAMETRO "N"	63-84

R.M. Joosten e Coll. JCAT 19(5): 752-758, 1995

T.J. Vogl e Coll. AJR 168: 1427-1434, 1997

P. Torricelli e Coll. Radio Med 103:74-83,2002

# DIAGNOSI e TERAPIA del CANCRO del RETTO 2022

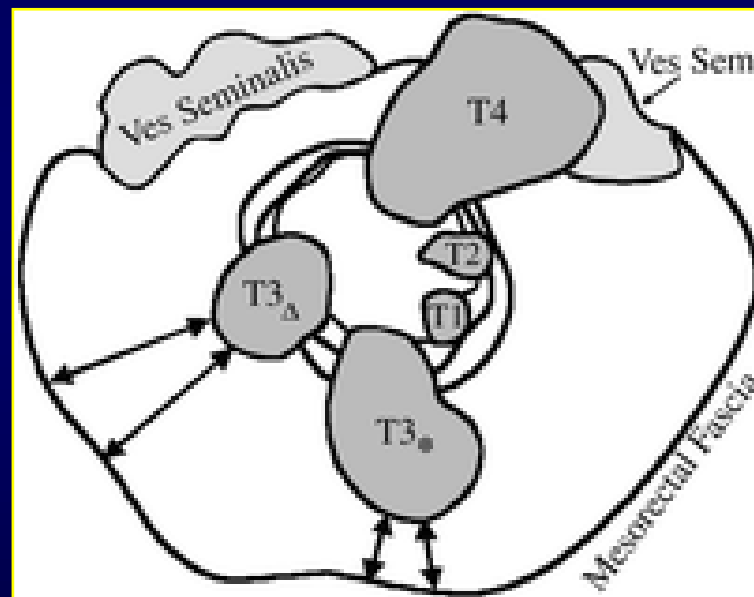
## MESORETTO :

Retto, grasso circostante e linfonodi, avvolti da una sottile fascia



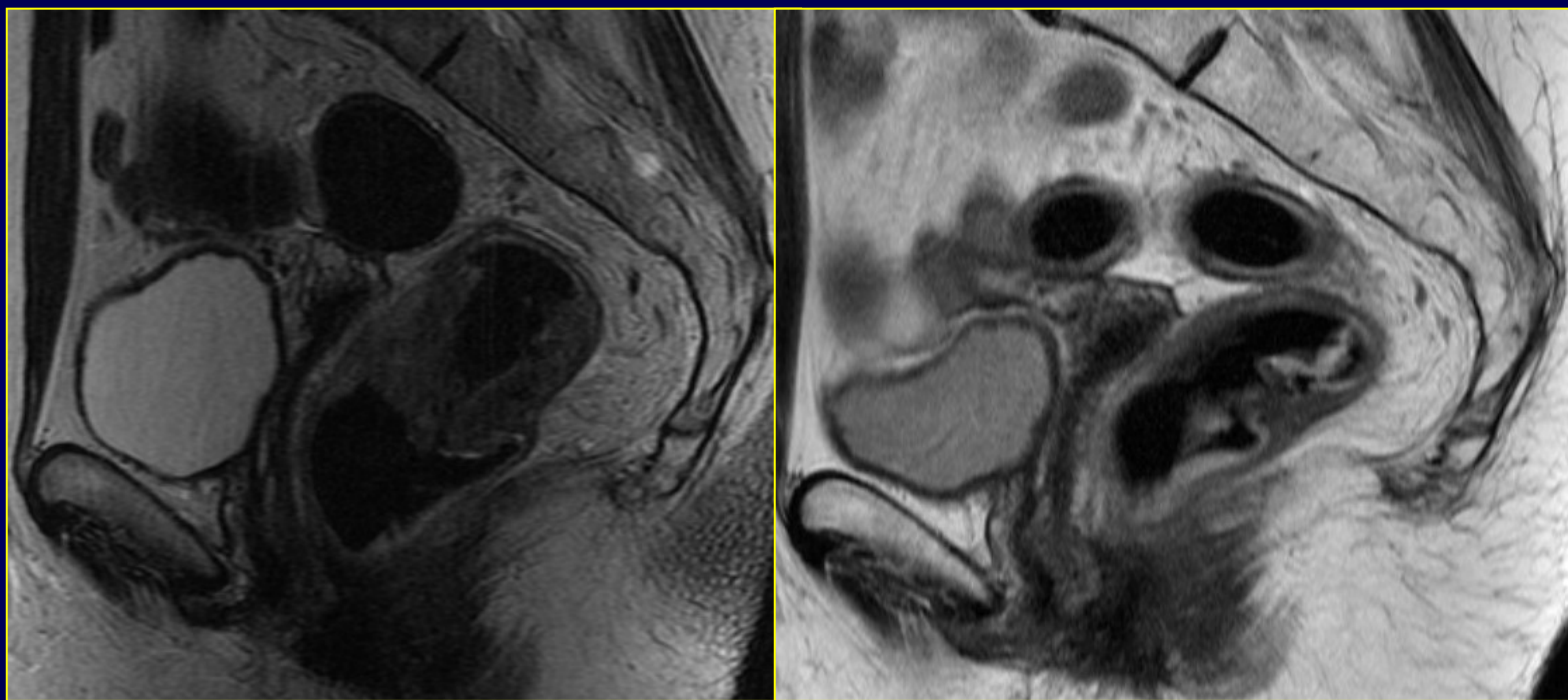
## CRM:

margine circonferenziale di resezione



A parità di stadio "T" (T3)  
i rischi di recidiva locale variano  
al variare del CRM

## TERAPIA NEOADIUVANTE (Cht + RT)



Pre

Post

## TAKE HOME POINTS

- 1) TC torace-addome per stadiazione colon e retto
- 2) RM per stadiazione locale tumore del retto
- 3) Eventuale utilizzo della colon-TC
- 4) RM per studio del fegato se dubbi diagnostici



GRAZIE