

# HOT TOPICS IN CARDIOLOGIA 2024

27 e 28 Novembre

Università degli studi di Napoli Parthenope  
Villa Doria D'Angri - Via F. Petrarca 80,  
Napoli

Presidente del congresso: Dr. Ciro Mauro



## T.C. CORONARICA

### PREVENZIONE SECONDARIA POST ANGIOPLASTICA CORONARICA

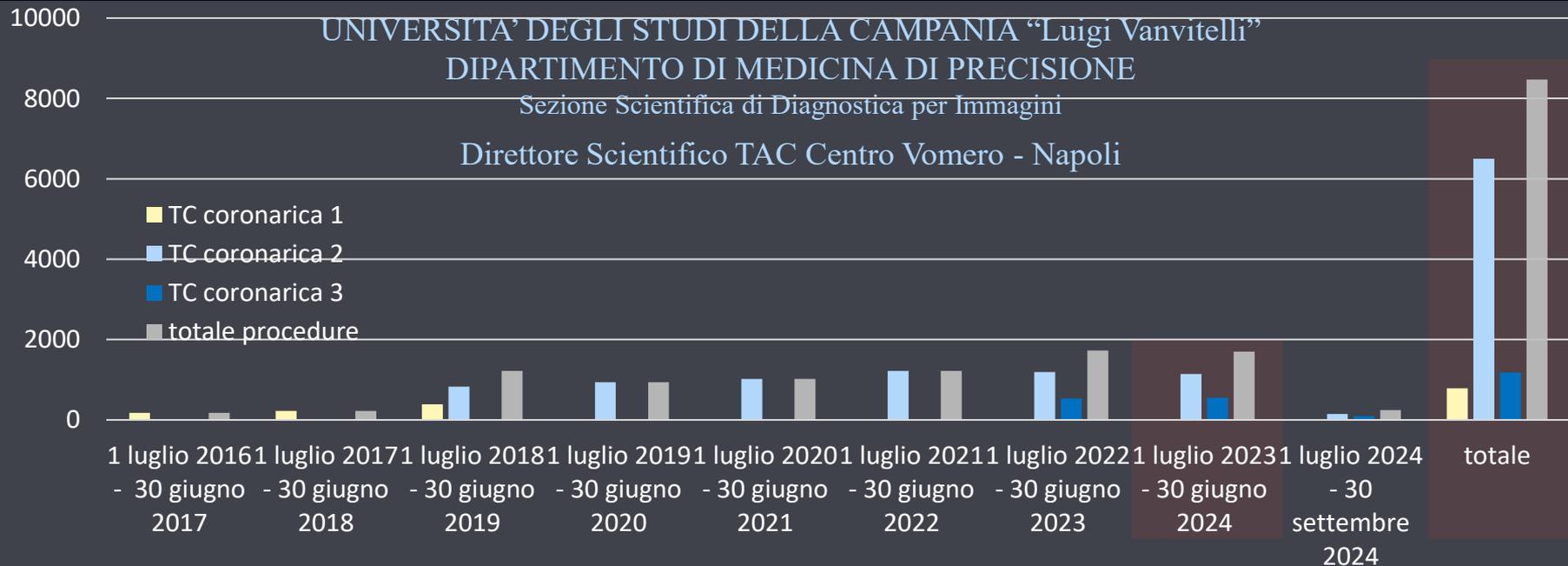
Luca Del Viscovo

UNIVERSITA' DEGLI STUDI DELLA CAMPANIA "Luigi Vanvitelli"

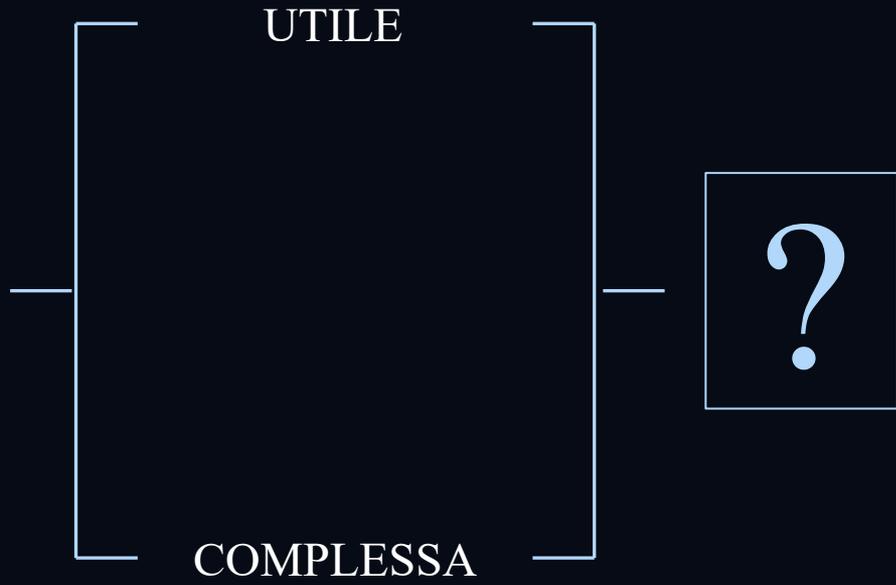
DIPARTIMENTO DI MEDICINA DI PRECISIONE

Sezione Scientifica di Diagnostica per Immagini

Direttore Scientifico TAC Centro Vomero - Napoli



CCTA post PCI





ELSEVIER

## Journal of Cardiovascular Computed Tomography



## Diagnostic performance of CCTA and CTP imaging for clinically suspected in-stent restenosis: A meta-analysis

**STENT DIAMETER**

<3 mm	396	0.90 (0.83–0.95)	0.90 (0.79–0.97)	8.48 (2.78–21.66)	0.16 (0.09–0.27)	59.84 (11.78–185.03)
≥3 mm	880	0.96 (0.92–0.98)	0.96 (0.93–0.99)	18.7 (6.92–42.07)	0.12 (0.06–0.19)	187.16 (41.13–545.65)

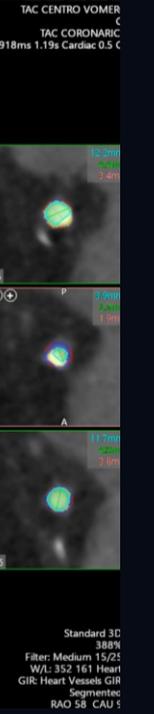
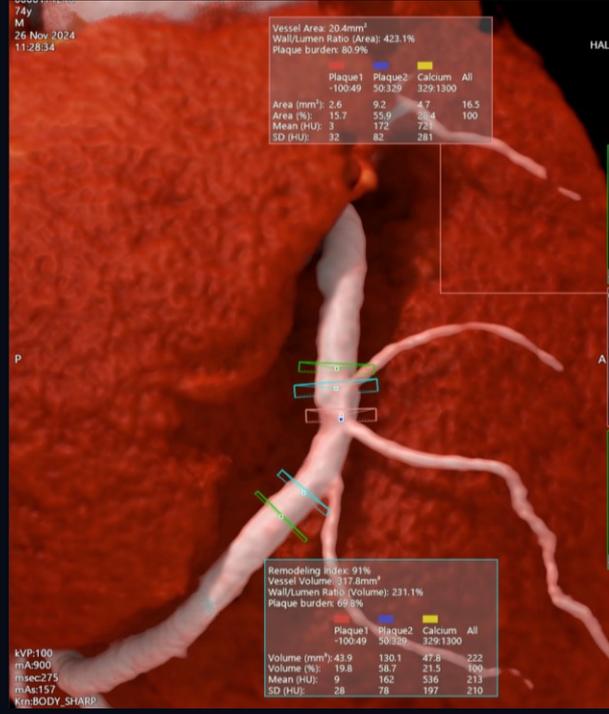
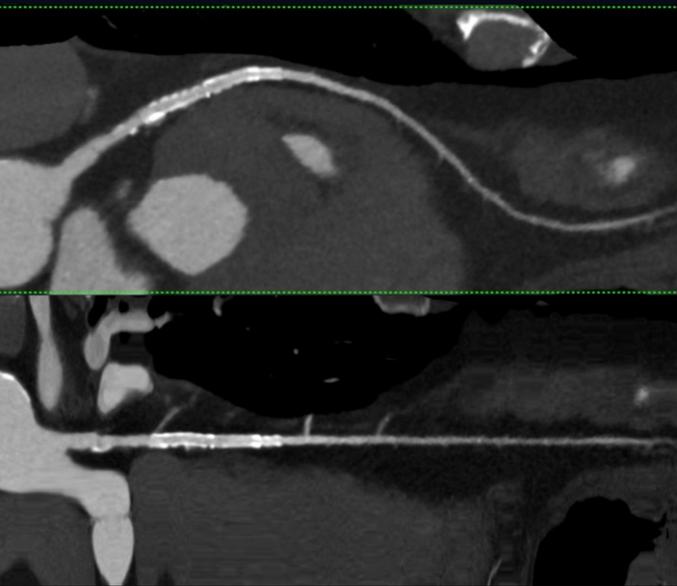
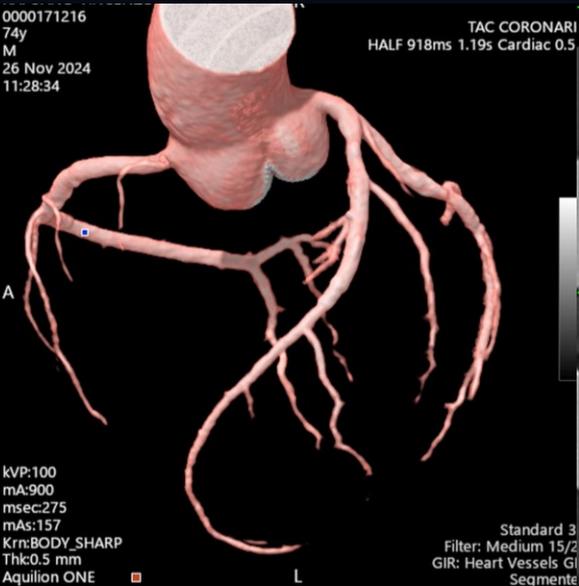
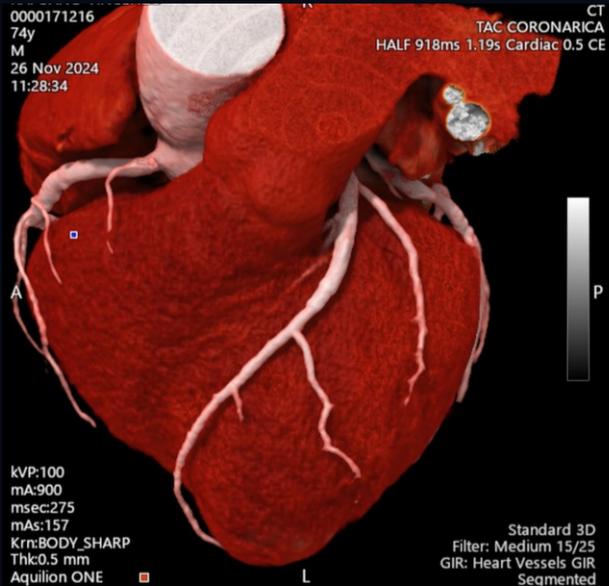
**STENT STRUT THICKNESS**

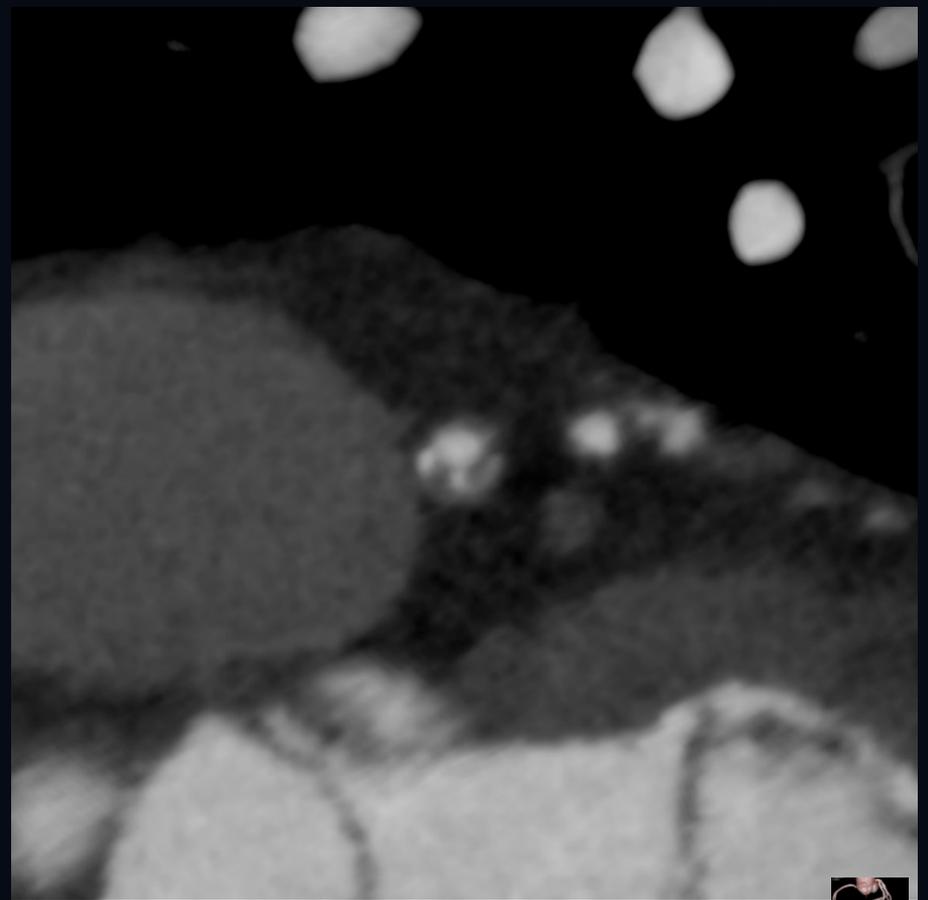
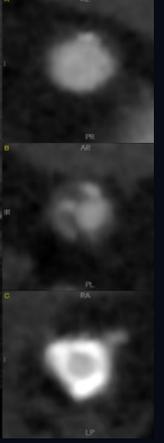
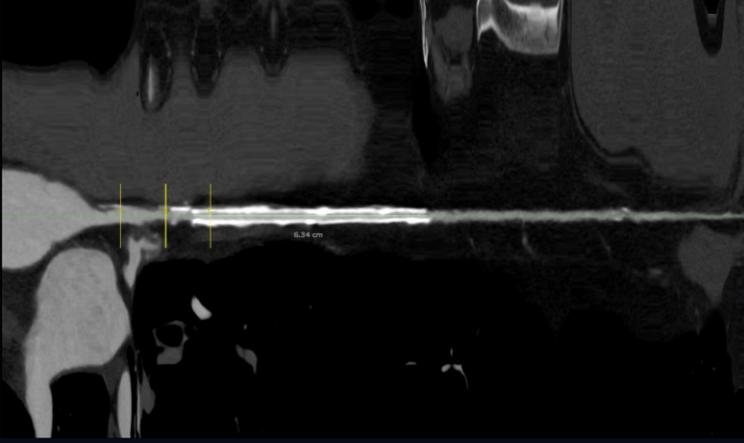
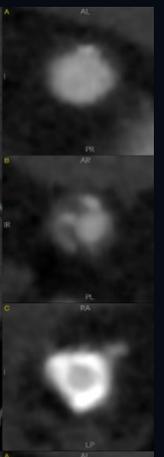
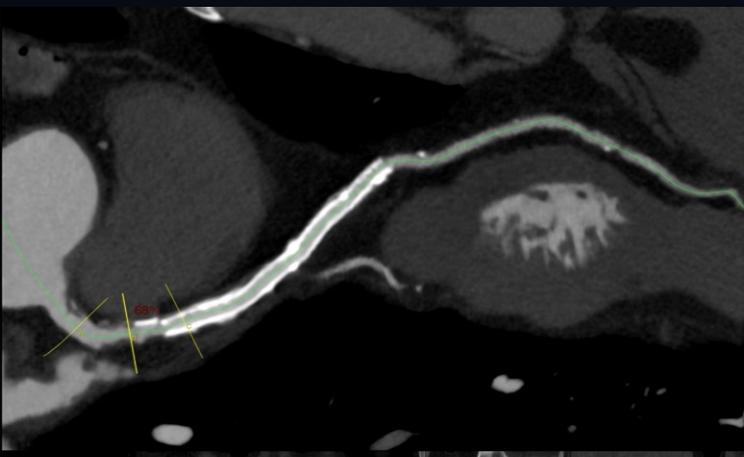
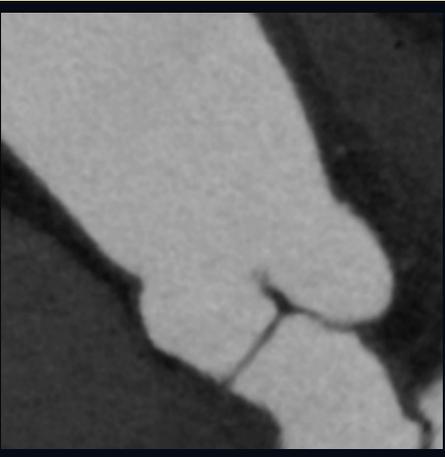
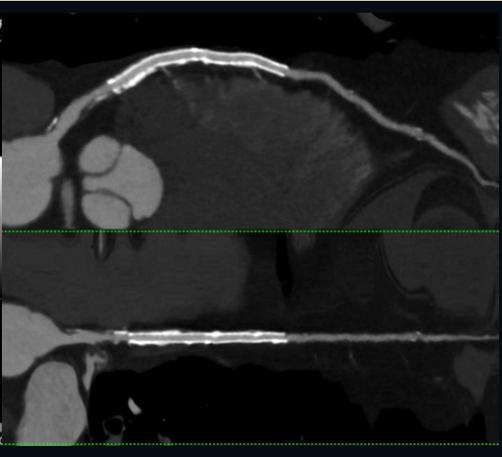
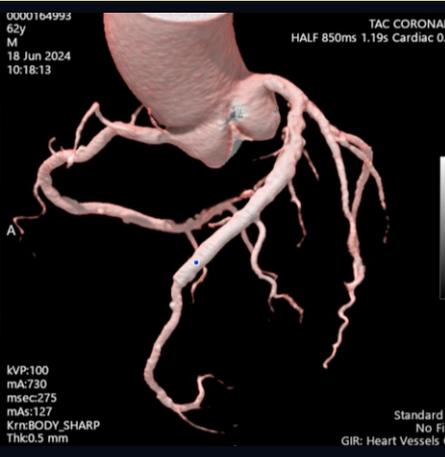
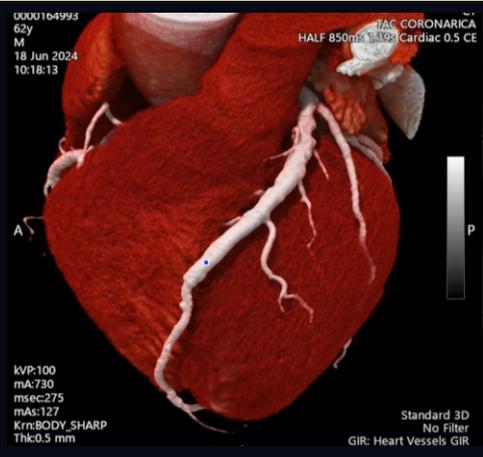
≥100 μm	351	0.83 (0.72–0.91)	0.95 (0.91–0.98)	19.02 (7.48–41.2)	0.18 (0.097–0.30)	113.56 (34.03–282.75)
<100 μm	320	0.95 (0.89–0.98)	0.98 (0.95–1.00)	74.00 (3.01–348.93)	0.08 (0.03–0.18)	1219.26 (5.38–6625.20)

## Performance of CCTA and CCTA + CTP for ISR diagnosis.

	Number	Sensitivity	Specificity	PLR	NLR	DOR
<b>PER-PATIENT</b>						
CCTA	440	0.93 (0.85–0.98)	0.80 (0.69–0.89)	4.35 (2.41–7.69)	0.15 (0.05–0.33)	38.5 (9.34–107.84)
<b>PER-STENT</b>						
CCTA	2674	0.90 (0.84–0.94)	0.89 (0.86–0.92)	7.17 (5.24–9.61)	0.17 (0.10–0.25)	45.70 (22.71–82.43)
CCTA + CTP	752	0.88 (0.80–0.94)	0.88 (0.84–0.93)	7.23 (5.34–9.64)	0.15 (0.07–0.27)	53.59 (24.69–102.08)



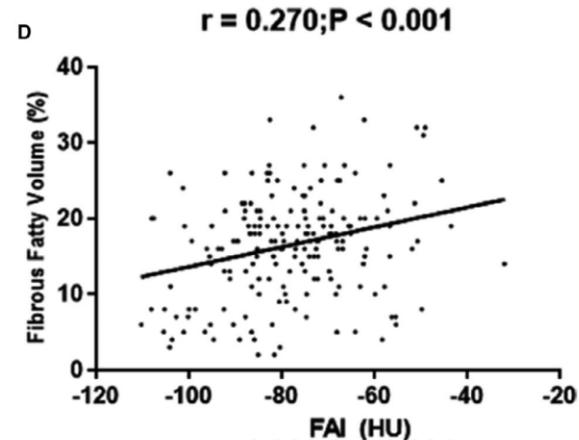
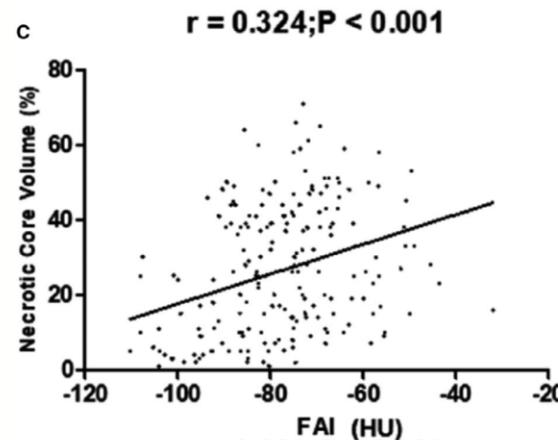
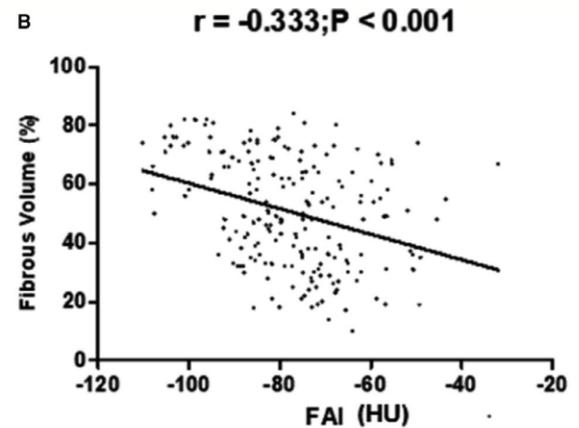
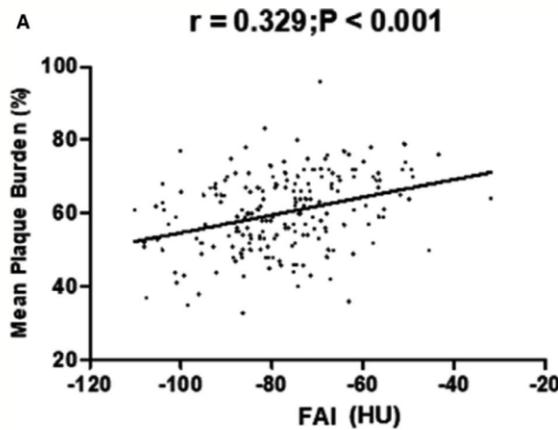
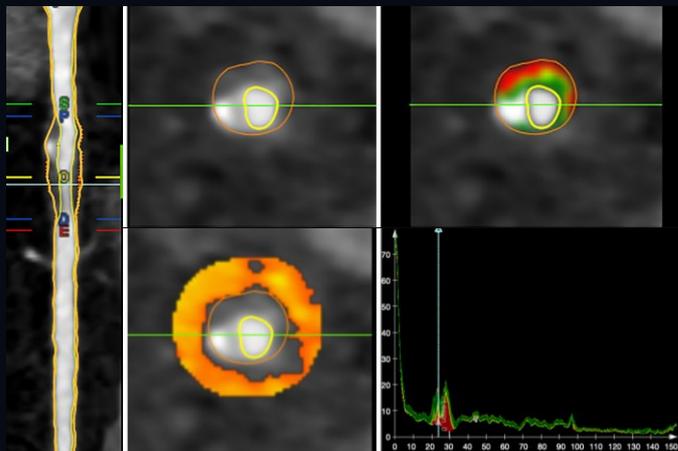
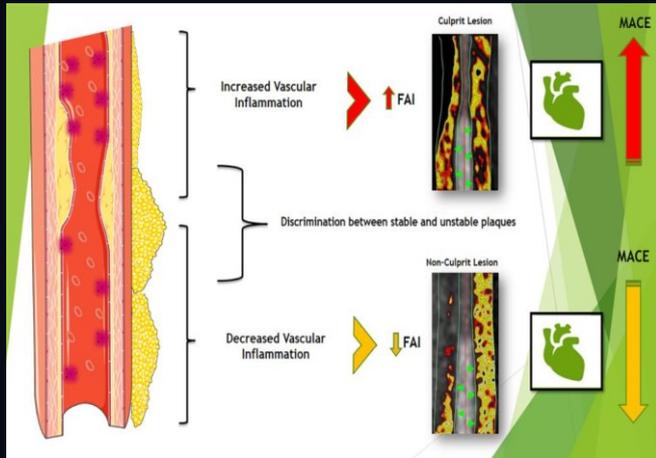




# ORIGINAL RESEARCH

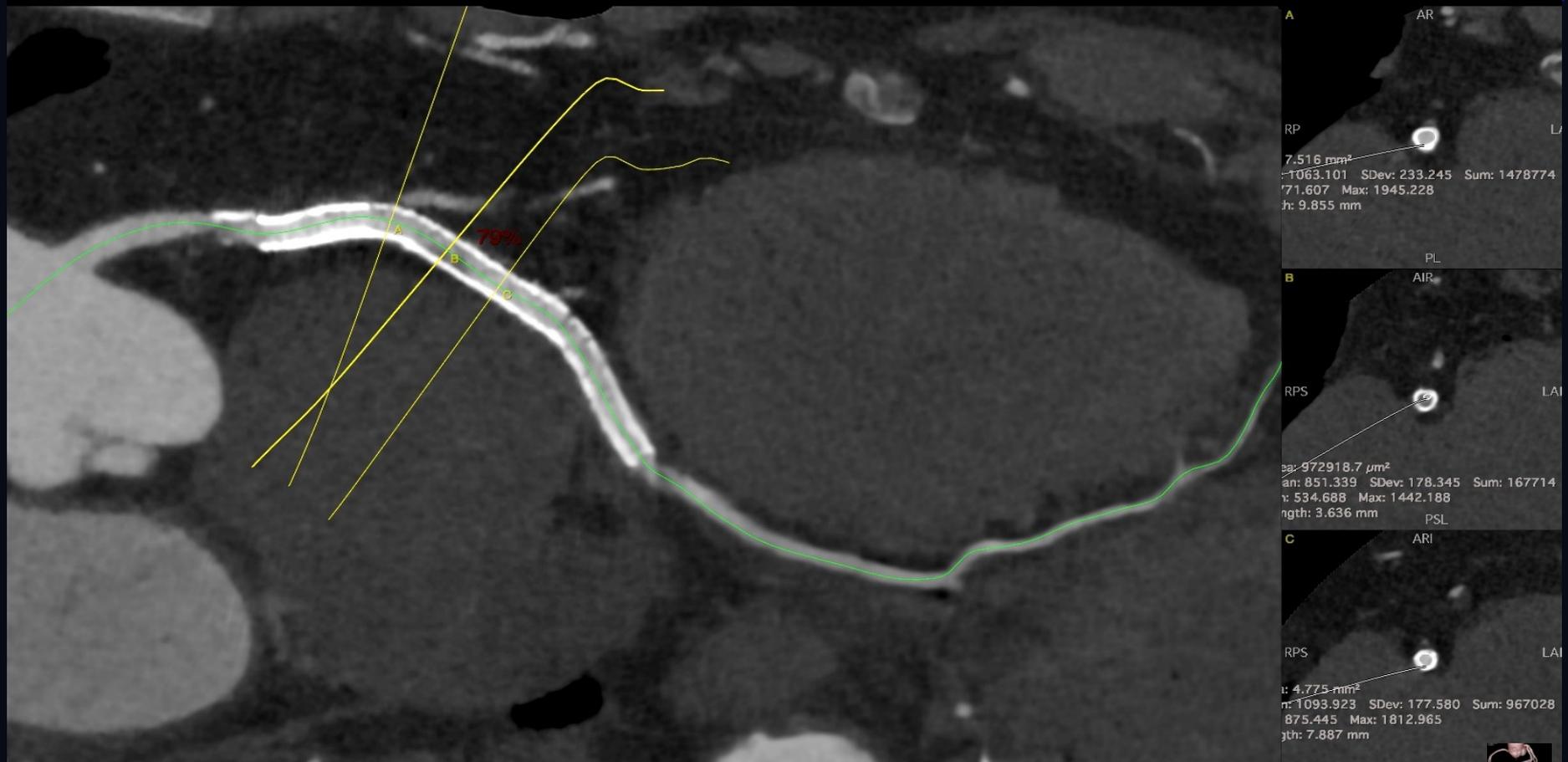
Pericoronary Fat Attenuation Index Is Associated With Vulnerable Plaque Components and Local Immune-Inflammatory Activation in Patients With Non-ST Elevation Acute Coronary Syndrome

Jia Teng Sun, MD, PhD\*; Xin Cheng Sheng, MD\*; Qi Feng, MD, PhD; Yan Yin, MD, PhD; Zheng Li, MD; Song Ding , MD, PhD; Jun Pu, MD, PhD



# Prediction value of pericoronary fat attenuation index for coronary in-stent restenosis

Cardiac | Published: 15 January 2024



CCTA post PCI

UTILE

?

COMPLESSA

45 keV

55 keV

65 keV

75 keV

85 keV

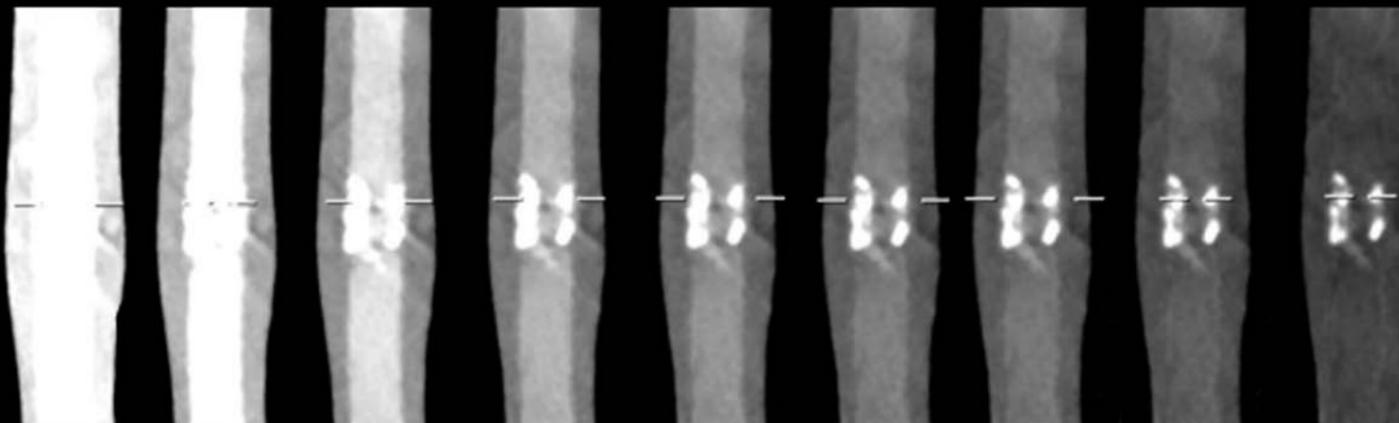
95 keV

100 keV

120 keV

190 keV

Iodine



Decreasing Blooming Artifacts

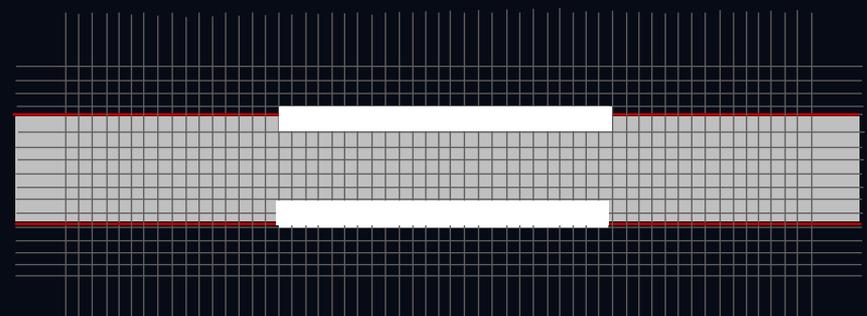
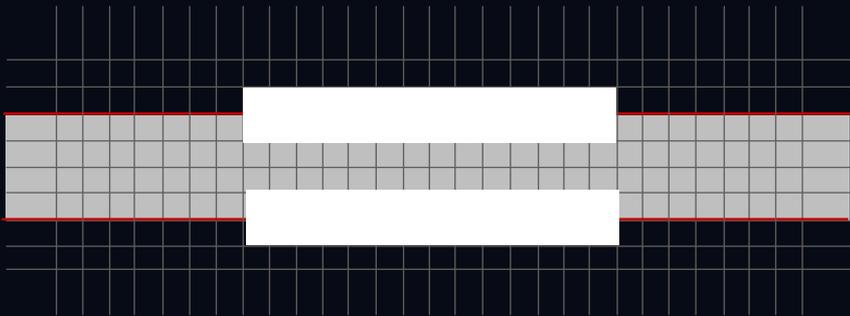
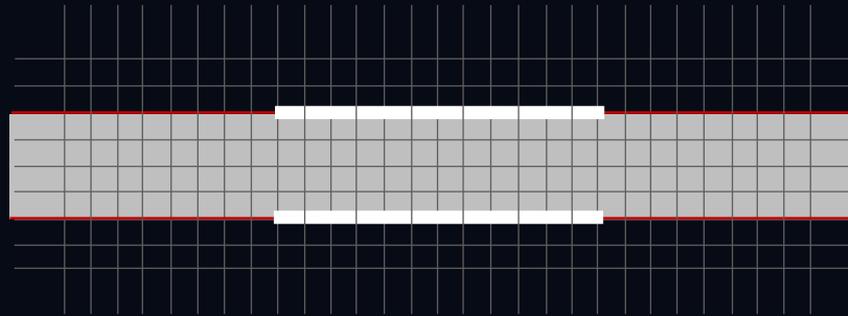
Increasing Iodine Attenuation



CCTA post PCI



BLOOMING ARTIFACT



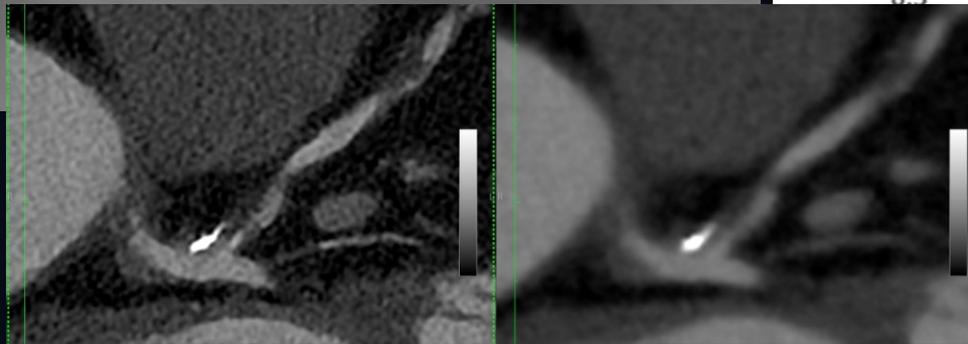
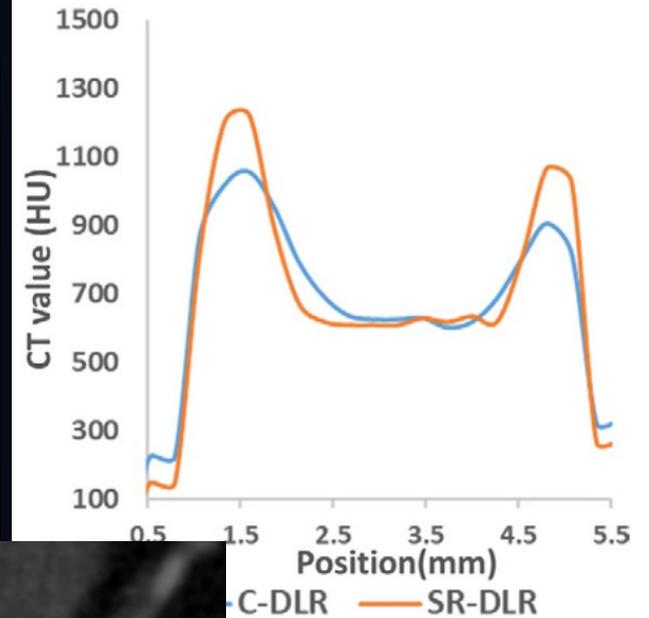
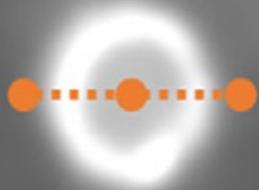
standard resolution

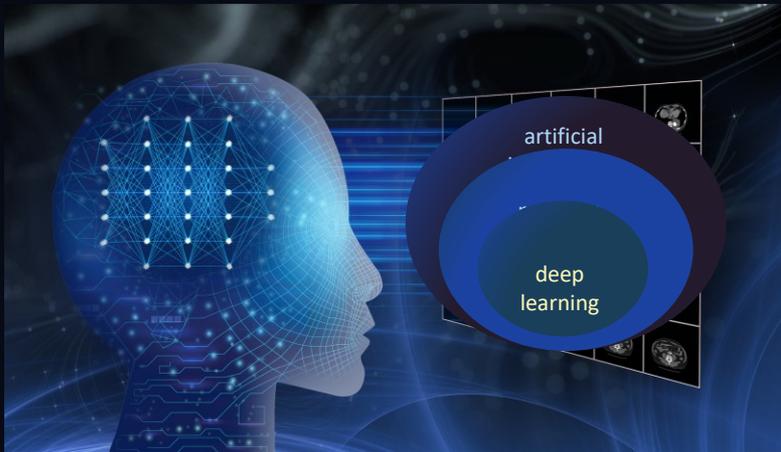
super resolution



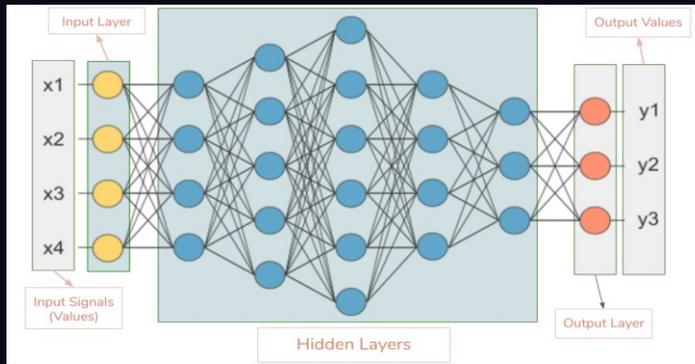
## Super-Resolution Deep Learning Reconstruction for Improved Image Quality of Coronary CT Angiography

Masafumi Takafuji, MD, PhD • Kakuya Kitagawa, MD, PhD • Sachio Mizutani, RT • Akane Hamaguchi, RT • Ryosuke Kisou, RT • Kotaro Iio, MD • Kazuhide Ichikawa, MD • Daisuke Izumi, MD • Hajime Sakuma, MD, PhD

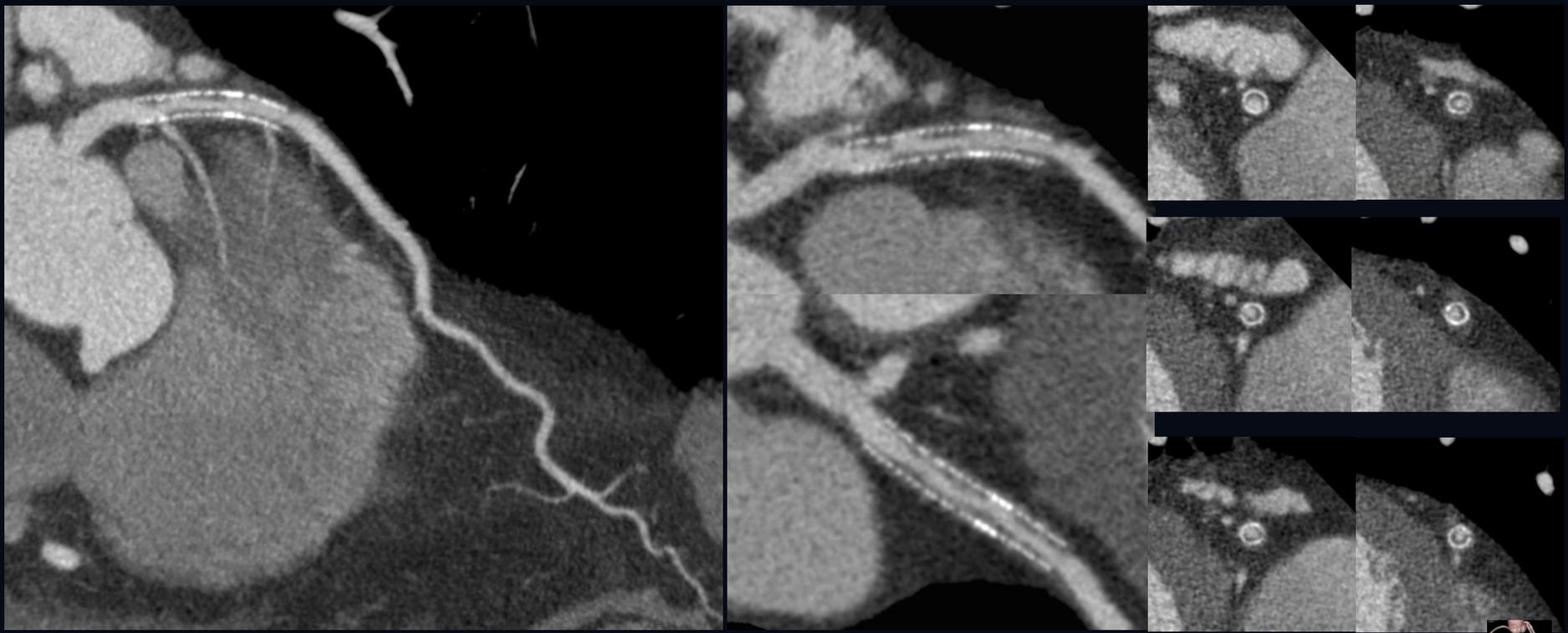
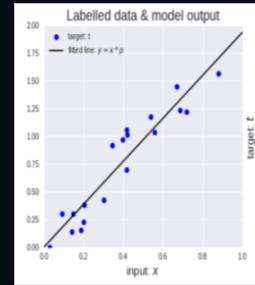
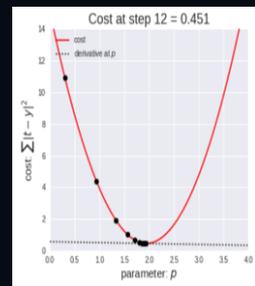




forward propagation



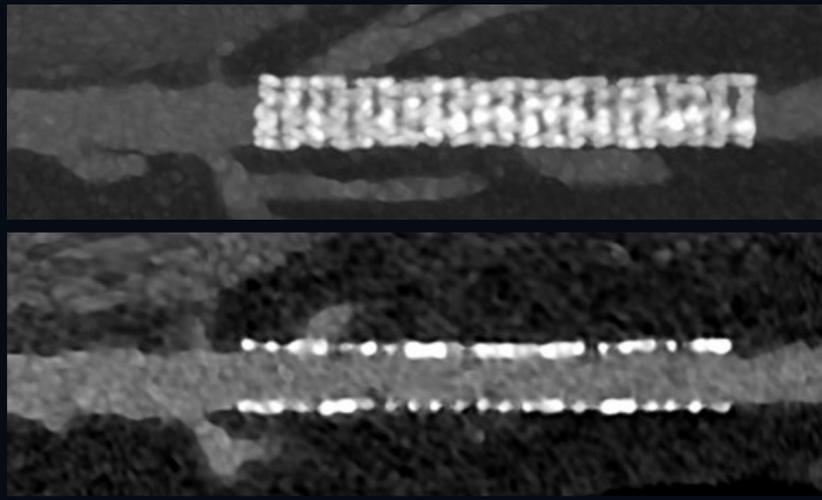
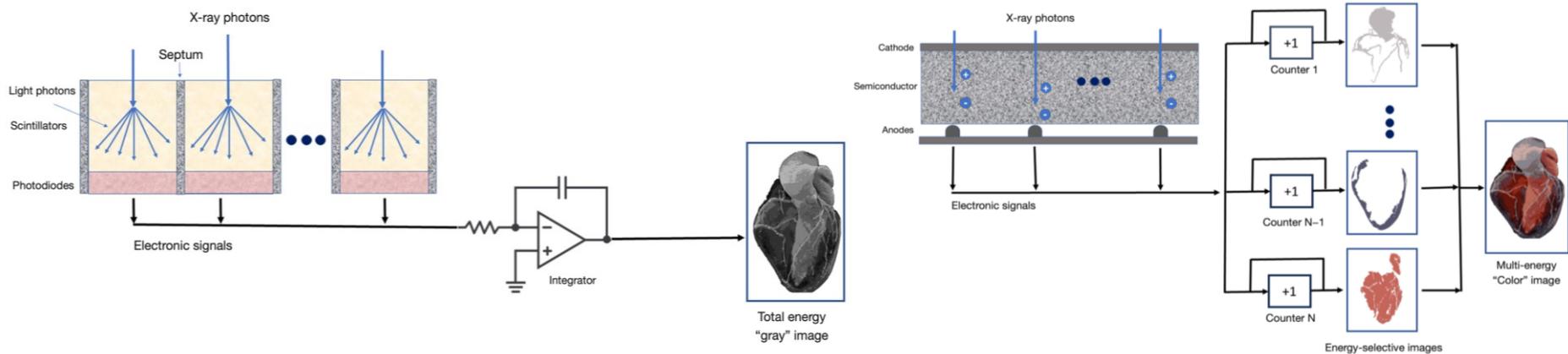
backward propagation



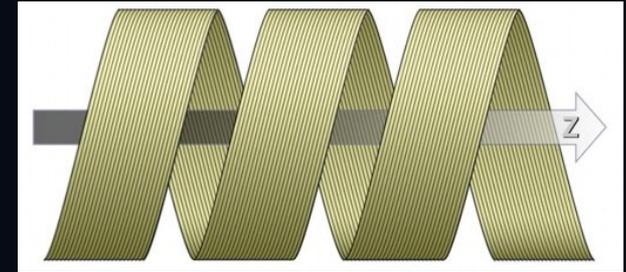
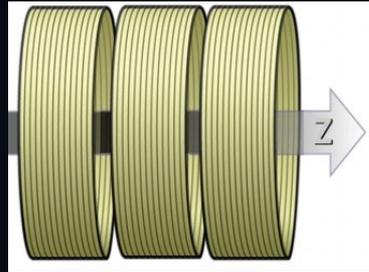
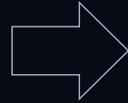
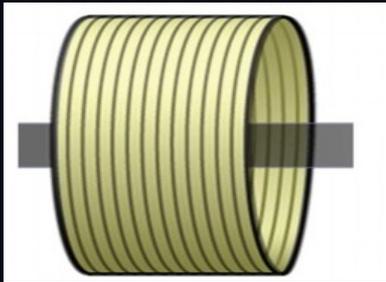
# Ultra-High-Resolution Coronary CT Angiography With Photon-Counting Detector CT

## Feasibility and Image Characterization

Victor Mergen, MD,\* Thomas Sartoretti, BMed,\*†‡ Matthias Baer-Beck, PhD,§ Bernhard Schmidt, PhD,§ Martin Petersilka, PhD,§ Joachim Ernst Wildberger, MD, PhD,†‡ André Euler, MD,\* Matthias Eberhard, MD, EBCR,\* and Hatem Alkadhi, MD, MPH, EBCR, FESER\*



# Photon Counting Coronary CT Angiography



efficacia dosimetrica  
numero di viste



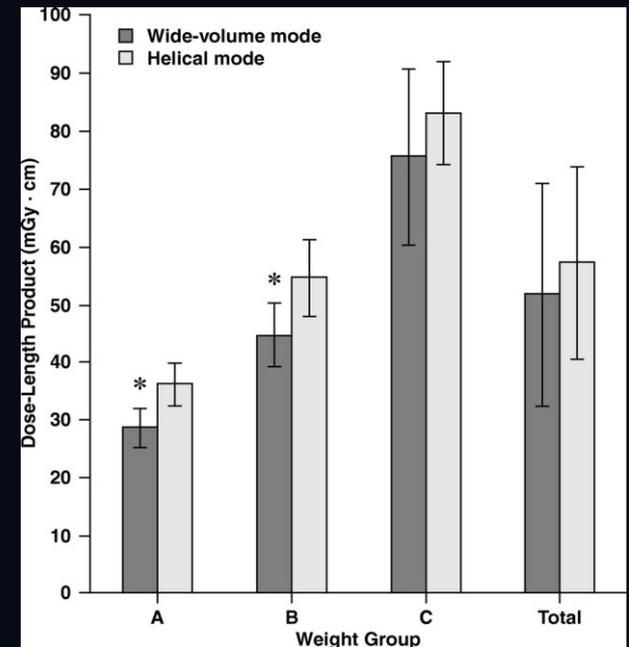
slice sensitivity profile (SSP)

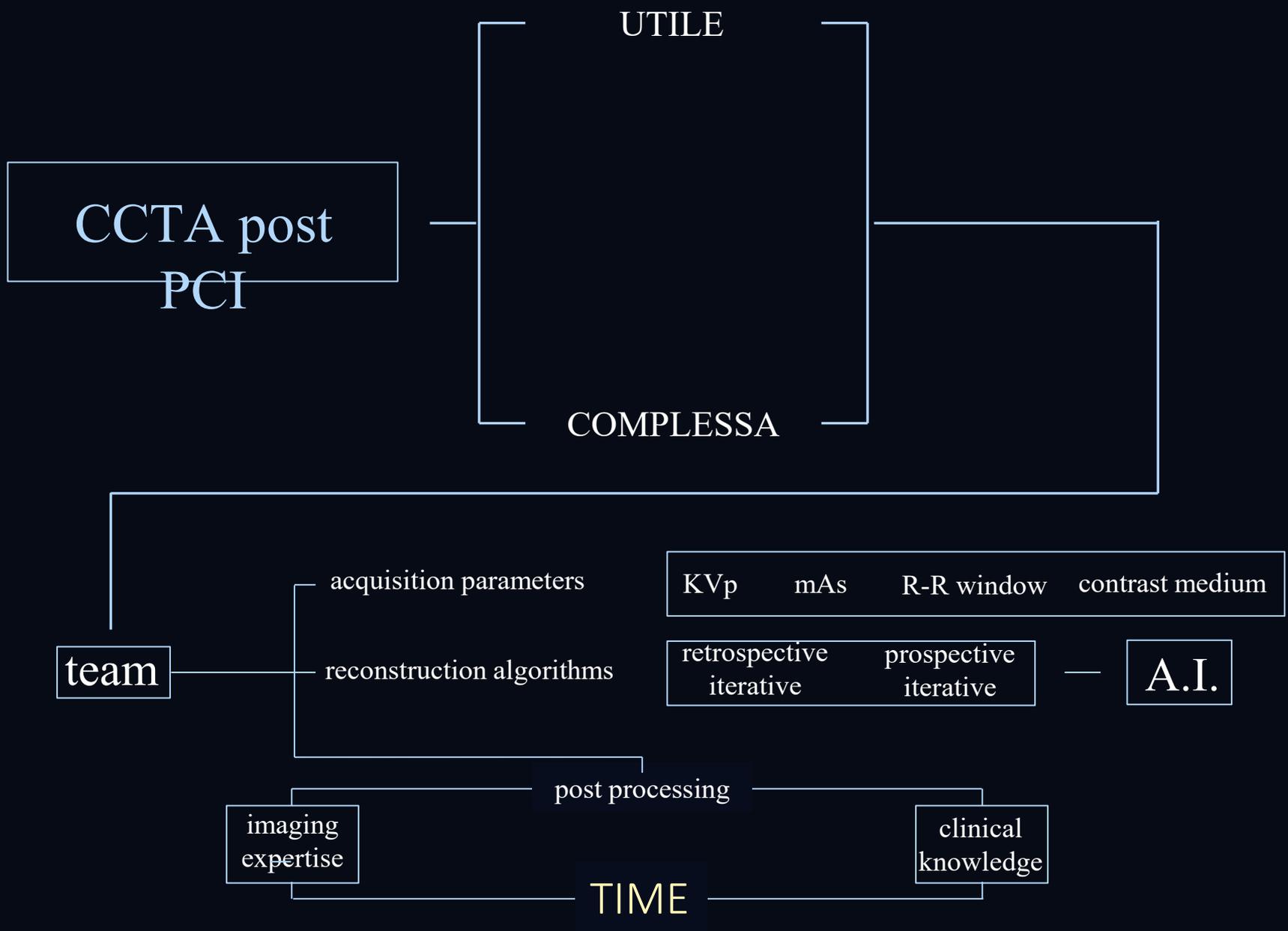


inadequate focal spot



X-ray dose up to 20 mSv





The international journal of science / 25 July 2024

# nature

Scientists need  
more time to think

Thinking  
time is often  
undervalued;  
it is rarely,  
if ever,  
quantified in  
employment  
practices.”

