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The use of a proposed updated EARL harmonization of  $^{18}\text{F}$ -FDG PET-CT in patients with lymphoma yields significant differences in Deauville score compared with current EARL recommendations

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LY, MINARIK, EDENBRANDT, WOLLMER, TRÄGÅRDH 2019

*Submitted 2019-04-15*





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# Påverkar valet av PET/CT rekonstruktionsalgoritm Deauville score?

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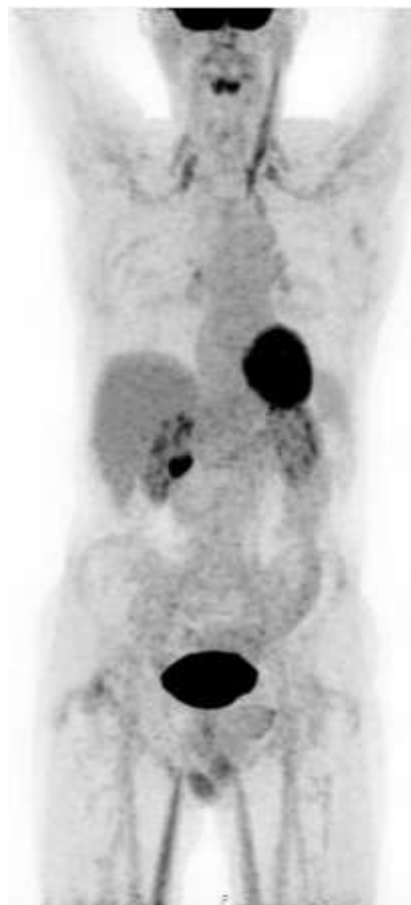
LY, MINARIK, EDENBRANDT, WOLLMER, TRÄGÅRDH 2019



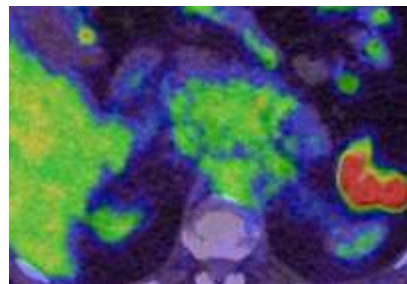
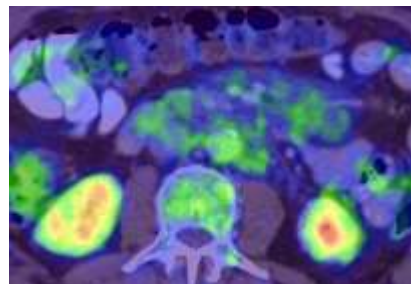
# Deauville score

Beror på lesionens SUV i förhållande till referensorgan

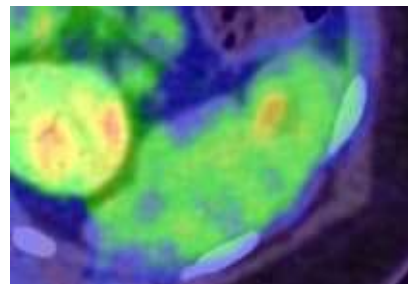
Inget upptag



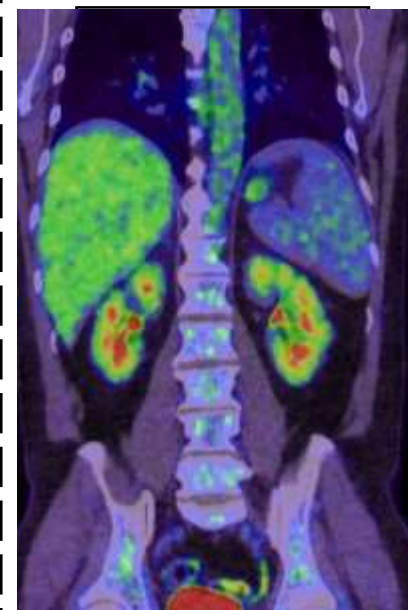
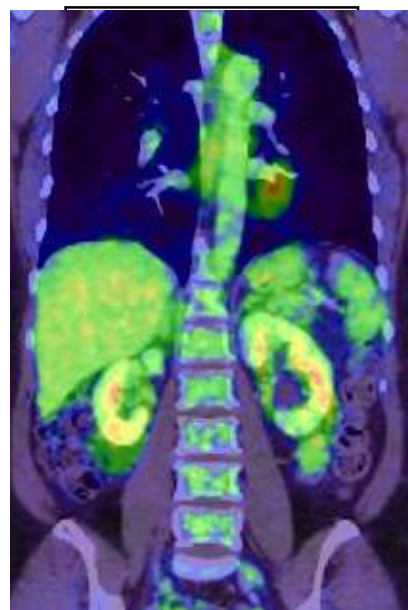
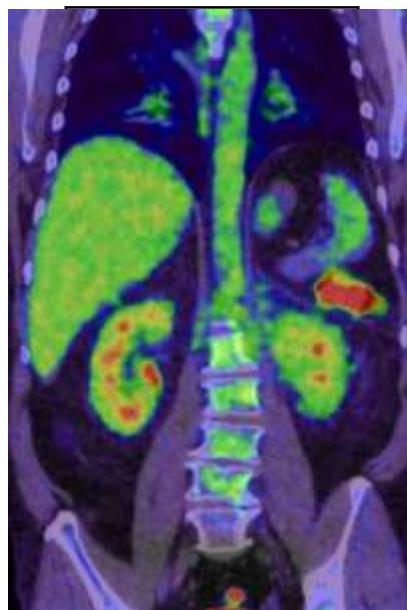
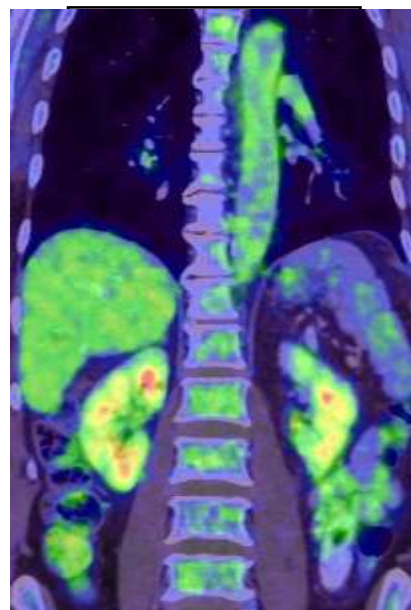
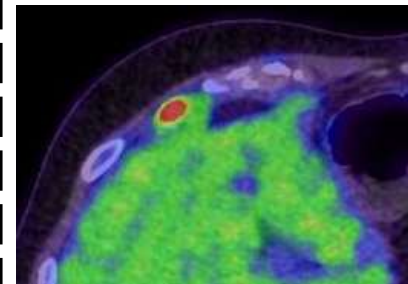
Aorta



Lever



Lever x 2



# Deauville score

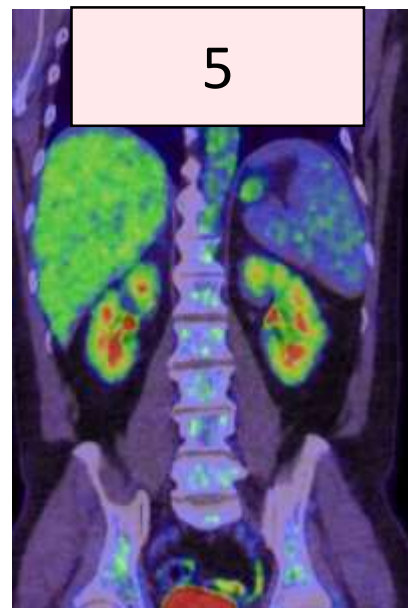
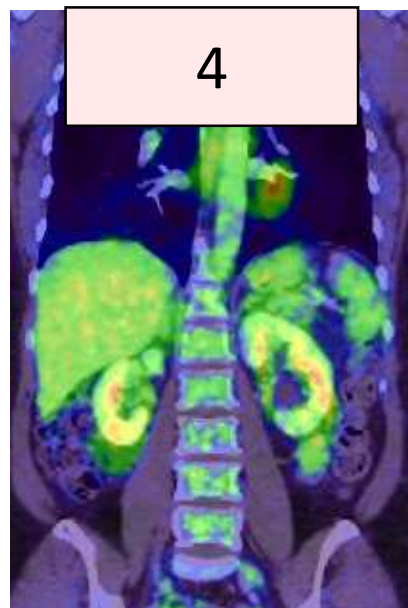
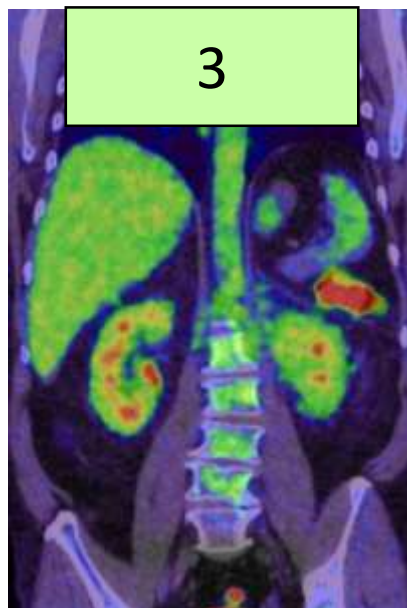
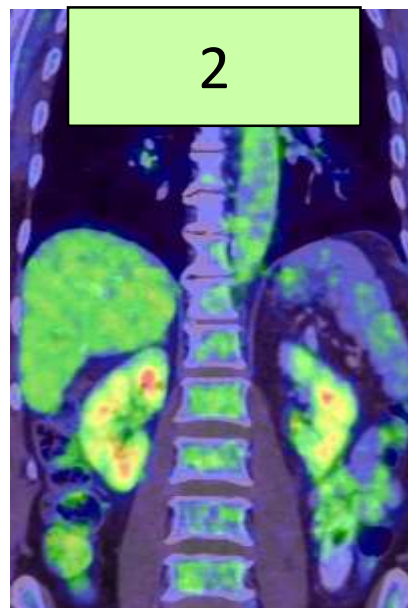
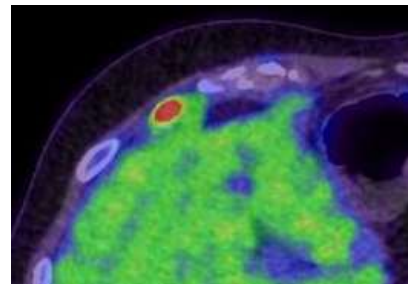
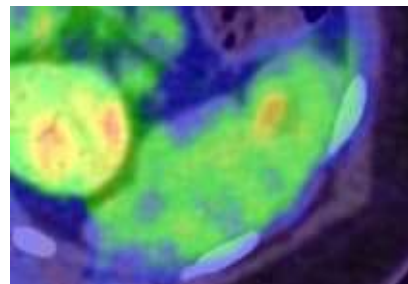
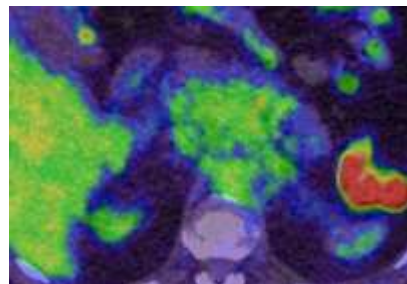
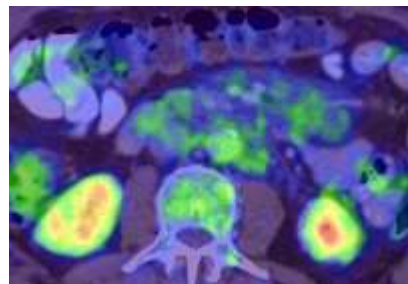
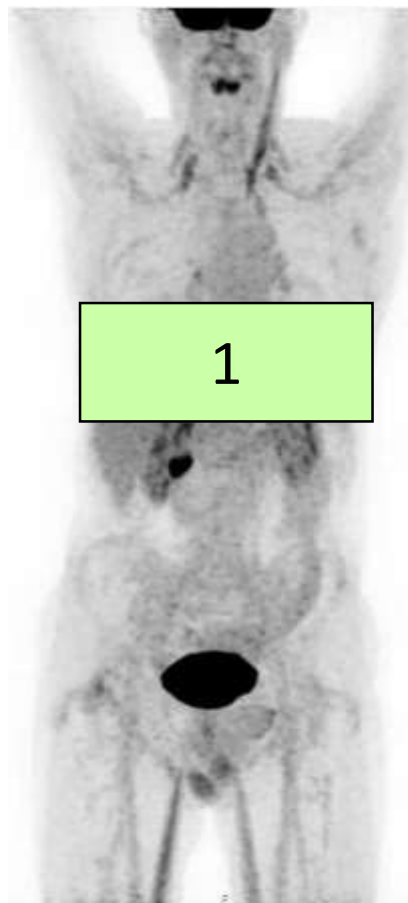
Beror på lesionens SUV i förhållande till referensorgan

Inget upptag

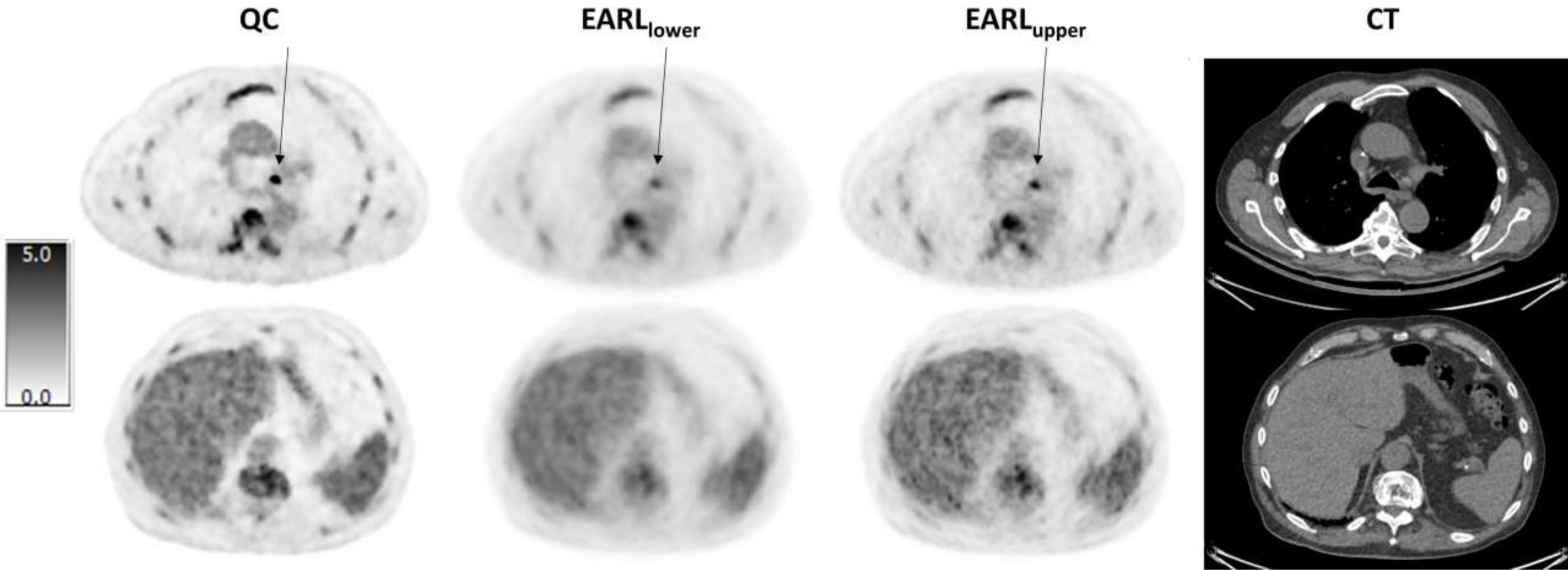
Aorta

Lever

Lever x 2



# Rekonstruktionsalgorithmen



SUV <sub>max</sub> Lesion	11.04
SUV <sub>max</sub> Aorta	3.34
SUV <sub>max</sub> Liver	3.95

3.53
2.89
3.65

4.99
3.46
4.46

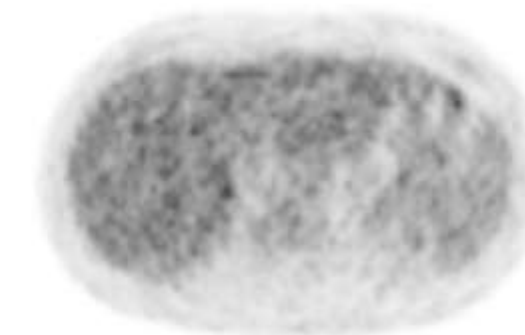
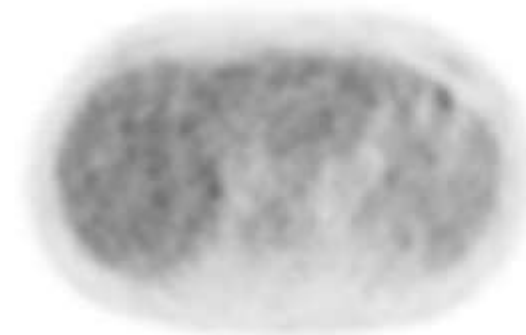
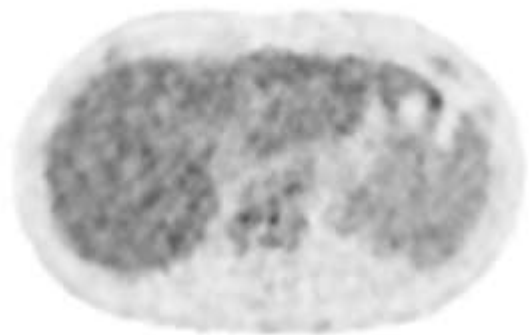
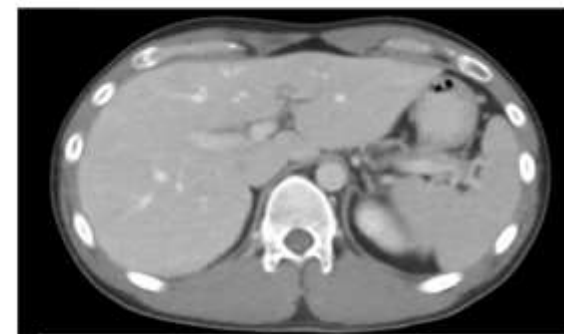
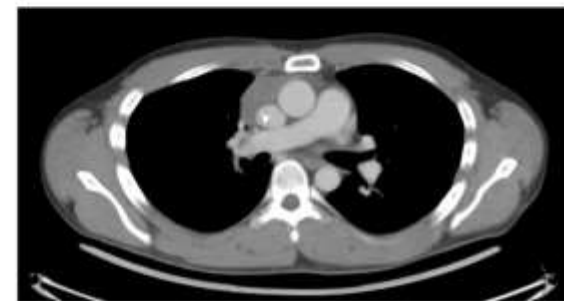
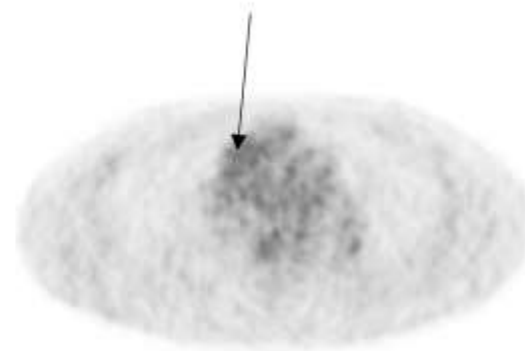
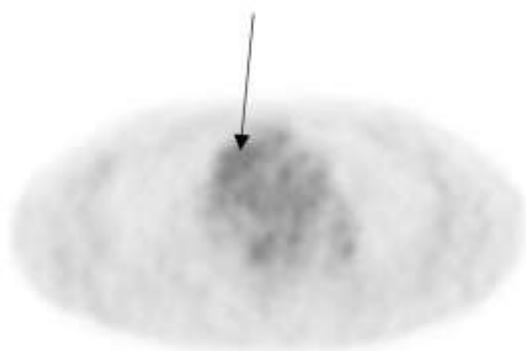
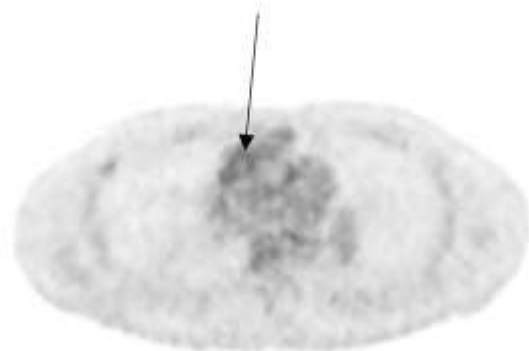
# Rekonstruktionsalgorithmen

QC

EARL<sub>lower</sub>

EARL<sub>upper</sub>

CT



SUV<sub>max</sub> Lesion  
SUV<sub>max</sub> Aorta  
SUV<sub>max</sub> Liver

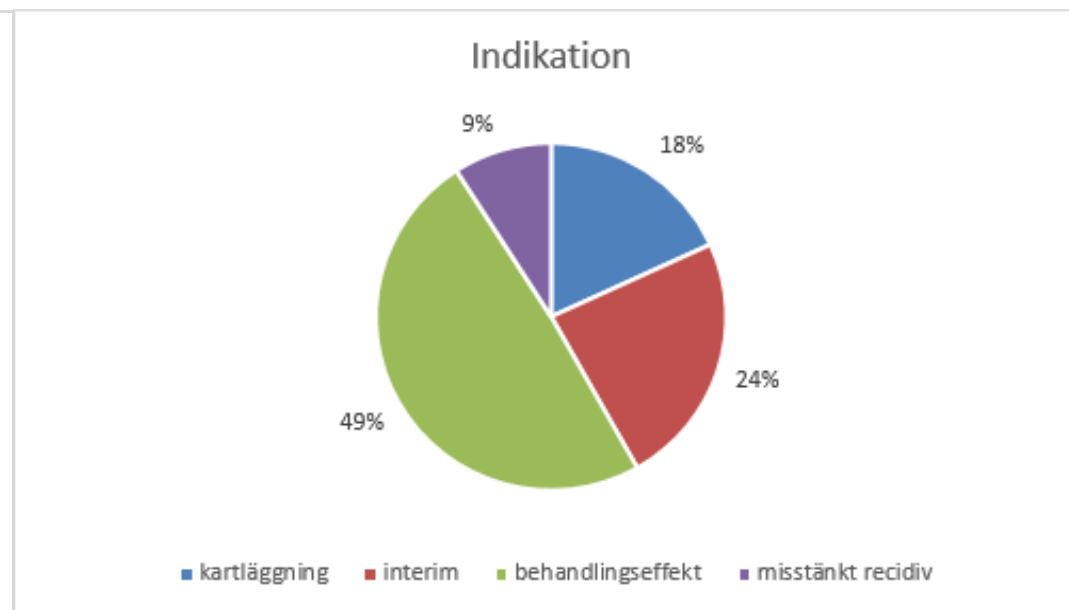
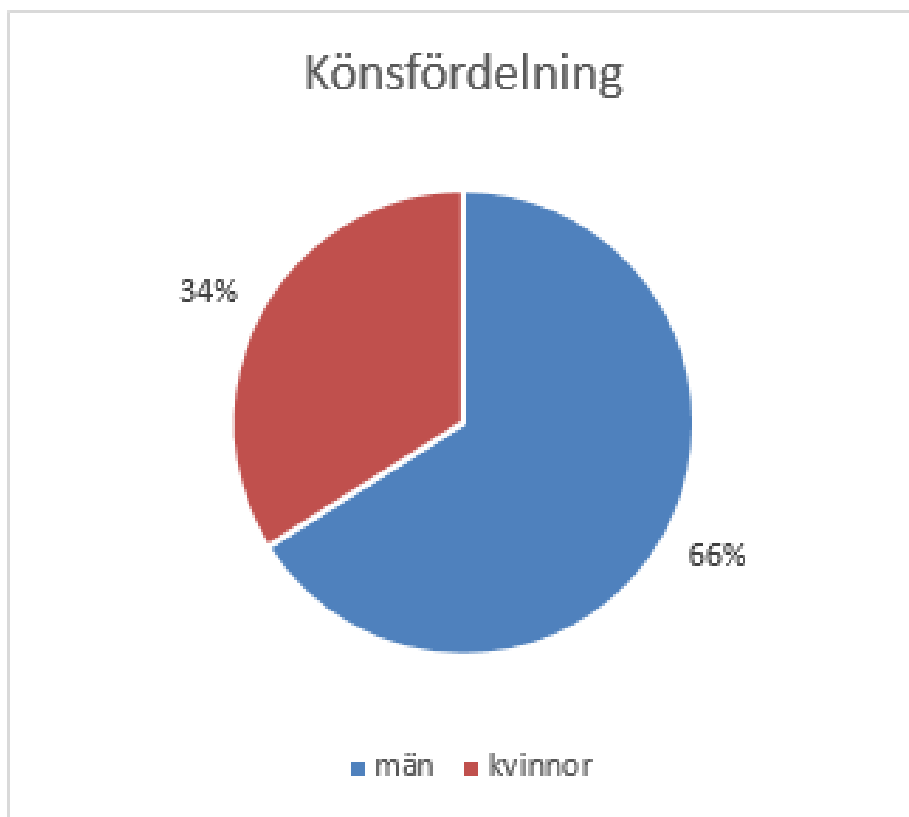
2.64  
2.29  
3.41

2.44  
2.25  
3.11

2.66  
2.45  
3.94

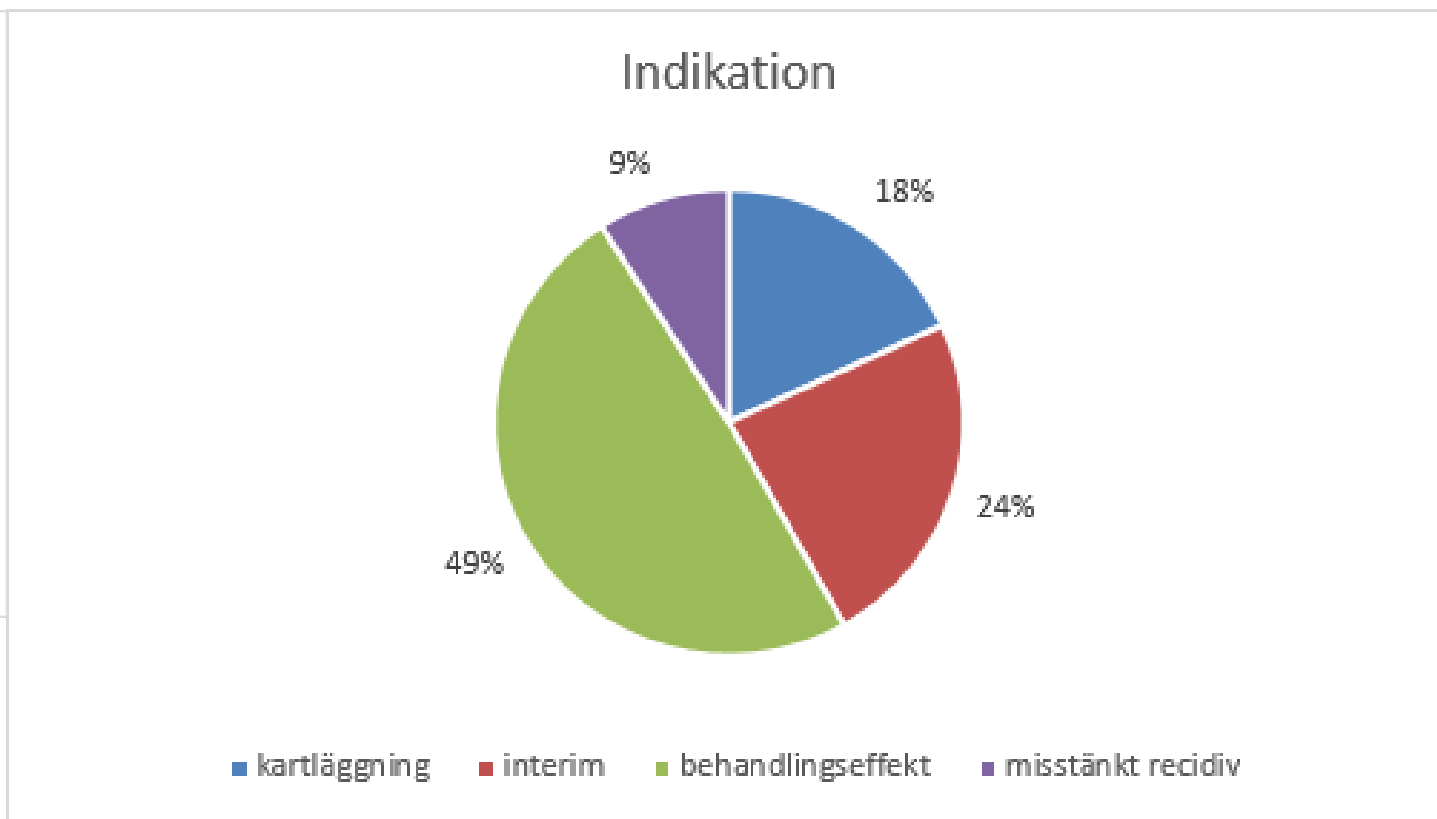
# Patientmaterial

- November 2017 - Mars 2018 i SUS Lund
- Augusti 2018 - Oktober 2018 i SUS Malmö
- Totalt 52 patienter och 54 undersökningar



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- November 2017 - Mars 2018 i SUS Lund
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# Resultat

## **SUV<sub>max</sub>**

QC vs EARL<sub>lower</sub>

QC vs EARL<sub>upper</sub>

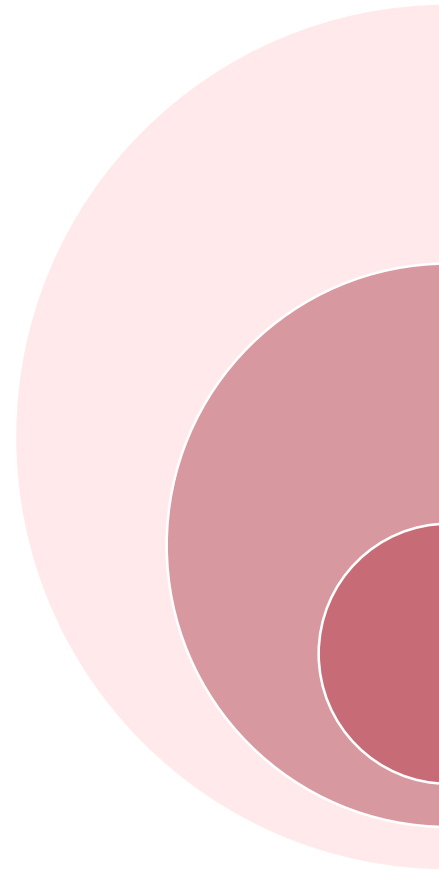
EARL<sub>lower</sub> vs EARL<sub>upper</sub>

## **SUV<sub>peak</sub>**

QC vs EARL<sub>lower</sub>

QC vs EARL<sub>upper</sub>

EARL<sub>lower</sub> vs EARL<sub>upper</sub>

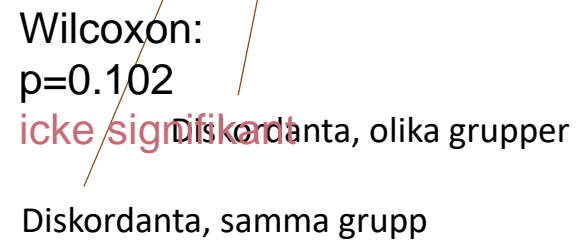
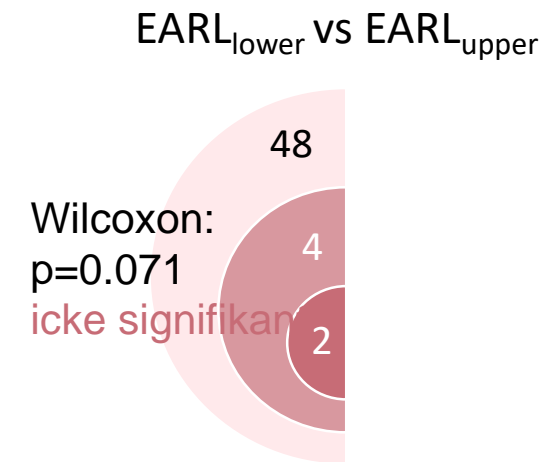
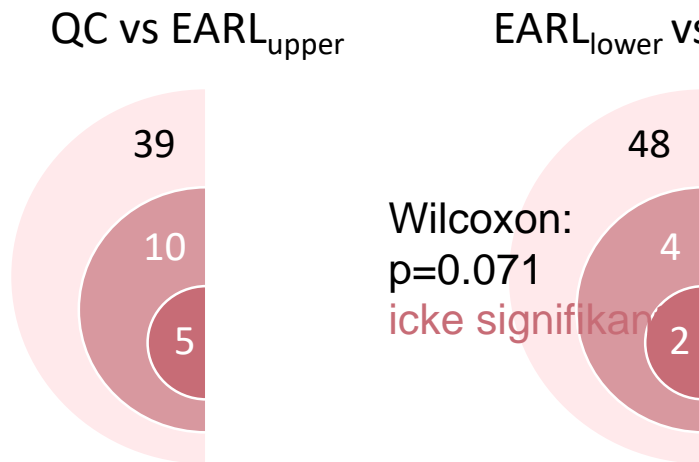
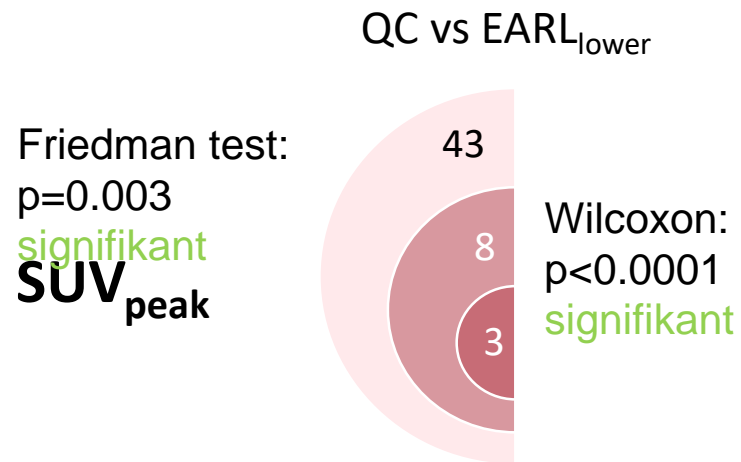
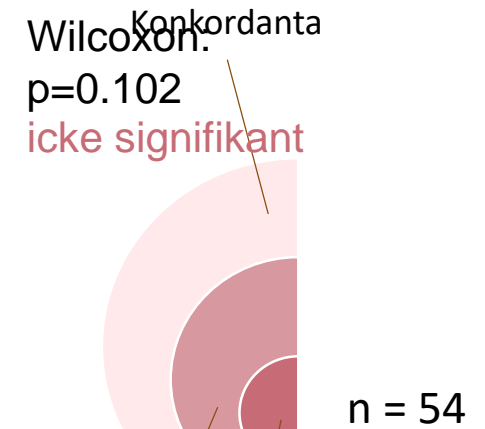
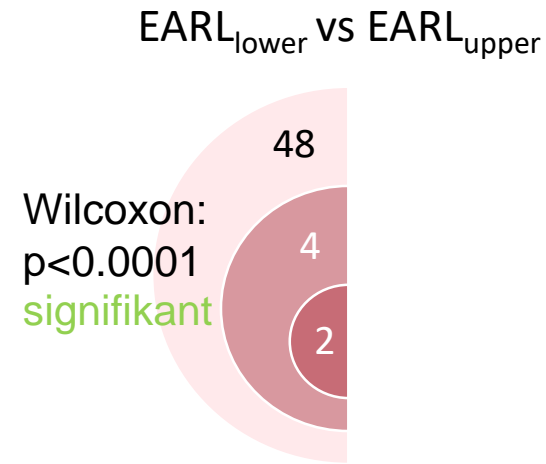
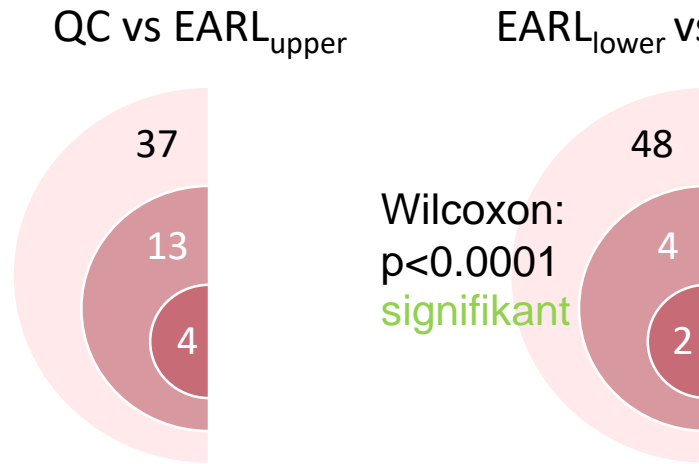
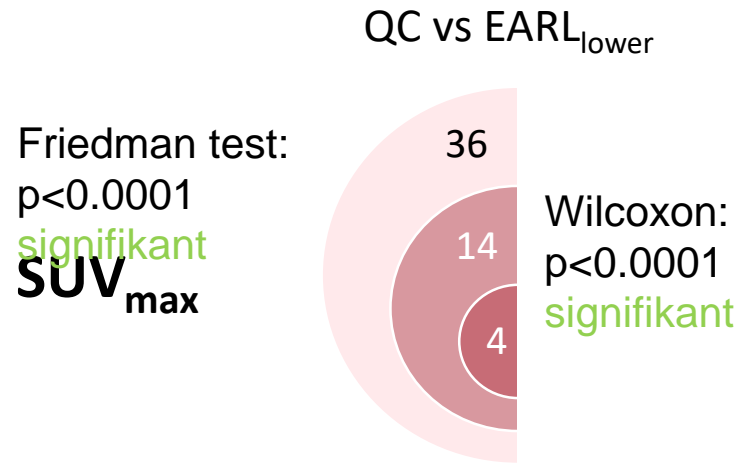


konkordanta

diskordanta, tillhör samma grupp  
(non-responder / responder)

diskordanta, tillhör olika grupper  
(non-responder / responder)

# Resultat



# Resultat


Nollhypotes:

*“Det finns ingen skillnad i Deauville score  
mellan QC,  $EARL_{lower}$  och  $EARL_{upper}$ ”*

# Resultat

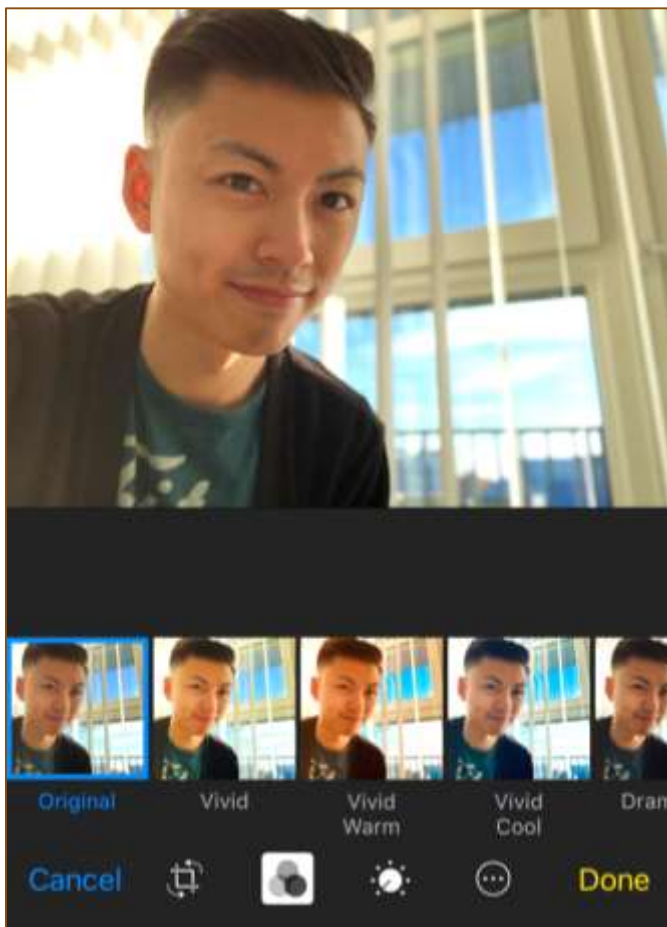
Nollhypotes:

*“Det finns ingen skillnad i Deauville score  
mellan  $EARL_{lower}$  och  $EARL_{upper}$ ”*

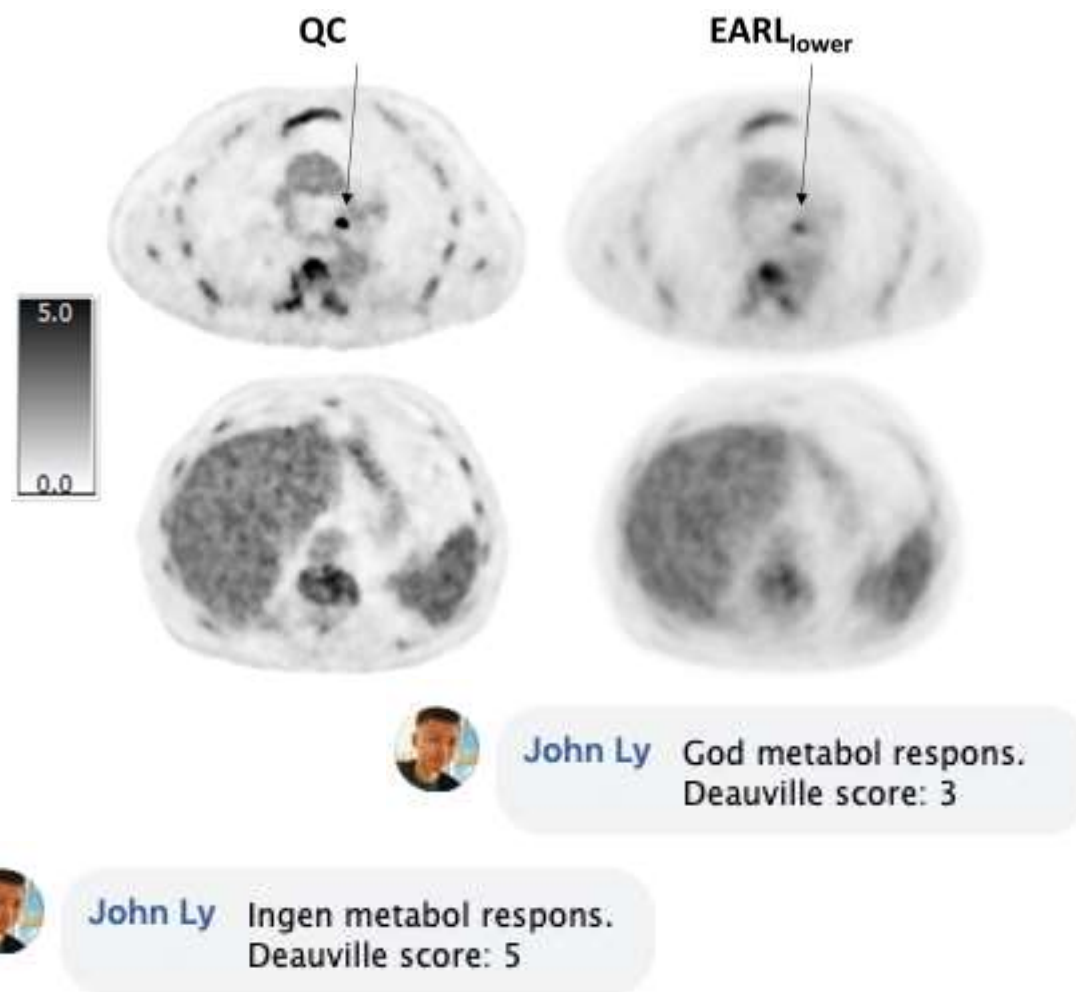


# Konklusion

- Det finns signifikant skillnad mellan QC, EARL<sub>lower</sub> och EARL<sub>upper</sub>.
- Det finns risk att patienter som undersöks med EARL<sub>lower</sub> och EARL<sub>upper</sub> får ett underskattat Deauville score, jämfört med QC.



Valet av fotofilter kan påverka antalet  och 



...men valet av rekonmetod påverkar behandlingen.



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