Radiation Exposure

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Disclosures

Cook:
Proctoring, Speaker’s fees, Grant support, Consulting

Cydar Medical:
Advisory board
Procedure

- DAP: 777360 mGycm²
- ST: 81.04 mins

CT Dose

- 1336 mGycm
Why so high??

C-arm angulation

DSA

Obese
Collimation reduces dose
Dose reduction starts outside the OR
Automated image overlay
Modelling organ specific risk

Lifetime excess cancer risk (per 100,000)

- **Leukaemia:** 601 (95% CI 144-1310)
- **Colon:** 517 (95% CI 293-848)
- **Kidney:** 330 (95% CI 35.6 – 834)
- **Liver:** 203 (95% CI 34 – 745)
- **Lung:** 390 (95% CI 188 – 701)
- **Stomach:** 247 (95% CI 40.1 – 890)
A population-based cohort study examining the risk of abdominal cancer after endovascular abdominal aortic aneurysm repair

Sheraz R. Markar, PhD, MA, MSc, MRCS, Alberto Vidal-Diez, PhD, Viknesh Sounderajah, MRCS, Hugh Mackenzie, PhD, MRCS, George B. Hanna, PhD, FRCS, Matt Thompson, PhD, FRCS, Peter Holt, PhD, FRCS, Jesper Lagergren, PhD, MD, and Alan Karthikesalingam, PhD, MA, MSc, MRCS

London, United Kingdom; and Stockholm, Sweden

**Abdominal cancer**

![Graph showing freedom from cancer over time with HR 1.14 (CI 1.03-1.27, P=0.02)]

**All cancers**

![Graph showing freedom from cancer over time with HR 1.09 (CI 1.02-1.16, P=0.02)]

Markar et al. JVS 2018
Operator beware!
Radiation hazards to vascular surgeon and scrub nurse in mobile fluoroscopy equipped hybrid vascular room

Jong Bin Kim, Jaehoon Lee, Kihyuk Park
Division of Vascular Surgery, Department of Surgery, Catholic University of Daegu School of Medicine, Daegu, Korea

- **6 month effective dose:** 3.85mSv
- **Lead attenuation rate:**
  - Body lead – 75%
  - Thyroid shield 61%
  - Goggles – 70%
- Real time 3D device visualisation using light
- Multiple unrestricted viewing angles
- Corresponding alignment markers on stent graft?
Cumulative effective dose: 400.85 mSv

<table>
<thead>
<tr>
<th>Organ</th>
<th>Dose</th>
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<tbody>
<tr>
<td>Bone marrow</td>
<td>525.08 mGy</td>
</tr>
<tr>
<td>Colon</td>
<td>488.2 mGy</td>
</tr>
<tr>
<td>Kidney</td>
<td>1755.28 mGy</td>
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<tr>
<td>Liver</td>
<td>576.91 mGy</td>
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<tr>
<td>Lung</td>
<td>311.92 mGy</td>
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<tr>
<td>Stomach</td>
<td>518.94 mGy</td>
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<td>Cancer Site</td>
<td>Lifetime Excess Cancer Risk (per 100,000)</td>
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