

# Australian and New Zealand Paired Kidney Exchange Program

Protocol 8: Recommended  
Donor CTA Protocol,  
Reconstruction & Reporting  
Standard



# Recommended Donor CTA Protocol, Reconstruction & Reporting Standard

## Aim

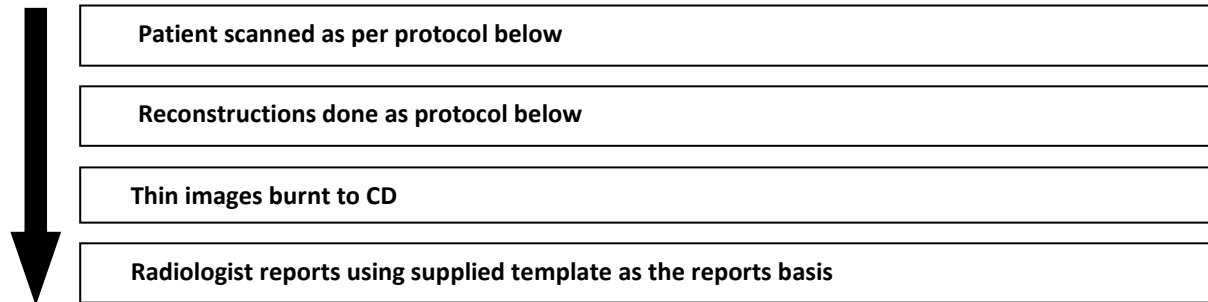
- To ascertain number, anatomy (parenchymal and vascular) and function of donor kidneys.
- To screen for incidental urinary tract pathology such as tumour, stone, or obstruction.

## Quality requirements

To be suitable, each CTA needs to be:

- performed with a machine of adequate quality, resolution, and speed
- non-contrast, angiographic, and excretory (IVP) phases must be included, timed appropriately
- an appropriate contrast dose must be given

## PROCEDURE



The following protocol is a suggestion, not a mandatory requirement.

### 1 Patient scanned as per suggested protocol

<b>Patient Preparation</b>	<ul style="list-style-type: none"> <li>• Two (2) hours fasting. Limit fluids to a minimum</li> <li>• Time Out/ Contrast Questionnaire</li> <li>• IV Cannula</li> </ul>
<b>Method</b>	<ul style="list-style-type: none"> <li>• 64 slice scanner</li> <li>• CT Scan utilising a four (4) phase kidney protocol</li> </ul>
<b>Summary method</b>	<ul style="list-style-type: none"> <li>• Non Contrast helical scan of the entire Abdomen/Pelvis</li> <li>• Arterial Phase helical Scan Of the Kidneys (Diaphragm to Crest)</li> <li>• Portal Venous Phase of the Entire Abdo</li> <li>• 10-15 Minute delayed Phase of the kidneys and urinary tract or</li> <li>• Plain X film of the urinary tract performed prone to provide best filling of the ureters</li> </ul>
<b>IV Contrast</b>	<ul style="list-style-type: none"> <li>• 1mL/kg of Ultravist 370 injected at 3.0-4.0 mL/s</li> </ul>
<b>Oral Contrast</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**2 Reconstructions should be in accordance with the suggested protocol below**

<b>Reconstruction</b>	<p><b>Non Contrast</b></p> <ul style="list-style-type: none"> <li>• 5mm Axial recons</li> </ul> <p><b>Arterial Phase</b></p> <ul style="list-style-type: none"> <li>• 5mm Axial recons</li> <li>• 2mm Axial recons SMA to inferior portion of the kidneys</li> <li>• 3D semi-transparent (AP, 2 Obliques, both Laterals)</li> <li>• MIPs (AP, 2 Obliques, both Laterals)</li> </ul> <p><b>Portal Phase</b></p> <ul style="list-style-type: none"> <li>• 5mm Axial recons (Diaphragm to Symphysis)</li> </ul> <p><b>10-15 Minute Delayed Phase</b></p> <ul style="list-style-type: none"> <li>• 5mm Axial recons</li> <li>• 3D semi-transparent (AP, 2 Obliques, both Laterals)</li> </ul> <p>MIPs (AP, 2 Obliques, both Laterals)</p>
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**3 Thin images burnt to CD**

<b>CD-ROM</b>	<p>Any CD/DVD should comply with DICOM portable media standards:</p> <ul style="list-style-type: none"> <li>• DICOM format uncompressed.</li> <li>• There is a DICOM.DIR file in the root of the CD drive.</li> <li>• It can be easily read by Windows XP/Vista/7 &amp; Mac or it provides the software to enable this (Ez-DicomCDviewer).</li> </ul>
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**4 Suggested radiologist reports using supplied template as the reports basis****Aorta**

Maximal diameter \_\_\_\_\_ mm

Calcification: mild / moderate / severe

**Native Kidneys**

Right		Left
	<b>Renal Length (cm)</b>	
	<b>Cysts (yes/no, size, simple/complex)</b>	
	<b>Scars (yes/no, location)</b>	
	<b>Stones (side, site, size, number)</b>	
	<b>Masses (yes/no, side, size)</b>	

1 / 2 / 3	<b>Renal Arteries</b>	1 / 2 / 3
	<b>Abnormalities (FMD, atheroma)</b>	
	<b>Distance aorta – first branch of RA (mm)*</b>	
	<b>Renal Vein length (mm)**</b>	
N/A	<b>Renal Vein vs. Aorta</b>	Anterior / posterior
Anterior / posterior	<b>Renal Artery vs. IVC</b>	N/A
IVC / iliac vein	<b>Renal Vein drains into</b>	IVC / iliac vein
Normal / ectatic / PUJ	<b>Renal pelvis</b>	Normal / ectatic / PUJ
Single / double	<b>Ureter</b>	Single / double

\* From lateral edge of the aorta to first bifurcation for each artery

\*\* From the lateral edge of the IVC (not the middle of the IVC) across to the renal hilum at the medial renal edge (not the innermost hilum)

### Renal Parenchymal Evaluation

- Renal cysts: yes / no if yes: simple / complex size: \_\_\_\_ mm
- Scars: yes / no if yes: location:
- Masses: yes / no if yes: size: \_\_\_\_ x \_\_\_\_ x \_\_\_\_ mm, Location:
- Calculi: Side: Site: Size: Number:

VERSION CONTROL			
Version	Date	Author	Comments
V 1.0	Jul 2019	ANZKX Team	AKX transitioned to ANZKX
V 1.0	Feb 2021	ANZKX Team	Reviewed no changes
V 1.0	Nov 2021	ANZKX Team	Reviewed no changes