When ordering a TKV,

either ask for

maximal bilateral kidney dimensions

or

a calculated total kidney volume

Why TKV is important:

In patients with ADPKD, kidney growth and damage often occur before kidney function declines.[1,2] Height-adjusted TKV (htTKV), calculated using a patient's height and total kidney volume, can be used to determine a patient's ADPKD imaging classification and help identify a patient's risk of ADPKD progression and appropriateness for treatment.[3,4]

ADPKD=autosomal dominant polycystic kidney disease;
TKV=total kidney volume.

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If you receive maximal bilateral kidney dimensions

- **Calculate TKV using the ellipsoid formula**
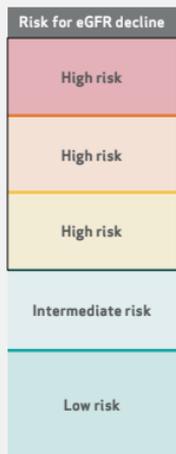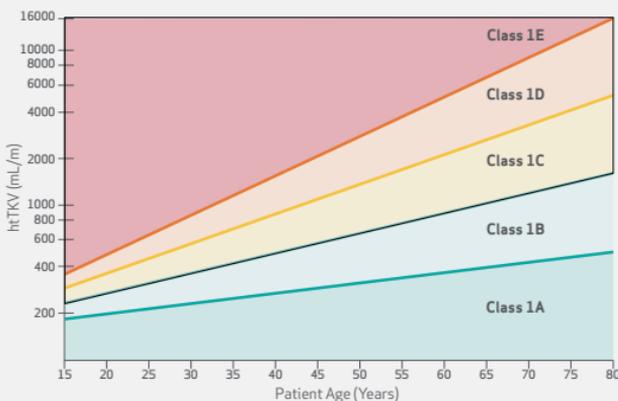
$$\frac{\pi}{6} \cdot (L \times W \times D) = TKV$$

- **Calculate htTKV using the patient's height and TKV**

$$\frac{TKV}{height\ (m)} = htTKV$$

L=length; W=width; D=depth.
Units for kidney dimensions are in mm.
To get kidney volume in mL, multiply by 0.001.
TKV in mL and height in m for a htTKV in mL/m.

Once you calculate htTKV, plot on the Mayo Imaging Classification tool to determine the risk of progression[5,6]

Class	1E	1D	1C	1B	1A
Estimated kidney growth rate: yearly percentage increase	>6.0%	4.5% – 6.0%	3.0% – 4.5%	1.5% – 3.0%	<1.5%
Estimated slope of change in eGFR	-4.78	-3.48	-2.63	-1.33	-0.23

eGFR units=mL/min/1.73 m²/yr.

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eGFR=estimated glomerular filtration rate.

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