Supplemental Table 1. Statistical test results between images in the pass and rework pathways for scanner and demographic information.

	Test Statistic	Degrees of Freedom[a]	P-Value
Scanner Information			
Manufacturer	1.675	1	.20
Model	8.073	8	.43
Field Strength	0.031	1	.86
Slice Thickness – mm	0.000	1	*P*>.99
Pixel Spacing	0.156	86,84	.25
Demographic Information			
Sex	4.596	1	.03
Age – yr	0.155	86,84	.26
BMI	0.205	85,84	.06
Race	2.517	4	.64

[a] A single degree of freedom indicates a chi-squared test of independence was performed while a pair of degrees of freedom indicates a two-sample Kolmogorov–Smirnov test was performed.

Supplemental Table 2. Additional statistical test results between images in the pass and rework pathways for additional scanner/image acquisition variables.[a]

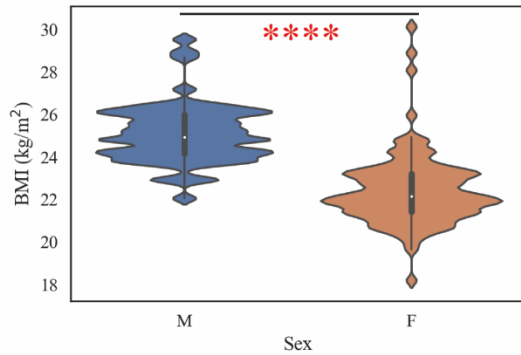|	Pass (N=86)	Rework (N=84)	Test Statistic	Degrees of Freedom[b]	P-Value
Repetition Time – ms	1071.7±204	1063.9±220.9	0.074	86,84	.97
Echo Time – ms	88.2±4.6	88.9±6.1	0.135	86,84	.42
Echo Train Length	47.9±53.3	34.8±48.5	0.160	86,84	.23
Flip Angle	114.1±30.4	106.3±28.2	0.157	86,84	.24
Percent Sampling – %	64.9±10.3	62±9.5	0.184	86,84	.11
Rows	447.3±75.7	464.8±68.9	0.109	86,84	.70
Columns	447±76	461.8±74.4	0.109	86,84	.70
Pixel Bandwidth	458.8±196.2	412.6±183.9	0.124	86,84	.53
Number of Images in Acquisition	47.2±10.7	47.1±11.4	0.087	49,56	.99
Field of View	433.9±25.8	434.5±27.9	0.087	49,56	.99
Patient Position – no. (%)			1.304	1	.25
Feet First-Supine	49 (57)	56 (66.7)			
Head First-Supine	37 (43)	28 (33.3)			

[a] Plus-minus values are means±SD [b] A single degree of freedom indicates a chi-squared test of independence was performed while a pair of degrees of freedom indicates a two-sample Kolmogorov–Smirnov test was performed.

Supplemental Table 3. Statistical test results between images in the pass and rework pathways for measures of disease severity.[a]
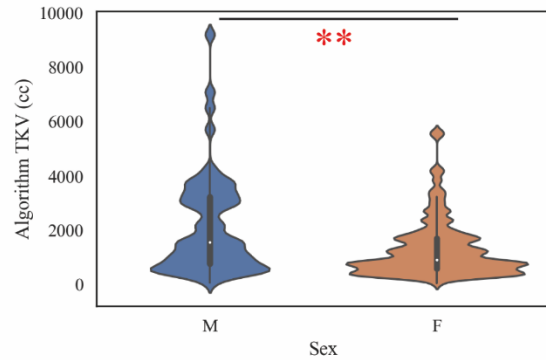
	Pass (N=86)	Rework (N=84)	Test Statistic	Degrees of Freedom[b]	P-Value
Algorithm TKV – cc	1548±1225.3	1649.1±1640.5	0.160	86,83	.23
eGFR – mL/min/BSA	61.2±27.2	60.1±26.9	0.101	73,68	.87
Creatinine – mg/dL	1.4±0.7	1.5±1	0.127	79,77	.56
BUN – mg/dL	21.1±9.8	21.5±11.7	0.105	76,73	.81
Albumin/Creatinine Ratio – mg/g	140.2±291.4	48.9±74.1	0.276	20,19	.45

[a] Plus-minus values are means±SD [b] A single degree of freedom indicates a chi-squared test of independence was performed while a pair of degrees of freedom indicates a two-sample Kolmogorov–Smirnov test was performed.
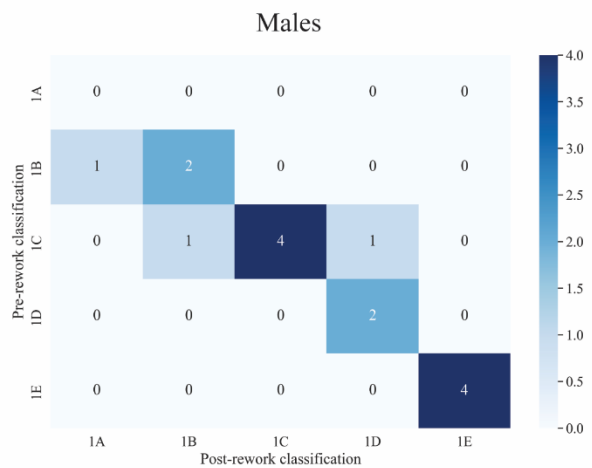
Supplemental Figure 1. Agreement between AI and corrected AI typical ADPKD classification by gender. Panel A shows female BMI (kg/m^2) is significantly lower on average than male BMI across all cases (KS Test, stat=0.78, P=$1.8e^{-23}$). Panel B shows female total kidney volume (cc) is significantly smaller on average than male total kidney volume across all cases (KS Test, stat=0.26, P=0.008). ** = P<0.01; **** = P<0.0001. Typical ADPKD classification ranges from 1A (least severe) to 1E (most severe). Panel C represents agreement heatmap between AI and corrected AI typical ADPKD classification for females in rework only cases (weighted Cohen's kappa= 0.90). Panel D represents agreement heatmap between AI and corrected AI typical ADPKD classification for males in rework only cases (weighted Cohen's kappa= 0.74). Diagonal represents perfect agreement. The darker the shade of blue represents greater counts.