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1: [Kidney Int.](#) 2008 Oct 29. [Epub ahead of print]



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### Increases in kidney volume in autosomal dominant polycystic kidney disease can be detected within 6 months.

[Kistler AD](#), [Poster D](#), [Krauer F](#), [Weishaupt D](#), [Raina S](#), [Senn O](#),  
[Binet I](#), [Spanaus K](#), [Wüthrich RP](#), [Serra AL](#).

1Clinic for Nephrology, University Hospital, Zürich, Switzerland.

Kidney volume growth is considered the best surrogate marker predicting the decline of renal function in autosomal dominant polycystic kidney disease. To assess the therapeutic benefit of new drugs more rapidly, changes in kidney volume need to be determined over a short time interval. Here we measured renal volume changes by manual segmentation volumetry applied to magnetic resonance imaging scans obtained with an optimized T1-weighted acquisition protocol without gadolinium-based contrast agents. One hundred young patients with autosomal dominant polycystic kidney disease and preserved renal function had a significant increase in total kidney volume by 2.71+/-4.82% in 6 months. Volume measurements were highly reproducible and accurate, as indicated by correlation coefficients of 1.000 for intra-observer and 0.996 for inter-observer agreement, with acceptable within-subject standard deviations. The change in renal volume correlated with baseline total kidney volume in all age subgroups. Total kidney volume positively correlated with male gender, hypertension, albuminuria and a history of macrohematuria but negatively with creatinine clearance. Albuminuria was associated with accelerated volume progression. Our study shows that increases in kidney volume can be reliably measured over a 6 month period in early autosomal dominant polycystic kidney disease using unenhanced magnetic resonance imaging sequences. *Kidney International* advance online publication, 29 October 2008; doi:10.1038/ki.2008.558.

PMID: 18971924 [PubMed - as supplied by publisher]

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