

clearances. Thus, for poor renal function, t should be greater than 3 hr.

So, when using the slope/intercept method and two plasma samples, the factor which most critically determines the value of clearance is the concentration in the first plasma sample, or, in other words, it is the zero time intercept, and not the slope, that is important. Previous validation of the slope/intercept method against the gold standard multiple sample method has essentially been in adults. In order to demonstrate that the single-sample technique of GFR measurement is acceptable for children, the single- or double-sample method must be compared with the multiple-sample technique in a pediatric population.

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REPLY: We wonder whether Drs. Peters and Myers have thoroughly read our article (1). In their opinion, it was not clear from the data presented how many children had poor renal function. In fact, this can easily be deduced from Table 1 and Figure 1, where for each age group, the range of clearance values scaled for body surface area and the distribution of clearance values are presented. Furthermore, they underlined the importance of the slope (λ) in the accuracy of single sample method. They seemed to ignore that this point has also been stressed in our manuscript. It was clearly indicated that the relationship between distribution volume at time t and double sample clearance follows a precise function, which is $\lambda \cdot e^{-\lambda t}$, and, hence, is dependent on the values of λ in the population studied. We did not develop this point in detail because it has already been done previously by several other authors (2-3). We prefer to refer the readers to these original works instead of copying their data and incorporating them in our work.

Concerning the use of the double-sample technique in the

pediatric population, we include in the references to this reply some papers that could be useful to Drs. Peters and Myers (4-6).

We would like to take this opportunity to thank Dr. Shore for his thoughtful editorial (7). We agree with Dr. Shore that theoretically it is preferable to estimate normalized GFR directly (direct estimate) rather than to estimate the true GFR first and then normalize the results for body surface area (indirect estimate). However, in practice, when using the 120th minute blood sample, indirect estimate gives significantly better results. Indeed, using the same methodology and population as in our manuscript (1), we have compared the correlation between direct and indirect estimates versus BSA normalized slope clearance. The indirect estimate was obtained by estimating the true GFR first and by normalizing the results afterwards whereas the direct estimate was obtained by estimating directly normalized GFR by using the best age specific converting formula. The results presented in Table 1 indicate that direct estimation requires different converting formulae to be used in each age group of children. Furthermore, even when using the best age-specific converting formula, the standard error of estimate obtained in each age group is much larger than that observed when we estimate the true GFR first and then normalize the results (indirect estimate).

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TABLE 1
Correlation Between Estimate and Slope Clearance

Age group	n	Indirect estimation			Direct estimation		
		Converting formula	r	s.e.e.	Converting formula	r	s.e.e.
<1 yr	67	cl = 2.60 (VD120) - 0.27	0.99	3.68	cl = 7.88 (VD120) + 31.9	0.93	8.87
1.00-1.99 yr	41	cl = 2.60 (VD120) - 0.27	0.99	3.07	cl = 7.18 (VD120) + 24.3	0.91	9.91
2.00-3.99 yr	46	cl = 2.60 (VD120) - 0.27	0.99	2.44	cl = 6.32 (VD120) + 19.4	0.95	9.46
4.00-5.99 yr	47	cl = 2.60 (VD120) - 0.27	0.99	3.19	cl = 5.58 (VD120) + 7.7	0.95	10.17
6.00-9.99 yr	58	cl = 2.60 (VD120) - 0.27	0.99	3.76	cl = 3.56 (VD120) + 26.0	0.90	12.72
10.00-14.99 yr	68	cl = 2.60 (VD120) - 0.27	0.99	4.14	cl = 2.58 (VD120) + 27.2	0.87	18.75