Benefit From Higher Dose: The Solution?

The London Daily/Nocturnal Hemodialysis Study,

a prospective, comparative, nonrandomized study, directly compared outcomes of quotidian (daily) hemodialysis patients with conventional thrice-weekly hemodialysis patients. Significant clinical improvements were seen with quotidian therapy in the areas of nutrition (short-hours daily), blood pressure (both), volume control (short-hours daily), calcium/phosphorus control (nocturnal), and quality of life (both). A nonsignificant trend for improvement in anemia management was suggested. The economic analysis showed substantial savings in annualized cost per quality-adjusted life-year in changing from conventional hemodialysis (carried out in-center, in satellite units, or at home) to home quotidian hemodialysis.

The substantial clinical benefits of home quotidian hemodialysis, combined with the economic advantage shown by this study, clearly justify its expansion.
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![Graph showing survival probability over time for different donation types](image)

- **Nocturnal Hemo**: 177 134 85 48 28 10
- **Deceased Donor**: 531 463 302 198 90 0
- **Living Donor**: 531 458 282 170 60 0

*Time From Modality Start (Years)*
Barriers to Higher Dose
Barriers to Higher Dose

Patient-Perceived Barriers to the Adoption of Nocturnal Home Hemodialysis

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Arrhythmia Care as a Paradigm for the 21st Century
Miniaturization?
The Kidney’s Natural Hemofilter
Uniformity of Pores and Shape of Pores Control Selectivity

![Graph showing the relationship between selectivity and scaled permeability for different values of \( \sigma/\bar{h} \) and \( \sigma/\bar{r} \). The x-axis represents the scaled permeability, and the y-axis represents the reciprocal of selectivity, \( 1/S_a \). The graph includes curves for different values of \( \sigma/\bar{h} \) and \( \sigma/\bar{r} \).]
Silicon Nanopore Membrane
Enhanced Selectivity of Slit Pores
Silicon Nanopore Membrane: Selectivity

![Graph showing sieving coefficient vs. molecular size/pore size for 7nm ß2-MG and 7nm Albumin](image)

- **7nm ß2-MG**
- **7nm Albumin**
Large Animal Hemofilter Implantation
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“One must not stay within the lines” - Eric Carle