



**KDIGO CONTROVERSIES CONFERENCE ON GREEN DIALYSIS:
ENVIRONMENTALLY SUSTAINABLE CARE, GROWTH, AND
INNOVATION**

**Personal & Societal Impact
of Non-Eco-Friendly Peritoneal Dialysis**

Junelle Speller, MBA
Patient Advocate
Chicago, Illinois USA

Peritoneal dialysis provides patients with greater autonomy and improved survival

When presented with the options of peritoneal or hemodialysis, I chose automated PD (APD) because of multiple advantages.

- Increased activation and empowerment
- Gentler on the body
- Reduced cardiovascular stress
- Better preservation of residual kidney function
- Fewer restrictions on diet and fluid intake
- Greater ability to travel
- Less disruptive to work
- “Greener” since there is less use of water and electricity



Daily treatments required dialysate solution and numerous supplies, resulting in tremendous waste

My prescription and waste production ballooned during my 8+ years on PD.

- PD Round 1 (2009)
 - ✓ 6 months - 6 hrs APD nightly, 4 exchanges, 1 6L 1.5% bag
- PD Round 2 (2014-2022)
 - ✓ 97 months - 9 hrs APD nightly, 6 exchanges, 2 6L 2.5% and 1 6L 1.5% bags plus 1 2.5L midday exchange
- Supplies included APD integrated cassette, MiniCaps, FlexiCaps, drain bags, drain line extensions, and external packaging and wrappings



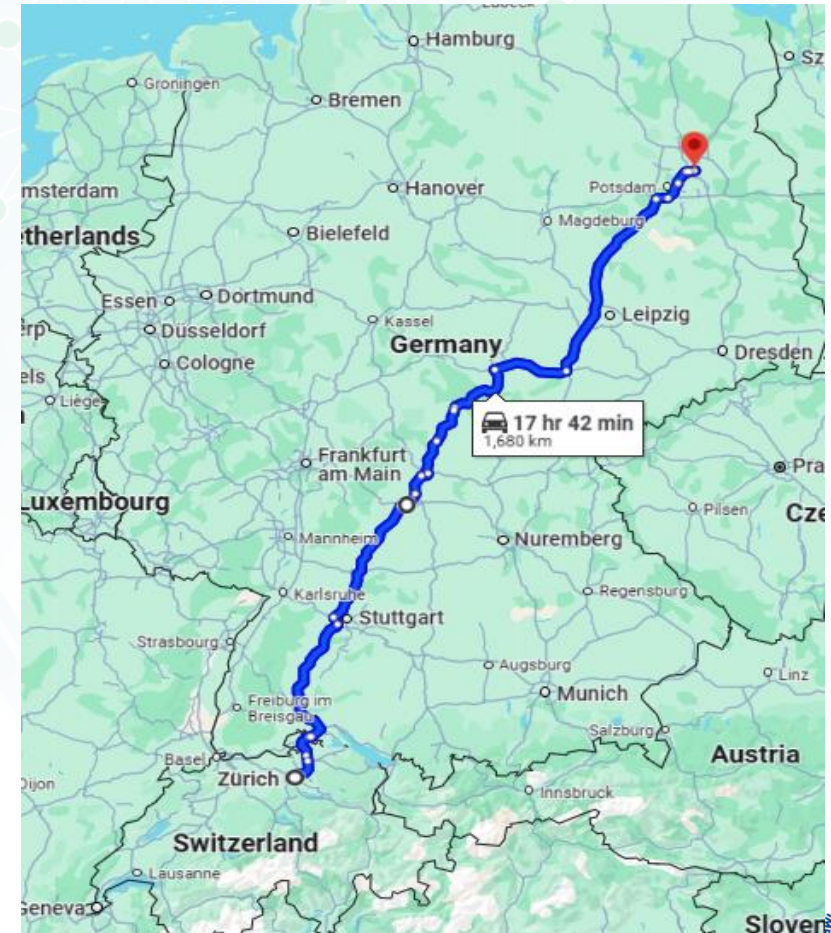
Daily treatments produced up to 2.2 kg of plastic waste and excess electricity, exponentially increasing my household's carbon footprint

Using the APD cyclor for 9 hours each night generated approximately:

- 396 kg of CO₂ emissions equivalent per month from plastic waste alone
- 12.8 kg of CO₂ emissions per month from electricity use

This translates to 1,629 km – roughly equivalent to the emissions generated by driving round-trip from Berlin to Brussels in an average gas-powered automobile!

Hmida, Mohamed Ben, et al. "Water implications in dialysis therapy, threats and opportunities to reduce water consumption: a call for the planet." *Kidney International* 104.1 (2023): 46-52.
Medline.com



My family was impacted physically from handling and disposing of PD waste

My husband, three daughters, now aged 18, 19, and 23, and I collectively spent over 2 hours each week disassembling boxes and discarding used dialysate bags, drain bags, supplies, and packaging.

- No guarantee that flattened boxes that were placed in bins would be recycled
- Obtained 2 additional bins from the city for a total of 4 bins that would still overflow at the time of weekly garbage pickup

There also was considerable emotional impact

As the years of PD droned on, I experienced increased stigma due to the conspicuous waste

- Signaled my medical issue to my neighbors
- Experienced embarrassment from the excessive waste at our curb every garbage pickup day
- Felt guilty about contributing to plastic pollution and high energy consumption
 - This was compounded by having to toss at least 2-3 damaged dialysate bags each month, adding further to the plastic waste
 - After my transplant, my PD center would not accept my remaining solution and supplies – told me to throw them away

Despite these challenges, we managed to stumble upon an unexpected benefit

We devised a system to drain my effluent into the plant beds in our backyard in the warmer months

- Trash collectors complained about spillage from incompletely drained bags
- Placed the drain line directly into the toilet, causing costly plumbing issues in our old historic home
- The upside was a bountiful garden that was nourished by effluent



Key Considerations

- During PD training, care teams should educate patients on the environmental impacts and offer advice on local disposal options, if available
- Integrate environmental questions into quality-of-life surveys, such as the RAND Kidney Disease Quality of Life (KDOL-SF) in the US
- Implement recycling protocols and/or programs at dialysis centers
- Advocate for greener packaging and recyclable components from manufacturers



Critical to share the full impact of PD with patients and discuss ways to mitigate the environmental factors