INTRODUCING THERANOVa FOR EXPANDED HEMODIALYSIS [HDx]
**THE PROBLEM**

Conventional/large middle-molecules are linked to chronic inflammation, cardiovascular disease (CVD), secondary immunodeficiency, erythropoietin resistance, symptom burden and other dialysis related comorbidities.\(^1\)\(^-\)\(^6\)

Accumulation of these uremic toxins result in elevated concentrations in patients with Kidney Failure (KF), and may cause adverse biologic effects.\(^1\)

Traditional high-flux membranes have limited ability to remove conventional and large middle molecular uremic toxins (up to 45,000 Da).\(^1\)\(^,\)\(^4\)\(^-\)\(^6\)

**ACCUMULATION OF CONVENTIONAL/LARGE MIDDLE MOLECULES MAY CONTRIBUTE TO DISEASE BURDEN IN KIDNEY FAILURE PATIENTS\(^1\),\(^2\)**

In a National Kidney Foundation (NKF) online survey, majority of patients (n=359) receiving in-center hemodialysis reported experiencing interdialytic symptoms.\(^9\)

- **62%** of patients feel fatigued/washed out
- **40%** of patients report 4+ hours of recovery time
- **6%** of patients skipped a dialysis session

These QoL symptoms were severe and correlated with longer recovery time following hemodialysis, as well as shortened and skipped hemodialysis sessions.\(^9\)
**THE SOLUTION**

The Theranova MCO membrane’s unique design includes a tight pore size distribution, with increased nominal pore size and pore density that delivers a steep sieving curve resulting in higher permeability for uremic toxins (up to 45,000 Da), while selectively retaining endotoxins/essential proteins and maintaining stable albumin levels.  

The minimized diameter (180 microns) of the Theranova membrane enhances internal filtration expanding solute removal, creating a stable separation profile and selectivity throughout treatment.

**HDx ENABLED BY THERANOVA: ONE STEP CLOSER TO THE NATURAL KIDNEY**

**THERANOVA 4 KEY DIFFERENTIATORS**
- Higher Permeability
- Selectivity
- Retention
- Enhanced Internal Filtration

**THE THERANOVA PAES/PVP ASYMMETRICAL AND POROUS MEMBRANE HAS THREE DISTINCT LAYERS**

1. Selective inner layer
2. Sponge-like intermediate layer
3. Finger-like support structure. The selective layer is the most important layer in the structure of the membrane including the permeability profile.

**PERFORMANCE CHARACTERISTICS OF VARIOUS BLOOD FILTRATION MEMBRANES**

- Conventional Middle Molecules 500 Da - <25 kDa
- Large Middle Molecules 25 kDa - 45 kDa
- Small Molecules <500 Da
- Essential Proteins

**Classification of uremic solutes by molecular weight (Daltons)**

1. Urea (60 Da)
2. Phosphate (96 Da)
3. PTH (9,500 Da)
4. Beta_2 microglobulin (12 kDa)
5. Cystatin C (13 kDa)
6. Myoglobin (17 kDa)
7. Kappa free-light-chains (23 kDa)
8. Complement factor D (24 kDa)
9. Interleukin-6 (25 kDa)
10. Alpha 1 microglobulin (33 kDa)
11. YKL-40 (40 kDa)
12. Lambda free-light-chains (45 kDa)
13. Albumin (67 kDa)

**Small Molecules** < 500 Da
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- Beta_2 microglobulin (12 kDa)
- Cystatin C (13 kDa)
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- Lambda free-light-chains (45 kDa)
- Albumin (67 kDa)

**Large Molecules** 25 kDa - 45 kDa
- Beta_2 microglobulin (12 kDa)
- Myoglobin (17 kDa)
- Kappa free-light-chains (23 kDa)
- Complement factor D (24 kDa)
- Interleukin-6 (25 kDa)
- Alpha 1 microglobulin (33 kDa)
- YKL-40 (40 kDa)
- Lambda free-light-chains (45 kDa)
- Albumin (67 kDa)

**Essential Proteins**
- Albumin (67 kDa)

**Classification of uremic solutes by molecular weight (Daltons)**

HDx ENABLED BY THERANOVA: NOW IS THE TIME TO CHANGE EVERYTHING

In a post-hoc analysis of a RCT*, HDx therapy showed a significant reduction of 45% (p=0.049) in all-cause hospitalizations, along with an annual per patient cost reduction of ~$4,324.24


Simply change the dialyzer membrane to expand clearance and CHANGE EVERYTHING for your patients.

FOR MORE DETAILS CONTACT YOUR BAXTER REPRESENTATIVE OR VISIT HTTPS://HEMODIALYSIS.BAXTER.COM/HDx
REFERENCES:
8. Aoki J, Ikari Y. Cardiovascular Disease in Patients with End-Stage Renal Disease on Hemodialysis, Ann Vasc Dis Vol 10, No 4; 2017; 327-337.
23. Tran H et al. Reduction in All-Cause Hospitalization Events Seen in a Randomized Controlled Trial Comparing Expanded Hemodialysis vs. High-Flux Dialysis. ADC Conference 2021 Poster #1070.

The Theranova Dialyzer is indicated for patients with chronic kidney failure who are prescribed intermittent hemodialysis. It provides an expanded solute removal profile with increased removal of various middle and large molecules (up to 45 kDa) that may play a pathologic role in the uremic clinical syndrome. The Theranova Dialyzer is not intended for hemofiltration or hemodiafiltration therapy. The total extracorporeal blood volume for the Theranova Dialyzer and the set should represent less than 10% of the patient’s blood volume.

For Single Use Only

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