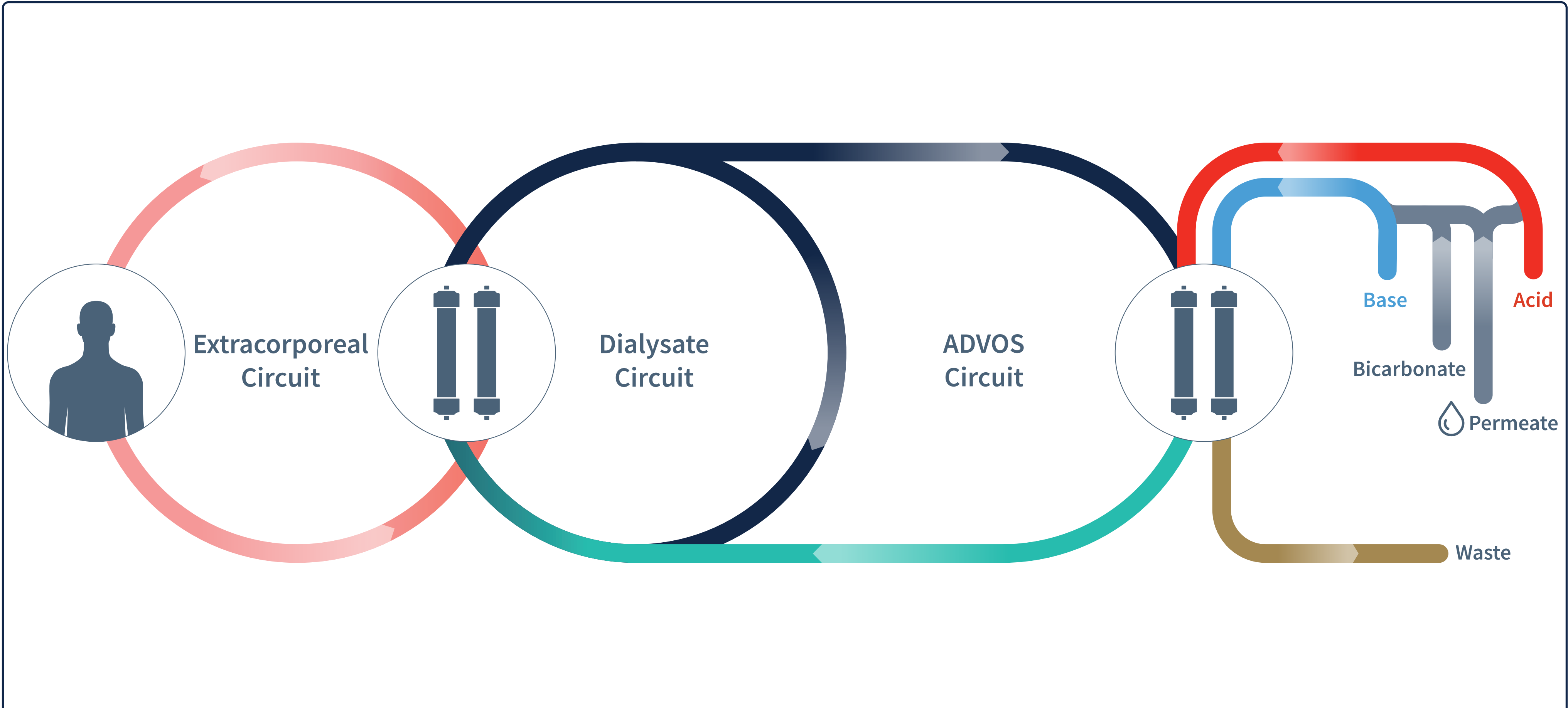


ADVOS MULTI THERAPY - NEXT LEVEL IN BLOOD PURIFICATION

Innovative Regulation of Blood pH with Integrated Organ Support



FUNCTION	WHO?	WHAT?	HOW?		 Kidney	 Liver	 Lung	 ADVOS
Removal of water-soluble substances		Removal of e.g. creatinine, urea, ammonia, lactate	Glomerular filtration and tubular processing					
		Indirect excretion via kidney or directly via bile	Metabolism of toxins into water-soluble substances (e.g., ammonia)					
		Removal of all above mentioned substances	<u>In the extracorporeal circuit</u> Diffusion of toxins from blood into the dialysate through the dialysers	<u>In the ADVOS circuit</u> Filtration of toxins from the dialysate into waste				
Removal of protein-bound substances		Removal of e.g. indoxyl sulfate, nitrate and bilirubin	Secretion of toxins with specific membrane transporters (e.g. OAT, OCT) into urine					
		Removal of e.g. bilirubin, bile acid and copper	Secretion of hepatic, hydrophilically altered toxins into bile or blood, in blood transport of substances bound to human albumin					
		Removal of all above mentioned substances	<u>In the extracorporeal circuit</u> Removal of toxins from blood using albumin-enriched dialysate	<u>In the dialysate circuit</u> Transport of albumin-bound toxins	<u>In the ADVOS circuit (continuous)</u> Detoxication of the dialysate from toxins by filtration based on chemical-physical principles			
Correction of respiratory acidosis		Removal of H ⁺ and production of HCO ₃ ⁻	- Excretion of H⁺ as titratable acid (H⁺) with urine buffers (HPO₄²⁻, NH₄⁺) - Production and transport of HCO₃⁻ from tubule cells into blood					
		Adjustable removal of H ⁺ and CO ₂ and production of HCO ₃ ⁻	<u>In the extracorporeal circuit</u> Diffusion of H ⁺ from blood into the dialysate (concentration gradient) and binding to human albumin and phosphate and production of HCO ₃ ⁻	<u>In the ADVOS circuit</u> - Removal of HCO₃⁻ both in the base (depending on bicarbonate concentration of base concentrate) and in the acid circuit of the ADVOS multi circuit - Removal of CO₂ in the acid circuit				
Correction of metabolic acidosis		Removal of CO ₂	Respiration					
		Removal of H ⁺	Cori cycle: Conversion of lactate to glucose and removal of H ⁺ with production of HCO ₃ ⁻					
		Removal of H ⁺ and CO ₂ and production of HCO ₃ ⁻	<u>In the extracorporeal circuit:</u> Support of the acid-base function of liver and kidney - Diffusion of H⁺ from blood (low pH) into the dialysate (high pH) and binding to human albumin and phosphate and production of HCO₃⁻ - Further increase of the HCO₃⁻ level in the blood, depending on the concentration of the base concentrate					