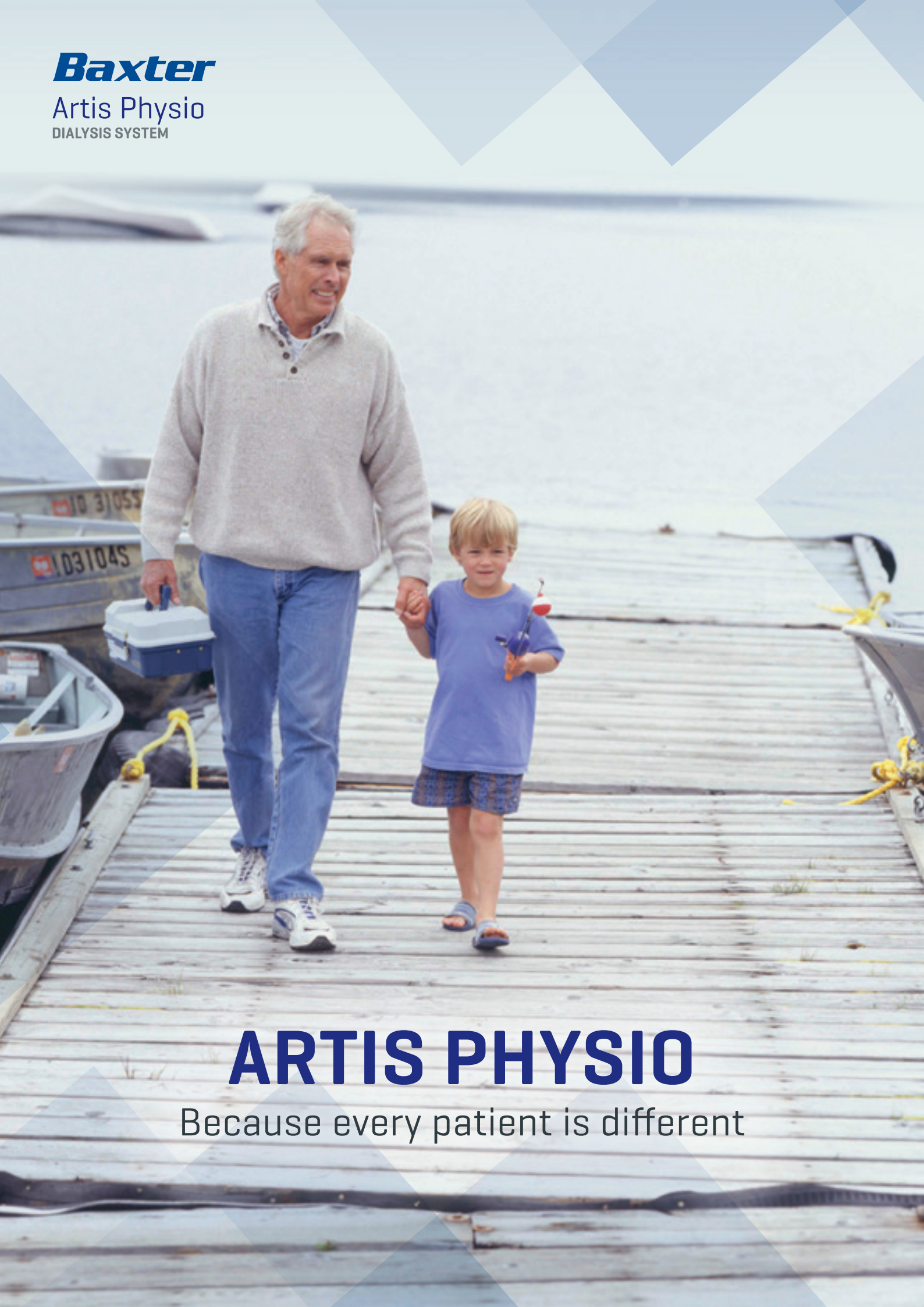
Baxter

Artis Physio

DIALYSIS SYSTEM



ARTIS PHYSIO

Because every patient is different

ARTIS PHYSIO SYSTEM BECAUSE EVERY PATIENT IS DIFFERENT

The **Artis Physio** dialysis system is inspired by Baxter's passionate commitment to hemodialysis. It provides a range of treatment modalities to meet patient needs through innovative technologies that are designed to simplify everyday operations and enhance user experience.

INDIVIDUALIZED TREATMENT: OVERCOMING HEMODIALYSIS CHALLENGES

Despite many advances in hemodialysis therapy (HD), dialysis-related complications, such as intradialytic hypotension (IDH), dizziness and fatigue are still frequent[1] and can impact the effective delivery of prescription.[2]

Complications associated with end stage renal disease vary between patients, and require different treatment modalities, tailored to individual needs.

The **Artis Physio** system gives you the ability to choose and adapt the therapy to the patient's needs and take advantage of monitoring functions designed to deliver treatment to clinical targets consistently.

ARTIS PHYSIO SYSTEM – DESIGNED FOR EACH AND EVERY PATIENT

INDIVIDUALIZED TREATMENT WITH THE **ARTIS PHYSIO** DIALYSIS SYSTEM

The **Artis Physio** dialysis system provides necessary treatment modalities and tools to individualize treatments. It combines technological innovation with clinical expertise to offer a range of treatment options such as the **BiCart Select** citrate system, the **HemoControl** and **UltraControl** modalities.

BICART SELECT CITRATE SYSTEM

The acetate-free, citrate-containing dialysis fluid provides benefits for the patient in regard to:

- tolerance to the treatment[7,9]
- management of acid-base status[3,9]
- dialysis-induced thrombogenicity[9]

HEMOCONTROL TREATMENT MODALITY

This modality manages fluid removal in a more physiological way, reducing the incidences of intradialytic hypotension (IDH).

- Minimized cardiovascular stress reducing the risk of IDH[12,14]
- Favourable impact on treatment tolerance and post-dialysis recovery times[26]

ULTRACONTROL TREATMENT MODALITY

This 'one-button' hemodiafiltration (HDF) modality ensures consistent high convective volumes in HDF post-dilution.[17,18,28]

- Automated delivery of high volume post dilution with minimal alarms and nurse interventions[17]
- Lower risk of all-cause mortality with high-volume HDF[19] in targeted patient groups

THE **BICART SELECT** CITRATE SYSTEM PROVIDES AN ACETATE-FREE CITRATE-CONTAINING DIALYSIS FLUID

PATIENT COMFORT MATTERS

The level of acetate in standard bicarbonate dialysis fluid is much higher than the normal plasma level and this can cause hemodynamic instability, inflammation, and post-dialysis malaise.[8] The **BiCart Select** citrate system offers a biocompatible replacement of acetic acid to provide citrate-containing dialysis fluid with all the beneficial properties of citrate.

THE **BICART SELECT** CITRATE SYSTEM IS PART OF THE **BICART SELECT** SYSTEM

The **BiCart Select** system is an effective solution for a tailored prescription of the electrolytes in dialysis fluid. It also offers convenient handling and facilitates the storage of concentrates.

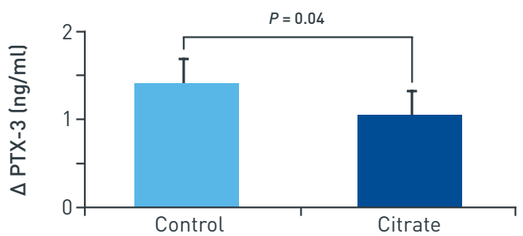
The system includes:

- The **BiCart** cartridge containing dry sodium bicarbonate
- The **SelectCart** cartridge containing dry sodium chloride
- The **SelectBag One** or the **SelectBag** citrate container providing electrolytes

BICART SELECT CITRATE SYSTEM IMPROVES TOLERANCE TO TREATMENT

In a clinical study using **SelectBag** citrate concentrate, citrate dialysis fluid reduced the intradialytic rise in pentraxin 3 (PTX-3), an inflammatory marker induced by hemodialysis treatment.[9]

Significantly lower intradialytic rise in PTX-3, a marker of inflammation[9]



Reduced intra-dialytic increase in the inflammatory marker pentraxin 3 when using **SelectBag** citrate dialysis fluid compared to control: +1.1 ±0.3 vs. +1.4 ±0.3 ng/ml, p=0.04, n=20, Data are shown as means ±SEM, Adapted from Grundstrom.[9]

HEMOCONTROL MODALITY CAN REDUCE THE RISK OF INTRADIALYTIC HYPOTENSION[14]

The **HemoControl** modality: an integrated function for fluid removal adapted to each patient's fluid status.

INTRADIALYTIC HYPOTENSION: A DAILY CONCERN

Episodes of intradialytic hypotension (IDH) can occur in up to 30% of hemodialysis sessions placing a significant burden on your clinic and patient.[5] Myocardial stunning with regional wall motion abnormalities (RWMA) is common in HD sessions and is associated with higher UF rates, which are also key risk factors for cardiovascular (CV) events and mortality.[6]

HEMOCONTROL MODALITY: CONTROLLING THE REDUCTION OF THE BLOOD VOLUME

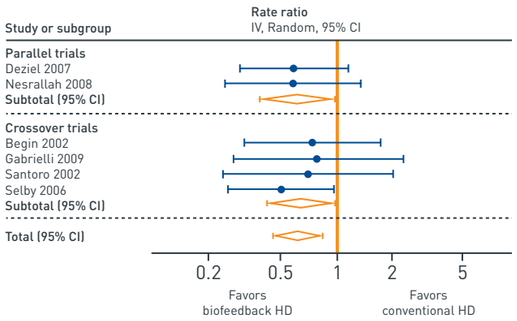
The **HemoControl** modality is a biofeedback control of the blood volume; it removes fluid according to the physiological tolerances of the patient. The **HemoControl** modality proactively controls the blood volume reduction by regulating ultrafiltration rate and dialysate sodium. This keeps the blood volume in a physiological range and reduces the risk of intradialytic hypotension, compared to conventional HD.[11,12,14]

The **HemoControl** modality has many benefits in hypotension-prone HD patients, including:

- Minimized cardiovascular stress reducing the risk of IDH[12,14]
- Reducing stress on the cardiovascular system.[12]
- Improved treatment tolerability and shorter post-dialysis recovery times[26]
- Reducing the number of interventions[13,32]

REDUCE THE RISK OF INTRADIALYTIC HYPOTENSION WITH **HEMOCONTROL** MODALITY

39% relative risk reduction in the incidence of IDH with Biofeedback HD versus conventional HD[14*]
P = 0.005



The Biofeedback HD versus the conventional HD with constant dialysate conductivity and ultrafiltration rate; outcome: IDH, relative treatment effect estimate, HR 0.61; 95% CI, 0.44–0.86, Adapted from Nesrallah[14]

* Results from a meta-analysis of 6 clinical studies (2 randomised, parallel-arm, controlled; 4 randomised, crossover) which reported IDH frequency. Patients were aged >18 years; n ranged from 7 to 60; duration ranged from 4 to 24 weeks. Important sources of bias within studies included lack of blinding of all participants, study personnel and possibly outcome adjudicators and analysts. Data from published randomised studies of biofeedback dialysis lacked sufficient power to evaluate its impact on major outcomes such as survival and hospitalisation rates.[14]

SIMPLE AND EFFECTIVE HIGH VOLUME POST-DILUTION HDF WITH THE **ULTRACONTROL** MODALITY

The **Artis Physio** system offers you the benefits of the **UltraControl** modality at the touch of a single button, and makes it possible to deliver high volume post-dilution HDF consistently.

CLINICAL BENEFITS OF HIGH VOLUME POST-DILUTION HDF

The ESHOL clinical trial has demonstrated improved survival and a lower hospitalization rate for patients treated with high blood flow rate when high volume post-dilution HDF can be delivered consistently.[19] Although this sounds simple, the routine implementation requires a high-performing vascular access and poses challenges, such as excessive hemoconcentration and subsequent high-pressure alarms, or even clotting.

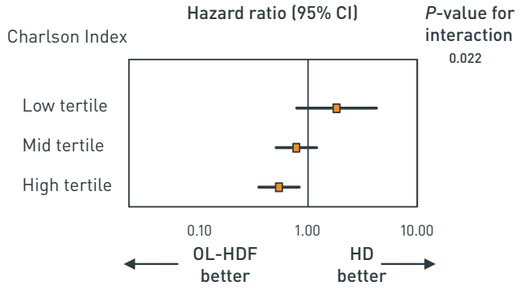
ULTRACONTROL MODALITY: CONTROLLING THE TMP

The **UltraControl** modality performs regular and automatic transmembrane pressure (TMP) scans, and makes the necessary adjustments to the TMP value, resulting in high filtration performance of the membrane. This means the session can be completed with fewer pressure alarms, manual adjustments and nurse interventions are minimized, and the total convective volume is significantly higher, compared with conventional HDF systems.[16,17,18]

CLINICAL BENEFITS IN RELATION WITH COMORBIDITY INDEX

High volume post-dilution HDF offers excellent blood purification capacity over the full range of solutes, from urea to $ß_2$-microglobulin, and reduces the risk of all-cause mortality.[19] Sensitivity analysis of the ESHOL study data indicated that the favorable effect of HDF was pronounced in patients with a high comorbidity index.[19]

Interaction between the HDF effect on all-cause mortality and patients' Charlson comorbidity index (excl. diabetes).



Adapted from original publication of the ESHOL study results[19]
Maduell F, Moreso F, Pons M, et al. High-efficiency postdilution online hemodiafiltration reduces all-cause mortality in hemodialysis patients. J Am Soc Nephrol. 2013;24(3): 487-497.

RELIABLE AND QUALITY-ASSURED DOSE DELIVERY

BECAUSE EVERY SESSION IS DIFFERENT

Hemodialysis is a complex process and unplanned events may occur, leading to significant variability in the delivery of the prescription. This can reduce the potential clinical benefits for the patient.
An approach based on the principles of quality assurance may be helpful to ensure that the therapy is effectively delivered.

QUALITY-ASSURED DIALYSIS

The **Artis Physio** dialysis system provides a unique blend of established and innovative technologies that you can rely on to consistently achieve the treatment goals for your patients, through:

- Automated processes adaptable to various clinical procedures
- Setting of treatment parameters with intuitive user interface and Patient Card
- Early detection of deviation from prescription with the **Diascan** monitoring system and SmartScan feature
- Individualized sessions with **HemoControl** and **UltraControl** modalities
- Comprehensive summary of treatment data for traceability and clinical analysis

CONSISTENT DELIVERY OF PRESCRIPTION

The advanced technology and tools integrated in the **Artis Physio** dialysis system aim at providing you with quality-assured dialysis which may reduce variability in treatment delivery and contribute to improved clinical outcomes. With the **Artis Physio** system, the most effective modalities can be used routinely with no additional burden on the clinical staff for reliable prescription delivery.

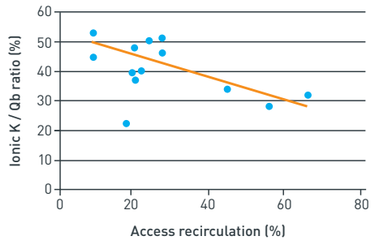
TREAT EACH AND EVERY PATIENT WITH CONFIDENCE

Consistently achieving the dialysis dose can reduce the risk of all-cause mortality and is essential if patients are to receive the benefit of treatment.[23,24,25]

DELIVERING THE PRESCRIBED DIALYSIS DOSE IN DUE TIME

The **Diascan** monitoring system is an integrated feature of the **Artis Physio** dialysis system that provides an accurate and real-time measurement of the dialysis efficiency: early indication of the treatment result is provided for optimization of settings if necessary, allowing patients to reach their treatment goals at each treatment.[20-22,29]

The ratio ionic clearance (Ionic K) / blood flow rate (Qb) is useful to identify recirculation in the vascular access,[29] one of the major causes of impaired delivery of dialysis dose

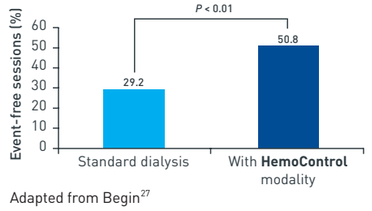


Adapted from Mohan[29]

PREDICTABLE AND EFFICIENT SESSIONS

The reduction of IDH with the **HemoControl** modality significantly increases the number of event-free sessions in hypotension-prone HD patients.[27]
The prescribed post-dialysis weight is achieved with less complication,[27,32] making the session more effective and predictable. Patients also benefit from a shorter recovery time,[26] facilitating post-treatment procedures.

74% relative increase in event-free sessions with **HemoControl** modality[27]

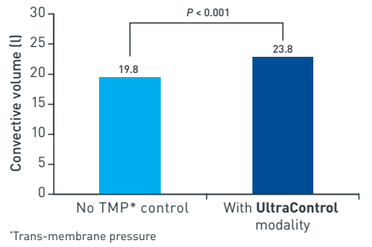


Adapted from Begin[27]

CONSISTENTLY ACHIEVE HIGH VOLUME POST-DILUTION HDF

The **UltraControl** modality is a simple and effective approach to HDF. The complex adjustments required for HDF post-dilution are handled automatically by the **UltraControl** modality to ensure high convective volumes, session after session.[18,17,28] Treatments run with minimal alarms and nurse interventions, compared with systems driving infusion volume without TMP control.[17]

+20% relative increase in convective volume[17]



*Trans-membrane pressure

Adapted from Panichi[17]

THE **ARTIS PHYSIO** SYSTEM PUTS YOU IN CONTROL OF THE TREATMENT DELIVERY

The modern dialysis clinic is a demanding environment. New technology can make a real difference when it simplifies routine practices and reduces the strain of daily work. The **Artis Physio** system is a product of innovative technology designed with help from human factor engineering and applied research in physical or cognitive ergonomics. Our focus on clinic staff is a top priority. In developing the **Artis Physio** system, Baxter has utilized a user-centered methodology aimed at carefully analyzing every step of the dialysis process to optimize workflow in clinics and reduce physical stress.

TAKE CONTROL OF THE TREATMENT

The touch-screen graphical interface places the user in control with the NavPad controller and intuitive help-on-screen feature.[31] The five-button NavPad mirrors the normal steps of treatment delivery, allowing you to logically access critical information. You can easily navigate to all working environments, allowing you to manage prescriptions, supervise treatment, access blood and fluid settings, as well as generate treatment reports.

Naturally aligned with workflow

Logically grouped by function

The help-on-screen feature provides step-by-step instructions, guiding the operator through optimal handling when running unusual procedures.

ARTISET BLOOD CIRCUIT:
ONE-BUTTON SET-UP

The **Artis Physio** system features an automatic loading process of the **ArtiSet** blood circuit, which also allows one-button auto-priming. Unlike conventional blood circuits, the **ArtiSet** blood circuit requires fewer procedural steps to set up[30] and the priming procedure is initiated at the touch of a single button.

The **Artis Physio** system design has grouped all operator actions in one single sequence to prevent waiting times. This means the preparation and priming may be completed with no operator intervention. There is no need to rotate the dialyzer or adjust levels in the chambers.

This automated priming process has the potential to free up time and resources within your clinic without compromising safety.

EVACLEAN:
WASTE FREE DRAINING

The priming fluid is automatically drained using the **Evaclean** function. This integrated device eliminates the handling of draining bag and removes excess waste in your clinic.

THE **ARTIS PHYSIO** SYSTEM IS READY FOR ANY DIALYSIS ROOM

The **Artis Physio** dialysis system incorporates all of Baxter's dialysis experience and uses proven technology to ensure smooth integration in the dialysis room.

ADAPTABLE TO VARIOUS CLINICAL ENVIRONMENTS

The **Artis Physio** system includes a number of parameters that can be adjusted to meet the many requirements of a dialysis room for flexible clinical integration.

Our highly professional team of experts works with each clinic to ensure that all features of the **Artis Physio** system can be easily integrated into your workflows.

We support this with our strong global service teams that are dedicated to providing you with the tools and support that ensure a successful and short learning period.

THE HYGIENIC CHAIN: 30 YEARS OF PURE WATER FOR YOU AND YOUR PATIENTS

Water quality is a critical factor in dialysis care. Contaminants in the water may affect the efficiency of therapy, performance, and maintenance of equipment. Baxter has designed its entire dialysis offering to protect your patients from the hazards of water contaminants and to help you provide the most beneficial dialysis treatment for your patients.

The **Artis Physio** system allows the user to take advantage of Baxters experience in maintaining fluid quality through:

- Proven and highly efficient heat disinfection
- Programmable disinfection with full auto-stop and auto-start
- Synchronized process with the Central Water Plant for end-to-end disinfection
- Disinfection history for quality control and traceability

EFFICIENT AND SAFE CARE OF THE FLUID PATH

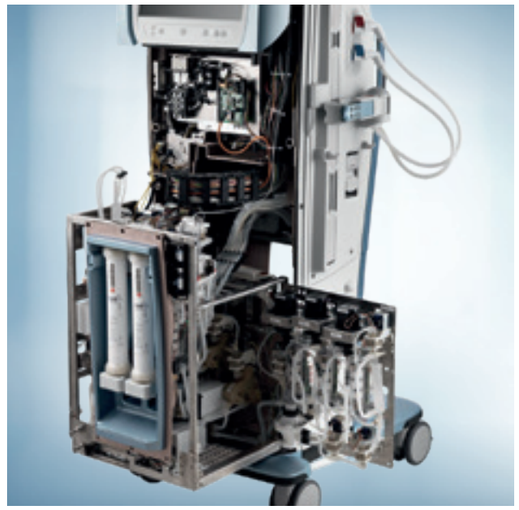
The **Artis Physio** system is designed to operate with the **CleanCart** cartridge allowing you to run daily cleaning, disinfection, and decalcification; removing the need for chemicals to be present in the dialysis room.

ADVANCED CONNECTIVITY FOR SIMPLIFIED WORKFLOW

Today's clinical environment strives for digitization, improved quality control, and operational efficiency. The **Artis Physio** system is ready to address this challenge.

Connectivity to the **Artis Physio** system allows seamless integration to your IT network. Treatment data can be transferred and stored for traceability and quality assurance.

Data can also be accessed for off-line analysis to better manage clinical outcomes for every patient, individually.



MAINTENANCE AND SUPPORT MADE SIMPLE

The modular design of the **Artis Physio** system allows access to all aspects of the system. The integrated service interface provides you with a range of powerful tools, including presets, calibration, and troubleshooting features. A real-time recording of technical parameters is also stored in an exportable BlackBox for advanced off-line analysis. As part of the Baxter family, you can rely on our customer support to help you perform maintenance procedures and minimize unnecessary downtime.

ARTIS PHYSIO SYSTEM
AN ORIGINAL AESTHETIC APPEAL

The modern and innovative design of the **Artis Physio** dialysis system is recognized by healthcare professionals and patients, and may contribute towards making the treatment room a pleasant and relaxed environment.

Artis Physio is Baxter's most advanced in-center dialysis system to date. With a range of modalities designed to reduce treatment complications and improve patient comfort, the **Artis Physio** system allows you to consistently achieve your treatment goals.

Easily integrated into the clinic, user-friendly, and efficient, the **Artis Physio** system allows you to deliver individualized treatment. This is crucial as every session is different and every patient is different.

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