

# share *for* care

## RECIPE

Great tasting pancakes with a sweet and fruity twist

## A PATIENT'S STORY

Becoming a mother on dialysis

## HEALTHY LIFESTYLE

Sleep: There's almost nothing more important than getting the sleep you need

## TRAVEL STORY

## KERKRADE

Full of history and charm, this Dutch town will take winter vacationers by surprise



# share for care

Dear readers,

To achieve great things, you sometimes have to believe in the impossible. Ten years ago, when researchers started investigating the development of a portable artificial kidney, it looked practically unattainable. But we can report now that science has already made a giant leap forward in developing the "kidney in a backpack."

Similarly, it used to be thought that for women who need dialysis, becoming pregnant and having a healthy baby was extremely unlikely. But in fact it is possible, if doctor and patient both pull together – the way they did in this issue's encouraging patient story from Orenburg in Russia.

Welcome to the fourth issue of *share for care!* Once again, this issue aims to provide information about important concerns involving dialysis and give you support as you go about everyday life. The special topic this time is the first in an occasional series featuring details about the blood results that are uniquely important for patients with renal insufficiency, explaining what the values mean. In this issue, the focus is on urea and creatinine. You can also find out why you should include strength training in your exercise program, what you can do to fight tiredness after dialysis, and how to get a restful night's sleep.

This issue's recommended travel destination is the southern Netherlands, which has a particularly romantic atmosphere in wintertime. If the weather's right, there may be frozen Dutch canals for you to go skating on after your vacation dialysis. Or you can explore historic palaces and monasteries and visit one of the region's beautiful Christmas markets. But even if you'd rather stay at home – the important thing in winter is: enjoy this time of year specially and take good care of yourself. The gloomy months can be an opportunity to enjoy some peace and quiet and do things you often have no time for in the hectic everyday rush – for example, bringing back childhood memories. When was the last time you built a snowman?

Lots of other ideas to help you put together a wellness program at home are also included in this issue. Helpful information and plenty of delicious recipes are also available via the Renal Care Compass app from B. Braun. Just download it to your smartphone to get comprehensive practical support for your daily nutrition plan.

As always, we look forward to receiving your questions, comments and suggestions. Enjoy the winter!



Christopher Boeffel



Martin Kuhl

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### SPECIAL TOPIC

Urea and creatinine: What do these important blood values tell you about your condition?

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Learn how to create a cozy and comfortable routine to relax your way through the long winter months

## NO GENDER EQUALITY IN DIALYSIS

Women are affected by chronic kidney diseases almost as often as men. Surprisingly, there are fewer women on dialysis than men. A possible explanation could be that women partially have a slower progression of the disease. However, women's longer life expectancy theoretically should lead to more women being affected by CKD, as it is a typical disease in the elderly population.

Older women tend to be living on their own more often than men. This means they don't have support from a partner, for example — this may lead to a delay in the start of dialysis, or in some cases even to a decision not to have dialysis. In many countries, women have more limited access to health care than men. Women often are at a disadvantage for transplantation compared with men.

# NEWS

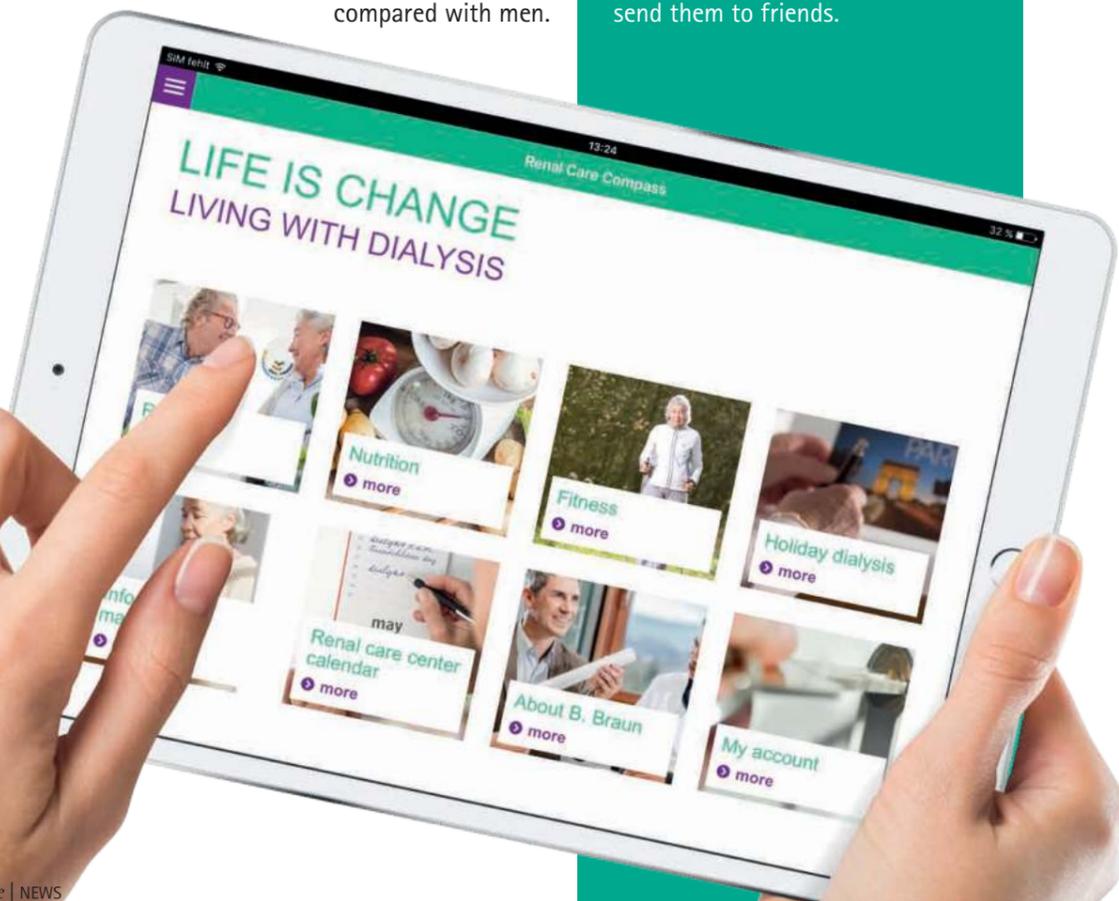
## USEFUL EVERYDAY AIDS

Living with renal failure is a big challenge for most affected people. The Renal Care Compass app from B. Braun provides patients with support through everyday life — with nutritional information, recipe suggestions for every day, a diet diary, and personal nutrition statistics. The app also makes it possible to show the statistics to other people or to send them to friends.



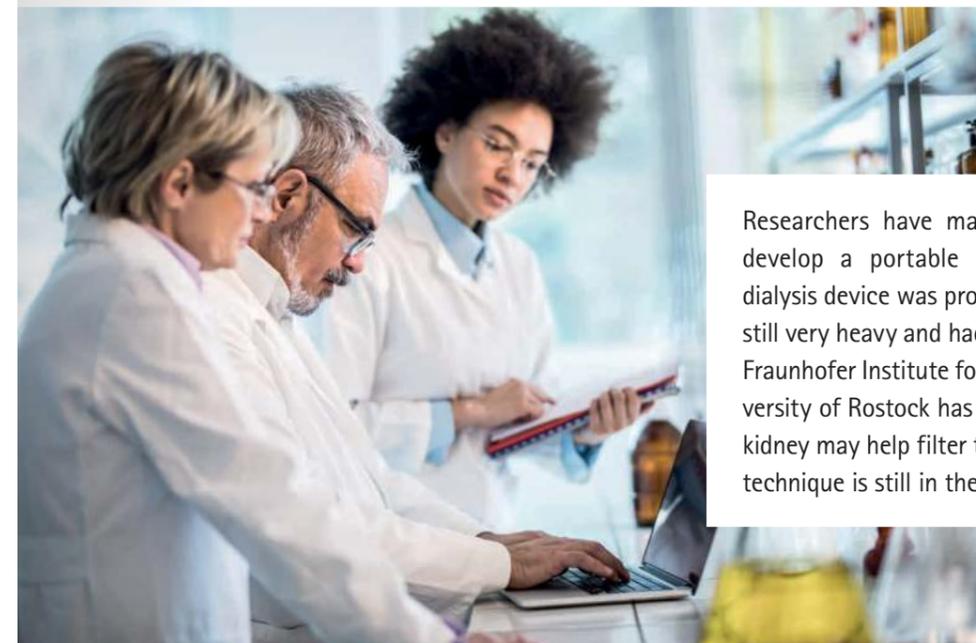
## STRENGTH TRAINING MAKES ALL THE DIFFERENCE

Regular training using weights is also effective for patients who have chronic kidney disease. If you train with weights in addition to doing stamina training on a treadmill, cycling, or rowing, you build up much more muscle mass, strength, and stamina. A study in Britain has shown just how effective strength exercises are when added to a stamina regimen: the group of patients who combined stamina and strength training gained almost twice as much muscle mass and three times as much strength as those who only did stamina training.



## FRESH HOPE FOR A "KIDNEY IN YOUR BACKPACK"

Researchers have made a major step forward in efforts to develop a portable artificial kidney. A prototype portable dialysis device was produced in the USA 10 years ago, but it was still very heavy and had several design problems. Research at the Fraunhofer Institute for Cell Therapy and Immunology at the University of Rostock has now shown that using ice in the portable kidney may help filter toxic waste products out of the blood. The technique is still in the development phase.



# UNDERSTANDING YOUR *blood values*

Blood analyses look complicated at first sight, with all the different details and values. But don't worry, you don't need a medical degree to get the hang of it. You can find out here which values are especially important for you.

## PART 1: UREA AND CREATININE

### Background information about the metabolism

Let's start with a bit of background information about the metabolism. Each of the cells in the body needs nutrients for it to function properly. Nutrients include, for example, carbohydrates, proteins, and fat, as well as vitamins and minerals. The body breaks these nutrients down into smaller components and transports them to the cells.

The waste products that are created when the nutrients are being processed then pass back out of the cell into the blood. Many of them are filtered out by the kidney and excreted in the urine. Besides that, we have substances in our body that are balanced by intake and excretion, like potassium and salt. A decrease of the excretion, e.g., by decreased urinary output, can lead to an excess of potassium when the intake of potassium is not decreased to the same extent. An excess of potassium can lead to arrhythmias of the heart. This applies to excess water, for example, as well as to potassium and sodium salts, phosphates, creatinine, and urea. If this did not occur, the waste products from the body's metabolism would quickly poison us.

### What are creatinine and urea, and what do they mean for healthy kidneys?

Urea is built by the body through breakage of pro-

teins. These proteins derive from nutritional intake, such as cheese or meat, and also from degradation of protein-rich body components, e.g., muscle tissue. Urea is excreted efficiently by healthy kidneys. Thus urea blood levels are very unlikely to increase if one's kidneys work properly. However, in patients with severely impaired kidney function, urea levels rise due to diminished excretion. Symptoms like dizziness, tiredness, or impaired consciousness are attributed to high urea levels.

Creatinine is generated by muscle metabolism. Individuals with high muscle mass generally produce more creatinine than those with low muscle mass. Creatinine is removed efficiently by healthy kidneys through a mechanism called filtration. The ultrafiltration performed during dialysis also removes creatinine. Creatinine levels can rise up to 1.2 mg/dl in healthy males with high muscle metabolism. However, creatinine levels >

> even much higher than 1.2 mg/dl in individuals with average body types and regular muscle metabolism if kidney function is impaired and

no dialysis is performed. There are no distinct symptoms associated with high creatinine levels.

Healthy kidneys take about a minute to clear creatinine from 100 milliliters of blood (the cleansing effect is called the glomerular filtration rate, or GFR for short). If the GFR falls below 15 milliliters per minute,

most patients will need dialysis in the near future. The GFR can be calculated by measuring the creatinine levels in the patient's urine and blood plasma.

## What does Kt/V mean?

You've probably also come across the term "Kt/V." It stands for the effectiveness of the dialysis procedure. "K" means the clearance rate. As mentioned, clearance is the speed with which the kidneys or the dialysis are able to filter a substance out of the blood — in this case, urea. The "t" stands for the dialysis time, and "V" means the volume of distribution of urea in the body. In practice, doctors often use what is called the Daugirdas formula — a more calculative version of the Kt/V assessment — that also takes into account the amount of urea that is newly produced during the dialysis procedure. The Kt/V should be 1.2 or greater.

# THE RENAL CARE COMPASS

# APP

You can influence the amounts of the metabolic products creatinine and urea in your blood between two dialysis appointments through diet and exercise.

Your doctor can give you more detailed information about this. In addition, your personal food

diary in the Renal Care Compass app can help you keep an eye on the amounts of protein and also salt, phosphate, and potassium that you take in each day. The app provides the most important information that kidney patients need about lots of different foodstuffs – and of course it also includes plenty of delicious recipe ideas.

 More information about blood values will be presented in the next issue.

SCAN THE QR CODE TO DOWNLOAD THE APP:



iOS



Android



# A baby despite everything

Only very few women who are dialysis patients are able to have a baby. Estimates indicate fewer than a thousand cases in which a dialysis patient has given birth – throughout the world. In the B. Braun Renal Care Center in Orenburg, Russia, however, as many as two patients in the one center – both cared for by chief physician Dr. Alexander Seliutin – have been able to become mothers. One of them, Olga G., reports here on her pregnancy and the birth of her baby.

When I was a child, I had an inflammation of the renal pelvis that became chronic. When I was 17, the doctors diagnosed renal cysts and nephrosclerosis. I underwent most of the examinations and treatments that were recommended for

me. Otherwise, I tried to let the disease have as little influence on my life as possible. In the end, however, it caught up with me – in the form of chronic renal failure.

More treatments and hospital stays were inevitable, but I went on living as normally as possible. I was involved in my job and successful in it, and I liked traveling. It worried me when the doctors advised me against getting pregnant: it would be too much of a burden for me, they said – my kidneys were too weak and would stop working altogether.

One winter I had two severe colds that led to a marked worsening of my hemoglobin and creatinine values. Then I discovered I was pregnant. I was 36 years old, and I decided to do everything I could to have the baby. In spite of my poor blood values, I felt quite well. I was only suffering from nausea a bit.

But then my kidney values got even worse. It was time to start dialysis – that day would have come sooner or later anyway, but it would have been later without the pregnancy. Due to the pregnancy, I had to spend four hours on the machine not just three times a week, but six. After a while, I was able to go home between the treatments. But only for a short time: the blood flow to the baby was too low, and I had to be admitted to the hospital again.

There was a high probability that I might develop a severe pregnancy disorder. But I was lucky... the due date kept getting closer and closer. The home stretch! The baby then arrived naturally, although it was a month before the expected date.

*My doctors and my family gave me tremendous support during the whole time I was pregnant. I'm very grateful to them, because without them I would never have experienced that long-awaited moment of happiness – the birth of my child.*



happiness

# Relaxed & active

ALL THROUGH THE YEAR

## TIPS

Even when it's cold and icy outside, there's a lot you can do to keep feeling well. Short trips and activities are helpful, as well as deliberately taking pleasure in enjoying your own home.

### Make things soft and cuddly for yourself!

Outside there's a gale blowing, and it's raining and snowing? This is the ideal opportunity for you just to spoil yourself. What about a cozy evening on the sofa, watching a movie you missed when it came out, or a long headphone session listening to your favorite opera?

### Turn your bathroom into a wellness spa

With candles, pre-warmed towels, fragrant bath essences, and fine music, you can turn your bathroom into an oasis of comfort. Just make sure you don't lie in the bath too long or have the water too hot, so that your skin doesn't get too soft. But you can be as generous as you like with the lotion afterwards.

### You can also get fit at home

Turn your living room into your own private fitness studio. For example, using the fitness video clips from the Renal Care Compass app. The clips show you how you can do a lot for your health with simple exercises that build up muscle strength effectively – and you can have fun at the same time.

### And you can play kids' games again at last!

If there's snow lying on the ground, you can get right in and roll a snowball until it's big, round, and thick! And why not build a snowman again? That was the best fun when we were kids. Try it out again, and don't forget pieces of coal for the eyes and a carrot for its nose. Happiness in wintertime can be so easy!

### Out into the fresh air!

Enjoy the cold weather by going for walks whenever you can and when you feel it'll be good for you. The clear winter air will put you in a good mood – well wrapped up, of course, with well-lined shoes, hat, scarf, and gloves.

## FAQs

### IS THERE ANYTHING THAT WILL REMIND ME TO TAKE MY DRUGS AT THE RIGHT TIMES?

If you find it difficult to remember your pills during your everyday routine, it's easy to get help. There are lots of useful medication aids – from a pillbox that sounds an alarm to tablet dispensers for the whole week. Not to mention the numerous digital aids and free apps for your smartphone that will remind you to take your drugs at the right time every day.

### WHAT CAN I DO ABOUT TIREDNESS AFTER DIALYSIS?

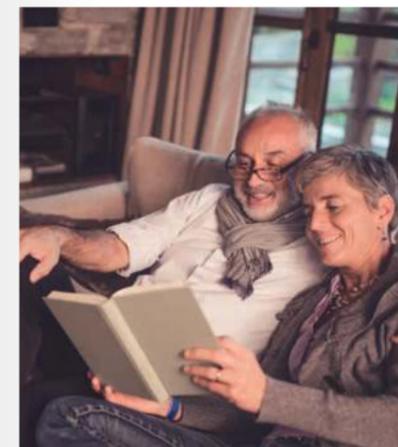
Lots of patients feel worn out after a dialysis session for multiple reasons, e.g., the removal of toxins and water or stress on the circulatory system. The best thing may be to take the rest of the day slowly and use the day after for some moderate exercise – for example, physical exercises, walking, cycling, or swimming. You'll find that exercise activities help you feel better, because they stimulate the metabolism and circulation.

### CAN THE PREPARATION TIME BETWEEN DIALYSIS TREATMENTS BE MADE SHORTER?

Unfortunately not. Dialysis may be an everyday fact for you in the meantime, but for your body to be able to cope with it well, it has to be carried out according to strict safety regulations. During the change-over period between patients, the treatment area and the machines have to be correctly prepared for the next session. This also includes disinfecting the dialysis chairs and devices and automatic checking of the dialysis machine. However scientists and technicians are working on technical solutions to shorten the preparation time.

### WHAT EFFECTS DOES DIALYSIS HAVE ON THE REMAINING KIDNEY FUNCTION?

Some forms of acute renal failure may improve during dialysis. If that happens, dialysis may only be needed until kidney function becomes sufficient again. In patients with chronic and end-stage renal kidney disease, however, renal function does not improve. These patients will need to have renal replacement therapy for the rest of their lives. Residual kidney function, meaning the kidney functions that are still present despite the necessity for dialysis, mostly disappears within six months after hemodialysis is commenced.



A vacation in beautiful countryside, with inspiration from historic towns, palaces, churches, and museums – Kerkrade and its surroundings in the Netherlands are also worth a visit in wintertime.

In the very south of the Netherlands, just over the German–Dutch border at Herzogenrath, the little town of Kerkrade with its beautiful surroundings is waiting for you to discover it. The B.Braun dialysis center in Elyse Hospital is located in the center of the town, which has a population of 45,000. All around the town lies the region of Zuid-Limburg, with its gentle hills and meadows, picturesque villages, and rich cultural, religious, and culinary traditions.

The region – lying in the triangle between Germany, Belgium, and the Netherlands – was a bone of contention between powerful sovereigns for many centuries. Emperors, kings, and bishops left their traces on it: past ages come to life again during visits to the numerous palaces, castles, and museums – and also on strolls through the historic towns with their churches, timber-framed houses, and water mills.

The monastery town of Sittard is famous for its magnificent churches.

The Kasteel Hoensbroek offers a lively impression of the lifestyle of its aristocratic owners. The ruins of Kasteel Erenstein today house a fashionable restaurant. And in Maastricht, 35 kilometers away, there are first-rate museums and cultural treasures, with a historic old town that is perfect for a shopping tour, along with trendy cafes and friendly beer bars.

Music lovers have their tastes catered for at the annual Orlando Festival, and a competition is held every four years at the World Music Contest, featuring tens of thousands of musicians and hundreds of thousands of visitors.

Like most Dutch towns, Kerkrade also keeps up its ice-skating tradition, which goes back to the early modern age. As the climate is milder nowadays, it's a special treat for people in Kerkrade when the canals that are typical features in Dutch towns freeze over now and then. If they don't, an ultramodern ice rink in the center of the town can make up for it. Another highlight in wintertime is the Christmas market in Rolduc Abbey, the largest monastery complex in the Netherlands, founded in 1104. You can even spend the night in the Abbey Hotel if you wish.

A visit to the little town of Valkenburg, with a history that goes back to the eleventh century, is particularly worthwhile at Christmastime. The town is

overlooked by the defiant-looking ruin of a castle, and Europe's largest and oldest underground (!) Christmas market is held in the commune's grotto.

## USEFUL INFORMATION

Travel: The nearest international airports are Cologne/Bonn and Düsseldorf. By car, Kerkrade can be reached from



Aachen in 20 minutes, or in an hour from Cologne or Düsseldorf. Kerkrade is also easily reached by rail, with a connection from Germany going via Herzogenrath. There are also public service bus connections from Aachen and Herzogenrath, for example. More information is available at <https://www.enjoy-kerkrade.com/>



## RENAL CARE CENTER

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## WINTER VACATION IN THE HEART OF EUROPE

# KERKRADE

# PANCAKES

## WITH CARAMELIZED APPLES AND PEARS

### TO MAKE THE PANCAKES

In a bowl, mix together the eggs, sugar, baking powder, milk, flour, and half a vanilla bean, scraped. In a non-stick pan, make four large pancakes.

### CARAMELIZED FRUIT COMPOTE

Remove the cores from the fruit and cut it into slices. Cook in water until al dente. Drain the water and caramelize the fruit in brown sugar, cinnamon, and half a vanilla bean (scraped), also in a non-stick pan. Plate with the hot pancakes and serve immediately.

Pancakes make a protein rich dessert. Apples and pears fit well into your diet since they are low in potassium.

### SERVES 4

- 4 eggs
- 2 TBSP of sugar
- 1 TSP of baking powder
- 350 ml milk
- 300 g flour
- Scrapings of 1 vanilla bean
- 1 apple
- 1 pear
- 2 TBSP brown sugar
- 1 pinch of cinnamon



Nutrition value (All nutritional information per serving. This corresponds to 1/4 of the total recipe.)								
Energy	Carbohydrates	BE	Protein	Fat	Potassium	Phosphate	Sodium	Water
437 kcal	76 g	6.3	15 g	8 g	226 mg	317 mg	312 mg	134 ml

These nutritional values represent average figures, which may differ in certain cases. They should be used only as a guide and cannot replace a consultation with your doctor or nutritionist.

# Just get a good sleep

Restful sleep is a basic requirement for good health, as the body recharges its own energy reserves during the night. But for this to happen, body and mind above all need to be given time to switch off.



Do you know the feeling: you go to bed tired, but in spite of that you still can't get to sleep? Or you wake up in the middle of the night and can't get back to

sleep? Then you're in good company — lots of people are all too familiar with this. Scientists are warning that sleep disturbances are becoming more and more frequent in modern industrial societies. The reasons for this are constantly increasing time pressure, constant accessibility via smartphone — and spending too much time in front of digital screens.

If you don't happen to be one of the talented people who are able to fall asleep naturally anywhere whenever they want, try out these methods of getting a good sleep:

1 Make sure you have a balanced daily rhythm. This includes regular sleeping hours, getting enough exercise in the fresh air, and eating a diet that's good for you. Try to keep as close as possible to the diet plan that you've worked out together with your dialysis team, and don't eat anything immediately before going to bed.

2 If you have problems and worries, then make sure you give enough space to them during the day — for example, by attending self-help groups or having discussions with friends or a therapist. This will let your mind relax better in the evening, and you won't have to spend the night brooding about things.

3 Leave enough time in the evening to wind down, and try to develop rituals that will help you — with relaxation techniques such as yoga, autogenic training, progressive muscle relaxation, or even a short walk. If these are done regularly, then even just a few minutes a day can be enough to let you get to sleep.

4 Be careful about using alcoholic drinks as "nightcaps." There's no harm in them in small amounts. But as soon as it's more than a small glass, alcohol can make it difficult to sleep through the night and can lead to lots of other problems.

5 If you want to have a relaxing drink, make yourself a cup of tea — for example, with sleep-inducing ingredients such as hops, lemon balm, or valerian. But as with all drinks, be sure to pay attention to your permitted daily fluid intake. However, be careful of over-the-counter sleep remedies. They may interact with your medication, and so you should always discuss this with your doctor. As with all drinks, be sure to pay attention to your permitted daily fluid intake.

6 Ideally, the last 90 minutes of your day should be free from any screens. So switch off the TV, smartphone, and computer in good time! What about reading a good book for a change instead?

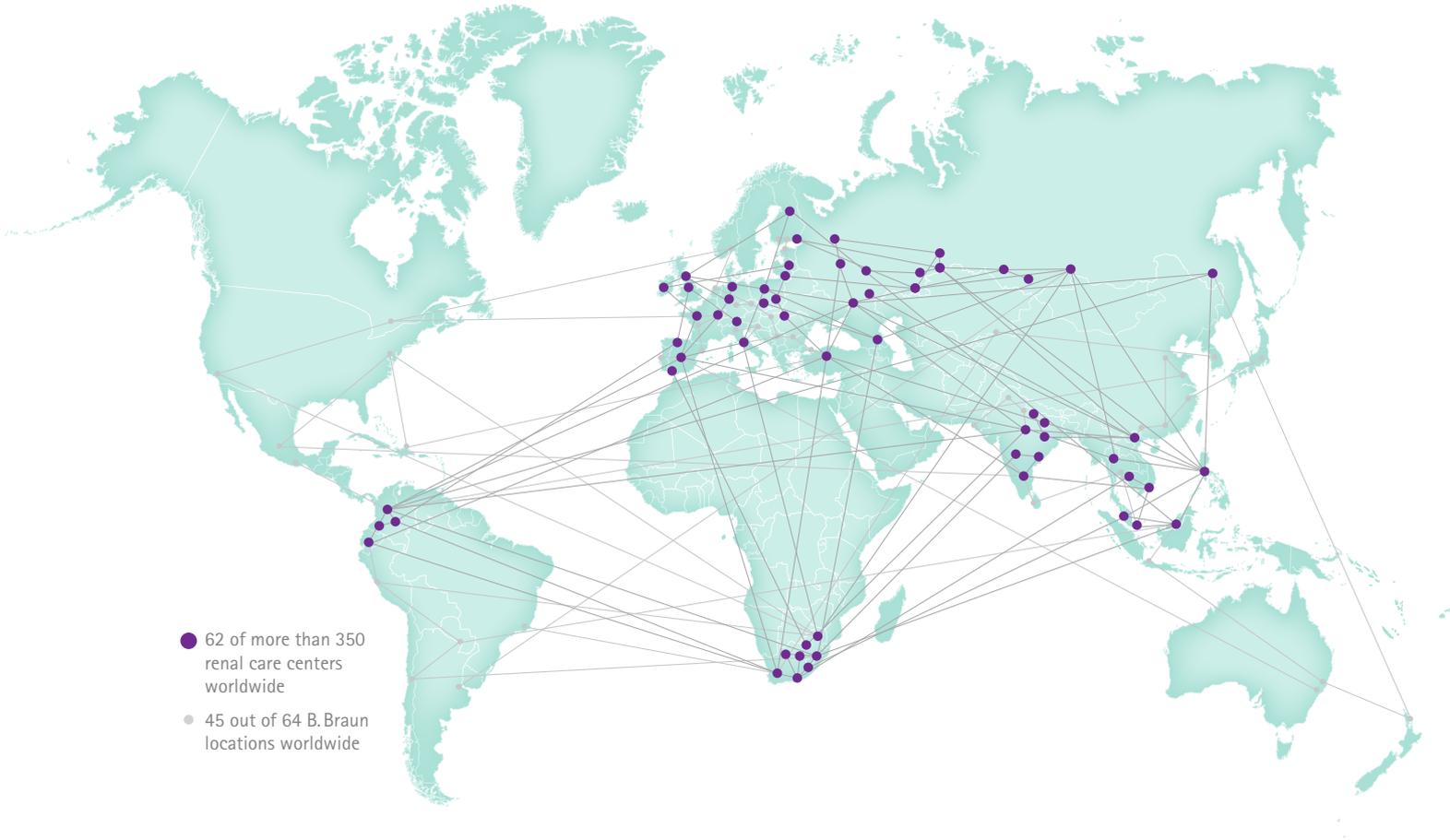
7 Never take electronic devices with you into the bedroom. Evidence shows that the glare from screens and displays has negative effects on the body's internal clock.

8 Make sure you have fresh air in the bedroom. Airing the room for 15 minutes before going to bed is ideal.

Keeping a sleep diary can also be recommended, so you can monitor your sleep pattern over a period of time. When you take a closer look at your routine like this, you'll soon find out which things help you get to sleep particularly well. In more difficult cases, you shouldn't hesitate to discuss things with the doctor treating you. We wish you every success — and sleep well!

# A NETWORK OF COMPETENCE

Exploring the world with B. Braun



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## COPYRIGHT & CREDITS

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ABW Wissenschaftsverlag GmbH | Altensteinstraße 42 | 14195 Berlin | Germany  
LAYOUT/TYPOSETTING/PRINTING Responsible: Marcina Damm  
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