



**Redefining mobility**  
in lying bioimpedance  
measurement.

## seca mBCA 525 –

### Defining a new standard.

**M**obile bioimpedance analysis (BIA) is raised to a new level with the seca mBCA 525. Its extraordinary precision supports your diagnosis and ensures long-term therapeutic monitoring. It also simplifies your daily work because all of the measurement results are visually presented in an understandable and comprehensible way. The presentation directly on the monitor or on a 1-page printout is ideal for a successful patient consultation and assists in providing patients with a better understanding of their results.

The compact seca mBCA 525 analyzer has been uncompromisingly thought out in terms of precision, functionality and quality and usefully expands your range of services. On the following pages we will give you the answers to these questions:

- How easy is BIA measurement?**  
Precise results are quickly displayed in an easy-to-read graphical presentation.
- What results will I receive and how do I evaluate them?**  
The intuitive touchscreen display simplifies measurement and evaluation.
- How does the seca mBCA 525 help me with diagnosis and the course of therapy?**  
The understandable presentation of the measurement values improves the patient consultation.
- Are the measurement values precise enough for my work as a physician?**  
Medical studies validate the precision of the BIA measurement.
- Will it be worth acquiring with regard to the next several years?**  
Innovative functionality with the highest quality.
- Will this investment pay off in the long run?**  
Expand your range and increase your scope of services.

The new compact class for  
**mobile body composition analysis.**



## Expertly developed for mobile application.

The entire development had one goal: to make mobile bioimpedance measurement as efficient as possible through low weight, the most precise measurement technology and easy handling. The seca mBCA 525 is one of a kind in terms of function and performance.

The unique measuring mat measures all of the required parameters such as fat mass, muscle mass and body water in a fully self-sufficient way. The short cables simplify working. The mat is also automatically linked to the touchscreen monitor by Wi-Fi, which can also be deactivated if required. The large memory of the monitor has sufficient capacity for over 100,000 measurements. This enables a large number of patients and courses of therapy to be reliably documented for years. Furthermore, measurements can be reliably carried out regardless of location in hospitals or in private practices. Its light weight, practical handle and optional mobile stand with a basket for patient files and accessories guarantees maximum mobility.



### Lightweight on the go.

Its mobility is optimized even further through the mobile stand. It has a secure stand and offers room for storing files and accessories in its convenient basket.



### Always ready for use.

The measuring mat is charged by induction in the practical transport compartment. If the Wi-Fi is switched off then the collected data can optionally be synchronized with the monitor. Simply dock it and you are done.



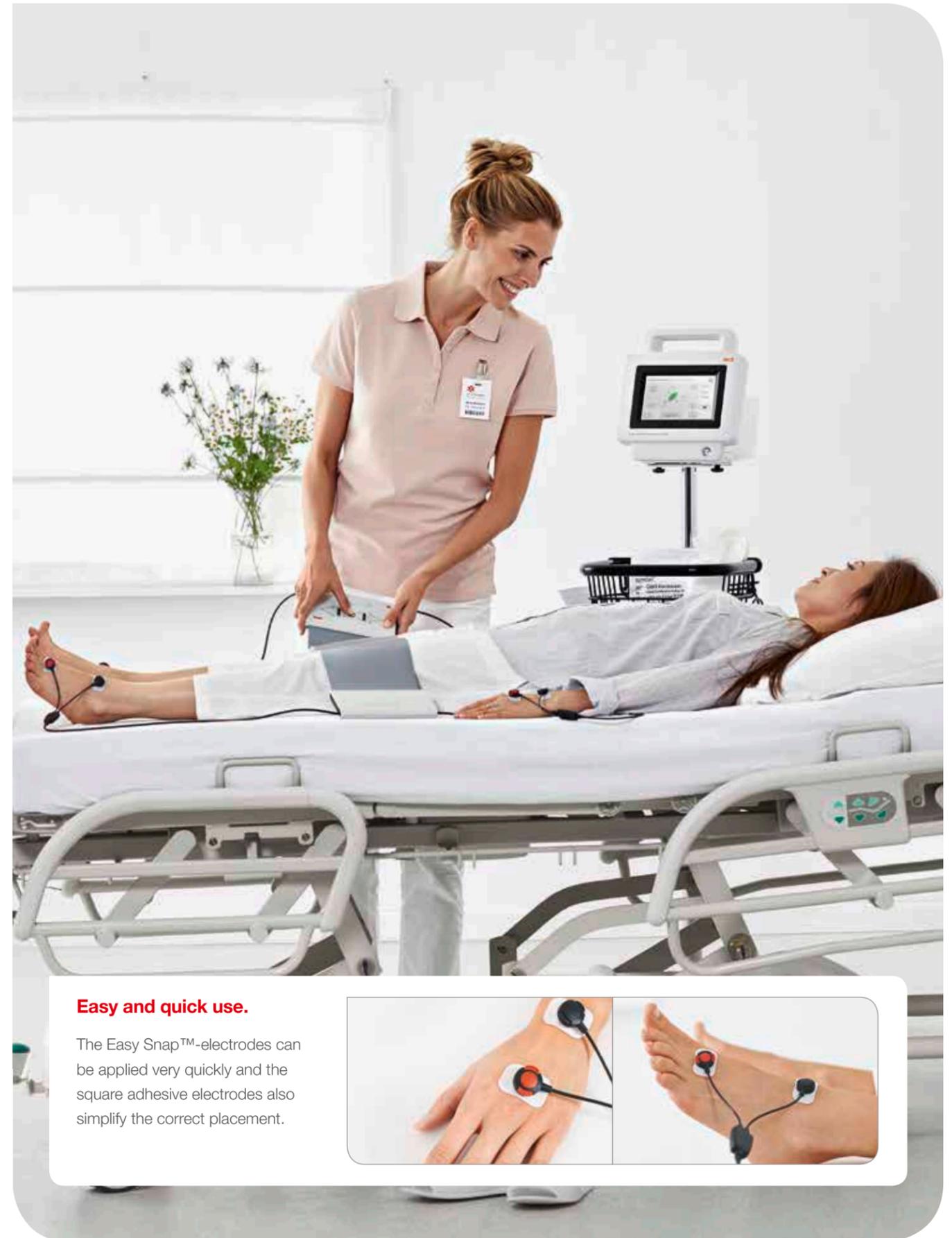
### Reliable measurement.

The correct placement of the electrodes is illustrated on the measuring mat. Each measurement only begins after an automatic electrode test to prevent errors and guarantee the reproducibility of the data.



### Perfectly displayed results.

The clearly organized presentation of all parameters makes diagnosis extremely easy and simplifies the patient consultation. It can be operated without any problems even when wearing gloves or under a protective cover.



### Easy and quick use.

The Easy Snap™-electrodes can be applied very quickly and the square adhesive electrodes also simplify the correct placement.



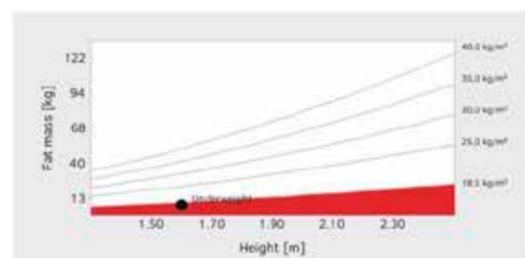
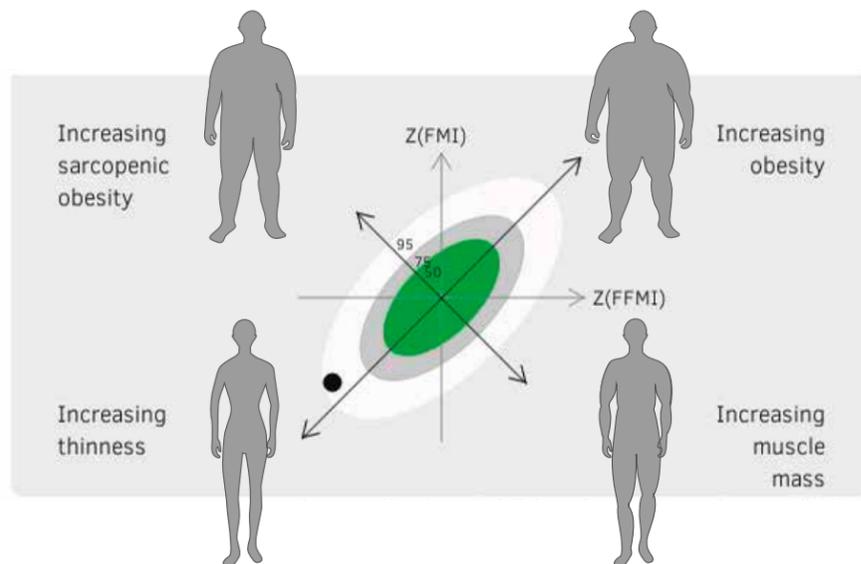
# A touchscreen display for your full overview.

Those who perform mobile measurements quickly require reliable data. We took this demand one step further with the seca mBCA 525 and provide intuitive menus displaying the results in a visually appealing way. This gives you immediate information and enables you to competently monitor your diagnoses and therapies.

The seca mBCA 525 immediately provides you with the following most important measurement parameters for your therapy:

## **BCC** Body Composition Chart (BCC)

It seems simple to roughly differentiate between malnourished or obese individuals. However, an extremely thin patient can have a lot of body fat while a seemingly overweight patient can have a high amount of muscle mass. The clearly arranged presentation provides immediate information about the body composition of your patients so you can instantly draw conclusions for therapeutic decisions. Series of measurements enable the therapy to be reliably monitored and controlled.

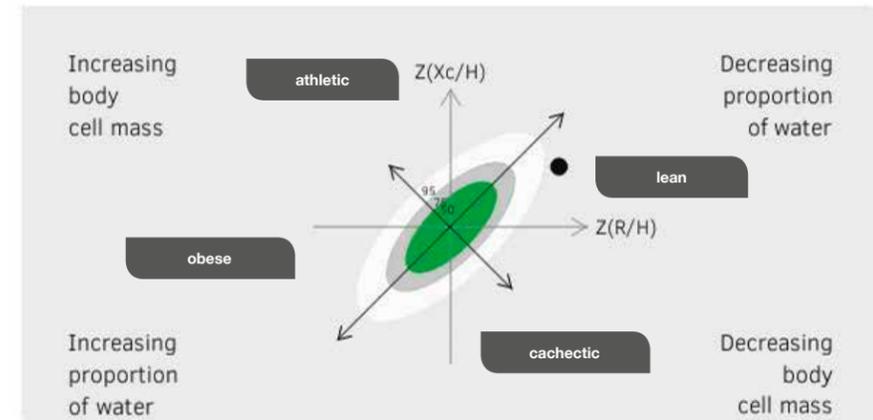


## **FM** Fat mass / fat-free mass / visceral fat

The fat mass and fat-free mass can be quickly, reliably and precisely recorded only by means of a BIA measurement. It helps to determine and monitor the correct nutritional therapy. The amount of visceral fat can also be precisely determined, which is otherwise possible only through time-consuming imaging procedures. This enables an estimate of the cardiometabolic risk and helps with the determination of further therapeutic strategies.

## **BIVA** Bioelectrical impedance vector analysis (BIVA)

The BIVA forms an important diagnostic basis for nutritional medicine. The measuring point provides information about the state of hydration and the body cell mass, which provides a good overview of the general state of health and nutrition. This makes it possible to detect whether there is malnutrition or if an intervention by means of infusions is necessary, for example. Monitoring over the course of time is especially important for stationary treatments.



<b>TBW</b>	Total body water	25.1 l	60.2 %
<b>ECW</b>	Extracellular water	11.3 l	27.2 %
<b>HYD</b>	Hydration	82.3 %	
<b>BIVA</b>	Bioelectric impedance vector analysis	65.6 Ω	745.5 Ω

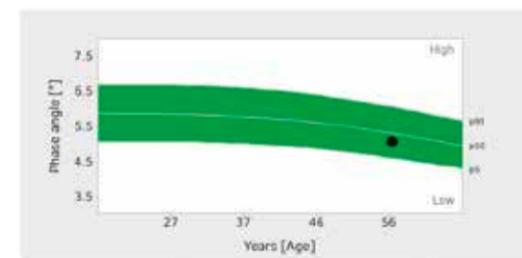
## **L** Body water

Total body water, intracellular water and extracellular water are measured separately. This supports the detection of edemas, the improved evaluation of weight increase and decrease and the detection of states of dehydration.



## **SMM** Skeletal muscle mass

The values for the torso and extremities are provided individually and displayed in a graphic. Increasing and maintaining muscle mass plays a key role in nutritional medicine because it helps to burn fat and positively influences the body's energy.



## **φ** Phase angle

Studies\* verify that a high phase angle shows a good condition of the cells and their functions. A very low phase angle is measured in the case of malnutrition and oncology patients, for example. It is a very good parameter for the general state of health. In diagnostics the severity of many illnesses as well as general states of exhaustion can be verifiably better determined.

\* Studies:  
Mattar JA. Application of total body bioimpedance to the critically ill patient. Brazilian Group for Bioimpedance Study. New Horiz 1996; 4: 493-503  
Zdolsek HJ, Lindahl OA, Sjöberg F. Non-invasive assessment of fluid volume status in the interstitium after haemodialysis. Physiol Meas 2000; 21: 211-220  
Dittmar M. Reliability and variability of bioimpedance measures in normal adults: effects of age, gender and body mass. Am J Phys Anthropol 2003; 122: 361-370

# Understandable results are the best foundation for a good consultation.

The well-founded bioimpedance measurement precisely determines the body water as well as the fat mass and muscle mass percentages. All parameters are presented separately on a clearly organized 1-page printout and thereby offer the optimal foundation for a convincing consultation with your patients.

## More than just BMI

Body Mass Index (BMI) alone has little diagnostic value because it only takes the total body weight into account. The fat mass is evaluated individually in order to be able to assess its percentage. The measured values in this example show that the fat mass percentage is within the normal range despite an increased BMI. This indicates that a high percentage of muscle contributed to a high BMI, which is to be considered positive. During diets only a bioimpedance measurement can prove whether an excessive amount of muscle mass or fat mass was lost.

## Targeted muscle-building

The monitoring of muscle mass is especially important for bedridden and malnourished patients. Regular measurements help to control the reduction of the forming fat mass and the building of muscle mass.

## Dangerous fat

An increase in visceral fat can lead to heart diseases, high blood pressure and type 2 diabetes. Only regular check-ups with precise results can provide clarity about the necessity of therapeutic measures.



## Energy

The determination of the resting metabolic rate or energy requirement forms the foundation for diet plans in nutritional medicine. A target weight or a target BMI to be achieved within a specific period of time can also be defined with the aid of the therapy planner.

## Body Composition Chart (BCC)

The type of weight change is first made clear by the BCC through the regular series of body composition measurements. This is because a qualitative evaluation of the change can only be carried out by observing the fat mass and fat-free mass together. This makes it clear whether the patient eliminated fat mass as desired or lost muscle mass.

## Proper water distribution (BIVA)

The components of the fat-free mass can be observed even more closely in the BIVA. Here it can be clearly seen whether muscles or areas of water retention (edemas) contributed to high water levels. Precise fluid management is indispensable for detecting an unhealthy increase in body water.

## Phase angle

A high phase angle shows a good condition of the cells and their functions and is thereby an indicator of a generally good state of health. However, the phase angle is mostly very low in cases of malnourishment, degenerative diseases such as cancer or water retention. For quick interpretation the phase angle is presented in an understandable graphic and compared with the normal ranges so that misinterpretations are avoided.

## Precision is clinically validated at seca.



Prof. Dr. Manfred J. Müller



Prof. Dr. Dympna Gallagher

The seca mBCA output parameters were validated in extensive clinical studies\*. The most precise respective measurement methods (called the “gold standard”) are our absolute reference for this. The seca mBCA 525 definitely showed itself to be comparable here and proved its exceptional position in bioimpedance measurement with results above 95 % in all studies.

### Impressive consistency with the respective gold standard:



#### 98 % for fat-free mass in comparison to the 4C model

The elaborate and time-consuming 4-compartment model takes into account the biological variability of water and mineral content. Other methods such as DEXA (dual-energy X-ray absorptiometry) can lead to inaccuracy, particularly in the case of lean and athletic patients.

**seca mBCA: high precision and a short measurement time.**



#### 98 % for total body water in comparison to the D<sub>2</sub>O dilution

The body water is marked with the isotope deuterium. The total body water is determined from the distribution area. The enrichment of blood was analyzed by mass spectrometry.

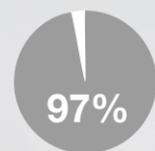
**seca mBCA: precise results without complicated laboratory tests.**



#### 95 % for extracellular water in comparison to the NaBr dilution

Dilution methods measure body water and its distribution via the dilution of a radioactive tracer in the body. To accomplish this, the stable isotope NaBr is administered orally and several hours later a blood sample is analyzed.

**seca mBCA: immediate results without long waiting periods or blood tests.**



#### 97 % for muscle mass in comparison to MRI

In an elaborate analysis, over 250 full-body MRI scans were evaluated in total. The high resolution of magnetic resonance imaging allows for especially high-contrast and differentiated images, in contrast to the less precise DEXA method.

**seca mBCA: less time-consuming and cost-intensive and more comfortable for patients.**

**Fact:** The seca mBCA 525 achieves a precision that is comparable with much more elaborate, more expensive and time-consuming scientific measurement methods.

Detailed information on the studies can be found at [www.seca.com/studies](http://www.seca.com/studies).

Contact us for more information on the medical validation studies.

\* Bomy-Westphal A, Schautz B, Later W, Kehayias JJ, Gallagher D. What makes a BIA equation unique? Validity of eight-electrode multifrequency BIA to estimate body composition in a healthy adult population. Eur J Clin Nutr 2013; 67: 14-21; doi:10.1038/ejcn.2012.160

## Satisfaction is our best reference.

When our passion for precision exceeds our customer's expectations, we are proud of what we have accomplished as a developer and manufacturer. The good experiences and positive resonance to the seca mBCA 515/514 reinforce our development of a mobile yet equally precise solution. The measuring procedure and the software were adapted to a mobile device and we guarantee the same high efficiency in terms of precision, economy and last but not least your time management.

“I rely on BIA measurement devices from seca for the monitoring of the treatment of obesity because they offer fast and reliable data. The visualized presentation of their state of health and nutrition is a good motivation for patients during therapy.”

*Dr. Matthias Riedl, MD, Diabetologist, Nutritionist, Head Physician for Internal Medicine – CEO of Medicum, Hamburg, Germany*



“The seca mBCA can be recommended especially due to its precision of measurements for use in scientific studies. For example, we have chosen this device for measuring body composition in the German National Cohort, a long-term population study with planned 200.000 attendees. The seca measurement results provide body composition (fat mass and fat-free mass) or the determination of total body water in comparison with the gold standard in a very good way.”

*Prof. Dr. Heiner Boeing, Head of the Institute for Epidemiology, German Institute of Human Nutrition, Potsdam, Germany*



“It allows us to measure our patients' true and real body composition. Useful in: Determining fat fraction and its relationship to overweight and diseases such as diabetes and metabolic syndrome, assessing and monitoring weight loss in patients undergoing conventional or surgical treatments, evaluating intra and extracellular water (...), evaluating muscle mass (...). All this information helps us to choose different therapeutic approaches.”

*Dr. Ana Carolina Baez Abbott, Responsible for Clinical Nutrition and Dietetics, Executive Health Plan, Dominican Republic*

## In a technological class of its own in mobile measurement.

Completely rethinking the mobile bioimpedance measurement was just logically consistent for seca. The technology supports the perfect handling and all parts fulfill the highest hygienic requirements. The mat as the central measuring unit is a world innovation. It has its own rechargeable battery, an interface for inductive charging and Wi-Fi for data transfer to the monitor. With its intuitive menus, the touchscreen can be easily operated while wearing gloves as well as under a protective covering. With the seca mBCA 525, seca is setting a new standard in terms of innovation, precision and material quality.

### Monitor.

The measurement results are displayed in a clearly structured and comprehensible way on the impact-resistant and scratch-resistant touchscreen monitor. The pressure-sensitive technology enables the menu to be operated even while wearing gloves or under a protective covering.

### Measuring mat.

The measuring mat is a true multifunctional tool. It is powered by its own rechargeable battery that is charged by induction and therefore operated fully self-sufficiently. The measured data is transferred to the monitor via a Wi-Fi signal. The Wi-Fi connection can also optionally be deactivated and the data transfer is carried out by means of an optical interface. The high-quality cables are easy to disinfect, withstand even heavy strains and avoid tangling due to their short length and design. The electrodes have an Easy Snap™-mechanism and can be quickly connected with the adhesive electrodes without applying any pressure.

### Diverse connection options.

2 x USB 2.0 for accessories, 1 x Ethernet and an optional scale connection for the data transfer give the user the optimal freedom of choice and compatibility of data.



### seca analytics 115

Medical PC software for diagnostic support

Smoothly transfer data to your PDMS via CSV file as well as in GDT, HL7, or XML format. With additional software licenses you can access the measurement results of a single seca mBCA from multiple PCs. **1 single location license comes free with each seca mBCA 525.** System requirements for your PC can be found here: [www.seca.com](http://www.seca.com)



### seca mBCA 525

#### Technical specifications

- Weight: 6.6 lbs / 3 kg
- Electrode type: adhesive electrodes (PVC-free)
- Dimensions (WxHxD): 9.9 x 10.3 x 9.1" / 252 x 262 x 230 mm
- Interfaces: Wi-Fi, Ethernet, USB 2.0, seca 360° wireless technology
- Measurement method: 8-point Bioelectrical Impedance Analysis
- Power supply: power adapter, rechargeable battery
- Display type: 7" touch-screen display
- Measurement current: 100 µA
- Measurement time: 30 seconds
- Frequencies: 8
- Measured data storage: up to 100,000 measurements
- Housing made of flame-retardant plastic
- Optional: seca 475 mobile stand, seca 432 carrying case



## Our diagnosis:

### A clever investment in the future.

With its complete analysis of body composition, the seca mBCA 525 provides you important assistance for your daily work. In addition to a simple diagnosis, longer series of measurements over the course of therapy are particularly interesting for you in this context. Each investment in your practice or hospital should naturally be well thought out in terms of financial feasibility. We therefore offer you an individual consultation that is geared towards your particular needs in a solution-oriented way. Speak with our experts about individual amortization models or simple financing plans.

#### We guarantee you:

- Clever investment**  
Affordable BIA technology in a class of its own.
- Individual consultation**  
A sensible and affordable investment for even better therapy of your patients.
- Customized amortization models**  
Extensive refinancing options.



## Product demonstration and offer.

### Make your appointment today!

Let your seca representative personally demonstrate the seca mBCA 525 for you at your facility. Familiarize yourself with the options and get answers to your questions. Fill out the form below and e-mail or fax it to your seca representative.

#### Free product demonstration

- Yes**, I would like a free demonstration of the seca mBCA 525 at my facility with no obligation to buy.

#### Non-binding offer

- Yes**, please send me a free and non-binding personal offer for \_\_\_\_ (number) seca mBCA 525 analyzer(s).

#### Clinical studies

- Yes**, please send me the mBCA clinical studies.

#### Users in my region

- Yes**, I would like to make contact with a seca mBCA user near my location.

#### Miscellaneous

- Yes**, I would like to speak with you at the next trade show / congress. Call me about scheduling an appointment.
- Yes**, please contact me regarding: \_\_\_\_\_.

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Fax **+1 888 705 7397**

Toll free **+1 800 542 7322**

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