

A New Standard for Body Water Analysis —

BWA 2.0

*Professional
Body Water Analyzer*



A New Standard for Body Water Analysis

In the last 20 years, body composition analysis has established itself as a standard practice in various fields, and InBody has continuously strived to further expand its application to specialized areas, such as dialysis, rehabilitation, nutrition, and etc.

With the need for the precise measurement of body water, InBody introduces a new standard for body water analysis, BWA 2.0.

The BWA 2.0 is equipped with state-of-the-art 3MHz technology and provides extensive research parameters for professionals to better suit diverse patients with different conditions and medical specialties than ever before.





Cole-Cole Plot Graph for Monitoring Changes in Body Water and Cellular Integrity



Statistical Analysis by Age, Based on InBody Big Data



Clamp Electrode for High Reproducibility



Covering Wide Range of Subjects / Patients and Conditions



Extensive Research Parameters for Professionals



BWA Highlights

Cole-Cole Plot Graph for Monitoring Changes in Body Water and Cellular Integrity

With Cole-Cole plot graph, BWA provides accurate Segmental Body Phase Angle measurements at 5, 50, and 250kHz enhancing sensitivity to the changes in fluid and cellular integrity resulting from various diseases and conditions.

Statistical Analysis by Age, Based on InBody Big Data

Based on 13 million sets of InBody Big Data, InBody provides averages and standard deviation graphs for each result parameter according to age. It allows for comparative evaluation between different or same age groups for a more objective body composition analysis.

Clamp Electrode for High Reproducibility

The Clamp Electrode is a combination of two forcep electrodes, which acts as an indicator attached to the wrist and ankle for high reproducibility. The flexible design of the forcep ensures the electrodes to closely adhere to wrist and ankle even during the articular movements.

Covering Wide Range of Subjects / Patients and Conditions

More precise results can be obtained and utilized by entering the patient status information such as amputation, paralysis, lymphedema, and vascular access region.

Extensive Research Parameters for Professionals

Select from a range of distinct optional parameters for clinical and research purposes.

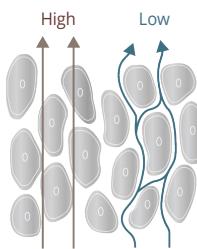
- Water Control Calculator: to set target ECW Ratio
- Age-specific graph: to evaluate and compare the body composition result by age
- BIVA (Bioelectrical Impedance Vector Analysis): to evaluate the hydration and nutritional status in comparison to their demographic group



InBody Technology on BWA

Body Composition Evaluation by Age Based on InBody Big Data

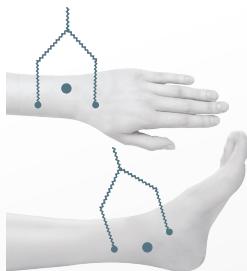
InBody provides age-specific graphs for each body composition analysis parameter based on globally accumulated InBody Data. With this, a comprehensive analysis is provided so that you can compare your data to the data of the young age group (T-score) and the same age group (Z-score).



Multi-Frequency for In-Depth Analysis

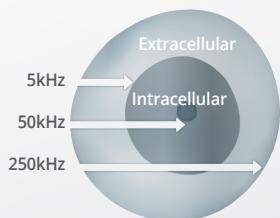
Low frequencies do not pass through the cell membranes well so they mainly reflect ECW, while high frequencies pass through the cell membranes and therefore reflect both ECW and ICW. By using multi-frequencies, InBody measures ECW and ICW separately and measures TBW accurately to check the water balance. As the newest technological advancement, InBody utilizes the 3MHz frequency, which enables the precise measurement of a more diverse range of patients and subjects with special body compositions. Furthermore, the technology that enabled the utilization of 3MHz also ensures the measurement stability from other frequencies even when there are outside interferences.

* ECW: Extracellular Water, ICW: Intracellular Water, TBW: Total Body Water



High Reproducibility and Accuracy Assured by 16-Point Clamp Electrodes

The 16-Point Clamp Electrodes were developed in a way so that the electrodes can be positioned on the wrist and ankle bone. It allows the instructor to place the electrode in the proper position and secures the reproducibility by minimizing the measurement errors. This technology also exempted the resistance from the hands and feet, which secures a more accurate results. With the 16-Point Clamp Electrodes, two different measurement modes are provided which enables users to choose between Research (Distal) and Medical (Proximal), depending on their purposes.



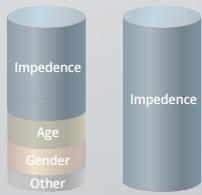
Multi-frequency Reactance Data for Enhanced Clinical Use

Reactance is a resistance that occurs in cell membranes, which is related to the cellular health such as somatic cell mass, structural integrity, and physiological functional level of the cell. Besides 50kHz, InBody improved segmental reactance measurement technology in 5kHz, 250kHz as well. Through this, InBody provides more parameters which can be used in various clinical fields to pre-screen diseases and evaluate nutritional status.



Direct Segmental Measurement-BIA

Each of our body segments is different in length and cross-sectional area. Arms and legs are longer and narrower in comparison to the trunk, so their impedance values are higher than the trunk. On the other hand, the trunk is shorter and wider than the arms and legs, so its impedance value is lower. However, the trunk muscle mass accounts for almost half of the whole body muscle mass, which is why a small impedance change in the trunk has a greater impact on the amount of whole body muscle mass. Therefore, the trunk must be measured separately in order to measure the whole body muscle mass accurately.



No Estimations or Empirical Equations

In the past, the conventional BIA devices used empirical estimations to compensate technological limitations of whole body measurement and use of single low frequency. To calculate the body composition by these conventional BIA devices, they needed to add statistical data such as age and gender in order to calculate results. However, InBody overcame these limitations with technologies of using Multi-Frequency, Direct Segmental Measurement, and 16-Point Clamp Electrodes System so that BWA provides results that are not affected by age, ethnicity or gender. Only reference ranges or scores based on age and gender are used as a basis for evaluating the values determined.

BWA Application

Nutrition

Monitor body composition change for nutritional evaluation.

Kim, H.S., Lee, E.S., Lee, Y.J., Jae Ho Lee, C. T.L., & Cho, Y.J (2015) *Clinical Application of Bioelectrical Impedance Analysis and its Phase Angle For Nutritional Assessment of Critically Ill Patients*. *Journal of the Korean Society for Parenteral and Enteral Nutrition*, 7(2), 54-61



Nephrology

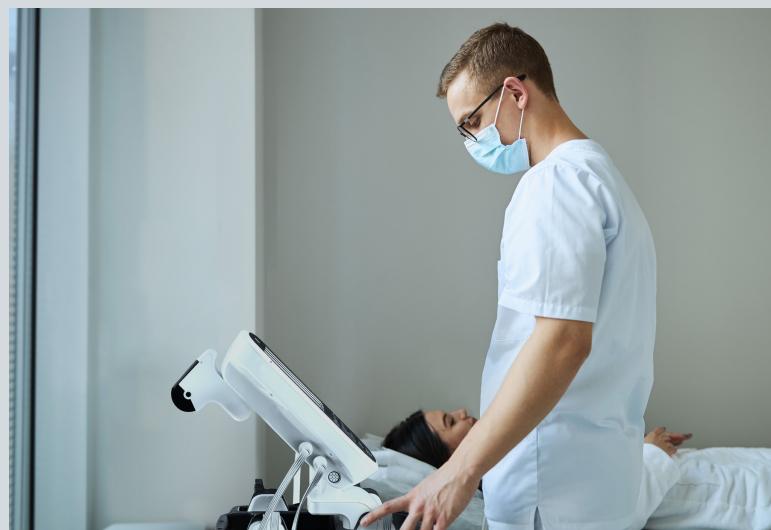
Obtain useful insights on dialysis patients' hydration and nutrition status.

Ando, M., Suminaka, T., Shimada, N., Asano, K., Ono, J. I., Jikuya, K., & Mochizuki, S. (2018). *Body water balance in hemodialysis patients reflects nutritional, circulatory, and body fluid status*. *Journal of Biorheology*, 32(2), 46-55.

Geriatric

Monitor muscle mass and muscle imbalances to screen sarcopenia with SMI, which are related to risks of fall and frailty.

Yoshimura, Y., Wakabayashi, H., Bise, T., & Tanoue, M. (2018). *Prevalence of sarcopenia and its association with activities of daily living and dysphagia in convalescent rehabilitation ward inpatients*. *Clinical Nutrition*, 37(6), 2022-2028.



Rehabilitation

Monitor injury and post-surgical recovery.

Yoshimura, Y., Bise, T., Nagano, F., Shimazu, S., Shiraishi, A., Yamaga, M., & Koga, H. (2018). *Systemic inflammation in the recovery stage of stroke: its association with sarcopenia and poor functional rehabilitation outcomes*. *Progress in Rehabilitation Medicine*, 3, 20180011.



Cardiology

Pre-screen the risk factors of cardiovascular disease.

Thomas, E., Gupta, P. P., Fonarow, G. C., & Horwitz, T. B. (2019). *Bioelectrical impedance analysis of body composition and survival in patients with heart failure*. *Clinical cardiology*, 42(1), 129-135.

Professional Sports

Manage body composition to enhance performance and minimize injury risk.

Almăjan-Guță, B., Rusu, A. M., Nagel, A., & Avram, C. (2015). *Injury frequency and body composition of elite Romanian rugby players*. *Timisoara Physical Education and Rehabilitation Journal*, 8(15), 17-21.

Application

Validations of More Than 3,000 Research Papers

Study 1

HIGH ACCURACY AND REPRODUCIBILITY OF FAT FREE MASS & PERCENT BODY FAT MEASUREMENTS COMPARED WITH DEXA

The measurement (mean \pm SD) for FFM with DXA was 52.8 ± 11.0 , and BIA was 53.6 ± 11.0 . Delta (S-MFBIA vs DXA) was 0.8 ± 2.2 (5% limits of agreement -3.5 to $+5.2$), and concordance correlation coefficient (CCC) was 0.98 (95% CI, 0.97 – 0.98). The measurements (mean \pm SD) for PBF with DXA was $37.5 \pm 10.6\%$ and S-MFBIA was $36.6 \pm 11.3\%$. Delta (S-MFBIA vs DXA) was -0.9 ± 2.6 (5% limits of agreement 6.0 to $+4.2$), and CCC was 0.97 (95% CI, 0.96 – 0.98).

Hurt, Ryan T, et al. "The Comparison of Segmental Multifrequency Bioelectrical Impedance Analysis and Dual-Energy X-ray Absorptiometry for Estimating Fat Free Mass and Percentage Body Fat in an Ambulatory Population." *Journal of Parenteral and Enteral Nutrition* (2020).

Study 2

HIGH CORRELATION WITH D₂O DILUTION METHOD FOR TOTAL BODY WATER

The study concluded that the BIA device InBodyS10 showed good test-retest precision (%CV = 5.2 raw; 1.1 after outlier removal) and high accuracy to D₂O for Total Body Water[TBWD₂O = 0.956 TBWBIA, R²= 0.92, root mean squared error(RMSE) = 2.2kg]. %Fat estimates from DXA, ADP, D₂O, and BIA all showed high correlation with the Lohman model.

Ng, Bennett K, et al."Validation of rapid 4-component body composition assessment with the use of dual-energy X-ray absorptiometry and bioelectrical impedance analysis." *The American journal of clinical nutrition* 108.4 (2018):708-715.

Study 3

HIGH ACCURACY WITH COMPUTED TOMOGRAPHY FOR MUSCLE MASS

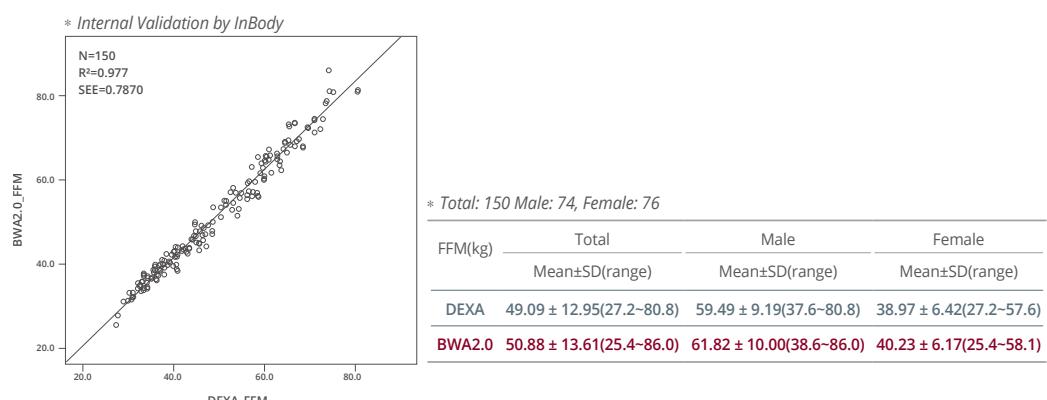
It was suggested that estimating muscle mass using DXA and BIA(InBody720) is a preferred method for diagnosis of sarcopenia in kidney transplant recipients. Both DXA and InBody showed high correlation with CT.

Yanishi, M., et al."Dual energy X-ray absorptiometry and bioimpedance analysis are clinically useful for measuring muscle mass in kidney transplant recipients with sarcopenia." *Transplantation proceedings*. Vol.50.No.1.Elsevier, 2018.

Study 4

HIGH CORRELATION OF FAT FREE MASS BETWEEN DEXA AND BWA2.0

Total of 150 results were analyzed, excluding duplicate data from the same subject. Fat Free Mass measured by BWA2.0 had a very high correlation with DEXA of R²=0.977 or higher. (P value < 0.05)



Extensive Research Parameters for Professionals

Select from a range of optional parameters for clinical and research purposes



Water Control Calculator

Set the Target ECW Ratio depending on the hydration status of dialysis and heart failure patients.

Water Control Calculator

Today ECW Ratio

Calculator

Today ECW Ratio	0.401	
Target ECW Ratio (Min0.340 / Max0.420)	-	0.385

APPLY

Target ECW Ratio 0.385

Over Hydration (L) -0.9 (-0.99--0.81)

Target Weight (kg) 76.2

Print Thermal Result Sheet

Up to 20 Optional Parameters

Provides up to 20 optional parameters for a customized experience. Select from parameters, such as age-specific graph, segmental analysis, and body composition results that are available at a glance.

Impedance	Body Water	Muscle,Fat	Etc.
Total : 20 (4/4)			
<input checked="" type="checkbox"/> Whole Body ECW Ratio			
<input checked="" type="checkbox"/> ECW Ratio(ECW/TBW) Balance			
<input checked="" type="checkbox"/> Total Body Water/Weight			
Done			

Impedance	Body Water	Muscle,Fat	Etc.
Total : 20 (4/4)			
<input checked="" type="checkbox"/> Percent Body Fat	<input checked="" type="checkbox"/> Fat Free Mass Index		
<input checked="" type="checkbox"/> Skeletal Muscle Mass and ECW Ratio	<input checked="" type="checkbox"/> Lean Mass Balance		
<input checked="" type="checkbox"/> Skeletal Muscle mass Index and ECW Ratio	<input checked="" type="checkbox"/> Fat Mass Index		
<input checked="" type="checkbox"/> Skeletal Muscle mass Index	<input checked="" type="checkbox"/> Skeletal Muscle Mass devided by WT		
Done			

Skeletal Muscle mass Index



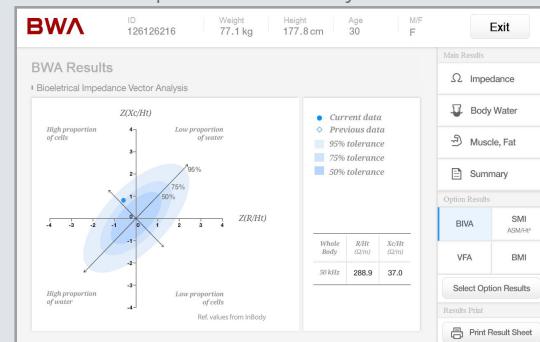
Body Mass Index



ECW Ratio (ECW/TBW) Balance

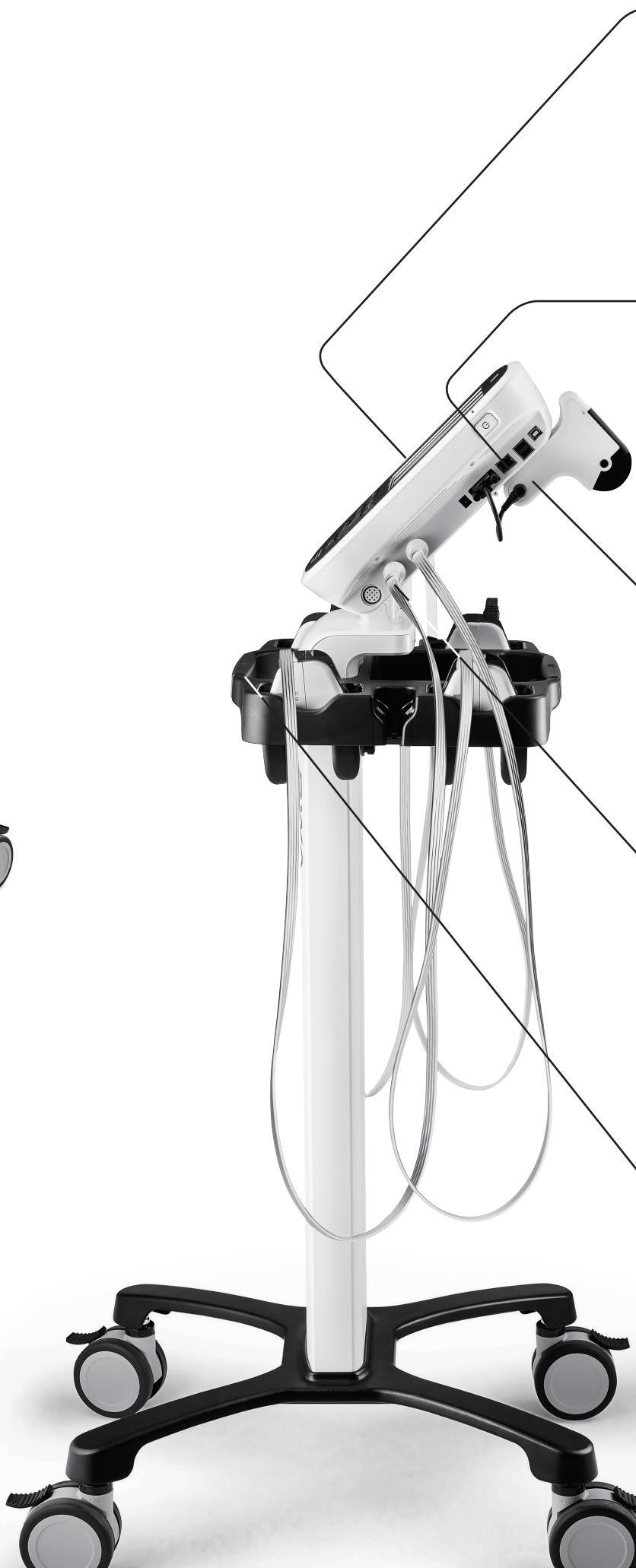


Bioelectrical Impedance Vector Analysis



Product Overview

Various Features and Optional Components of BWA



LCD
Sharp 10.1" touch screen



Battery
BWA battery for mobile use



Test Posture
Measurable in a lying, seated or standing position



InBody USB
Easy data back up with InBody USB



Thermal Printer (Optional)
Easy-print out BWA results



Clamp Electrode
Patented dual forcep structure of Clamp Electrodes ensures high reproducibility



BWA Cart
Customized BWA Cart to easily arrange the Clamp Electrodes



BWA Portable Case (Optional)
Convenient way of carrying BWA for mobility



Adhesive Electrodes and Tape (Optional)
BWA Electrode Tapes for patients with difficulty in using Clamp Electrode



Body Water Result Sheet

BWA Body Water

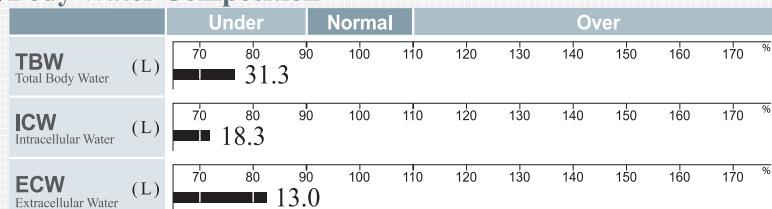
[BWA2.0]

ID	Height	Age	Gender	Test Date / Time
John Doe	173cm	41	Male	2021.03.31. 15:44

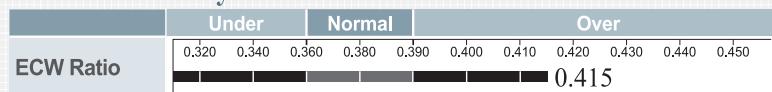
InBody

www.inbody.com

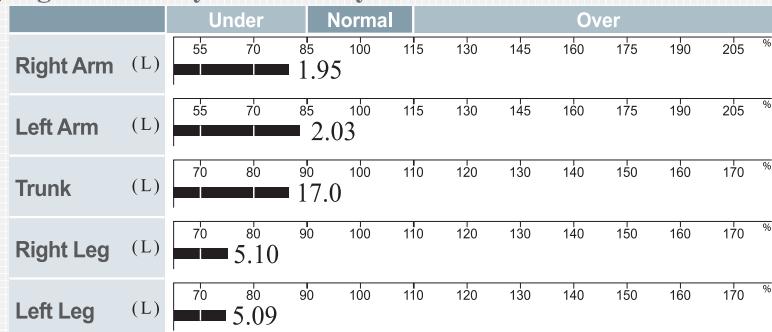
1 Body Water Composition



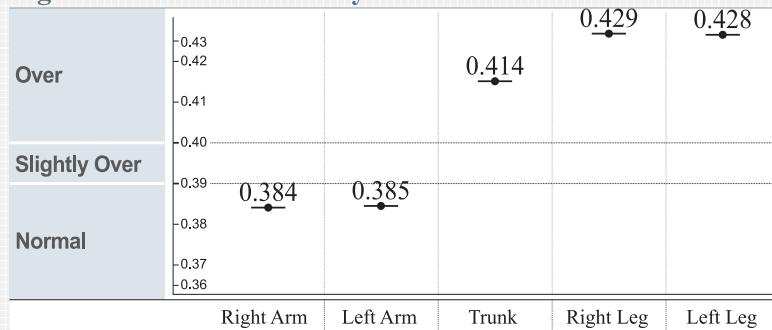
2 ECW Ratio Analysis



3 Segmental Body Water Analysis



4 Segmental ECW Ratio Analysis



5 Body Water Composition History

Weight (kg)	64.5	64.3	64.1	64.4	64.7	66.8	67.9	64.0
TBW Total Body Water (L)	30.6	30.6	30.5	30.6	30.7	32.7	34.3	31.3
ICW Intracellular Water (L)	18.0	18.1	18.0	18.1	18.1	19.1	19.9	18.3
ECW Extracellular Water (L)	12.6	12.5	12.5	12.5	12.6	13.6	14.4	13.0
ECW Ratio	0.411	0.410	0.410	0.409	0.410	0.416	0.419	0.415
<input checked="" type="checkbox"/> Recent <input type="checkbox"/> Total	20.07.21 15:11	20.08.27 14:58	20.09.20 15:02	20.11.23 15:23	20.12.21 15:00	21.02.19 14:52	21.03.20 15:12	21.03.31 15:44

6 Body Composition Analysis

Protein	8.0 kg	(9.9 ~ 12.1)
Minerals	2.60 kg	(3.43 ~ 4.19)
Body Fat Mass	22.1 kg	(7.9 ~ 15.8)
Fat Free Mass	41.9 kg	(50.4 ~ 61.6)
Bone Mineral Content	2.16 kg	(2.82 ~ 3.44)

7 Muscle-Fat Analysis

Weight	64.0 kg	(55.9 ~ 75.7)
Skeletal Muscle Mass	21.9 kg	(28.2 ~ 34.4)
Soft Lean Mass	39.7 kg	(47.5 ~ 58.1)
Body Fat Mass	22.1 kg	(7.9 ~ 15.8)

8 Obesity Analysis

BMI	21.4 kg/m ²	(18.5 ~ 25.0)
PBF	34.5 %	(10.0 ~ 20.0)

9 Research Parameters

Basal Metabolic Rate	41.9 kg	(50.4 ~ 61.6)
Waist-Hip Ratio	1275 kcal	(1428 ~ 1663)
Waist Circumference	1.14	(0.80 ~ 0.90)
Visceral Fat Area	145.0 cm ²	

10 Obesity Degree

97 %	
Body Cell Mass	26.2 kg
Arm Circumference	30.2 cm
Arm Muscle Circumference	27.1 cm
TBW/FFM	74.8 %
FFMI	14.0 kg/m ²
FMI	7.4 kg/m ²

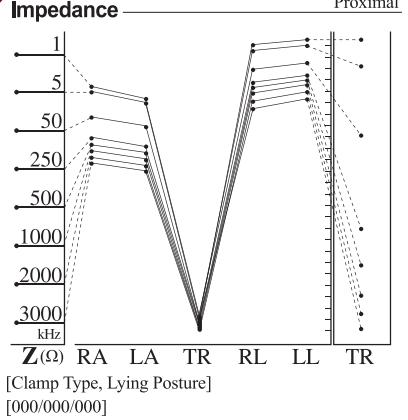
Whole Body Phase Angle

Proximal ϕ(°) 50 kHz	3.8°
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Segmental Body Phase Angle

Proximal ϕ(°) 5 kHz	RA 2.2	LA 2.0	TR 2.2	RL 1.6	LL 1.5
50 kHz	4.9	4.8	5.0	2.8	2.6
250 kHz	4.8	4.7	5.9	3.1	2.8

11 Impedance



Result Sheet Interpretation

1 Body Water Composition

50-70% of our body is composed of water. Body water is distributed between all the cells and fluids in our body. Most of it is present in the cells while the rest is in the form of blood and interstitial fluid. The water inside the cell membrane is called intracellular water, and the water outside the cell membrane is called extracellular water.

2 ECW Ratio Analysis

The extracellular water ratio shows the balance status of body water. The ratio between intra and extracellular water remains constant at about 3:2 ratio in healthy individuals, and when this balance is broken down edema may occur.

3 Segmental Body Water Analysis

Segmental Body Water Analysis helps to understand the water balance by analyzing the total body water in each part of the body. Changes in body water corresponds to the changes in muscle mass. However, in the case of a subject who has health issue, the amount of body water may increase even if there is no increase in muscle mass. Therefore, it is necessary to check whether Extracellular Water Ratio is normal in segments.

4 Segmental ECW Ratio Analysis

Segmental ECW Ratio is displayed in a graph so you can easily determine if the ICW and ECW are balanced. By analyzing the ECW Ratio, you can assess if there is a problem with body water circulation. This can help monitor the recovery of post-surgery or hemodialysis patients.

5 Body Water Composition History

Body Water History provides the changes in Weight, Skeletal Muscle Mass, Intracellular Water, Extracellular Water, Extracellular Water Ratio. Take the BWA test periodically to monitor your progress.

6 Body Composition Analysis

Body composition is a method of describing what the body is made of. BWA offers quantitative values and normal ranges for four core body components: Body Water, Protein, Minerals, and Fat.

7 Muscle-Fat Analysis

The balance between Skeletal Muscle Mass and Body Fat mass is a key health indicator. Muscle-Fat Analysis shows this balance by comparing the length of the bars for Weight, Skeletal Muscle Mass, and Body Fat Mass.

8 Whole Body Phase Angle

Phase Angle is related to the health status of the cell membrane. Strengthening of the cellular membrane and structural function will increase the Phase Angle, while damage or a decrease in function will result in a decrease in the Phase Angle.

9 Segmental Body Phase Angle

Segmental Phase Angle indicates the Phase Angle of each part of the body, representing the level of structural integrity and function of the cell membrane.

10 Bioelectrical Impedance Vector Analysis

BIVA stands for Bioelectrical Impedance Vector Analysis. The position of the tested subject is located on a graph which is based on the measured Resistance (R) and Reactance (Xc) for evaluation. The relative position is evaluated and monitored to see the changes in body water and muscle mass in a set period time for the tested subject.

11 Impedance

Impedance is the resistance that occurs when weak alternating current is applied to the human body. BWA visualizes the impedance with the graph, so you can easily detect if there is reversed impedance error by checking crossed lines in the impedance graph. Below the impedance graph, you can also check the error codes.



Body Composition Result Sheet

BWA

[BWA2.0]

ID	Height	Age	Gender	Test Date / Time
John Doe	173cm	41	Male	2021.03.31. 15:44

InBody

www.inbody.com

Body Composition Analysis

	Values	Total Body Water	Soft Lean Mass	Fat Free Mass	Weight
Total Body Water(L)	31.3 (37.0 ~ 45.2)	31.3	39.7 (47.5 ~ 58.1)	41.9 (50.4 ~ 61.6)	64.0 (55.9 ~ 75.7)
Protein (kg)	8.0 (9.9 ~ 12.1)				
Minerals (kg)	2.60 (3.43 ~ 4.19)				
Body Fat Mass (kg)	22.1 (7.9 ~ 15.8)				

Muscle-Fat Analysis

	Under	Normal	Over	
Weight (kg)	55 70 85 100 115 130 145 160 175 190 205	64.0		%
SMM (kg) Skeletal Muscle Mass	70 80 90 100 110 120 130 140 150 160 170	21.9		%
Body Fat Mass (kg)	40 60 80 100 160 220 280 340 400 460 520	22.1		%

Obesity Analysis

	Under	Normal	Over	
BMI (kg/m ²) Body Mass Index	10.0 15.0 18.5 22.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0	21.4		
PBF (%) Percent Body Fat	0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0	34.5		

Segmental Lean Analysis

	Based on ideal weight										Based on current weight	
	Under	Normal	Over	ECW Ratio								
Right Arm (kg) (%)	55 70 85 100 115 130 145 160 175	2.50	82.1	0.384								
Left Arm (kg) (%)	55 70 85 100 115 130 145 160 175	2.61	85.6	0.385								
Trunk (kg) (%)	70 80 90 100 110 120 130 140 150	21.6	88.7	0.414								
Right Leg (kg) (%)	70 80 90 100 110 120 130 140 150	6.45	76.2	0.429								
Left Leg (kg) (%)	70 80 90 100 110 120 130 140 150	6.43	75.9	0.428								

ECW Ratio Analysis

	Under	Normal	Over	
ECW Ratio	0.320 0.340 0.360 0.380 0.390 0.400 0.410 0.420 0.430 0.440 0.450	0.415		

Body Composition History

Weight (kg)	64.5	64.3	64.1	64.4	64.7	66.8	67.9	64.0
SMM (kg) Skeletal Muscle Mass	21.5	21.6	21.5	21.6	21.7	23.0	24.0	21.9
PBF (%) Percent Body Fat	35.0	34.8	34.8	34.9	35.0	33.0	32.3	34.5
ECW Ratio	0.411	0.410	0.410	0.409	0.410	0.416	0.419	0.415

Recent Total 20.07.21 20.08.27 20.09.20 20.11.23 20.12.21 21.02.19 21.03.20 21.03.31
15:11 14:58 15:02 15:23 15:00 14:52 15:12 15:44

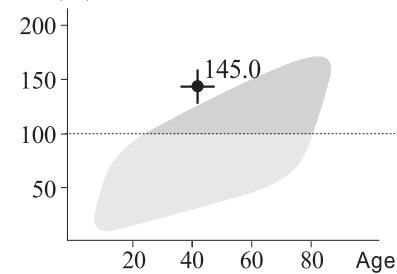
InBody Score

/100 Points

* Total score that reflects the evaluation of body composition. A muscular person may score over 100 points.

Visceral Fat Area

VFA(cm²)



Weight Control

Target Weight	65.9 kg
Weight Control	+ 1.9 kg
Fat Control	-12.2 kg
Muscle Control	+ 14.1 kg

Research Parameters

Intracellular Water	18.3 L	(23.0~28.0)
Extracellular Water	13.0 L	(14.0~17.2)
Basal Metabolic Rate	1275 kcal	(1428~1663)
Waist-Hip Ratio	1.14	(0.80~0.90)
Body Cell Mass	26.2 kg	(32.8~40.2)
SMI	6.0 kg/m ²	

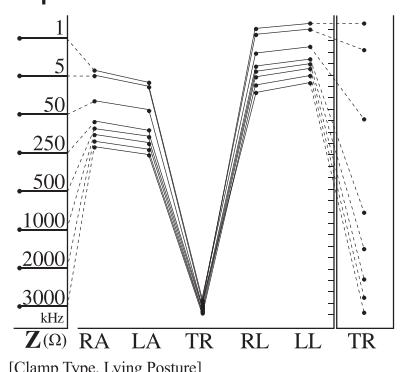
Whole Body Phase Angle

Proximal $\phi(°)$ 50 kHz | 3.8°

Segmental Body Phase Angle

Proximal	RA	LA	TR	RL	LL
$\phi(°)$ 5 kHz	2.2	2.0	2.2	1.6	15
50 kHz	4.9	4.8	5.0	2.8	2.6
250 kHz	4.8	4.7	5.9	3.1	2.8

Impedance



Evaluation Result Sheet

BWA Evaluation

[BWA 2.0]

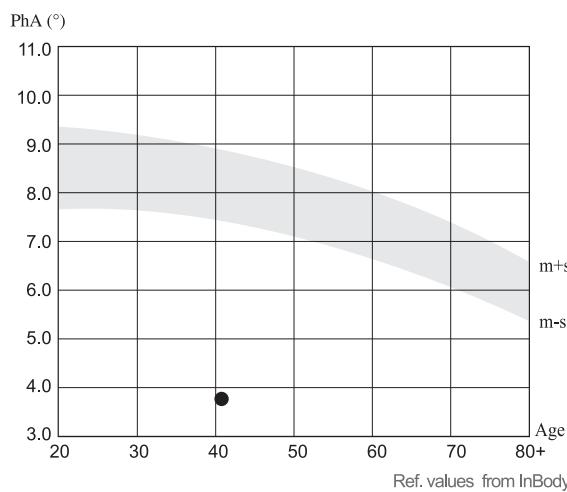
ID	Height	Age	Gender	Test Date / Time
John Doe	173cm	41	Male	2021.03.31. 15:44

InBody

www.inbody.com

Research Parameters

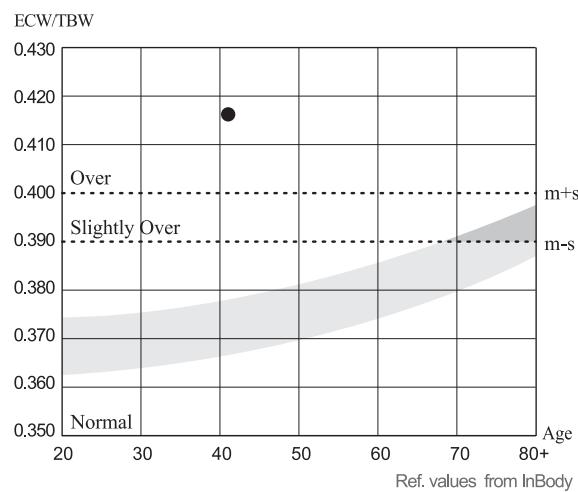
Whole Body Phase Angle_50kHz



PhA (°)	Young adults (T-score)	Age-matched (Z-score)
3.8	-5.6	-5.9

Body Water Evaluation

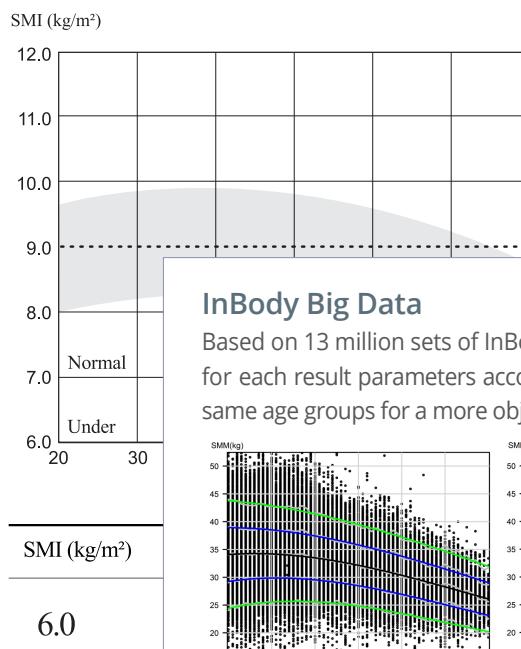
Whole Body ECW Ratio



ECW/TBW	Young adults (T-score)	Age-matched (Z-score)
0.415	8.0	7.7

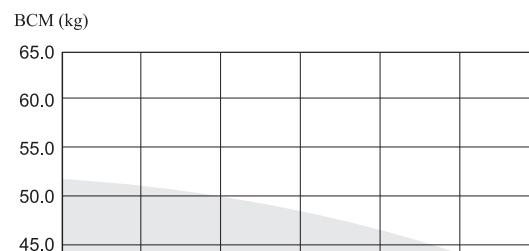
Muscle • Nutrition Evaluation

Skeletal Muscle mass Index



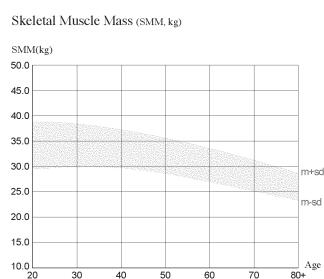
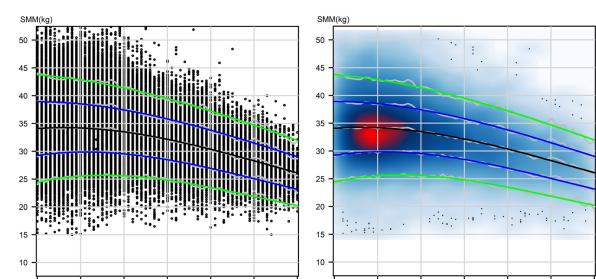
Research Parameters

Body Cell Mass



InBody Big Data

Based on 13 million sets of InBody Big Data, InBody provides averages and standard deviation graphs for each result parameters according to age. It allows for comparative evaluation between different or same age groups for a more objective body composition analysis.



* InBody Big Data is used for the evaluation by age which is shown as T-Score and Z-score that indicate the relative position of subject.

It does not affect the subjects' body composition analysis result.

* Depending on the country, the graph will be set differently.

Research Result Sheet

BWA Research

[BWA2.0]

ID	Height	Age	Gender	Test Date / Time
John Doe	173cm	41	Male	2021.03.31. 15:44

InBody

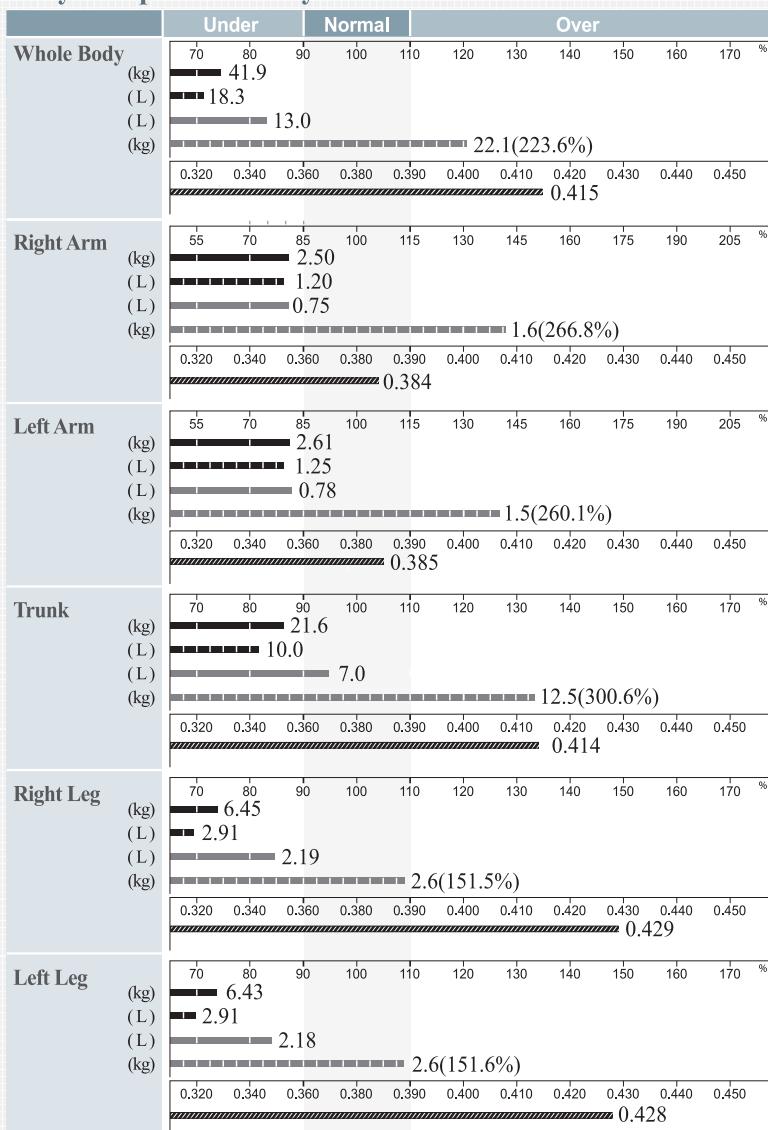
www.inbody.com

Body Composition Summary

	FFM	FM	ICW	ECW	TBW	ECW/TBW
Right Arm	2.50 kg	1.6 kg	1.20 L	0.75 L	1.95 L	0.384
Left Arm	2.61 kg	1.5 kg	1.25 L	0.78 L	2.03 L	0.385
Trunk	21.6 kg	12.5 kg	10.0 L	7.0 L	17.0 L	0.414
Right Leg	6.45 kg	2.6 kg	2.91 L	2.19 L	5.10 L	0.429
Left Leg	6.43 kg	2.6 kg	2.91 L	2.18 L	5.09 L	0.428
Whole Body	41.9 kg	22.1 kg	18.3 L	13.0 L	31.3 L	0.415
Weight		64.0 kg				

The difference between the whole body values and sum of segmental values are from the craniocervical region.

Body Composition Analysis



Research Parameters

Body Mass Index	21.4 kg/m ² (18.5~25.0)
Percent Body Fat	34.5 % (10.0~20.0)
Skeletal Muscle Mass	21.9 kg (28.2~34.4)
Soft Lean Mass	39.7 kg (47.5~58.1)
Protein	8.0 kg (9.9~12.1)
Mineral	2.60 kg (3.43~4.19)
Bone Mineral Content	2.16 kg (2.82~3.44)
Basal Metabolic Rate	1275 kcal (1428~1663)
Waist Hip Ratio	1.12 (0.80~0.90)
Waist Circumference	100.8 cm
Visceral Fat Area	145.0 cm ²
Obesity Degree	97 % (90~110)
Body Cell Mass	26.2 kg (32.8~40.2)
Arm Circumference	30.2 cm
Arm Muscle Circumference	27.1 cm
TBW/FFM	74.8 %
Fat Free Mass Index	14.0 kg/m ²
Fat Mass Index	7.4 kg/m ²
Skeletal Muscle mass Index	6.0 kg/m ²

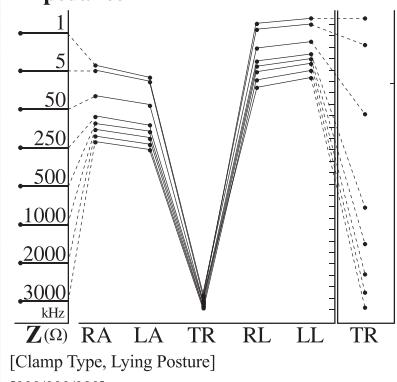
Whole Body Phase Angle

Proximal
 ϕ (°) 50 kHz | 3.8°

Segmental Body Phase Angle

Proximal	RA	LA	TR	RL	LL
50 kHz	2.2	2.0	2.2	1.6	1.5
50 kHz	4.9	4.8	5.0	2.8	2.6
250 kHz	4.8	4.7	5.9	3.1	2.8

Impedance



[Clamp Type, Lying Posture]

[000/000/000]

Comparison Result Sheet

BWA Comparison

[BWA2.0]

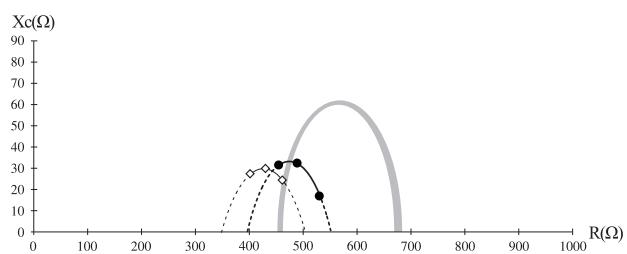
ID	Height	Age	Gender	Test Date / Time
John Doe	173cm	41	Male	2021.03.31. 15:44

InBody

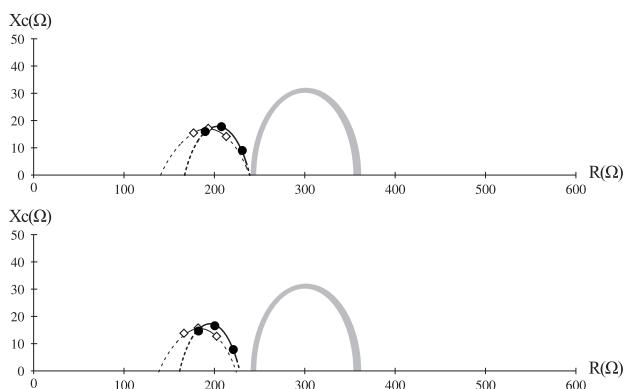
www.inbody.com

—●— Today's Results —◇— Recent Results ——— Standard median curve
(2021.03.20 15:12)

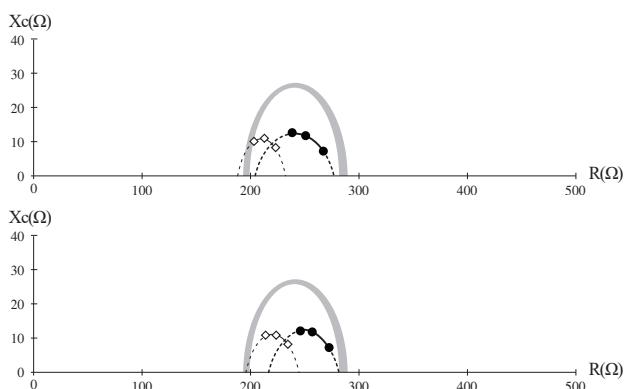
Whole Body	Today	Recent	Difference
Weight (kg)	64.0	67.9	-3.9
SMM Skeletal Muscle Mass (kg)	21.9	24.0	-2.1
Body Fat Mass (kg)	22.1	21.9	+0.2
ECW Ratio	0.415	0.419	-0.004
Phase Angle (°)	3.8	3.9	-0.1



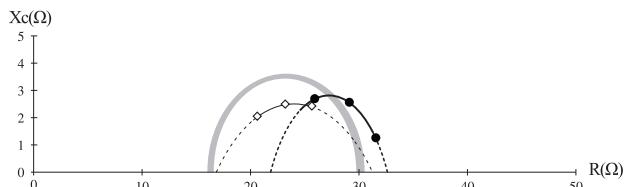
Right Arm	Today	Recent	Difference
Lean Mass (kg)	2.50	2.75	-0.25
ECW Ratio	0.384	0.386	-0.002
Phase Angle (°)	4.9	4.8	+0.1
Left Arm	Today	Recent	Difference
Lean Mass (kg)	2.61	2.91	-0.30
ECW Ratio	0.385	0.387	-0.002
Phase Angle (°)	4.8	4.7	+0.1



Right Leg	Today	Recent	Difference
Lean Mass (kg)	6.45	6.93	-0.48
ECW Ratio	0.429	0.433	-0.004
Phase Angle (°)	2.8	2.9	-0.1
Left Leg	Today	Recent	Difference
Lean Mass (kg)	6.43	6.82	-0.39
ECW Ratio	0.428	0.432	-0.004
Phase Angle (°)	2.6	2.6	0.0



Trunk	Today	Recent	Difference
Lean Mass (kg)	21.6	23.0	-1.4
ECW Ratio	0.414	0.419	-0.005
Phase Angle (°)	5.0	6.0	-1.0



Body Composition Result Sheet for Children

BWA

[BWA 2.0]

ID	Height	Age	Gender	Test Date / Time
John Doe	139.4cm	10	Male	2021.03.31. 16:40

InBody

www.inbody.com

Body Composition Analysis

Total amount of water in my body	Total Body Water	(L)	19.1 (18.0 ~ 22.0)
What I need to build muscles	Protein	(kg)	5.1 (4.9 ~ 5.9)
What I need for strong bones	Mineral	(kg)	1.91 (1.66 ~ 2.04)
Where my excess energy is stored	Body Fat Mass	(kg)	8.9 (3.8 ~ 7.7)
Sum of the above	Weight	(kg)	35.0 (27.3 ~ 36.9)

Muscle-Fat Analysis

Weight	Under		Normal		Over		%				
	55	70	85	100	115	130	145	160	175	190	205
35.0											
Weight (kg)	55	70	85	100	115	130	145	160	175	190	205

SMM	Under		Normal		Over		%				
	70	80	90	100	110	120	130	140	150	160	170
13.3											
Skeletal Muscle Mass (kg)	70	80	90	100	110	120	130	140	150	160	170

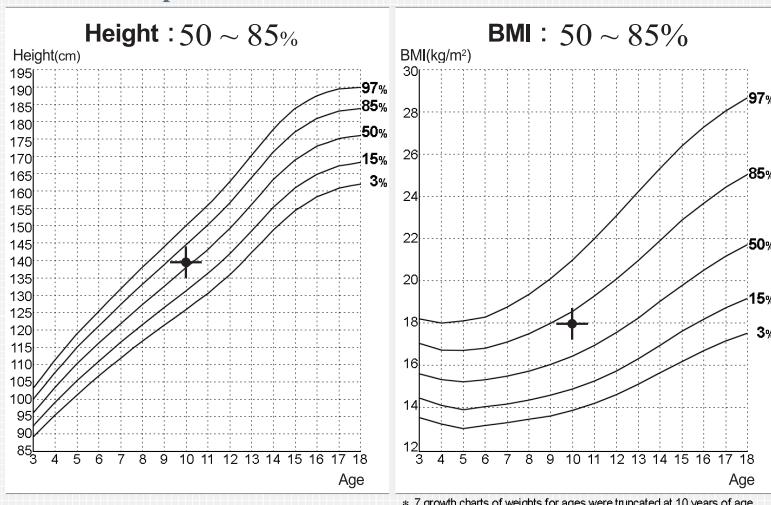
Body Fat mass	Under		Normal		Over		%				
	40	60	80	100	160	220	280	340	400	460	520
8.9											
Body Fat mass (kg)	40	60	80	100	160	220	280	340	400	460	520

Obesity Analysis

BMI	Under		Normal		Over		%				
	7.9	10.9	13.9	16.4	18.6	20.2	22.2	24.2	26.2	28.2	30.2
18.0											
Body Mass Index (kg/m ²)	7.9	10.9	13.9	16.4	18.6	20.2	22.2	24.2	26.2	28.2	30.2

PBF	Under		Normal		Over		%				
	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
25.6											
Percent Body Fat (%)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0

Growth Graph



Body Composition History

Height	(cm)	134.5	135.2	136.4	137.2	137.9	138.5	139.0	139.4
Weight	(kg)	30.8	31.3	32.0	32.8	33.5	34.0	34.4	35.0
SMM	(kg)	12.5	12.7	12.8	13.0	13.1	13.1	13.2	13.3
PBF	(%)	20.4	20.7	21.6	22.3	23.1	24.3	25.1	25.6
<input checked="" type="checkbox"/> Recent		19.07.15 14:22	19.11.19 09:30	20.01.29 15:18	20.03.15 11:00	20.06.21 15:00	20.09.19 14:52	20.12.20 15:12	21.03.31 16:40

Growth Score

85 / 100 Points

* If tall and within great body comparison standards, the growth score may surpass 100 points.

Nutrition Evaluation

Protein	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Deficient	
Minerals	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Deficient	
Body Fat	<input type="checkbox"/> Normal	<input type="checkbox"/> Deficient	<input checked="" type="checkbox"/> Excessive

Obesity Evaluation

BMI	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Under	<input type="checkbox"/> Over	<input type="checkbox"/> Over
PBF	<input type="checkbox"/> Normal	<input type="checkbox"/> Slightly Over	<input checked="" type="checkbox"/> Over	

Body Balance Evaluation

Upper	<input checked="" type="checkbox"/> Balanced	<input type="checkbox"/> Slightly Unbalanced	<input type="checkbox"/> Extremely Unbalanced
Lower	<input checked="" type="checkbox"/> Balanced	<input type="checkbox"/> Slightly Unbalanced	<input type="checkbox"/> Extremely Unbalanced
Upper-Lower	<input checked="" type="checkbox"/> Balanced	<input type="checkbox"/> Slightly Unbalanced	<input type="checkbox"/> Extremely Unbalanced

Segmental Lean Analysis

Right Arm	0.95 kg
Left Arm	0.94 kg
Trunk	10.8 kg
Right Leg	3.41 kg
Left Leg	3.37 kg

Research Parameters

Basal Metabolic Rate	933 kcal (948 ~ 1077)
Child Obesity Degree	109 % (90 ~ 110)

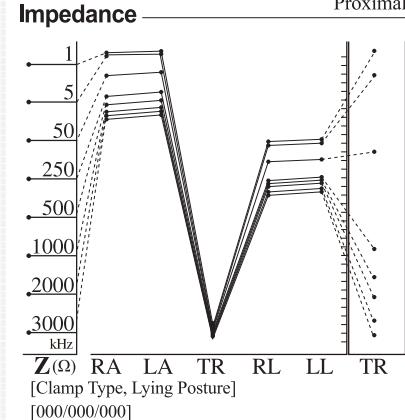
Whole Body Phase Angle

Proximal	4.3°
ϕ (°) 50 kHz	

Segmental Body Phase Angle

Proximal	RA	LA	TR	RL	LL
ϕ (°) 5 kHz	1.4	1.4	3.0	1.9	1.8
50 kHz	3.6	3.3	6.8	5.0	4.8
250 kHz	3.7	3.6	9.4	5.0	4.9

Impedance



Thermal Result Sheet

BWA 2021/03/31 15:44

ID : John Doe
Height : 173cm Age : 41
Gender: Male Weight : 64.0kg

[Clamp Type, Lying Posture]

Muscle-Fat Analysis

Weight 64.0 kg
Normal Range (55.9~75.7)

Skeletal Muscle Mass 21.9 kg
Normal Range (28.2~34.4)

Soft Lean Mass 39.7 kg
Normal Range (47.5~58.1)

Body Fat Mass 22.1 kg
Normal Range (7.9~15.8)

Obesity Analysis

BMI 21.4 kg/m²
Normal Range (18.5~25.0)

Percent Body Fat 34.5 %
Normal Range (10.0~20.0)

Segmental ECW Ratio Analysis

Right Arm 0.384
Normal Range (0.360~0.390)

Left Arm 0.385
Normal Range (0.360~0.390)

Trunk 0.414
Normal Range (0.360~0.390)

Right Leg 0.429
Normal Range (0.360~0.390)

Left Leg 0.428
Normal Range (0.360~0.390)

Body Water Analysis

Intracellular Water 18.3 L
Normal Range (23.0~28.0)

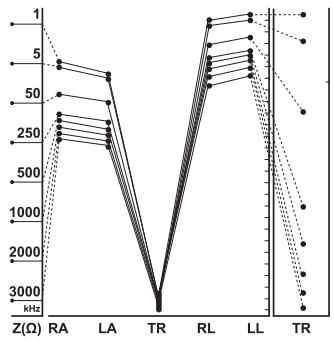
Extracellular Water 13.0 L
Normal Range (14.0~17.2)

Total Body Water 31.3 L
Normal Range (37.0~45.2)

Proximal

Whole Body Phase Angle 3.8 °

Impedance



InBody
www.inbody.com

BWA 2021/03/31 15:44

ID : John Doe
Height : 173cm Age : 41
Gender: Male Weight : 64.0kg

Water Control

ECW Ratio 0.415

Target ECW Ratio 0.385

Over Hydration -1.5 L
(-1.65~-1.35)

Target Weight 65.5 kg



Data Management Program



LookinBody WEB (Cloud)

A cloud-based client and data management solution designed to optimize performance and deliver a better user experience. Try a free 1-month demonstration by contacting regional managers.

The LookinBody WEB (Cloud) interface is a web-based application. It features a top navigation bar with links for Home, LookinBody, Reports, Device Management, Staff Management, Setup, and Support. The main content area includes a 'Recent Health Report' section with a summary of a recent test (Weight: 178.6 kg, BMI: 25.6, etc.) and a 'Dashboard Reports' section showing a 'Body Composition Changes Summary' with a table of changes over time. Below these are detailed reports for 'BWA Body Water' and 'BWA Body Composition'.



LookinBody120 (PC Software)

LookinBody120 allows you to view and manage all BWA data generated from your BWA device.

The LookinBody120 (PC Software) interface includes a 'Health Report - InBody' window and a main 'LookinBody120' window. The report window shows a summary for a member (Name: test1, ID: 216432-1, Height: 180cm, Age: 39, Gender: Male) with a 'Recent Results' section showing a weight of 80.0 kg. The main window shows a 'Select Member' dropdown, a 'Search by InBody Test Date' field, and a 'Register New' button. It also displays a 'Skeletal Muscle Mass' table with a value of 30.5 kg. The bottom of the main window shows a table of 'Recent Results'.

InBody Integration Solution

Rehabilitation Equipment



Nutrition Software



Medical Software



Corporate Wellness



Data Intergration via
InBody Cloud Server



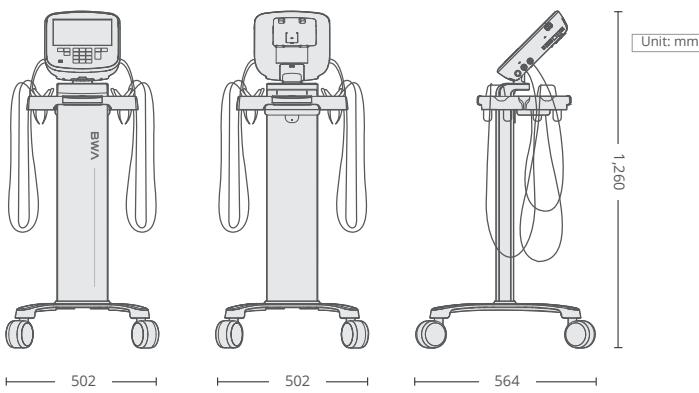
Direct Intergration
via PC Software

Government / Public System



Specifications

BWA 2.0 BODY WATER ANALYZER

			
Bioelectrical Impedance Analysis (BIA) Measurement Item		<p>Bioelectrical Impedance(2) 40 Impedance Measurements by Using 8 Different Frequencies (1kHz, 5kHz, 50kHz, 250kHz, 500kHz, 1MHz, 2MHz, 3MHz) at Each of 5 Segments (Right Arm, Left Arm, Trunk, Right Leg and Left Leg)</p> <p>Phase Angle 15 Phase Angle Measurements by Using 3 Different Frequencies (5kHz, 50kHz, 250kHz) at Each of 5 Segments (Right Arm, Left Arm, Trunk, Right Leg, and Left Leg)</p>	
Electrode Method		16-Point Clamp Electrodes	
Measurement Method		Direct Segmental Multi-Frequency Bioelectrical Impedance Analysis (DSM-BIA) Simultaneous Multi-Frequency Bioelectrical Impedance Analysis (SMF-BIA)	
Body Composition Calculation Method		No Empirical Estimation (Age and Gender does not affect the result)	
Optional Items		Thermal Printer (TP100), BWA Portable Case, BWA Adhesive Electrodes and Tape and BWA Battery Pack	
Logo Display		Name, Address and Content Information can be shown on Result Sheet	
Digital Results		LCD Screen, LookinBody Web, LookinBody120	
Type of Result Sheets		Body Water Result Sheet, Body Composition Result Sheet, Evaluation Result Sheet, Research Result Sheet, Comparison Result Sheet, Result Sheet for Children, and Thermal Result Sheet	
Voice Guidance		Audible guidance for test in progress and test complete	
Data Storage		Saves up to 100,000 measurements (When ID is entered)	
Administrator Menu		Setup: Configure settings and manage data Troubleshooting: Additional information to help use the BWA2.0	
InBody USB		Copy, backup, or restore the LookinBody test data (data can be viewed on Excel or LookinBody120)	
Barcode Reader		Member ID will be automatically inputted when the Barcode is scanned	
InBodyBAND Series Recognition Function		Recognizes the InBodyBAND series of the subject and automatically inputs personal information to the BWA2.0	
Fingerprint Recognition Function		Recognizes the fingerprint of the measurer and automatically inputs personal information to the BWA2.0	
Backup data		Backup data form BWA2.0 with an InBody USB	
QR Code		See your result on the InBody mobile App	
Applied Rating Current		1kHz : 70uA (+10uA), Over 5kHz : 300uA (+30uA)	
Adapter	Bridgepower (BPM040512F07)	Power Input	AC 100-240V, 50-60Hz, 1.2A (1.2A-0.6A)
		Power Output	DC 12V, 3.4A
	Mean Well (GSM0412-P1IR)	Power Input	AC 100-240V, 50-60Hz, 1.0-0.5A
		Power Output	DC 12V, 3.34A
Display Type		1280 x 800 10.1inch Color TFT LCD	
Internal Interface		Touchscreen, Keypad	
External Interface		RS-232C 4EA, USB Host 2EA, USB Slave 1EA, LAN(10/100T) 1EA, Bluetooth 1EA, Wi-Fi 1EA	
Compatible Printer		BWA compatible printers available at www.inbodyservice.com	
Dimensions		322(W) x 282(L) x 81.5(H): mm	
Equipment Weight		3.3kg (7.27lb, BWA only)	
Test Duration		About 90 seconds for Medical Mode, about 180 seconds for Research Mode	
Operation Environment		10~40°C (50 ~ 104°F), 30~75% RH, 70~106kPa	
Storage Environment		-10~70°C(14~158°F), 10~80% RH, 50~106kPa (No Condensation)	
Weight Range		10 ~ 250kg (22.0 ~ 551.2lb)	
Age Range		3~99 years	
Height Range		95~220cm (3ft 1.40in ~ 7ft 2.61in)	
Body Water Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Body Water Composition (Total Body Water, Intracellular Water, Extracellular Water) • ECW Ratio Analysis • Segmental Body Water Analysis (Right Arm, Left Arm, Trunk, Right Leg, Left Leg) • Segmental ECW Analysis (Right Arm, Left Arm, Trunk, Right Leg, Left Leg) • Body Water Composition History (Weight, Total Body, Intracellular Water, Extracellular Water, Extracellular Water Ratio) • Muscle-Fat Analysis (Weight, Skeletal Muscle Mass, Soft Lean Mass, Body Fat Mass) • Obesity Evaluation (BMI, Percent Body Fat) 	
Body Composition Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Body Composition Analysis (Total Body Water, Protein, Mineral, Body Fat Mass, Fat Free Mass, Soft Lean Mass, Weight) • Muscle-Fat Analysis (Weight, Skeletal Muscle Mass, Body Fat Mass) • Obesity Analysis (Body Mass Index, Percent Body Fat) • Segmental Lean Analysis • Segmental Fat Analysis • Segmental ICW Analysis • Segmental ECW Analysis • ECW Ratio Analysis (ECW Ratio) • Body Composition History (Weight, Skeletal Muscle Mass, Percent Body Fat, ECW Ratio) • InBody Score • Visceral Fat Area (Graph) • Weight Control (Target Weight, Weight Control, Fat Control, Muscle Control) • Body Type (Graph) • Nutrition Evaluation (Protein, Minerals, Fat Mass) • Obesity Evaluation (BMI, Percent Body Fat) 	
Evaluation Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Whole Body ECW Ratio (ECW/TBW): (T-Score, Z-score) • Visceral Fat Area (VFA,cm²): (T-Score, Z-score) • Body Mass Index (BMI,kg/m²): (T-Score, Z-score) • Bioelectrical Impedance Vector Analysis (BIVA) • Whole Body Phase Angle_50kHz (PHA₅₀): (T-Score, Z-score) • ECW Ratio (ECW/TBW) Balance (Right Arm, Left Arm, Trunk, Right Leg, Left Leg): Evaluation • Percent Body Fat (PBF, %): (T-Score, Z-score) • Skeletal Muscle mass Index (SMI,m²): (T-Score, Z-score) • Fat Mass Index (FMI,kg/m²): (T-Score, Z-score) • Fat Free Mass Index (FFMI,kg/m²): (T-Score, Z-score) • Lean Mass (LM) Balance (Right Arm, Left Arm, Trunk, Right Leg, Left Leg): Amount, Evaluation 	
Research Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Body Composition Summary (Fat Free Mass, Body Fat Mass, Intracellular Water, Extracellular Water, Body Water, ECW Ratio, Weight, Left Leg) • Body Composition Analysis (Lean Mass, ICW, ECW, Fat Mass, ECW/TBW): Whole Body, Right Arm, Left Arm, Trunk, Right Leg, Left Leg • Research Parameters (BMI, Percent Body Fat, Percent Abdominal Fat, Visceral Fat Area, Obesity Degree, Waist Circumference, FMI, Skeletal Muscle Mass, FFMI, SMI, Protein, Body Cell Mass, Mineral, Bone Mineral Content, Basal Metabolic Rate, Arm Circumference, Arm Muscle Circumference, TBW/FFM) • Segmental Phase Angle (5kHz, 50kHz, 250kHz): Right Arm, Left Arm, Trunk, Right Leg, Left Leg • Whole Body Phase Angle (50kHz) • Impedance Graph (Each segment and each frequency) 	
Comparison Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Weight, Skeletal Muscle Mass, Body Fat Mass, ECW Ratio, Phase Angle: Whole Body (Current Result, Previous Result, Current-Previous Result difference) • Lean Mass, ECW Ratio, Phase Angle: Right Arm, Left Arm, Trunk, Right Leg, Left Leg (Current Result, Previous Result, Current-Previous Result difference) • Cole-Cole Plot (Today, Recent, Standard Median Curve) 	
Body Composition Result Sheet for Children		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Body Composition Analysis (Total Body Water, Protein, Mineral, Body Fat Mass, Weight) • Muscle-Fat Analysis (Weight, Skeletal Muscle Mass, Body Fat Mass) • Obesity Analysis (Body Mass Index, Percent Body Fat) • Growth Graph (Height, Weight, BMI) • Growth Score • Body Composition History (Height, Weight, Skeletal Muscle Mass, Percent Body Fat) • Nutrition Evaluation (Protein, Minerals, Fat Mass) • Obesity Evaluation (BMI, Percent Body Fat) • Body Balance (Upper, Lower, Upper-Lower) • Segmental Lean Analysis (Right Arm, Left Arm, Trunk, Right Leg, Left Leg) 	
Thermal Result Sheet		<p>Result parameters and Result interpretation</p> <ul style="list-style-type: none"> • Muscle-Fat Analysis (Weight, Skeletal Muscle Mass, Soft Lean Mass, Body Fat Mass) • Obesity Evaluation (BMI, Percent Body Fat) • Segmental Lean Analysis • Segmental ECW Ratio Analysis • Body Water Composition (Total Body Water, Intracellular Water, Extracellular Water) • Body Composition Analysis (Protein, Minerals, Body Fat Mass, Fat Free Mass, Bone Mineral Content) • Segmental Body Water Analysis (Right Arm, Left Arm, Trunk, Right Leg, Left Leg) • Research Parameters (Extracellular Water, Intracellular Water, ECW Ratio, Skeletal Muscle Mass, Protein, Minerals, Bone Mineral Content, Body Cell Mass, Percent Abdominal Fat, Waist Circumference, Visceral Fat Area, Obesity Degree, Basal Metabolic Rate, Arm Circumference, Arm Muscle Circumference, FMI, FFMI, SMI, TBW/FFM) • Segmental ECW Ratio Analysis (human shaped graph) • Whole Body Phase Angle (50kHz: Right side of the body) • Segmental Phase Angle (5kHz, 50kHz, 250kHz: Right Arm, Left Arm, Trunk, Right Leg, Left Leg) • Whole Body Phase Angle (50kHz) • Impedance (Each segment and each frequency) 	

* Specifications may change without prior notice.
* QR Code is a registered trademark of DENSO WAVE INCORPORATED

InBody

See what you're made of

The power of InBody

InBody maintains a high brand position with the highest level of technology.



Certifications obtained by InBody

InBody complies with the quality management system according to international standards. We satisfy country-specific regulatory requirements that apply to product safety and performance, and provide related services.



InBody's Intellectual Property Rights

InBody owns patents and intellectual property rights around the world and provides products with high accuracy and reproducibility based on this technology.



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