

# InBody s20

THE PRECISION BODY COMPOSITION ANALYZER



**BIOSPACE**

# Body Composition Analyzer for Patients - InBody S20

InBody S20 is a bedside body composition analyzer for the patients who cannot stand for a body composition test. The body composition analyzer for professionals, InBody S20 is capable of presenting accurate and highly reproducible data. Out of consideration for patients who have trouble getting out of bed, the InBody S20 is mobile and equipped with functions to store and monitor data.



# InBody S20 - the precision body composition analyzer nobody ever imagined.

## **InBody S20 has overcome the limits of existing BIA equipments.**

InBody has almost replaced conventional BIA. These betterments have been proved by clinical researches. Technology of InBody is patented as a seed technology in developed countries across the world including US, Japan and European nations. Using **8-point electrodes method**, InBody **measures the body by segments**, and it has very unique technology that does **not resort to empirical estimates** like gender or age upon body composition analysis. This is InBody's disparate technology that can be not compared with others.

## **InBody S20 monitors body water changes during dialysis.**

It is crucial to watch changes of body water in dialysis patients on a regular basis. InBody S20 with **the technology of segmental analysis** can figure out even slight change of body water. Because the measured value of one segment of the body does not affect the measurements of other segments, the result is highly accurate. The balance between ICW and ECW can be checked through broadband **multi-frequency method**.

InBody S20 measures an accurate dry weight using such technologies. It is critical to have an accurate dry weight for hemodialysis to prevent possible side effects. InBody S20 will show you the exact measurements to minimize adverse side effects when going under hemodialysis. InBody S20 measures continuously during a certain time frame, so that you can monitor the timeless changes of body water.

## **And other features of InBody S20**

- **Anywhere, Anytime, Anybody**  
A hub-wheeled InBody S20 is movable right next to the patients.
- **The result sheet**  
Easy for both patients and physicians to understand the data at a glance.
- **Color screen**  
InBody S20 displays results on colored LCD screen.
- **Two types of electrode usage**  
Tactile electrodes, Adhesive electrodes.

## **Why body composition analysis is important for patients?**

- Detecting the imbalance of body fluid is crucial for patients with kidney failure, heart disease as well as those who recovering from operations.
- It is preferable to check the amount of muscles that patients are prone to lose due to lack of physical activities. To assess the effects of rehabilitation treatment, analyzing muscle mass by part is essential.
- The nutrition test is important to the treatment for the long-term in-patients, patients suffering from chronic illnesses or geriatric diseases.
- It is strongly recommended to check obesity of people who have very little physical activities or of the elderly between the age of 50's and 70's who have greater risk of adult diseases.



### 1. Bedside type with greater mobility

Rechargeable battery being in use

### 2. Data storage

Results of body composition analysis can be stored in floppy disks and printed out for research purposes

### 3. Convenient to attach and remove

Tactile electrode / Adhesive electrode

Through 6.4 inch Color TFT LCD screen, you can check measurement procedures in detail.

### 4. Body Water History

InBody S20 displays the segmental body water distribution and edema figures. Examinee's weight, Total Body Water, Intracellular Water, and Extracellular Water, changed by the tested date, are also displayed on the screen.

### 5. Body Composition History

InBody S20 displays Obesity Diagnosis results based on the body composition analysis. You can easily check the changes in body composition at the body composition history section.

### 6. Study Item

InBody S20 uses broadband frequencies of 1~1000kHz, and shows segmental Impedance, Reactance, and Phase angle values in each measured frequencies. These values can be used for research purposes in BIA and other various fields.

### Various Results based on measurements

#### Examinee and institution

You can advertise your center effectively. It displays personal information of examinee entered and hospital or clinic name, doctor name and the address.

#### Body Composition

By explaining the result sheet, your clients will realize what their body is composed of and soon comply with given instruction. In this part, these values demonstrate the weight of each body compositional element that makes up the examinee's total body weight. The estimated values are then compared with the standard values.

#### Muscle-Fat Analysis

Skeletal Muscle and Body Fat Mass are the main subjects for weight control. The horizontal bar graph helps you understand your body composition state compared to standard values. The value next to bar shows you the measured values and the end of bar indicates your position in the range. If the length of the bars would be similar, your body composition is well balanced, while if the lengths of the bars fluctuate, it means your body composition is not balanced.

#### Obesity Diagnosis

By showing the proportion of both BMI and percent body fat in their body, InBody S20 can identify hidden obese people. A comprehensive diagnosis of obesity can be made based on various approaches like Percent Body Fat and Waist-Hip Ratio through body composition analysis.

### Body Water

Body water analysis data for each arms, legs, and trunk. Body water in each limbs reflect the amount of the lean body mass in a healthy body. So the differences between the bar lengths indicate the differences of muscle mass in each segments. This is useful to monitor the changes of body composition during treatments.

### Segmental Edema

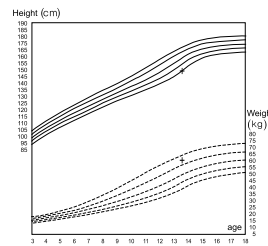
InBody S20 shows segmental edema score as well as edema score for the whole body.

### Edema

The graph shows the ratio of ECW to TBW and ECF to TBF. Edema score of healthy person is maintained in normal range.

### Visceral Fat Area

It tells how much of body fat is accumulated in visceral areas.



#### \* Growth Chart

For children under 18 of age, instead of Visceral Fat Area, it provides a Growth Chart. With graphs in percentile regarding age, gender, height and weight, it is possible to see the developmental conditions of their growth.

### Various comprehensive evaluation

Nutritional Evaluation, Weight Management, Obesity Diagnosis, Body Balance, Body Strength, Health Diagnosis The result sheet of InBody S20 summarizes all the obtained results on the right side. This makes much easier for patients to comprehend their health condition. Using different colors, it even distinguishes the poor and the fine conditions. It helps to check and see overall body composition at a glance.

### Body Composition History

Examination results will be stored so that changes in body composition of the examinee can be tracked.

### Weight Control

Based on body composition analysis results, target weight and how much to adjust for fat and muscle are suggested.

### Fitness Score

This generalized figure is suggested for subjects to remember easily. You need to make sure that score gets higher through weight control.

### Additional Data

Basal Metabolic Rate, Body cell mass, Obesity degree, Bone mineral content. InBody shows you commonly used indexes related to body composition.

### Anthropometrics

- NECK (circumference of neck)
- ABD (circumference of Abdomen)
- ACR (circumference of right arm)
- THIGH<sub>R</sub> (circumference of right thigh)
- AMC (circumference of arm muscle)
- CHEST (circumference of chest)
- HIP (circumference of hip)
- ACL (circumference of left arm)
- THIGH<sub>L</sub> (circumference of left thigh)



# Result Sheet

## InBody S20 Body Composition Analysis

I.D. MISUK HAN      AGE 24      HEIGHT 158cm      GENDER F      DATE / TIME 2004.07.01/09:23:50(65000)

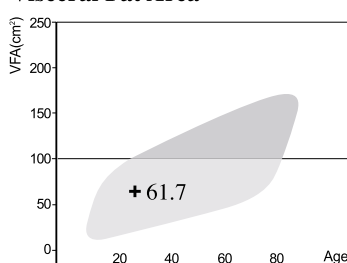
Seoul National Univ. Hospital  
Doctor Lee

### Body Composition Analysis

Compartments	Values	Total Body Water	Soft Lean Mass	Fat Free Mass	Weight	Normal Range
I C W (ℓ) <small>Intracellular Water</small>	16.3	26.8	34.3	36.4	46.0	16.6 ~ 20.2
E C W (ℓ) <small>Extracellular Water</small>	10.5					10.5 ~ 12.4
Protein (kg)	7.0	NON-OSSEROUS				7.2 ~ 8.7
Mineral (kg)	2.58	OSSEROUS: 2.14				2.47 ~ 3.02
Body Fat Mass(kg)	9.6					10.5 ~ 16.8

▶ Mineral is estimated.

### Visceral Fat Area



### Muscle - Fat Analysis

	Under	Normal	Over	UNIT: %	Normal Range
Weight (kg)	55 70 85 100 115 130 145 160 175 190 205				44.6 ~ 60.3
S M M (kg) <small>Skeletal Muscle Mass</small>	70 80 90 100 110 120 130 140 150 160 170				19.8 ~ 24.2
Body Fat Mass (kg)	40 60 80 100 160 220 280 340 400 460 520				10.5 ~ 16.8

### Obesity Diagnosis

	Under	Normal	Over	UNIT: %	Normal Range
B M I (kg/m²) <small>Body Mass Index</small>	10 15 18.5 21.5 25 28 33 38 43 48 53				18.5 ~ 25.0
P B F (%) <small>Percent Body Fat</small>	8 13 18 23 28 33 38 43 48 53 58				18.0 ~ 28.0
W H R <small>Waist-Hip Ratio</small>	0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15				0.75 ~ 0.85

### Body Water

	Under	Normal	Over	UNIT: %	Segmental Edema	Edema
Right Arm (kg)	40 60 80 100 120 140 160 180				ECF/TBF: 0.331	ECW/TBW: 0.378
Left Arm (kg)	40 60 80 100 120 140 160 180				0.331	0.377
Trunk (kg)	70 80 90 100 110 120 130 140				0.348	0.395
Right Leg (kg)	70 80 90 100 110 120 130 140				0.342	0.389
Left Leg (kg)	70 80 90 100 110 120 130 140				0.348	0.395

### Nutritional Evaluation

Protein  Normal  Deficient  
Mineral  Normal  Deficient  
Fat  Normal  Deficient  Excessive

### Weight Management

Weight  Normal  Under  Over  
S M M  Normal  Strong  Under  
Fat  Normal  Under  Over

### Obesity Diagnosis

B M I  Normal  Under  Over  
 Extremely Over  
P B F  Normal  Obese  Extremely Obese  
W H R  Normal  Obese  Extremely Obese

### Body Balance

Upper  Balanced  Slightly Unbalanced  Extremely Unbalanced  
Lower  Balanced  Slightly Unbalanced  Extremely Unbalanced  
Upper-Lower  Balanced  Slightly Unbalanced  Extremely Unbalanced

### Body Strength

Upper  Normal  Developed  Weak  
Lower  Normal  Developed  Weak  
Muscle  Normal  Muscular  Weak

### Health Diagnosis

Body Water  Normal  Under  
Edema  Normal  Slight Edema  Edema  
Life Pattern  Normal  Alert  Risky  Highly Risky

### Weight Control

Target Weight	52.42	kg
Weight Control	+ 6.42	kg
Fat Control	+ 2.51	kg
Muscle Control	+ 3.92	kg
Fitness Score	81	Points

### Impedance

R	RA	LA	TR	RA	LL
1kHz	471.5	495.5	31.0	322.9	310.7
5kHz	461.9	483.4	29.1	316.0	303.0
50kHz	420.5	440.3	25.5	280.2	269.0
250kHz	383.6	401.2	22.7	252.9	245.3
500kHz	366.3	383.1	21.9	247.3	240.9
1000kHz	341.3	355.2	21.7	244.7	239.9
Xc 5kHz	98.9	34.0	3.0	51.8	49.5
50kHz	56.2	91.9	9.5	11.3	12.8
250kHz	18.7	49.8	5.9	83.1	80.8

### Body Composition History

DATE / TIME	Weight	SMM	Fat	Score	ECF/TBF
04/03/05 09:55	45.0	19.0	9.0	79	0.348
04/04/02 10:30	45.2	19.3	9.0	79	0.349
04/05/12 09:50	45.5	19.0	9.2	80	0.345
04/06/08 10:23	46.0	19.5	9.5	81	0.343
04/07/01 09:23	46.0	19.3	9.6	81	0.345

### Additional Data

( Normal Range )  
Dry Weight = 45.46 kg      None  
B C M = 23.3 kg      23.7 ~ 28.9  
B M C = 2.14kg      2.03 ~ 2.49  
B M R = 1157 kcal      1118 ~ 1367

### Anthropometry

NECK = 29.80cm      CHEST = 77.83cm  
ABD = 76.19cm      HIP = 101.65cm  
AC<sub>R</sub> = 24.22cm      AC<sub>L</sub> = 24.14cm  
THIGH<sub>R</sub> = 45.93cm      THIGH<sub>L</sub> = 45.57cm  
AMC = 21.30cm

## Specifications

Electrode Method	Tetrapolar 8-Point Tactile/Detachable Electrode System
Frequency	1kHz, 5kHz, 50kHz, 250kHz, 500kHz, 1000kHz(1MHz)
Measurement items	Resistance(R), Reactance(Xc), Phase Angle( $\varphi$ )
Measurement Sites	Right Arm, Left Arm, Trunk, Right Leg, Left Leg
Outputs	Visceral Fat(VFA, cm <sup>2</sup> ) Fat Mass(FAT, kg) Intracellular Water(ICW, ℓ) Extracellular Water(ECW, ℓ) Total Body Water(TBW, ℓ) Edema Segmental Edema Segmental Water( ℓ) Skeletal Muscle Mass(kg) Dry Weight(kg)
Applied Rating Current	100 $\mu$ A(1kHz), 500 $\mu$ A(others)
Power Consumption	150VA
Power Source	200-240V~, 50/60Hz
Display Type	640 × 480 Color TFT LCD
External Interface	RS-232C 3EA, USB(Ver. 1.1) 2EA, Ethernet(10/100 Base-T) 1EA FDD (Transferring database to external device)
Printer Interface	IEEE1284 (25pin parallel)
Compatible Printer	Laser/Inkjet Printer (HP, Canon, Epson)
Dimensions	260.5(W) × 373(L) × 800(H) : mm
Machine Weight	27kg
Measurement Duration	Less than 2 minutes
Operation Environment	10 ~ 40 °C(50 ~ 104 °F), 30 ~ 80% RH
Storage Environment	0 ~ 40 °C(32 ~ 104 °F), 30 ~ 80% RH
Optimum Pressure	500 ~ 1060hPa
Weight Range	10 ~ 250kg(22 ~ 551lbs)
Age Range	6 ~ 99years
Height Range	110 ~ 220cm(43.3 ~ 86.6in)

Ⓒ The aforementioned information is subject to change without prior notice.



## Certifications and patents obtained by Biospace



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