InBody170

InBody USER'S MANUAL

InBody170 USER'S MANUAL

Thank you for purchasing the InBody170.

Please read manual prior to use and operate with care. Make sure to keep this manual for future reference.

BIOSPACE

Notice

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Acknowledgements

Biospace reserves the right to modify the dimensions or exterior of the InBody170 to improve the quality of the product, without consent of the customer.

BM-ENG1-C0-B-120903

Introducing the InBody170 - BODY COMPOSITION ANALYZER

Body Composition consists of 4 major components: Water, Protein, Minerals and Fat. These four elements are the fundamental ingredients the body is comprised of, and it is important for them to be in balance. Body composition analysis is expected to quantify and measure these ingredients.

Until recently, diagnosing obesity has focused on appearance, without considering a balanced body composition. For more reasonable health care, accurate body composition analysis must be performed first, to achieve the balance of the four major body components.

Biospace has earned recognition in the international market for technical expertise demonstrated through the InBody series. Based on the experience and technology over the last 15 years, Biospace has released the body composition analyzer, the InBody170 .

With direct segmental measurement, the InBody170 guarantees high accuracy and reproducibility. The InBody170 yields accurate results unique to the individual, regardless of empirical estimations and reliably evaluates the effectiveness of diet control and exercise prescription.

Biospace is committed to providing advanced equipment to promote good health and a long life.

Kichul Cha, CEO

Contents

How to use this manual

This user's manual explains the functions of the InBody170.

Follow the instructions below for effective use.

1. Please read this manual thoroughly prior to InBody170 operation.

2. Take a few moments to review the manual of this product in order to understand configuration.

3. If you have clinical issues while using the InBody170, please contact Biospace customer service.

E-mail : info@inbody.com TEL: 82-2-501-3939

4. Read symbols carefully. The following represents these symbols.

Important information to warn of situations which might cause major injury and/or damage to property if instructions are not carefully followed.

Important information to warn of situations which might cause minor injury and/or damage to property if instructions are not carefully followed.

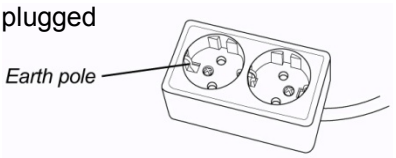
Important and helpful information for operation.

Safety Information

WARNING

1. Do not use this equipment in combination with the following electronic medical devices.
 - Medical devices, such as a pacemaker
 - Electronic life support systems, such as an artificial heart/lung
 - Portable electronic medical devices, such as an electrocardiograph.

2. This product should always be placed on the ground and plugged into a secure electrical outlet.



3. Physically disabled persons or children should receive assistance when measuring on the InBody170 in order to obtain accurate results and avoid injury.

4. Do not insert and remove the power cord with wet hands.

5. Do not jump or apply severe shock to the foot plate, this may cause incorrect measurement or malfunction

6. To prevent damage, please use a socket connected to appropriate power supply(100-240VAC). If the socket has several terminals, a socket or extension cable with enough electric capacity should be used.

7. To avoid electric shock, be sure to avoid contact between this product and other devices.

8. Use caution when raising the stand body of the equipment to avoid injury. When the body stand is raised, do not touch the joint part by hand or with any other part of the body. There is a danger of such hand or part of the body getting jammed in between the joints.

9. Do not dismantle the equipment or open the back cover. Internal parts are not for customer use. If the equipment is dismantled, the warranty is void, and service costs will be charged. If service is required, contact Biospace or the supplying agency.

10. Follow local governing ordinances and recycling plans regarding the disposal or recycling of device components.

11. BIA device has no harm to human body as it flows small current through the body. However, when measuring pregnant women, please consult with physicians or experts.

1. **Cross Contamination**

Individuals with any kind of contagious disease or infection must not use or come in contact with the foot plate or this product. Please be sure to clean the foot plate with appropriate disinfectant after each use. Never pour any liquid directly on the foot plate, as it may cause internal damage. Use a soft cloth and appropriate ethyl alcohol to wipe off the foot plate. Do not wipe the foot plate with strong chemicals.

2. **Test result interpretation and prescription**

Do not start weight control or exercise therapy without physician's prescription or expert's advice. Misguided self-diagnosis may harm your health. If you are pregnant, please consult with physician or expert before use.

3. **Other equipment**

Please block electromagnetic interferences from other equipments. It may lead to inaccurate test result or error.

4. This product must be installed on a flat and stable floor. If the floor is not level, may cause harm or incorrect measurement.

5. Make sure you use the AC adapter provided by Biospace. Using other AC adapter may cause the malfunction of product.

6. Be careful not to spill or drop any residue(food or beverage) on this product. It may cause serious damage to the electronic components.

7. Do not move during measurement for accurate test result.

8. The arm consists of a hand electrode. Do not force the arm in the wrong direction. The resulting damage may affect the function of the internal cable and circuit board.

9. Be careful not to hurt your fingers on the edge of the foot plate when handling the screws.

1. Wrong installation contrary to manual guidelines, or other equipment interference, may cause error or inaccurate test results. To solve the interference problem, you should
-Separate power supply from the equipment that is causing interference.
-Isolate the equipment.
-Use a power supply committed only to device.
-Please contact Biospace if the problem continues.

2. Excessively high or low temperatures, humidity and pressure may affect the equipment operation and cause error. Please use the equipment within the suggested specification range for equipment's use.

3. While moving, installing, or using this product, be sure to protect against any physical shock or damage. Always use the packing material and the original shipping box when moving or transporting this product.

4. Use this equipment only for the purpose of body composition analysis.

5. Repair and examination should be conducted only by Biospace's professional A/S staff. Please contact Biospace if needed.

6. The InBody170 fulfills the Standards of IEC60601-1(EN60601-1), Safety of Electric Medical Equipment. In addition, the InBody170 complies not only with Level A for Noise Immunity, but also with Level A for Noise Emission by the Standard IEC60601-1-2(EN60601-1-2), Electromagnetic Compatibility Requirements.

7. The InBody170 has been designed, manufactured, and inspected under the full quality assurance system of Biospace. Biospace fulfills the international standardization system, ISO 9001 and ISO 13485.

Indicators & Safety Symbols

A. Indicators

	9 pin Serial Port, Female (RS-232C)		USB Port (Slave)

B. Safety Symbols

	Warning / Caution / Note		BF Type Equipment
12V ⎓, 3.4A	Adapter		Power On
	Power Off		

Disposal of old Electrical & Electronic Equipment

(Application in the European Union and other European countries with separate collection system.) This symbol indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling this product, please refer to local governing ordinances and recycling plans.

NOTE

Follow local government ordinances and recycling instructions regarding disposal or recycling of device components, including batteries.

Workplace Requirements

Operation Environment

Temperature range	10 ~ 40 ℃ (50 ~ 104˚F)
Relative humidity	30 ~ 75 %
Atmospheric pressure range	70 ~ 106 kPa

□ **Transport and Storage Environment**

Temperature range	-20 ~ 70 ℃ (-4 ~ 158˚F)
Relative humidity	10 ~ 95 % (No condensation)
Atmospheric pressure range	50 ~ 106 kPa

□ **Adapter**

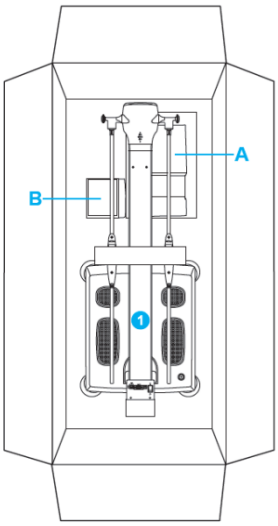
Power Input	AC 100 ~ 240V, 50/60Hz, 1.2A
Power Output	DC 12V, 3.4A

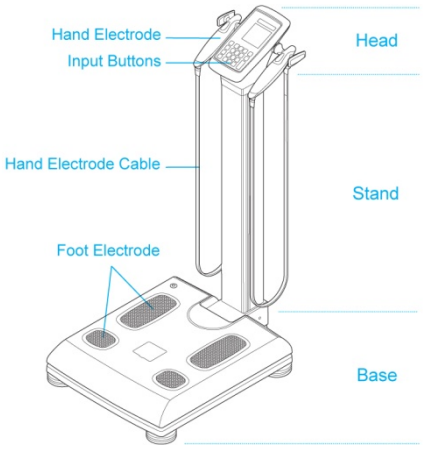
Chapter1. Installation & Maintenance

1. Contents of the box
2. Exterior & Functions
3. Installation Instructions
4. Transportation
5. Repacking
6. Maintenance

1. Contents of the box

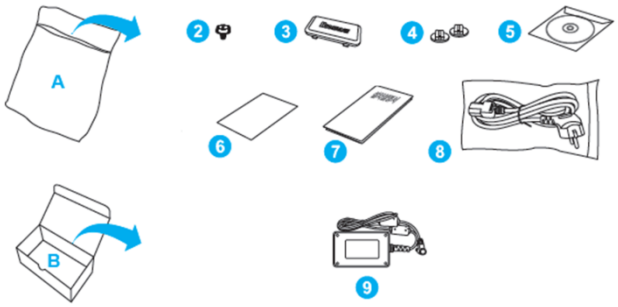
When opening the box, make sure all of the following items are inside.





Included Items

① InBody170
② Joint Screw
③ Joint Cover
④ Cable Clips 2EA
⑤ User's Manual CD
⑥ Warranty
⑦ Install Manual
⑧ Power Cord
⑨ Adapter (12V, 3.4A)



CAUTION

To prevent physical shock, use Biospace's packing material when shipping or transporting the equipment. Refer to this Chapter1, Section 4: "Transportation."

NOTE

Save the wrapping material after unpacking for the event of relocation.

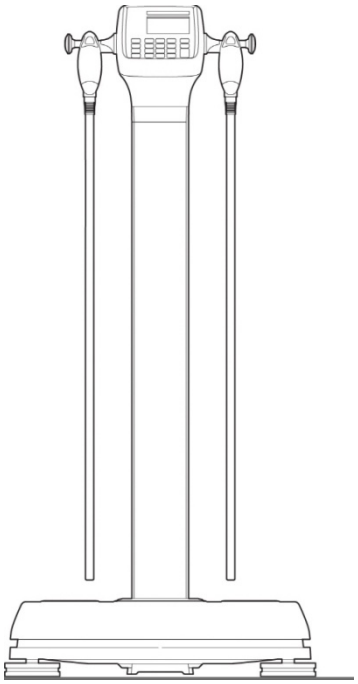
NOTE

Please refer to Chapter 5. Section2. "Options" for PT500 contents and installation guidance.

2. Exterior & Functions

Individual part identification and functions with schematic sketches are provided below. Please inspect each component of the InBody170 to check any damage prior to installation.

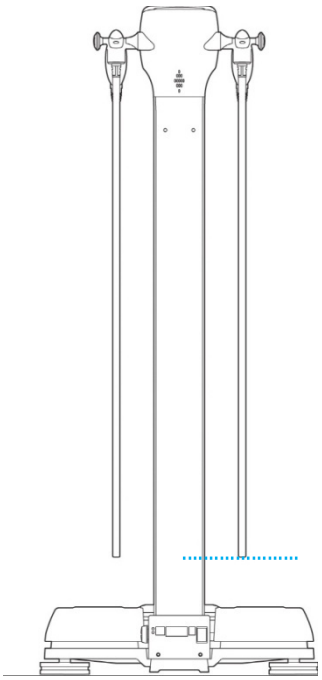
A. Operation Part (Head)
B. Stand Part
C. Base Part
D. Rear Part



A. Operation Part (Head)

B. Stand Part

C. Base Part

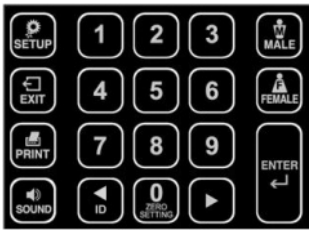


D. Rear Part

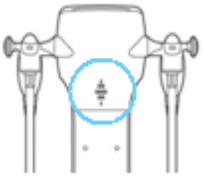
A. Operation Part

(1) LCD
This displays the analysis procedure, messages and results.

(2) Key Pad (19 buttons)
The keypad is divisible into input buttons and function buttons. These are used to input data required for body composition analysis, to set up the operating environment and to print out test results.



(3) Speaker
A signal sound informs users of status such as process or completion of measurement.

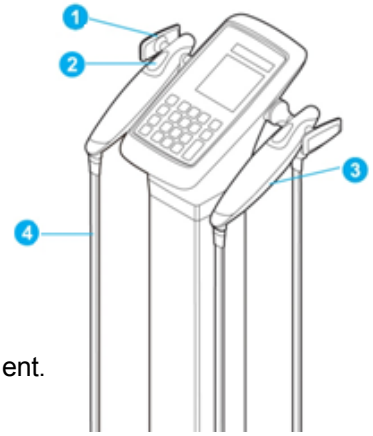


B. Stand Part

(1) Hand Electrode Holder
Place hand electrode here when not in use

(2) Thumb Electrode
Activated by making contact with the thumb,
thus allowing current to flow through the body during measurement.

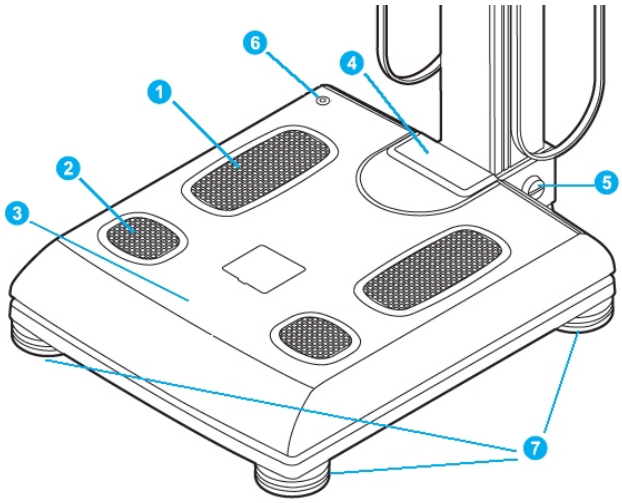
(3) Palm Electrode
Activated by wrapping the palm around the electrode,
thus allowing current to flow through the body during measurement.



(4) Hand Electrode Cable
The hand electrode cable is connected to the circuit that transfers voltage and electric current.

CAUTION The cable connected to the electrode can be damaged when too much pressure is given to it.

C. Base Part



(1) Front Sole Electrode

Activated by placing the fore-foot directly on the front sole electrode. This allows the current to flow through the body.

(2) Rear Sole Electrode

Activated by placing the heel of the foot directly on the rear sole electrode.

(3) Foot Plate

The loadcell, which measures body weight, is underneath the foot plate.

(4) Joint Cover

Remove joint cover on the foot plate and fold the stand. If the joint cover is not removed before folding the stand, the product can be severely damaged.

(5) Joint Screw

This is the joint screw which fixes the upper part in such a way it does not move.

(6) Bubble Level Indicator

Used to level the InBody170 by means of a view glass and bubble alignment.

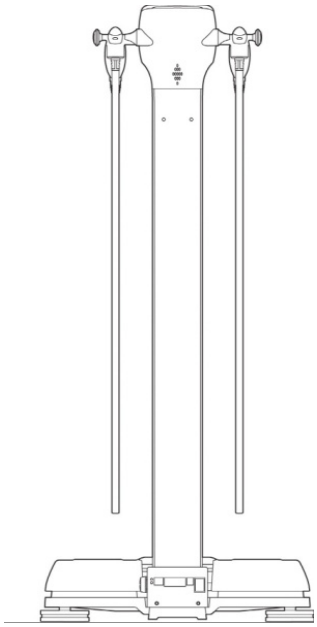
(7) Level Screws

There are 4 leveling screws that support the equipment. Leveling screws are designed to be turned by hand, so you can easily adjust the balance of the equipment.

D. Rear Part

(1) Back Cover

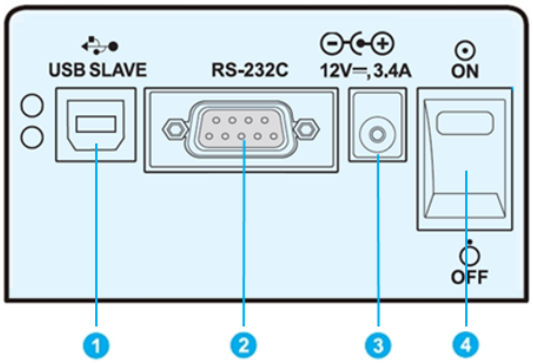
Only qualified personnel are allowed to remove the back cover.



WARNING

Do not dismantle the equipment. Internal parts are not for customer use and may cause electric shock. If the equipment is dismantled, the warranty is void, and service costs will be charged. If you have any problems with device quality or operation, please contact the manufacturer or the distributor.

(2) Control & Connection Unit
Connect to peripherals such as a PC or a printer for data transmission.



① USB Slave Port

② 9pin Serial Port, Female (RS-232C)
Use to connect optional devices i.e. thermal printer or blood pressure monitor provided by Biospace.

③ Power Input Port
Use to connect the power adapter.

④ Power Switch
Power the InBody170 on/off.

Since the control and connection part is located below the rear part of the equipment, liquid or foreign matter may flow into the equipment. The liquid or foreign matter which has flown into it could cause a critical damage to any electronic parts.

Do not touch signal input, signal output or other connectors, and the patient simultaneously.

External equipment intended for connection to signal input, signal output or other connectors, shall comply with relevant IEC Standard(e.g., IEC60950 for IT equipment and IEC60601-1 series for medical electrical equipment). In addition, all such combination-
system-shall comply with the standard IEC60601-1 and/or IEC60601-1-1 harmonized
national standard or the combination. If, in doubt, contact qualified technician or your local representative.

Use the adapter provided by Biospace only.

When using the adapter cable, insert the adapter cable tightly into the InBody170.

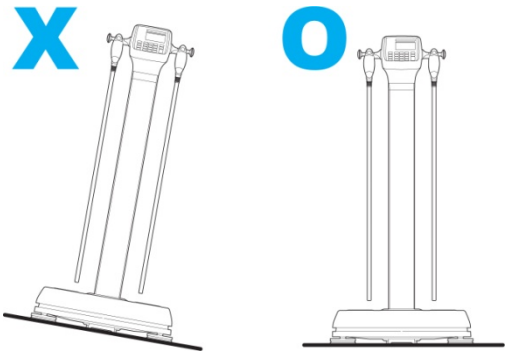
Including the optional equipment, only the peripherals provided by Biospace can be connected to the InBody170. For any inquiry about peripherals, contact Biospace.

3. Installation Instructions

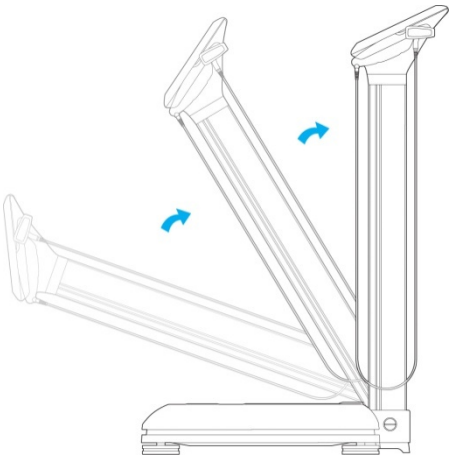
A. Unpacking & Installation

(1) Unpack the box and remove the top pad.

(2) Place the equipment horizontal to the ground.



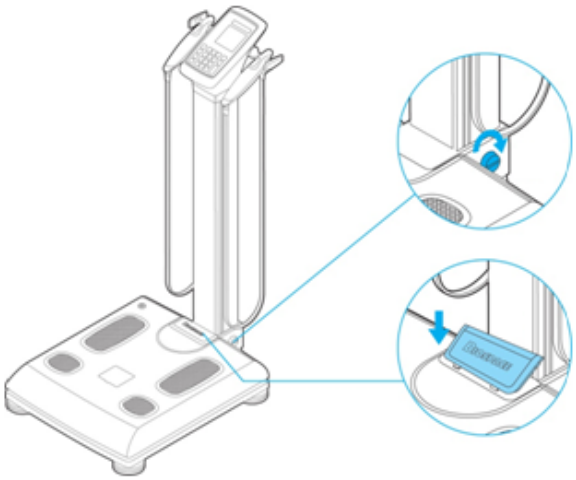
(3) Raise the stand of the equipment carefully until it stands upright.



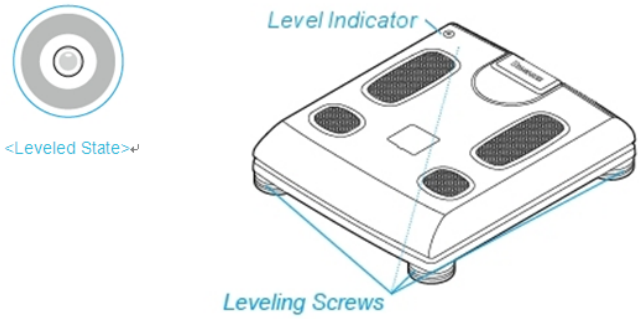
CAUTION

Use caution when raising the stand body of the equipment to avoid injury. When the body stand is raised, do not touch the joint part by hand or with any other part of the body. There is a danger of such hand or part of the body getting jammed in between the joints.

(4) Tighten the joint screw connecting stand body and foot plate. After upper part of the InBody170 is fixed, close the joint cover..



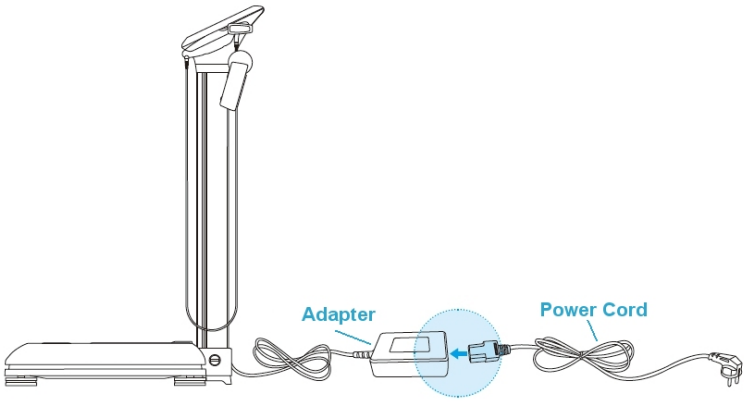
(5) If the air bubble is not in the center of the level indicator, tighten or loosen the leveling screws (4EA) on the foot plate to adjust the level of InBody170. InBody170 must be leveled properly for accurate weight measurement.



< Raise > < Lower >

CAUTION Use caution when handling screws to avoid injury.

(6) Connect the adapter to the power cord and plug it to the wall outlet.



(7) Turn the InBody170 on.

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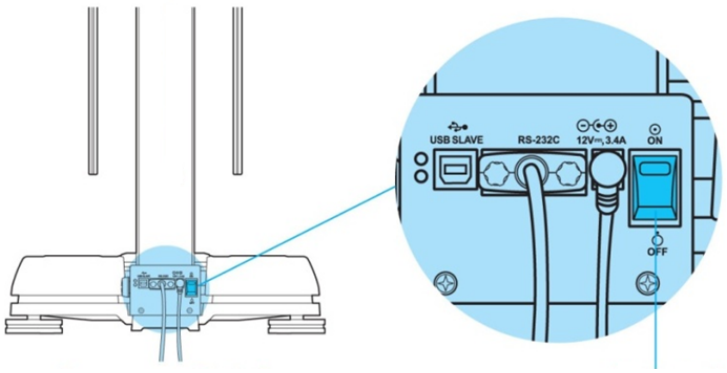


<Rear view of InBody170>

Power Switch

CAUTION

Do not touch the base when turning on and during warm up. Applying pressure or weight to the base during warm up will result in an inaccurate calibration, which may cause the measurements to be inaccurate.

4. Transportation

If it must be transported, be extra careful to ensure safe handling. The following are some tips for safely transporting the InBody170.

(1) Before transporting the InBody170, turn off the power switch and unplug the adapter.

(2) Be careful not to damage the hand module.

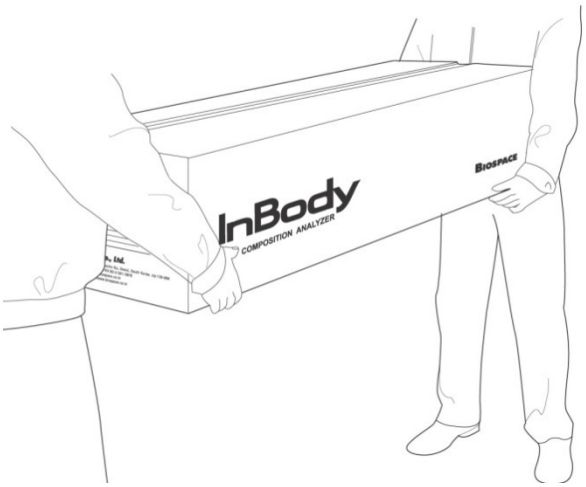
(3) After moving the InBody170, ensure that it is placed horizontal to the ground.

A. Environmental Requirements

Storage environment: -20 ~ 70℃ (-4 ~ 158°F), 10 ~ 95%RH (No condensation)
50 ~ 106kPa

B. Transporting Before Installation

Before installation, the InBody170 is shipped in the box designed by Biospace.
For safety, have two people move it by holding both sides or use handling equipment such as a cart or dolly.



CAUTION

Be careful with fragile freight. The package has fragile operation parts including LCD, which has the sign on the box.

CAUTION

After relocating the InBody170, make sure it is level again. Inaccurate leveling will affect accuracy of individual weight measurements.

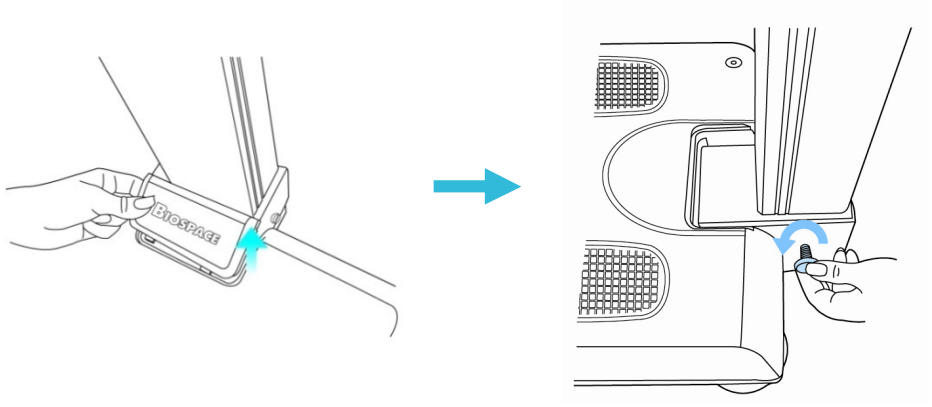
5. Repacking

Be sure to turn off the power switch and unplug the power cable before repacking. Be careful to avoid severe physical shock, jarring or other damage while repacking, especially with regard to the arm and foot electrodes.

(1) Turn off the power switch.

(2) If a printer is attached to the InBody170, remove the thermal printer first.
Remove all cables connected to the InBody170.

(3) Open the joint cover. Loosen the screw on the foot plate..

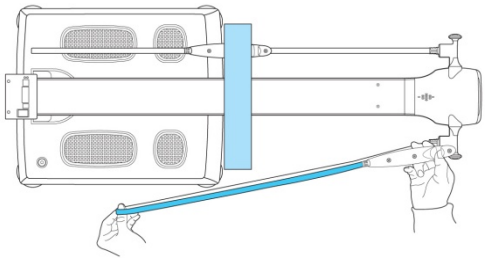


(4) Slowly fold the stand of the InBody170 carefully.

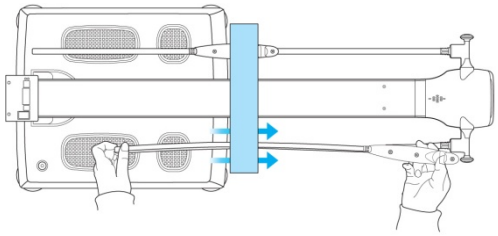
WARNING

Use caution when handling screws to avoid injury. Do not touch the joint part by hand or with any other part of the body. There is a danger of such hand or part of the body getting jammed in between the joints.

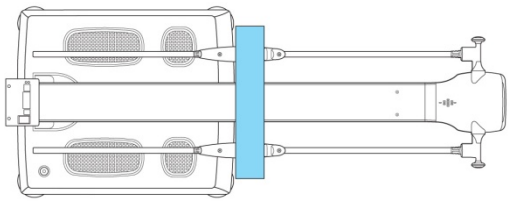
(5) Hold the hand electrode cable and make sure that it is not twisted.



(6) Insert the hand electrode cable into the hole on the packing pad.



(7) Mount the hand electrode on the packing pad.
Mount the other hand electrode in the same way.



(8) Put the equipment in the box.

6. Maintenance

(1) After usage, wipe electrodes with a wet tissue(also known as wet naps, surface wipes, anti-bacterial tissues, etc.). Wet tissues can be purchased at any local store.

(2) Handle the arms with care. Never apply excessive force near the hand electrode joint. The damage caused by misuse may affect the function of the internal cable and electric board.

(3) Do not place anything on the foot plate or apply any pressure onto it when the InBody170 is not in use.

(4) When the InBody170 is not in use for a period longer than one day, unplug the adapter.

(5) Do not move or relocate the InBody170 while the power is on.

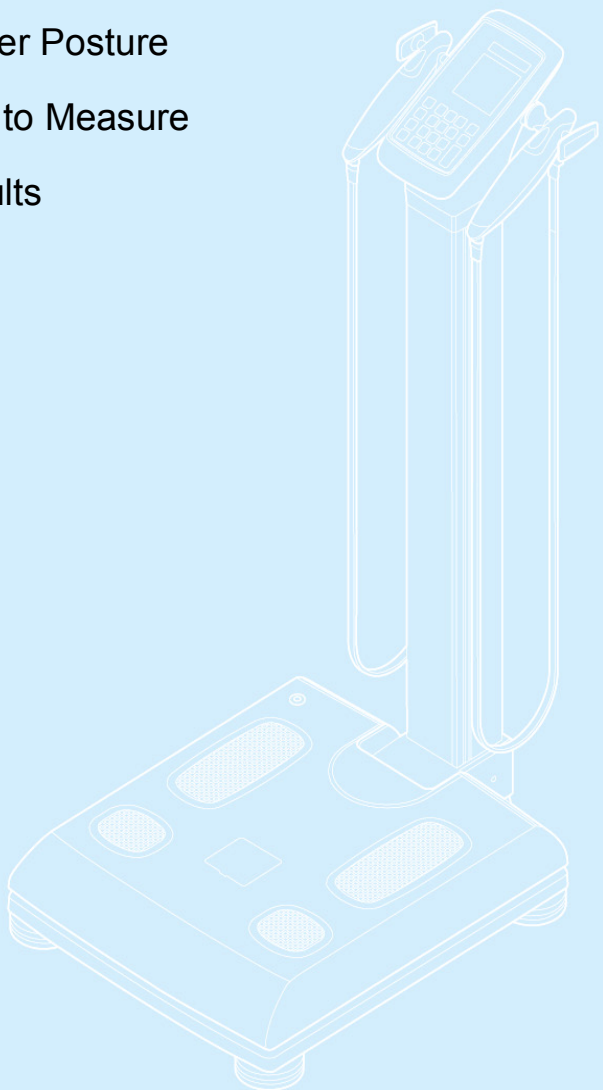
(6) Do not drop any food or liquid on the equipment. It may affect the electrical parts in the equipment or cause damage.

(7) Once a week, wipe the exterior sides of the InBody170 with a dry towel. In particular, clean the LCD monitor, using gentle care not to scratch the surface.

(8) Follow local governing ordinances and recycling plans regarding the disposal or recycling of device components.

Chapter 2. Management & Results Description

1. Cautions before Measurement
2. Function of Keypad
3. Home Screen
4. Personal Profile
5. Proper Posture
6. How to Measure
7. Results



1. Cautions before Measurement

To observe changes of the human body through body composition analysis, it is crucial to perform the analysis each time under the same conditions, temperature, posture, etc. Bear in mind, the following factors affect the results of body composition analysis, and as a result, affect the reproducibility of analysis.

(1) Make sure not to use this equipment with those that have medical electrical devices, such as a pacemaker.

(2) Do not eat before measurement.

(3) Do not exercise or perform any physical activities before testing. If an examinee has already been physically active, a temporary change in body composition will result.

(4) Do not take a bath or shower prior to measurement.

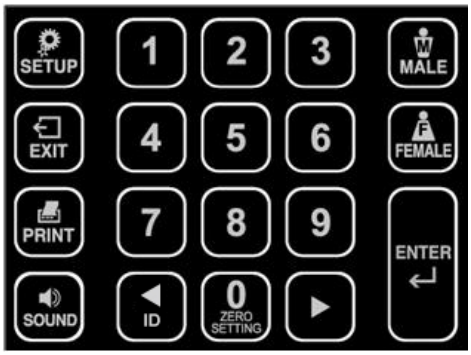
(5) Perform the measurement after urination or excretion, if possible. Residues inside the human body are interpreted as fat mass. Waste in the body means the analysis will be less accurate.

(6) Measurement should ideally be done before mid-day.

(7) Perform the measurement under normal temperature conditions 20~25°C (68~77 °F). If the ambient temperature is too high or too low, the human body responds, resulting in temporary changes in body composition.

2. Function of Keypad

Keypad is located below the LCD Monitor. The InBody170 has a keypad for data input. To input all information, press the relevant buttons on the keypad.



(1) Numerical Buttons (0~9)
The input buttons are use to enter alpha-numeric data such as the examinee's age, height and ID. With each button press, number is displayed in the sequence shown on the keypad.

(2) Directional Buttons
The directional buttons consist of left and right.

(3) SETUP Buttons
Use the SETUP button when setting up the InBody 170

(4) EXIT Buttons
EXIT button is use to stop the process that is in progress or go back to the previous process.

(5) PRINT Buttons
Use the PRINT button to print the results of the last person who did the test.

(6) SOUND Buttons
Use to control sound volume.

(7) Male, Female Buttons
It is used for gender input when entering personal information.

(8) ENTER Buttons
This button is used when data input is finished or to move on to the next item.

(9) Zero Setting Buttons (0 Buttons)
If 0 point of weight is not correct, press '0' button and hold button until you hear a beep sound.

3. Home Screen

(1) Connect the InBody170 power adapter behind the foot plate.

(2) When system switch is turned on, the screen is displayed as illustrated below

4. Personal Profile

Height and weight are essential information for body composition analysis, and for more comprehension, age and gender are used to provide normal range. The InBody170 analyzes the measurement results based on the input data. To reduce errors and acquire more reliable results, input examinee's data after reading the following.

(1) Weight (permitted range: 10 ~ 250kg / 22 ~ 551 lb.)
The measured weight is automatically added to the weight column. When the unit is changed, the weight will change automatically. It is also possible to adjust the weight to account for clothing weight and accessories.

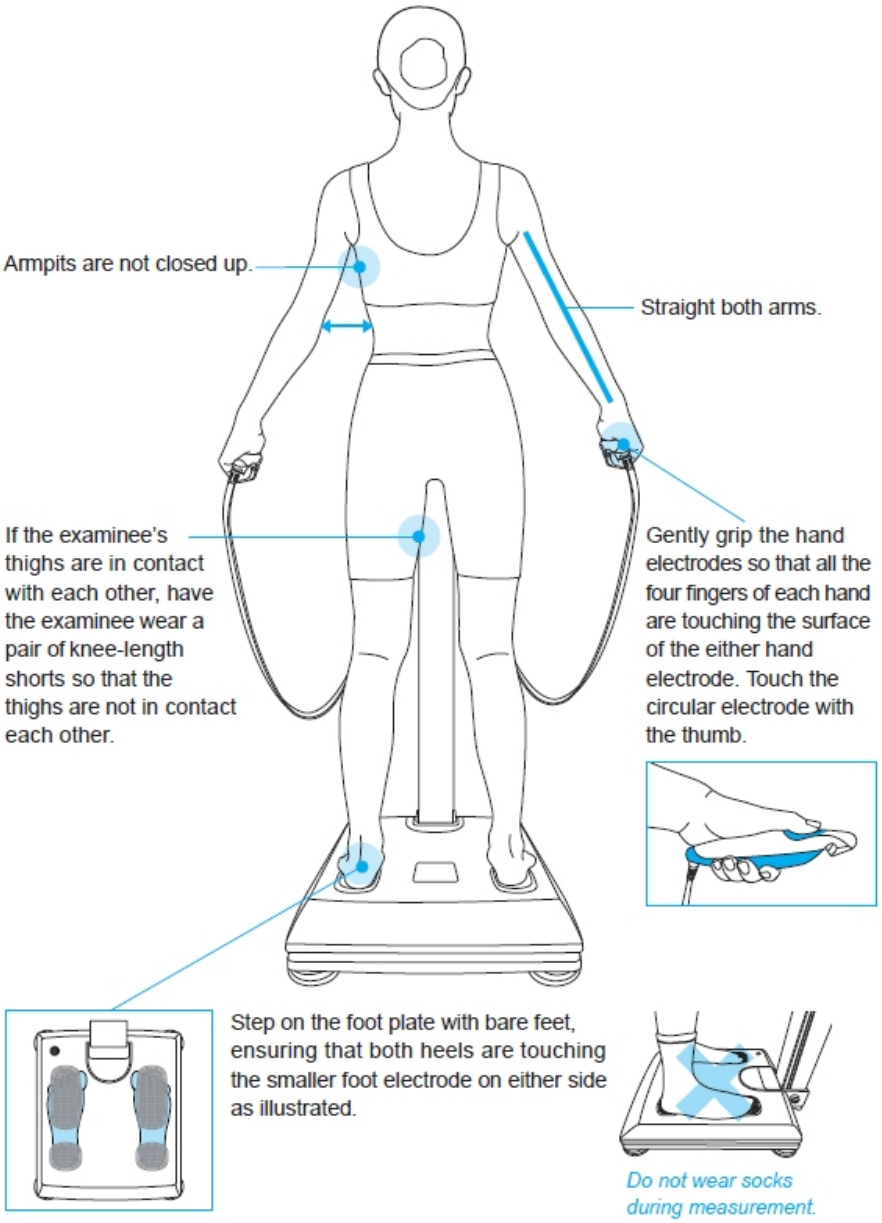
(2) Gender
You can select the gender by using the Male or Female buttons.

(3) Age (Recommended input range: 3 ~ 99 years)
Use the keypad to enter age.

(4) Height (Recommended input range: 95 ~ 220cm, 3ft. 1.4in. ~ 7ft. 2.6in.)
Use the keypad to enter height. It is possible to select the unit you want to use between inches and cm.

5. Proper Posture

Proper posture is essential to achieve reliable results and high reproducibility.
Do not talk or move during the InBody Test.



6. How to Measure

The following procedure is based on the initial setting of the InBody170.

(1) Confirm the InBody170 is ready for measurement. If it is ready, the following screen is displayed.

(2) Remove heavy clothes and accessories before stepping on the InBody170.

(3) Stand on the foot plate of the InBody170 and do not move until the weight is displayed.

(4) Once weight measurement is complete, the result will be displayed as illustrated below.

NOTE To enter your ID, please press ID button.

NOTE Use setting for the user's preference with stage to input ID. Refer to Chapter 3, Section 2: "Setup Menu"

(5) Use the input buttons to enter gender, age and height in order. You must press the ENTER button after entering each item in order to proceed.

NOTE Please enter your gender, age and height accuately.

(6) Maintain correct posture and the measurement will begin.
When the measurement is complete, the results screen will be displayed as illustrated below.

(7) Once the measurement is complete, step off the foot plate.

NOTE The printer will automatically print the results sheet about 15 seconds later.

7. Results

A. Results Screen

During measurement, the InBody170 displays information of an examinee's body composition on the LCD. The results are shown on the LCD while an examinee is standing on the equipment.

Through the display of the results, you can check the main items of the results.

(1) Weight

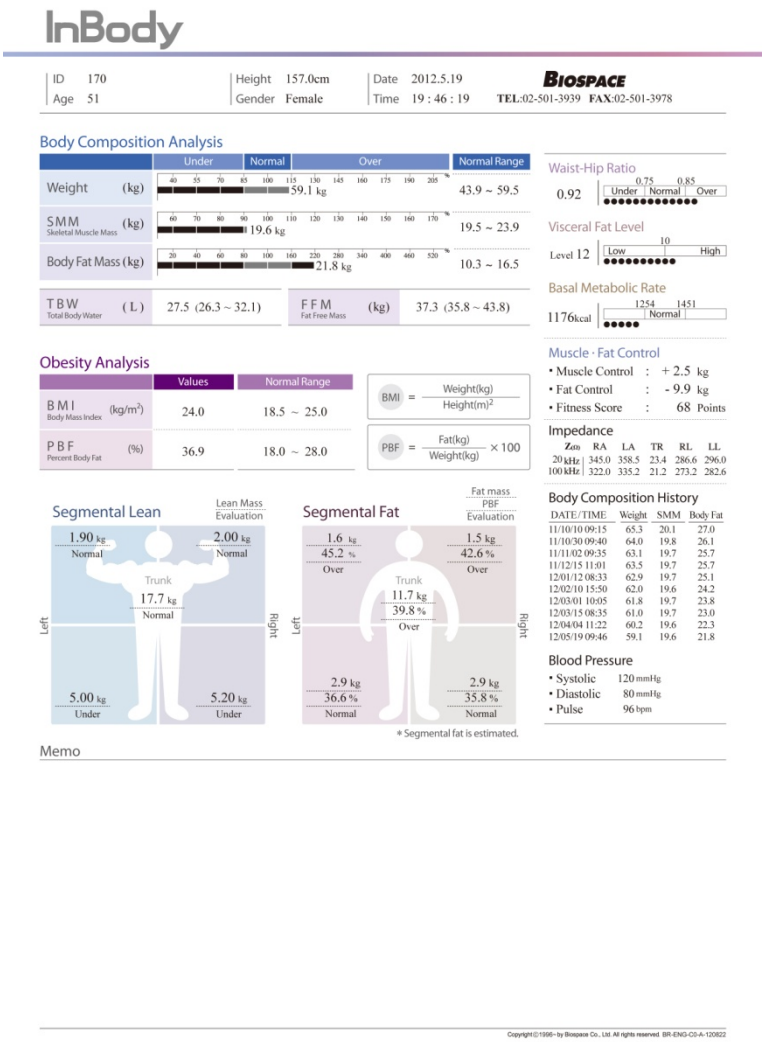
(2) Skeletal Muscle

(3) Percentage of Body Fat

(4) Visceral Fat

B. Results Sheet

If the printer is connected, you can print the results sheet.


InBody

ID 170 | Height 157.0cm | Date 2012.5.19
Age 51 | Gender Female | Time 19 : 46 : 19

BIOSPACE
TEL:02-501-3939 FAX:02-501-3978

Body Composition Analysis

	Under	Normal	Over	Normal Range
Weight (kg)		59.1 kg		43.9 ~ 59.5
SMM Skeletal Muscle Mass (kg)		19.6 kg		19.5 ~ 23.9
Body Fat Mass (kg)		21.8 kg		10.3 ~ 16.5

TBW Total Body Water (L)	27.5 (26.3 ~ 32.1)	FFM Fat Free Mass (kg)	37.3 (35.8 ~ 43.8)

Obesity Analysis

	Values	Normal Range
BMI Body Mass Index (kg/m²)	24.0	18.5 ~ 25.0
PBF Percent Body Fat (%)	36.9	18.0 ~ 28.0

BMI = Weight(kg) / Height(m)²

PBF = Fat(kg) / Weight(kg) × 100

Segmental Lean (Lean Mass / Evaluation)
Left Arm 1.90 kg Normal | Right Arm 2.00 kg Normal
Trunk 17.7 kg Normal
Left Leg 5.00 kg Under | Right Leg 5.20 kg Under

Segmental Fat (Fat mass / PBF / Evaluation)
Left Arm 1.6 kg 45.2 % Over | Right Arm 1.5 kg 42.6 % Over
Trunk 11.7 kg 39.8 % Over
Left Leg 2.9 kg 36.6 % Normal | Right Leg 2.9 kg 35.8 % Normal
* Segmental fat is estimated.

Waist-Hip Ratio
0.92 (Under / Normal / Over; 0.75 / 0.85)

Visceral Fat Level
Level 12 (Low / High; 10)

Basal Metabolic Rate
1176kcal (1254 / 1451; Normal)

Muscle · Fat Control
• Muscle Control : + 2.5 kg
• Fat Control : - 9.9 kg
• Fitness Score : 68 Points

Impedance

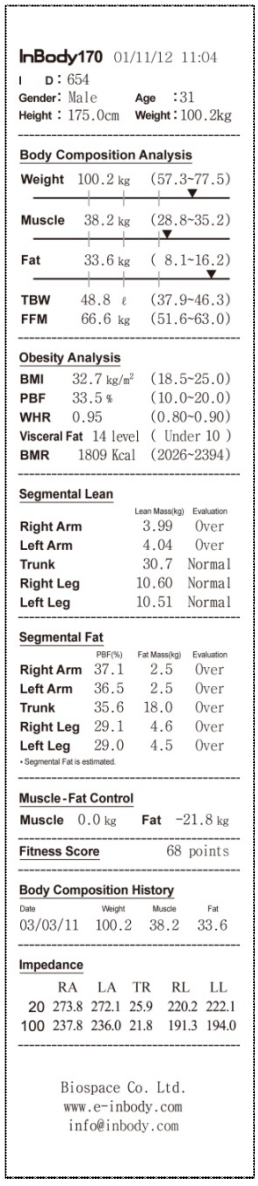
Z₀₀	RA	LA	TR	RL	LL
20 kHz	345.0	358.5	23.4	286.6	296.0
100 kHz	322.0	335.2	21.2	273.2	282.6

Body Composition History

DATE/TIME	Weight	SMM	Body Fat
11/10/10 09:15	65.3	20.1	27.0
11/10/30 09:40	64.0	19.8	26.1
11/11/02 09:35	63.1	19.7	25.7
11/12/15 11:01	63.5	19.7	25.7
12/01/12 08:33	62.9	19.7	25.1
12/02/10 15:50	62.0	19.6	24.2
12/03/01 10:05	61.8	19.7	23.8
12/03/15 08:35	61.0	19.7	23.0
12/04/04 11:22	60.2	19.6	22.3
12/05/19 09:46	59.1	19.6	21.8

Blood Pressure
• Systolic 120 mmHg
• Diastolic 80 mmHg
• Pulse 96 bpm

Memo


InBody170 01/11/12 11:04
ID : 654
Gender : Male Age : 31
Height : 175.0cm Weight : 100.2kg

Body Composition Analysis

Weight	100.2 kg	(57.3~77.5)
Muscle	38.2 kg	(28.8~35.2)
Fat	33.6 kg	(8.1~16.2)
TBW	48.8 ℓ	(37.9~46.3)
FFM	66.6 kg	(51.6~63.0)

Obesity Analysis

BMI	32.7 kg/m²	(18.5~25.0)
PBF	33.5 %	(10.0~20.0)
WHR	0.95	(0.80~0.90)
Visceral Fat	14 level	(Under 10)
BMR	1809 Kcal	(2026~2394)

Segmental Lean

	Lean Mass(kg)	Evaluation
Right Arm	3.99	Over
Left Arm	4.04	Over
Trunk	30.7	Normal
Right Leg	10.60	Normal
Left Leg	10.51	Normal

Segmental Fat

	PBF(%)	Fat Mass(kg)	Evaluation
Right Arm	37.1	2.5	Over
Left Arm	36.5	2.5	Over
Trunk	35.6	18.0	Over
Right Leg	29.1	4.6	Over
Left Leg	29.0	4.5	Over

• Segmental Fat is estimated.

Muscle-Fat Control
Muscle 0.0 kg Fat -21.8 kg

Fitness Score 68 points

Body Composition History

Date	Weight	Muscle	Fat
03/03/11	100.2	38.2	33.6

Impedance

	RA	LA	TR	RL	LL
20	273.8	272.1	25.9	220.2	222.1
100	237.8	236.0	21.8	191.3	194.0

Biospace Co. Ltd.
www.e-inbody.com
info@inbody.com

NOTE

Only the thermal printer provided by Biospace can be used with the InBody170.

C. Output Items

The following are the definitions and explanation for each item analyzed on the results sheet.

NOTE

The normal range on the result sheet is the standard provided by Biospace based on the Biospace possessed reference data..

NOTE

Basically, the result sheet shows measured values for each test item. Regarding the standard result as 100%, it shows the ratio of measured values to standard values with the bar graph's length. The normal range will be set according to the standard value to enhance examinee's easy understanding of result sheet.

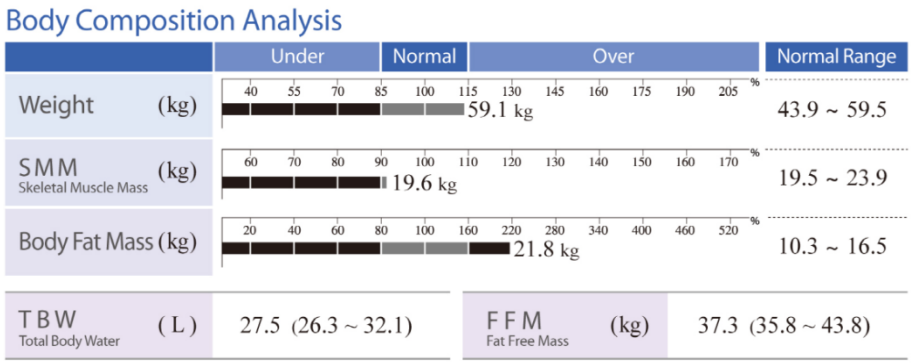
(1) Personal Information

The examinee's ID, gender, age, height, weight, exam date and time are displayed here.

ID	170	Height	157.0cm	Date	2012.5.19
Age	51	Gender	Female	Time	19 : 46 : 19

(2) Body Composition

Bar graphs and values for Weight, Muscle Mass (Skeletal Muscle) and Body Fat Mass are displayed here. The length of bar graph shows a percentage relative to the standard value (100%) and the value at the end of each bar is the measured value. The standard value (100%) is based on the standard weight of the examinee. When an examinee is on a diet or exercising for weight control, body fat mass and skeletal muscle mass get affected among the body compartments. Therefore, you can keep monitoring the changes of body fat mass and skeletal muscle mass performing a weight control program. Also, you can see the body composition goes along your expect.



① Weight (kg or lbs.)
Standard weight is based on examinee's height. The normal range of weight is 85~115% based on the normal range of BMI.
Using the classical BMI method, the InBody170 identifies the standard BMI as 22kg/m^2 for males, 21.5kg/m^2 for Western females and 21kg/m^2 for Asian females.

Formula to get standard weight	
Male Standard Weight = Height^2(㎡) × 22	Female Standard Weight = Height^2(㎡) × 21 (Asian) Standard Weight = Height^2(㎡) × 21.5 (Western)

② SMM (Skeletal Muscle Mass, kg or lbs.)
Distinctively, skeletal muscle mass, which generally indicates the lean body mass of each arm and leg, can be controlled by exercise and dietary habits. Compare the bar graphs' lengths of skeletal muscle mass with body fat mass. If the bar of skeletal muscle mass is relatively shorter and under the standard value, lean body mass lacks in the body, while the opposite case is proper. 100% signifies ideal lean body mass when examinee's weight is normal. The normal range is 90~110% of standard skeletal muscle mass based on standard weight.

③ Body Fat Mass (kg or lbs.)
100% signifies ideal body fat mass when examinee has standard weight and standard percent body fat. The normal range is 80~160% of ideal percent body fat.

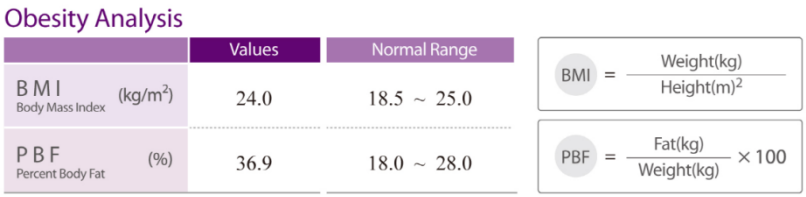
* The normal range varies for the each item because the variation rates of muscle and fat are not same in normal condition.

④ TBW (Total Body Water, L or lbs.)
The total volume of water in the body.
It is shown as "L" on the results sheet. However, mass measured in kilograms (kg) is the basic unit of measure for body composition components. Therefore, the unit volume of water should be converted to a mass unit. It is a common known fact that the volume of 1 liter (L) is equal to the mass of 1kg in water. This fact allows volume and mass to be interchangeable i.e. used at the same time.

⑤ FFM (Fat Free Mass, kg or lbs.)
Fat Free Mass refers to the components of body weight with the exception of body fat mass.

(3) Obesity Analysis

This enables examinees to check BMI, the classical method for obesity analysis, percentage of body fat all at once.



① BMI(Body Mass Index, kg/㎡)

BMI is determined by using only weight and height and diagnoses superficial obesity. The standard values are 22kg/m^2 for male and 21.5kg/m^2 for Western female and 21kg/m^2 for Asian female.

Formula)

BMI = weight (kg) ÷ height^2 (㎡)

Determination 1) WHO Standard

BMI(kg/㎡)	Classification		Diagnosis
<18.5	Underweight	Under	Infectious disease, malnutrition related disease
18.5~24.9	Normal	Standard	Least risk at most disease
25.0~29.9	Overweight	Over	May cause health problem
30.0~34.9	Obese1		Increase of the risk of cardiac disease, high blood pressure, diabetes, etc
35.0~39.9	Obese2		
>40	Severely Obese		

Ref. WHO and the National Heart, Lung, and Blood Institute: clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults, the evidence report. June 1998, xiv

Determination 2) Asian-Pacific Standard

BMI(kg/㎡)	Classification	Diagnosis
<18.5	Underweight	Low (high risk of other clinical disease)
18.5~22.9	Normal	Average
>23	Overweight	
23~24.9	Risky Overweight	Increased
25.0~29.9	Obese step1	Moderate
>30	Obese step2	Severe

Ref. Korean Society for the Study of Obesity, chapter 2. Redefining and Evaluation, The Asian-Pacific perspective : Redefining Obesity and its Treatment:, 1st edition, Korean Society for the Study of Obesity, 2001, p10.

*For children under the age of 18, children's standard is used.

② PBF (Percentage of Body Fat, %)

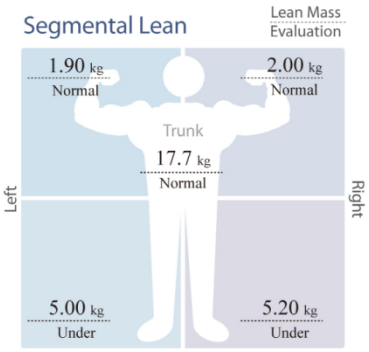
Percentage of Body Fat indicates the percentage of body fat to body weight. The ideal percentage of body fat is 15% for men and 23% for women, while the normal range of Body Fat Mass for men is 10-20% of the weight and 18-28% of the weight for women. In the case of children under the age of 18, children's standard is used.

Ref.

1.Robert D.Lee, David C. Nieman, Nutritional Assessment(second edition),p.264, 1990.
2.George A. Bray, MD. Contemporary Diagnosis and Management of Obesity. P.13, 1998.
3.L.Kathleen Mahan, Sylvia Escott-Stump. Krause's FOOD,NUTRITION, & DIET THERAPY.10th edition. P.488, 1991.
4.Judith E. Brown, Nutrition Now, p9-3~9-5, Wadsworth Publishing Company,1999.
5.Semuel J. Fomon, et al.(1982): Body Composition of reference children form birth to age 10 years. The American Jounal of Clinical Nutrition: 35, 1169-1175

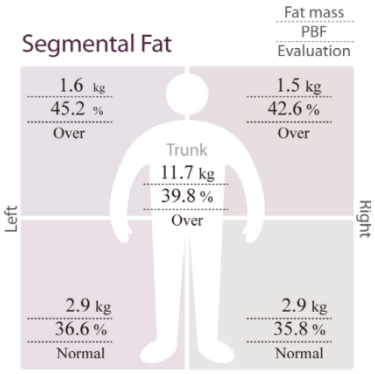
(4) Segmental Lean

'Segmental Lean' shows that the level of segmental muscle mass in consideration of an examinee's weight. Description is followed as below.

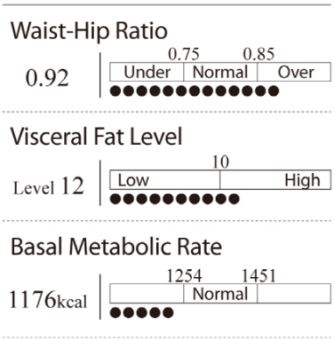


(5) Segmental Fat

'Segmental Fat' shows segmental fat mass, percentage of body fat and its overall evaluation. Description of picture is followed as below.



(6) WHR, Visceral Fat, BMR



① WHR (Waist-Hip Ratio)

Waist-Hip Ratio (WHR) means ratio of waist and hip circumference. The InBody170 yields WHR value saving the effort of tape measurement, using the principle which figures out body size with segmental bioimpedance and reference of empirical factors.

The normal ranges are 0.80~0.90 for male and 0.75~0.85 for female. Abdominal obesity is diagnosed in case of over 0.95 for male and 0.90 for female.

Ref.
1.Judith E. Brown, Nutrition Now, 2nd edition, pp9-8, published by West/Wadsworth, 1999.
2.NIH, Bioelectrical impedance analysis in body composition measurement: National Institutes of Health ,1996. Technology Assessment Conference Statement, 524S-532S, December 12-14, 1994.

② Visceral Fat (Visceral Fat Level, level)

Visceral fat level refers to the visceral fat area. Body fat is divided into categories depending on the location of the fat: visceral fat, subcutaneous fat, and the fat between your muscles. An individual with a visceral fat area of more than 100cm^2 is considered to be abdominally obese in the visceral fat area. So an individual with a visceral fat level of more than 10 level is considered to be abdominally obese in the visceral fat.

* Generally, even though infants have a high WHR (Waist Hip Ratio), they have low visceral fat than adults. The reason is because infants have mostly subcutaneous fat. The older we are, the visceral fat area might increase even if WHR remains the same.

③ BMR (Basal Metabolic Rate, kcal)
Basal Metabolic Rate is the minimal energy required to maintain life and homeostasis i.e. energy for breathing, heart activity, body temperature regulation and so on. The InBody170 calculates BMR as referring to Fat Free Mass (FFM) mentioned in the reference below..

Ref. John J Cunningham. Body composition as a determinant of energy expenditure : a synthetic review and proposed general prediction equation. Am J Clin Nutr. Vol.54, 963-969,1991.

*In general, Harris-Benedict Equation is used for BMR. This equation concerns gender, age, height and weight. However, calculating BMR with Fat Free Mass, which is the most active mass in a body, brings out more analogous results closed to the directly measured BMR. Also, respiratory gas analyzer can compute relatively accurate BMR.

(7) Muscle - Fat Control
Muscle- Fat control suggests fat and muscle (Fat Free Mass) control that leads to the balanced body composition to achieve ideal body composition. The (+) and (-) signs indicate an increase or decrease in the amount of control.

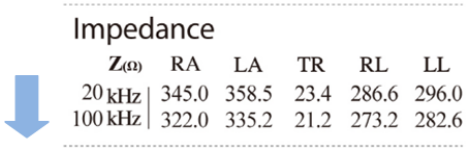
① Muscle Control (kg or lbs.)
The amount of muscle to be controlled for optimum muscle mass based on the results of body composition analysis.

② Fat Control (kg or lbs.)
The amount of fat to be controlled for optimum body fat mass based on the results of body composition analysis.
* If fat mass is over the standard, it is suggested to lose fat. However, no suggestion for muscle loss is offered in the case of muscle excess. Although muscle is often lost during weight control, there is no document supporting intended muscle loss. Therefore, the InBody170 proposes 0.0kg for muscle control, which means no muscle control needed', when an examinee is overweight for excessive muscle mass.

③ Fitness Score (points)
The Fitness Score is offered in numeric value to help people remember the status of their body composition easily. This is the peculiar index of Biospace without any document or reference. Setting 80 as standard, less than 70 means 'weakness', from 70 to 90 means 'normal', greater than 90 means 'athletic type.

(8) Impedance

The InBody170 provides impedance of each segment at multiple frequencies.
The impedance value must decrease in the arrow direction.



Impedance

Z(Ω)	RA	LA	TR	RL	LL
20 kHz	345.0	358.5	23.4	286.6	296.0
100 kHz	322.0	335.2	21.2	273.2	282.6

(9) Body composition History

Body Composition History offers up to 10 monitoring data in table enabling to see subject's recent body composition change at a glance.
The table shows 3 major body composition items such as weight, skeletal muscle mass and body fat mass of each measurement date and time.

Body Composition History

DATE/TIME	Weight	SMM	Body Fat
11/10/10 09:15	65.3	20.1	27.0
11/10/30 09:40	64.0	19.8	26.1
11/11/02 09:35	63.1	19.7	25.7
11/12/15 11:01	63.5	19.7	25.7
12/01/12 08:33	62.9	19.7	25.1
12/02/10 15:50	62.0	19.6	24.2
12/03/01 10:05	61.8	19.7	23.8
12/03/15 08:35	61.0	19.7	23.0
12/04/04 11:22	60.2	19.6	22.3
12/05/19 09:46	59.1	19.6	21.8

(10) Blood Pressure

The sphygmomanometer is linked with the InBody170 and available to Print systolic blood pressure, diastolic blood pressure and heart rate.

Blood Pressure

- Systolic 120 mmHg
- Diastolic 80 mmHg
- Pulse 96 bpm

Chapter3. Setup Establishment

1. Setup
2. Setup Menu

1. Setup

The InBody170 has a function to modify the setting for the user's preference.

A. Enter the SETUP menu

(1) You can see the below screen, by pressing SETUP button.

(2) Press the password and press ENTER button. You can see the below screen. The default password is "0000". This function is to prevent unauthorized examinee use of modifying the setting.

B. How to modify Setup

(1) Press the ENTER button to save the settings.

(2) Press the EXIT button to exit without saving changes.

(3) ID ▶ buttons are for navigating between items.

(4) When there is no input for 1 minute, the setup screen will be closed automatically.

(5) The item with flashing cursor is the currently set item.

2. Setup Menu

(1) Weight Adjustment Value Setting

Use the number buttons to set weight adjustment value. This value will be subtracted from the actual weight measurement.
(Offset Range: 0.0 ~ 9.9lbs., step: 0.1lbs. / 0.0 ~ 5.0kg, step: 0.1kg)

(2) ID Input Setting

Use the 1 or 2 button to set the ID input mode. Select 1 for entering ID before taking measurement, or select 2 to skip entering ID before taking measurement.
① 1 : It requires a stage to input ID.
② 2 : It does not require a stage to input ID.

(3) Unit Setting

Use the 1 or 2 button to set the desired unit. Select 1 for kg-cm, or select 2 for lbs.-in.

(4) External Peripherals Connection Setting

To connect an external device:
① 1 (dc): Connect a single device cable to the InBody's serial terminal.
② 2 (yc): Use a Y cable to use two or more external devices.
③ 3 (sd): Use the Y cable but using the SD400 in one side of it.

(5) Ethnic Background

Use the 1,2,3,4 buttons to select the ethnic background of the examinee. Select 1 for Asian, 2 for Caucasian, 3 for African and 4 for Hispanic.

(6) BMI Standard Setting

Use the 1 or 2 button to set BMI standard. Select 1 for “Asian standard”, 2 for “WHO standard”, and 3 for “Chinese standard”.

① 1: Asian standard. The normal range is 18.5~23kg/㎡.

② 2: WHO(World Health Organization) standard. The normal range is 18.5~25.0kg/㎡.

③ 3: Chinese standard. The normal range is 18.5~24.0kg/㎡.

(7) Fitness Score Setting

Use the 1 or 2 button to set printing “Fitness Score” on results paper. Select 1 for printing “Fitness Score”, or select 2 to skip printing “Fitness Score”

(8) Password Setting

Specify password required to enter the setup. Enter setup password and press the ENTER button. Enter the new password again and press the ENTER button to finish saving the new password..

(9) Date/Time Setting

Use the direction buttons(◀, ▶) or numerical buttons to set for date/time.

* Date Display Mode Setting

If you press SETUP button in Date/Time setting menu, you can also select the date display mode. Use the direction buttons(◀, ▶) to select display mode (YY/MM/DD, MM/DD/YY, DD/MM/YY) and press the ENTER button to save the setting and go back to the 'Date/Time Setting' menu.

(10) Printer Setting

① 1: Select for Thermal Printer
② 2: Select for A4 Printer
③ 3: Select for Thermal Printer and A4 Printer

(11) Results Sheet Setting

① 1: Select for A4 Paper
② 2: Select for using InBody Result Sheet

(12) Printer Specification Setting

Select the printer specification and press the ENTER button.
① 1: select when using PCL printer
② 2: select when using SPL2009-600 printer
③ 3: select when using SPL2011 printer

(13) Printing Position Setting and Test Printing

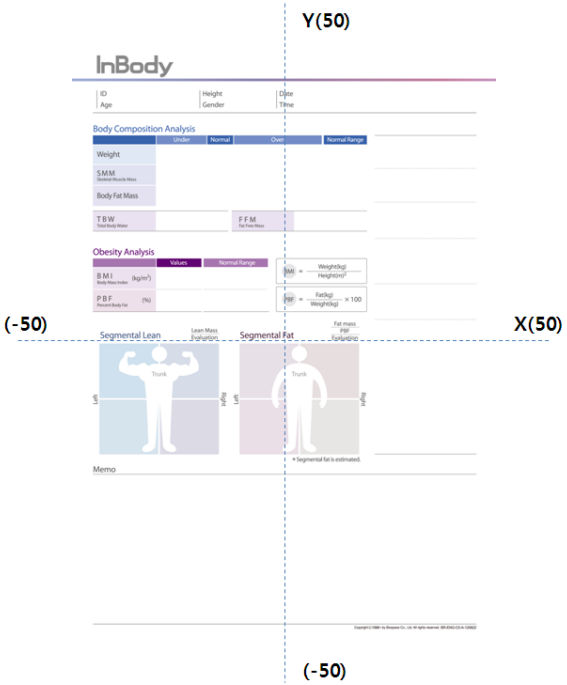
Press the SETUP button after choosing 1 or 2. Press the ENTER button after choosing button3.

① 1: Select 1 to move the printing position to the left or the right.

② 2: Select 2 to move the printing position up or down.

③ 3: Select 3 to print a test page.

*Adjustment range : X(left, right) Y(up, down) +50 ~ -50



Chapter4. Problems & Solutions

1. Error Messages
2. Troubleshooting
3. Frequently Asked Question (FAQs)

1. Error Messages

The InBody170 may display the following error messages to alert the operator of problems and to recommend the correct action.

A. 

Cause 1 Fundamental problem of the device suspected.
Actuion1 Please contact Customer Support. (info@inbody.com)

2. Troubleshooting

This section lists the order of steps you should take in case of malfunction, with the assumption that you have some basic knowledge about how to operate the equipment. If you still have the problem after taking the following steps, contact Biospace

A. InBody170 does not seem to run, even after the power is on.

(In a normal situation, a signal sounds and the LCD is turned on.)

Cause 1 The plug is not pushed all the way into the electrical outlet.
Actuion1 Push the plug all the way into the electrical outlet.

Cause 2 Extension is not turned on (when using a surge protector) or the power does not flow into extension.
Action 2 Check if the power flows into the extension and the electrical outlet where the extension is connected.

Cause 3 When an adapter not provided by Biospace is used.
Action 3 Use the adapter provided by Biospace only.

Cause 4 Adapter is not tightly inserted into the InBody170.
Action 4 Insert the adapter into the power input port tightly.

B. The measured weight value seems very low, or shows a negative value.

(Normally the measured weight is not very different from what the examinee believes his or her actual weight to be.)

Cause 1 The weight sensor (load cell) calibration was performed wrong during the self-calibration.
Action 1 Turn off the power of the InBody170, then turn it on again. Allow the unit to perform the self-calibration process again with no weight on the foot plate. The load cell will be set to 0 kg during self-calibration. Keep in mind, even a small amount of weight affects the calibration negatively.

C. The analysis results are unexpected or unusual.

(It is not common to observe unexpected values. All analyzed values should not be outside of pre-determined ranges.)

Cause 1 An examinee failed to maintain proper posture. He or She removed fingers or the sole of the foot from the tactile points of the electrodes.

Action 1 He or She must maintain proper posture until the analysis is complete. Refer to Chapter 2, Section 5: “Proper Posture,” for more information. If the repeated analysis results are the same, contact Biospace.

3. Frequently Asked Question (FAQs)

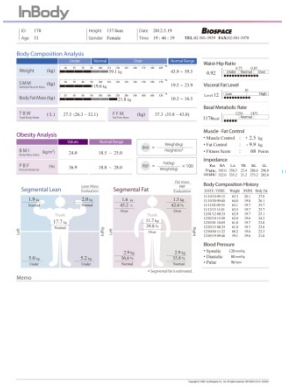
Even if no problems arise from the equipment, users may still have many questions especially regarding clinical procedures. Below are a few of the more common questions with answers. If additional questions or more clarification is desired, please contact us by E-mail. The E-mail address for clinical questions is as follows:
E-mail: info@inbody.com

Q1. Where can I buy printer paper and other optional devices?

Please contact Biospace or the local distributor.

Q2. How do I know the measurement taken is correct?

After taking the measurement, check the impedance at the bottom of the results sheet printed. The impedance value must decrease in the arrow direction.



Impedance

Z(Ω)	RA	LA	TR	RL	LL
20 kHz	345.0	358.5	23.4	286.6	296.0
100 kHz	322.0	335.2	21.2	273.2	282.6

Q3. How do I clean the hand/foot electrodes?

Please use InBody tissues provided by Biospace and wipe the hand/foot electrodes.
InBody tissues have antibacterial functionality which protects cross-contamination.

Q4. Do I have to use InBody tissue? Can I just use wet cloth?

The InBody tissue that comes with the InBody170 is specially designed for optimal testing, as opposed to other wet cloth. Always use the InBody tissue for accurate testing.

Q5. Must socks or stockings be removed from the feet for analysis?

Bare skin contact is essential in the analysis using the BIA method. Socks or stockings may cause a certain amount of distortion in the results. Socks and stocking must be removed to obtain accurate data.

Q6. What are the circumstances where an analysis cannot be performed?

Examinee who has a pacemaker or other internal electronic medical devices should never use the InBody170.

Q7. Is the electrical current applied to a human body through electrodes safe?

Yes. The BIA method uses an electrical current, but is practically harmless. The InBody170 has acquired the CE and other certifications that assure the safety of the medical equipment.

Q8. Do accessories (jewelry, watches, rings, etc.) or any other metal objects worn by an examinee affect the analysis?

The ideal condition for the analysis is simply standing with no clothes (naked) and wearing no accessories. However, this may not always be possible. Therefore, we recommend that the examinee removes as many clothing items and accessories that may affect the weight as possible.

Q9. How often does the examinee perform the analysis?

The body composition changes by inches but continuously according to steady diet, work out, or medical treatment, etc. We recommend you to measure the InBody170 once every two to four weeks to reliably see the changes.

Q10. How does the examinee follow for accurate analysis?

For accurate analysis, Biospace recommends the following:

- Measure with an empty stomach.
- Measure 2 hours after a meal or on an empty stomach.
- Measure after urination and excretion.
- Remove heavy clothes or accessories.
- Do not exercise or take a shower before measurement.
- Measure after standing for at least 5 minutes.
- Do not measure after abruptly standing up.
- Do not measure while taking a diuretic.
- For females, avoid having measurement during menstrual period as total body water will be higher than normal.
- Input accurate height.
- Keep room temperature at 20 ~ 25℃ (68 ~ 77°F).
- Warm up yourself for 20 minutes before a test performed in winter

Chapter5. Consumables

1. Consumables
2. Options

1. Consumables

The specifications shown in the images below are based on the standard status of the product. If defected, please stop using the device and contact Biospace or designated distributor for immediate exchange.

A. Results Sheet

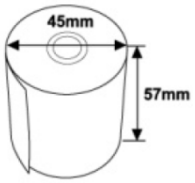
When using the InBody170 with a printer, it is strongly recommended to use the results sheet supplied by Biospace.

Results sheet size	210mm * 297mm (A4 type)
Number of sheets	500 / 1box
Printer condition	4 colors
Manufacturer	Biospace Co., Ltd

B. Thermal Printer Roll Paper

Only the thermal printer provided by Biospace can be used with the InBody170

Result sheet Size : Width 57mm
External diameter 45mm

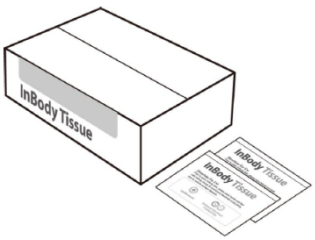


C. InBody tissue

The following diagram and specifications describe the InBody tissue. If you find any abnormality or defects with the tissue, stop using it and contact the Biospace or one of the distributors to get it replaced.

The specifications of InBody tissue are:

Expiration date	**The date on the box**
Packing Material	**PET+AL+PE**
Packing Size	**100mm x 75mm**
Tissue Size	**205mm x 185mm**
Quantity	**300 packs per box Manufacturer Biospace Co., Ltd.**



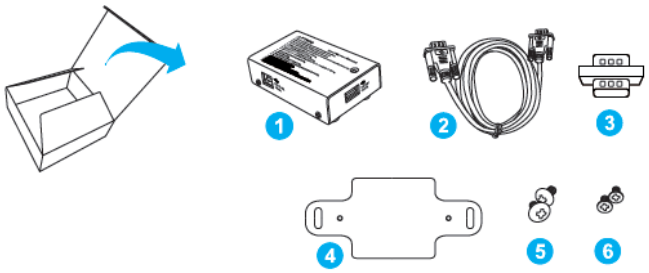
2. Options

Biospace provides optional devices to make the operation of the InBody170 more efficient and convenient. For more information, contact the Biospace or authorized distributors of Biospace.

A. PT500

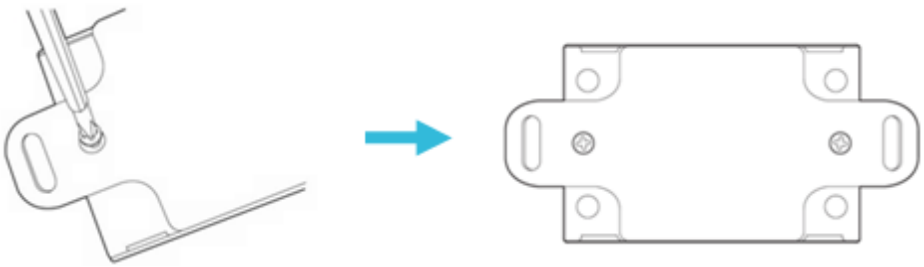
This is the optional device for connecting A4 printer and InBody170. You can print the results sheet out by using PT500.

① PT500
② PT500 Cable
③ PT500 Cable gender
④ PT500 Bracket
⑤ Round-headed Bolt 2EA
⑥ Flat-headed Bolt 2EA



PT500 can be installed by the following instruction.

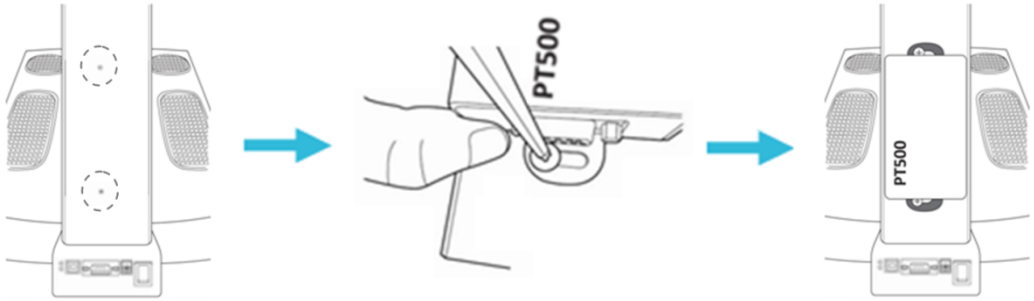
(1) Use the flat-headed bolt and cross screw driver to attach the PT500 and the PT500 bracket.



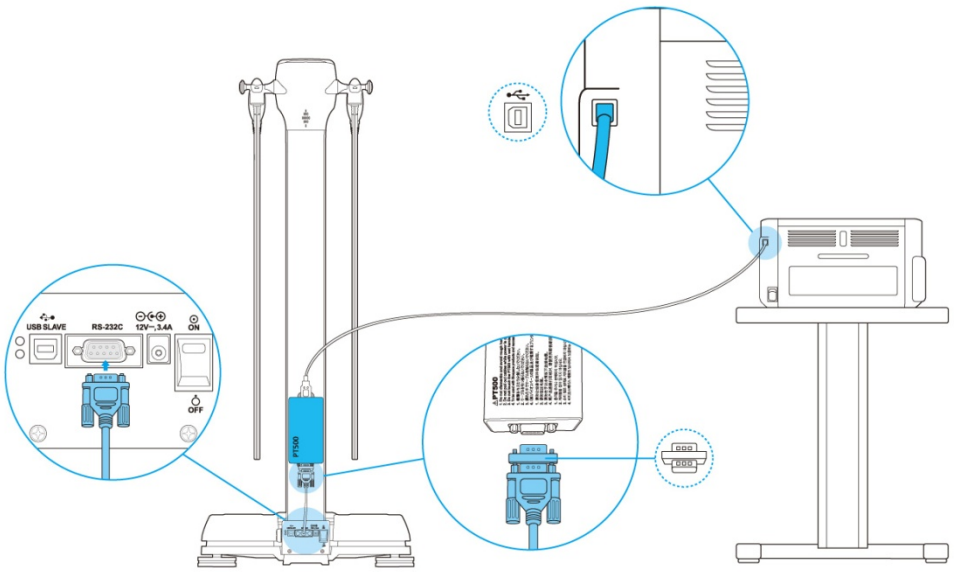
< Back of the PT500>

<after attaching the PT500 and the PT500 Bracket >

(2) Assemble the PT500 and the hole in the backside of the InBody170 and fasten the PT500 with the round-headed bolt.
When fastening the PT500, make sure that the Serial Port is facing down.

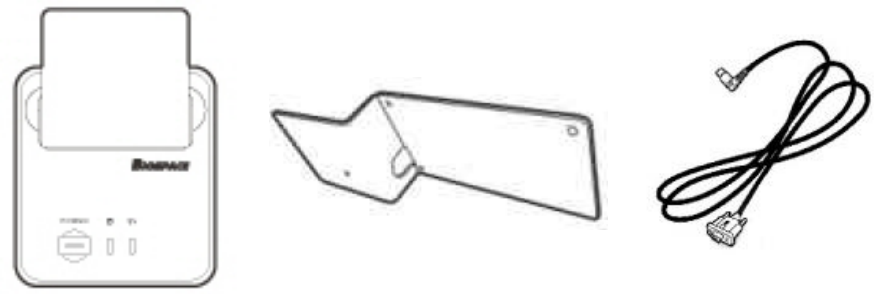


(3) Connect the InBody170, PT500, and the printer as shown in the image below.
(Please connect the InBody and PT500 cable using the PT500 cable gender.)

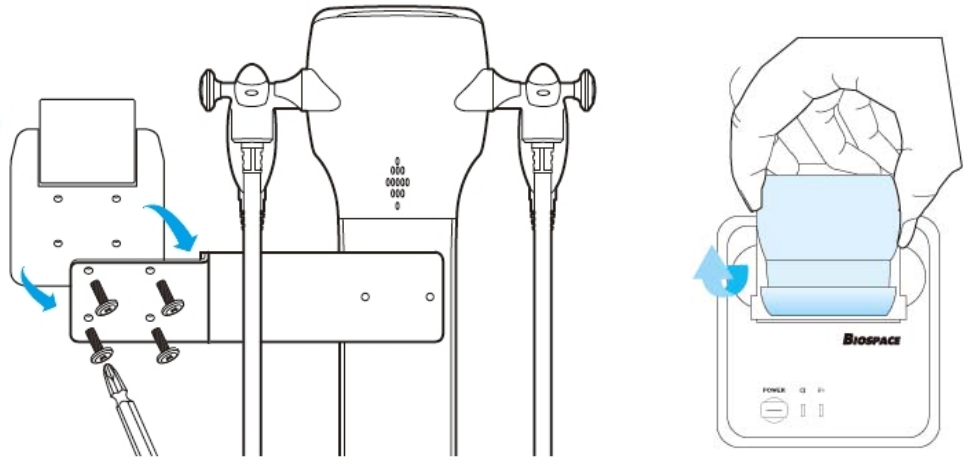


B. Thermal Printer

Only the thermal printer provided by Biospace can be used with the InBody170. The thermal printer should be connected to the serial port and it can be also used together with a regular printer. Please contact Biospace or the local distributor of Biospace for further information.



The thermal printer can be installed in the following way.



Appendix

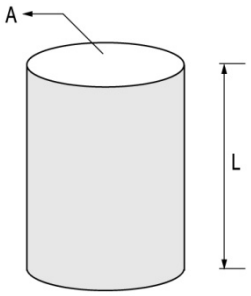
1. More about the InBody170
2. Specifications
3. Customer Service Information

1. More about the InBody170

A. How does BIA work?

The Bioelectrical Impedance Analysis (BIA) method is based on the fact that the human body consists of conductors and non-conductors. Generally, 50~70% of the human body consists of water which functions as a conductor, whereas body fat functions as a non-conductor.

The classic BIA method measures the impedance of the whole body on the assumption that the human body can be considered a cylinder for the application of this model. If A is the cross sectional area, and L is the length, the impedance of the cylinder can be expressed as follows.



$$Z = \rho\frac{L}{A} \quad (\rho = \text{resistivity})$$

If both sides are multiplied by L, We get the new expression as follows.

$$V = \rho\frac{L^2}{Z} \quad (V(\text{Volume}) = A(\text{Area}) \times L\ (\text{Length}))$$

According to this expression, if we know the L and the impedance value, we get the volume. That is to say, if we know the height of the human body (acting as a conductor), and know the impedance value, we can get the volume of body water. Here, the volume represents examinee's height. Therefore, the two directly used variables in body composition analysis are impedance and height.

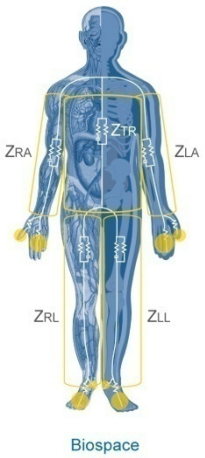
The principle of the InBody170's body composition analysis is explained by the following; the volume of body water, an electrolyte, is calculated first with a measured impedance value. Then, we can get the value of fat free mass using the volume of body water. Body fat mass is determined by deducting the lean body mass from the measured weight.

Height should be entered by the user. Weight can be directly measured on the InBody170.

B. Core Technology

The following are key features that make the InBody170 extremely convenient, timely, and accurate.

(1) Segmental Analysis



Biospace

There are some claims to be able to estimate the body composition separately; there is no technology which can really measure it separately other than Biospace. Segmental measurement is the technology that assumes the body as five cylinders of four limbs and trunk and measures the impedance of these parts separately. Segmental body composition analysis provides segmental measurement of body water, muscle mass, and fat free mass. Furthermore, the analysis is highly accurate because the measured value of a certain part does not affect the measurements of other segments. It is because body composition analyzers lack accuracy in measuring body fat and cannot figure out the examinee's exact shape that they must rely on empirical references to correct inaccurate measured values. But, the InBody with the technology of segmental analysis can exactly figure out difference by gender, aging, disease and ethnic without any empirical estimation. Based on the fact that fat free mass (FFM) consists of about 73.3% of body fluid, it can be concluded that the distribution of body fluid reflects the distribution of FFM. Because the InBody can analyze the segmental body fluid distribution (each arm, trunk, and each leg separately), it can as a result examine a examinees segmental development.

(2) Tetrapolar 8-Point Tactile Electrode

It was a complex and inconvenient procedure to attach and detach the electrodes to a specific spot every time. Trained technicians were needed for each measurement. The InBody170 uses tactile electrodes to avoid the possibility of errors and inaccuracies. The 8-point Tactile Electrode method enables the InBody170 to efficiently produce accurate data every time.

C. Classifications

The product received classifications in the following:

Type of protection against electric shock : Class I

Type of the applied parts : BF Type

Degree of protection against water infiltration : IPXO

EMC Immunity : Level A EMC Emission : Level A

Equipment is not suitable for use in the presence of flammable mixture.

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Specifications

Items & Standard	BODY COMPOSITION ANALYZER of Direct Segmental Multi-frequency Bioelectrical Impedance Method	
Bioelectrical Impedance(BIA) Measurement Items	Bioelectrical Impedance(Z)	10 Impedance measurements by using 2 different frequencies(20㎑, 100㎑) at each 5 segments of the body(Right Arm, Left Arm, Trunk, Right Leg, Left Leg)
Electrode Method	Tetrapolar 8-Point Tactile Electrodes	
Measurement Method	Direct Segmental Measurement Bioelectrical Impedance Analysis Method; DSM-BIA method	
Body Composition Calculation Method	No use of Empirical Estimation.	
Outputs	Weight, Skeletal Muscle Mass, Body Fat Mass Total Body Water, Fat Free Mass BMI, Percent Body Fat, Waist-Hip Ratio(WHR) Basal Metabolic Rate (BMR), Visceral Fat Level Segmental Analysis of Lean and Fat (Right arm, Left arm, Trunk, Right leg, Left Leg), Muscle Control, Fat Control Fitness Score, Body Composition History Impedance at Each Segment & Frequency	
Applied Rating Current	250㎂	
Adapter	Power Input	AC100-240V, 50/60Hz, 1.2A
	Power Output	DC 12V, 3.4A
Display Type	EBTN Custom LCD	
External Interface	RS-232C 1EA, USB Slave 1EA,	
Dimensions	396(W) X 608(L) X 955(H) : mm 15.6(W) X 24(L) X 37.6(H) : inch	
Weight	14.3kg (31.5 lbs.)	
Operation Environment	Temperature: 10 ~ 40℃(50 ~ 104˚F) Humidity: 30 ~ 75%RH Pressure: 70 ~ 106kPa	
Storage Environment	Temperature: -20~ 70℃(-4 ~ 158˚F) Humidity: 30 ~ 95%RH Pressure: 50 ~ 106kPa	
Weight Range	10 ~ 250kg (22 ~ 551lbs.)	
Age Range	3 ~ 99years	
Height Range	95 ~ 220cm (2ft. 9.5in. ~ 7ft. 2.6in.)	

* Specifications may change without prior notice.

3. Customer Service Information

Corporate agents of the InBody170 and addresses are listed below. Contact us for assistance or more information about the InBody170.

Biospace Co., Ltd.
518-10, Dogok 2-Dong, Gangnam-gu, Seoul 135-784 KOREA
TEL: 82-2-501-3939
FAX: 82-2-501-3978
Website: www.inbody.com
E-mail: info@inbody.com

Biospace Inc. [U.S.A]
13850 Cerritos Corporate Dr. Unit C Cerritos, CA 90703, USA
TEL : 1-323-932-6503
FAX : 1-323-932-6506
Homepage : http://www.biospaceamerica.com
E-mail : USA@biospaceamerica.com

Biospace Japan Inc. [JAPAN]
Second Floor Ayabe Bldg., 2-17-3 Sotokanda, Chiyoda-ku, Tokyo JAPAN
TEL : 81-03-5298-7667
FAX : 81-03-5298-7668,7669
Homepage : http://www.inbody.co.jp
E-mail : inbody@inbody.co.jp

EU Representative. [Europe]
DongBang Acuprime.
1 Forrest Units, Hennock Road East, Marsh Barton, Exeter EX2 8RU, U.K
TEL : 44-1392- 829500
FAX : 44-1392- 823232
E-mail : info@acuprime.com

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904, Xing Di Plaza, No. 1968 Yishan Road, Shanghai, 201103, CHINA
TEL : 86-21-64439738, 9739, 9705
FAX : 86-21-6443906
Homepage : http://www.biospacechina.com
E-mail : sales@ biospacechina.com