

[www.inbody.com](http://www.inbody.com)

# InBody230

For Convenient Use





## The most ideal and convenient system for health care

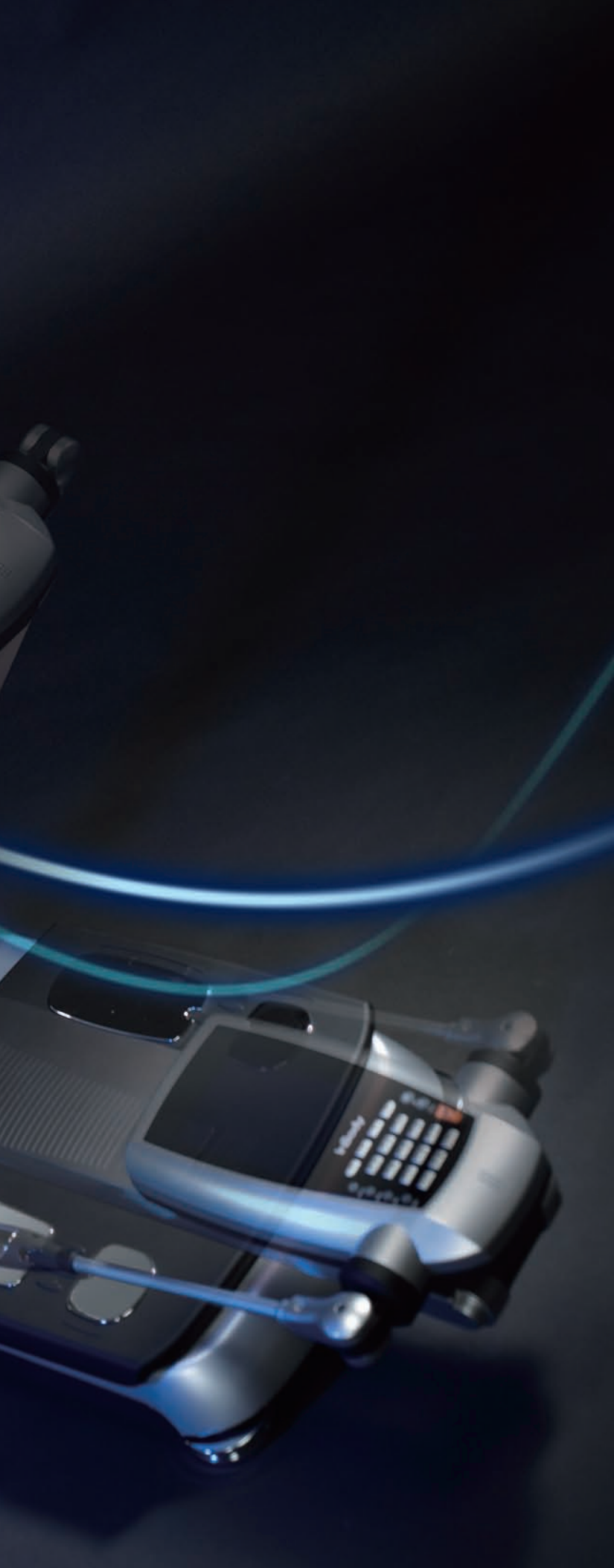
*The revolutionary technology in BIA has created a new standard*

Leading novel technology provides the accurate results you can trust

- Body Composition
- Obesity Diagnosis: BMI, Percent Body Fat, WHR
- Segmental Analysis for Fat and Lean Mass
- Guidance for weight management
- Exercise planner for effective exercise

Advanced design and features to fulfill your needs

- Easy to carry and install
- Easy to operate
- Easy to transfer the results through a USB memory stick
- Useful accessories and much more



## Available Options



### **Manage all clients' results at your fingertip**

InBody230 comes with a perfect solution to organize all personal results in your own computer.

▶ Lookin'Body



A small and handy printer can be attached to the InBody230.

▶ Thermal Printer



Specially designed bag helps to store and carry InBody230.

▶ InBody Bag



A solution to connect InBody with more than one compatible device.

▶ SD400

## **InBody230, Providing Detailed Information You Can Use**

### **To monitor the body composition at a glance**

With the shape of the weight/skeletal muscle mass/body fat mass graphs on the results sheet, you can easily check the current state body composition and body shape.

### **To get accurate obesity diagnosis**

No longer be misguided by weight alone. Utilizing both BMI and Percentage of Body Fat (PBF), you can more accurately discover underweight and overweight obesity by considering muscle and fat values, rather than just total body weight.

### **To monitor direct changes in muscle mass in each part of the body**

When pursuing a training or weight loss program, the segmental lean analysis becomes imperative by showing if muscle mass has developed or decreased in each arm, leg and the trunk. The InBody230 provides validation that the program works for each individual.

*Unique design and worldwide patented technology...*



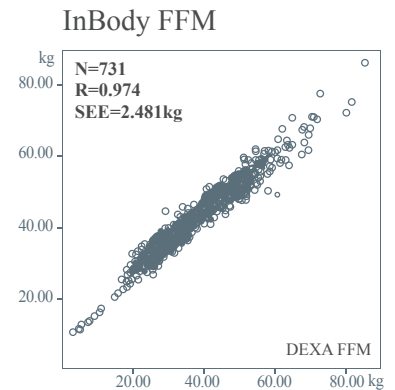


Correlation study with DEXA shows that InBody is highly accurate ( $r=0.974$ ).

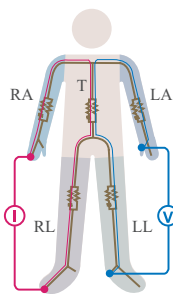
InBody is the only body composition analyzer which offers the high correlation coefficient near 0.98 comparing with DEXA.

\* Male: 343, Female: 388

	N	Minimum	Maximum	Mean	Std. Deviation
Age (years)	731	5.00	88.00	40.09	17.54
Height (cm)	731	106.50	193.00	162.42	10.43
Weight (kg)	731	17.30	118.30	60.60	13.59



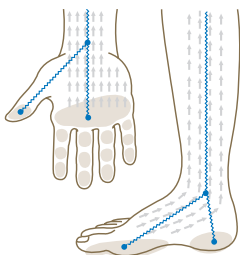
*... with proven accuracy and effectiveness.*



### Direct Segmental Measurement

Biospace's segmental analysis method is world widely patented technology. It makes measurements absolutely accurate by producing impedance values for each different segment: 4 limbs and trunk.

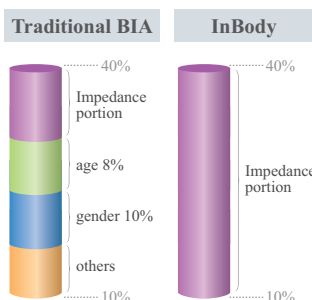
- Accurate impedance measurement of trunk is the key to bioimpedance technology.
- No population specific statistics(empirical factors) are used in calculation.



### 8-Point Tactile Electrode System

It has enhanced accuracy by fixing the measuring region.

- The fixed measurement starting points of the body guarantee high reproducibility.
- It also minimizes error rates due to different placement of electrodes in hands and feet.



### No Use of Empirical Estimation

With direct segmental measurement and 8-point tactile electrode method, the InBody does not need empirical factors in calculation.

- High accuracy is guaranteed by precise assessment of the trunk.
- All the data solely depends on the measurements, not relying on gender or age.

# For Adult

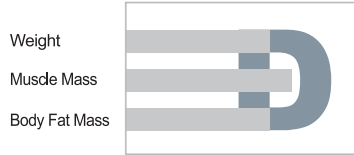
## Results Interpretation

### 1 Body Composition

Pay attention to the shape formed by bars of Weight / Skeletal Muscle Mass / Fat Mass.



'C' shape: Fat mass is relatively more than muscle content.



'D' shape: Muscle mass has been increased and fat mass has been reduced. Expect a stronger body.

► Results from the Thermal Printer

### 2 Obesity Diagnosis

BMI alone can not judge obesity. BMI and Percent Body Fat must be considered together for accurate obesity diagnosis.

	Value	Normal Range
<b>BMI</b> Body Mass Index (kg/m <sup>2</sup> )	20.0	18.5 ~ 25.0
<b>PBF</b> Percent Body Fat (%)	29.0	18.0 ~ 28.0

Normal BMI with high PBF;  
Sarcopenic and Obese Body

	Value	Normal Range
<b>BMI</b> Body Mass Index (kg/m <sup>2</sup> )	20.0	18.5 ~ 25.0
<b>PBF</b> Percent Body Fat (%)	24.0	18.0 ~ 28.0

Both BMI and PBF are normal;  
Healthy Body

	Value	Normal Range
<b>BMI</b> Body Mass Index (kg/m <sup>2</sup> )	26.0	18.5 ~ 25.0
<b>PBF</b> Percent Body Fat (%)	24.0	18.0 ~ 28.0

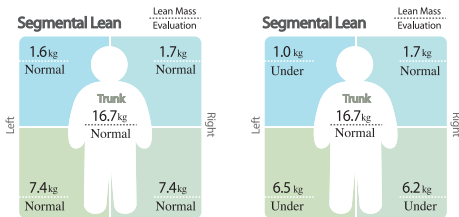
High BMI but normal PBF;  
Well- built Body

	Value	Normal Range
<b>BMI</b> Body Mass Index (kg/m <sup>2</sup> )	26.5	18.5 ~ 25.0
<b>PBF</b> Percent Body Fat (%)	31.0	18.0 ~ 28.0

Both BMI and PBF are high;  
Obese Body

### 3 Segmental Lean

Maintain Segmental Lean Mass in the either "Normal" or "Over" and check body balance between upper and lower and between left and right.

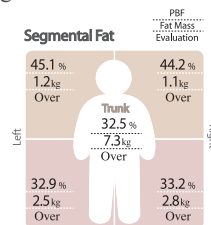


A well-balanced body with enough muscle in each segment.

Imbalance between the 2 arms and not enough muscle in legs.

### 4 Segmental Fat

Monitor Percent Body Fat of each segment and manage it in the "Normal".



Result of the evaluation says "Over" meaning excessive fat is stored in each segment. Try to lower the Percent Body Fat.

\* Segmental fat analysis is estimated calculation based on other results and it can not be measured directly by the BIA method.

### 5 Exercise Planner

Plan your exercise based on body composition state.

**1) Exercise Planner**  
Plan your weekly exercises from the followings and estimate your weight loss from these activities.

Energy expenditure of each activity (base weight: 51.6kg / Duration: 30min. / unit: kcal)											
Walking 102	Jogging 178	Bicycle 153	Swim 178	Mountain climbing 166	Aerobic 178						
Table tennis 115	Tennis 153	Football 178	Oriental Fencing 255	Gate ball 97	Badminton 115						
Racket ball 255	Tae kwondo 255	Squash 255	Basketball 153	Rope jumping 178	Golf 90						
Push-ups 255	Sit-ups 255	Weight training 255	Dumbbell 255	Elastic band 255	Squats 255						

**2) • How To**

- Choose practicable and preferable activities from the left.
- Energy expenditure for each is calculated when it is done for 30 min.
- Choose exercises that you are going to do for 7 days.
- Calculate the total energy expenditure for a week.
- Estimate expected total weight loss for a month using the formula shown below.

**3) • Recommended calorie intake per day**

1400 kcal

- You can choose your preferable exercise and know the consumption of calorie
- Easy explanation lets you understand how to use the Exercise Planner
- Recommended calorie intake per day is provided with consideration of your body state

Time 2012/09/25 19:40:35  
ID SKM00079-0008  
Gender Male Age 29  
Height 164.0cm Weight 71.3kg

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**Body Composition**

Weight	71.3kg	(50.3~68.1)
Muscle	30.1kg	(25.1~30.7)
Fat	18.2kg	(7.1~14.2)
TBW	38.9kg	(33.3~40.7)
FFM	53.1kg	(43.2~53.8)

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**Obesity Diagnosis**

BMI	26.5 kg/m <sup>2</sup>	(18.5-25.0)
PBF	25.6 %	(10.0-20.0)
WHR	0.88	(0.80-0.90)
BMR	1516 kcal	(1548-1810)

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**Segmental Lean Distribution**

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**Segmental Fat Distribution**

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**Muscle-Fat Control**  
Muscle 0.0kg Fat -8.9kg

\*Segmental Fat is estimated.

# For Child

Results Sheet Can Be Understood by Children.

## Nutrition Condition assessment that is essential for future growth

Easily understandable explanation has been added on four major elements of human body. Also, nutrition condition that is important for child's growth has been clearly assessed.

## Body balance table of weight, muscle, and body fat that assesses the qualitative growth

Balanced growth can occur when the ratio of muscle and body fat, which make up the weight, is in balance.

Check for the children's qualitative growth by looking at the body balance table shape of weight, muscle, and body fat.

My total	Weight	1	2	3	4	5	6	7	8	9	10
For a great body shape	Muscle	1	2	3	4	5	6	7	8	9	10
Am I storing too much	Body Fat	1	2	3	4	5	6	7	8	9	10

**'I' shape:** Balance of weight, muscle and body fat.  
The ratio of muscle and body fat is adequate.

My total	Weight	1	2	3	4	5	6	7	8	9	10
For a great body shape	Muscle	1	2	3	4	5	6	7	8	9	10
Am I storing too much	Body Fat	1	2	3	4	5	6	7	8	9	10

**'C' shape:** Lack of muscle and much body fat.  
Better to increase muscle or decrease body fat.


My total	Weight	1	2	3	4	5	6	7	8	9	10
For a great body shape	Muscle	1	2	3	4	5	6	7	8	9	10
Am I storing too much	Body Fat	1	2	3	4	5	6	7	8	9	10

**'D' shape:** Strong and has lots of muscle.  
Healthy state due to lots of muscle.

## Body balance that points the growth condition of the body part

It is important to know the comment of palm & foot marking, which shows the muscle state of arms & legs.

Based on the comment of palm & foot, it is possible to assess whether each part of the body is making balanced growth or not.



# InBody

I.D. HKE-0008      Age 10

**Let's discover what my body is made up of ?**

Occupying most of my body	<b>Body Water</b>	22.1 kg	Too little
Making muscle	<b>Protein</b>	6.0 kg	Too little
Making bones strong	<b>Mineral</b>	2.22 kg	Enough
Storing extra energy	<b>Body Fat</b>	14.9 kg	Too much

**Shall we check if my body is well balanced ?**

		Under			Normal	Over						
My total	<b>Weight</b>	45.2 kg	1	2	3	4	5	6	7	8	9	10
For a great body shape	<b>Muscle</b>	16.0 kg	1	2	3	4	5	6	7	8	9	10
Am I storing too much	<b>Body Fat</b>	14.9 kg	1	2	3	4	5	6	7	8	9	10

**Is my body growing well ?**

**Arms:** Look at the comment of palm marking. It shows the muscle state of arms.

**Legs:** Look at the comment of foot marking. It shows the muscle state of legs.

You are rather chubby.      It will be great if you grow more.

You are rather developed.	Good!	Length is ok but you need more muscle.	You look weak.
You are developed though you are slim.	Good enough.	You are lack of muscle.	You look too weak.
Your muscles are like an athlete player's.	Very good!	Your muscle is weak for the weight.	Your muscle is ok for the weight but you look weak.

**Am I well balanced?**

Arms	Balanced	Slightly Unbalanced	Extremely Unbalanced
Legs	Balanced	Slightly Unbalanced	Extremely Unbalanced
Arms & Legs	Balanced	Slightly Unbalanced	Extremely Unbalanced

✳ When children grow, it is not just bone that grows, but the muscle that supports the bone. Whether or not children have developed muscle is an important factor in children's growth process since development of muscle accelerates the growth of bone.

Height Weight Gender Date / Time  
 48 cm 45.2 kg Girl 2014.03.05/09:56

# InBody

TEL: +82-2-501-3939 FAX: +82-2-578-2716

## Growth Curve shows growth rate

It is important to know exactly where your child stands compared to the children of same age. Under 10% requires more careful supervision.

## Weight control encourages children to reach their ideal weight

InBody provides weight control instructions that encourage children to maintain healthy body composition status.

## Diagnosis of obesity that hinders the growth

Diagnosis of obesity based on BMI, percentage body fat and obesity degree. It diagnoses obesity using BMI, percentage body fat, and obesity degree.

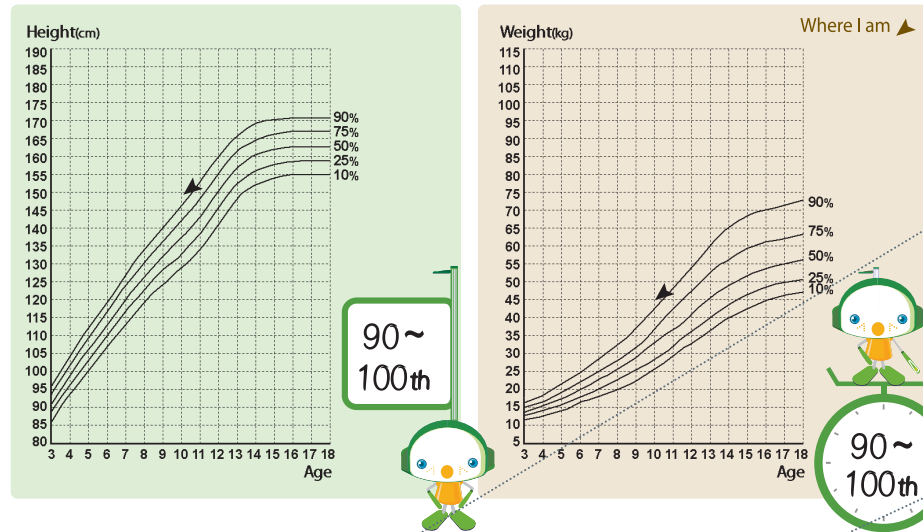
## Growth score that evaluates qualitative and quantitative aspects of growth

Growth score is based on children's height and weight as well as body fat. The score evaluates children's growth in both qualitative and quantitative ways.

## Check your own impedance

Directly measured impedance values for each frequency for each of five parts, trunk and four limbs (arms and legs).

Where am I in height and weight among my 100 friends? The taller and the heavier, numbers will increase.



## What is my ideal weight?

For my ideal muscle mass	Need to gain	3.6 kg
For my ideal body fat mass	Need to lose	6.3 kg
For my ideal weight	Need to lose	2.7 kg

So, what is my ideal weight?

**42.5 kg**

## Evaluation of my body

BMI Body Mass Index	20.6 kg/m <sup>2</sup>	normal	under	over	extremely over
PBF Percentage Body Fat	33.0 %	normal	under	slightly over	extremely over
OD Obesity Degree	107 %	normal	weak	over weight	extremely over
BMR Basal Metabolic Rate	1025 kcal	normal	under	over	

What is my growth score?

**87 Points**

### note

#### Impedance

Z	RA	LA	TR	RL	LL
20 kHz	513.3	523.1	27.6	347.0	348.3
100 kHz	461.4	474.1	24.8	302.9	304.6



# The Results Sheet

# InBody

ID SKM00079-0008  
Age 29

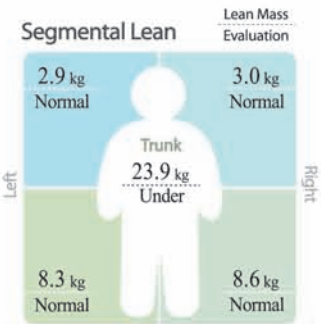
Height 164cm  
Gender Male

Date 2014.9.25  
Time 19:40:35

**InBody**  
www.inbody.com

## Body Composition

	Under	Normal	Over	UNIT%	Normal Range
<b>Weight</b>	40 55 70 85 100 115 130 145 160 175 190 205				50.3 ~ 68.1
<b>Muscle Mass</b> Skeletal Muscle Mass	60 70 80 90 100 110 120 130 140 150 160 170				25.1 ~ 30.7
<b>Body Fat Mass</b>	20 40 60 80 100 160 220 280 340 400 460 520				7.1 ~ 14.2
<b>TBW</b> Total Body Water	38.9 kg (33.3 ~ 40.7)		<b>FFM</b> Fat Free Mass	53.1 kg (43.2 ~ 53.8)	



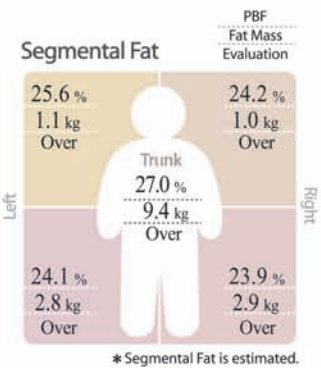
## Obesity Diagnosis

	Value	Normal Range
<b>BMI</b> Body Mass Index (kg/m <sup>2</sup> )	26.5	18.5 ~ 25.0
<b>PBF</b> Percent Body Fat (%)	25.6	10.0 ~ 20.0
<b>WHR</b> Waist-Hip Ratio	0.88	0.80 ~ 0.90
<b>BMR</b> Basal Metabolic Rate (kcal)	1516	1548 ~ 1810

$$BMI = \frac{\text{Weight, kg}}{(\text{Height, m})^2}$$

$$PBF = \frac{\text{Fat, kg}}{\text{Weight, kg}} \times 100$$

$$WHR = \frac{\text{Waist circumference, cm}}{\text{Hip circumference, cm}}$$



## Muscle-Fat Control

<b>Muscle Control</b>	0.0 kg	<b>Fat Control</b>	- 8.9 kg
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## Impedance

Z	RA	LA	TR	RL	LL
20kHz	286.5	298.3	27.0	218.7	231.1
100kHz	250.7	262.4	23.1	189.1	200.9

\* Use your results as reference when consulting with your physician or fitness trainer.

## Exercise Planner

Plan your weekly exercises from the followings and estimate your weight loss from these activities.

Energy expenditure of each activity (base weight: 51.6kg / Duration: 30min. / unit: kcal)						
Walking	Jogging	Bicycle	Swim	Mountain Climbing	Aerobic	
143	250	214	250	232	250	
Table tennis	Tennis	Football	Oriental Fencing	Gate ball	Badminton	
161	214	250	357	135	161	
Racket ball	Tae-kwon-do	Squash	Basketball	Rope jumping	Golf	
357	357	357	214	250	125	
Push-ups development of upper body	Sit-ups abdominal muscle training	Weight training backache prevention	Dumbbell exercise muscle strength	Elastic band muscle strength	Squats maintenance of lower body muscle	

### • How To

1. Choose practicable and preferable activities from the left.
2. Energy expenditure for each is calculated when it is done for 30 min.
3. Choose exercises that you are going to do for 7 days.
4. Calculate the total energy expenditure for a week.
5. Estimate expected total weight loss for a month using the formula shown below.

Calculation for expected total weight loss for a month (one month = 4 weeks)

$$\text{Total energy expenditure (kcal/week)} \times 4 \text{ weeks} \div 7700$$

### • Recommended calorie intake per day

1600 kcal

# InBody230 Specifications

## Key Specifications

Bioelectrical Impedance Analysis (BIA) Measurement Items	Impedance(Z)	10 Impedance measurements by using 2 different frequencies(20kHz, 100kHz) at each 5 segments of the body (Right Arm, Left Arm, Trunk, Right Leg, Left Leg)
Electrode Method		Tetrapolar 8-Point Tactile Electrode System
Measurement Method		Direct Segmental Multi-frequency Bioelectrical Impedance Analysis Method, DSM-BIA method
Body Composition Calculation Method		No use of Empirical Estimation
Outputs	For Adult	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), Muscle Control, Fat Control, Segmental Analysis of Lean and Fat(Right arm, Left arm, Trunk, Right leg, Left leg), Impedance at Each Segment & Frequency, Exercise Planner(Optional)
	For Child	Height, Body Water, Protein, Mineral, Body Fat, Weight, Skeletal Muscle Mass, Segmental Lean Evaluation, Growth Chart(Height, Weight), Target Weight, Weight Control, Muscle Control, Fat Control, BMI, Percent Body Fat, Child Obesity Degree, Basal Metabolic Rate(BMR), Growth Score, Impedance at Each Segment & Frequency

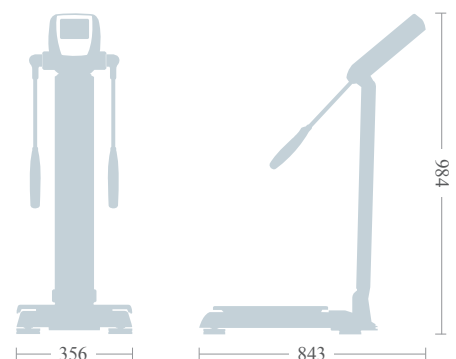
## Feature Specifications

Logo Display	Possible to input name of the user's place, address and contact number
Type of Results Sheet	Basic : Body composition results sheet for adult(Printed Paper/Blank Paper) Body composition results sheet for child(Printed Paper/Blank Paper) Option: Thermal results sheet(when using thermal printer)
Portability	Foldable body stand part, Portable carrying bag
Sound	Possible to turn the beep sound on during measurement
Measurement Screen	Results of measurement and the process of measurement will be displayed on Color LCD
Data Storage	Possible to save the results when ID is entered(Up to 1,000 measurements)
Printer Connection	USB port

## Other Specifications

Applied Rating Current	330μA
Power Consumption	50VA
Adapter	Power Input AC100~240V, 50/60Hz, 1.2A
	Power Output DC 12V, 3.5A
Display Type	240 × 320 Color LCD
External Interface	RS-232C 1EA, USB Slave 1EA, USB Host 1EA
Compatible Printer	Laser/Inkjet PCL 3 or above and SPL(Printer recommended by BIOSPACE) Thermal Printer(Optional)
Dimensions	356 (W) × 843 (L) × 984 (H): mm 14.0 (W) × 33.2 (L) × 38.7 (H): inch
Machine Weight	14.5kg(32.0lbs)
Measurement Duration	30sec.
Operation Environment	10 ~ 40°C(50 ~ 104°F), 30 ~ 80%RH, 50 ~ 106kPa
Storage Environment	0 ~ 40°C(32 ~ 104°F), 30 ~ 80%RH, 50 ~ 106kPa(No condensation)
Weight Range	10 ~ 250kg(22 ~ 551lbs)
Height Range	95 ~ 220cm(3ft. 1.4in. ~ 7ft. 2.6in.)
Age Range	3 ~ 99 years

\* Specifications may change without prior notice.



InBody is a body composition analysis device manufacturer that has acquired over 80 patent rights across the globe.



## InBody

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