Body Composition Analysis

Example/27,0-yr-old/184,0cm/Male Date: 2006-08-07 15:22:37

Compartments	Values	TBW	SLM	FFM	Weight	Normal Range	Nutritional Evaluation
I C W (ℓ)	30,6	49,4	63,5	67,3	81,3	26,0 - 31,8	Normal
E C W (ℓ)	18,8					15,9 - 19,5	
Protein (kg)	13,2					11,3 - 13,8	Normal
Mineral (kg)	4,61	non-osseous: 0,8 osseous: 3,84				3,88 - 4,74	Normal
B F M (kg)	14,0					9,0 - 17,9	Normal

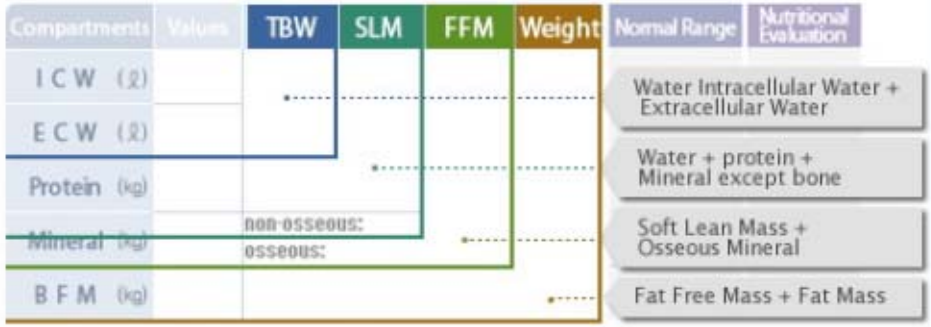
▸ Mineral is estimated. ▪TBW: Total Body Water ▪SLM: Soft Lean Mass ▪FFM: Fat Free Mass

	Standard Body Composition Ratio		Body Composition Ratio
Total Body Water	62,4		60,8
Protein	16,5		16,2
Mineral	5,8		5,7
Body Fat Mass	15,3		17,2

Left Right Unit:%

Description

Body Composition Analysis Graph



- It analyzes 4 body compositions
- Sum of each component creates muscle mass, fat free mass and weight.
- The result could be checked to the normal range which is shown at the right end of the graph.

How to interpret the Graph of Body Composition Ratio?

It shows the ratio of each body component (body water, protein, mineral, body fat) out of total weight.

The standard body composition ratio of male and female

Examinee's current body composition ratio

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Skeletal Muscle - Body Fat

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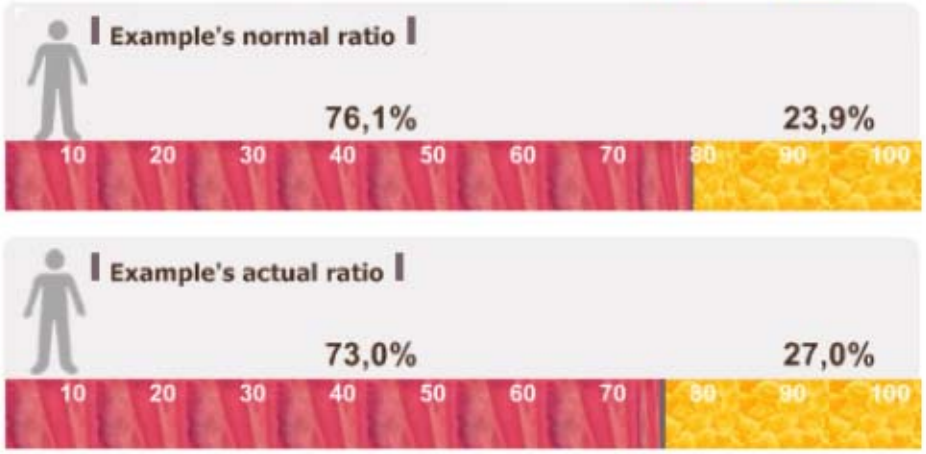
	Under	Normal	Over	Normal Range
Weight (kg)	55 70 85 100 115 130 145 160 175 190 205	81,3		Normal 63,3 - 85,7
S M M (kg)	70 80 90 100 110 120 130 140 150 160 170	37,9		Normal 32,1 - 39,2
B F M (kg)	40 60 80 100 160 220 280 340 400 460 520	14,0		Normal 9,0 - 17,9

•SMM: Skeletal Muscle Mass •BFM: Body Fat Mass

Percent Skeletal Muscle-Body Fat(%) SMM BFM



Description

Graph Shape of Weight, SMM, Body Fat Mass

Graph Shape	Under (weight)	Normal (weight)	Over (weight)
Shape C	Underweight-Low Muscle Type	Normal Weight-Low Muscle Type	Overweight-Low Muscle Type
	Weak condition due to underweight and low amount of muscle. Increase weight by developing more muscle.	Insufficient SMM(skeletal muscle mass). Develop more muscle and bring body fat mass into the normal range, to be in a healthy shape.	Obese condition. Reduce body fat while keeping SMM.
Shape I	Underweight-Well-Balanced Type	Normal Weight-Well-Balanced Type	Overweight-Well-Balanced Type
	Weak condition, but with balanced SMM and body fat mass. Increase the amount of both muscle and fat.	Standard body condition. Develop more muscle, and you will look a lot healthier.	Overweight exceeding in both muscle and fat. Control weight by reducing your body fat mass within the normal range.
Shape D	Underweight-Muscular Type	Normal Weight-Muscular Type	Overweight-Muscular Type
	Underweight but you have a healthy body composition. If you bring your weight into the normal range, you will be in a healthier condition.	Ideal body composition. Keep it the way as it is.	Overweight, but you don't look plump since you have much muscle. Control weight by reducing body fat within the normal range.

Ratio of SMM-Body Fat Mass

Standard Ratio of SMM= Standard SMM/(Standard SMM+Standard Body Fat Mass)*100

Standard Ratio of Body Fat Mass= Standard Body Fat Mass /(Standard SMM+Standard Body Fat Mass)*100

Actual ratio of the examinee is calculated based on the actual SMM and actual Body Fat Mass

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Obesity Diagnosis

Example/27,0-yr-old/184,0cm/Male Date: 2006-08-07 15:22:37

	Under	Normal	Over	Normal Range
BMI	10 15 18,5 22 25 30 35 40 45 50 55 — 24,0			Normal 18,5 - 25,0
PBF (%)	0 5 10 15 20 25 30 35 40 45 50 — 17,2			Normal 10,0 - 20,0
WHR	0,70 0,75 0,80 0,85 0,90 0,95 1,00 1,05 1,10 1,15 1,20 — 0,86			Slight abdominal obese 0,80 - 0,90

•PBF : Percent Body Fat •WHR: Waist-Hip Ratio

Obesity Degree by BMI

Obesity Degree by Percent Body Fat

Weight is in the normal range,	More fat than muscle. chubby, but normal type

Description

Obesity Diagnosis Index? BMI, Percent Body Fat, WHR

BMI (kg/m²)

BMI diagnoses obesity by calculating with weight relative to height. BMI does not take into consideration what weight is composed of.

Percent Body Fat (PBF/%)

Percent Body Fat is an essential obesity diagnosis index, based on the proportion of Body Fat Mass in weight. InBody provides you with accurate Percent Body Fat.

WHR

InBody diagnoses WHR, a major cause of adult diseases. Instead of troublesome measuring with tape ruler, InBody diagnoses WHR in a simple way.

What is wrong with diagnosing obesity by BMI?

BMI does not take into consideration what weight is composed of. It is impossible to distinguish whether the examinee is overweight due to excessive muscle or body fat. The exact obesity diagnosis is based upon Percent Body Fat along with BMI.

Example : same BMI, different Percent Body Fat

	Normal Type	Oveweight Obese Type
	Under Normal Over	Under Normal Over
BMI	27.6	27.6
PBF	24.6	36.7
	Both BMI and Percent Body Fat are above the average.	Oveweight Obese Type with little muscle and excessive body fat.

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Body Water

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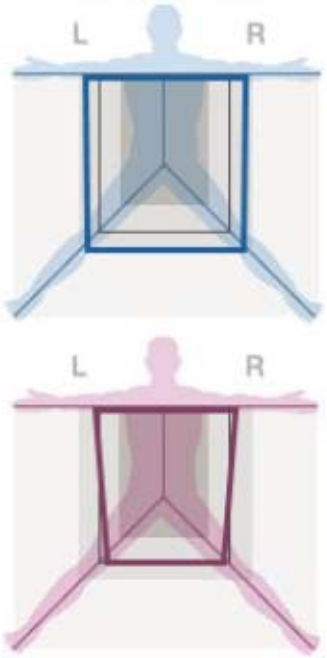
	Under	Normal	Over
Right Arm (kg)	40 60 80 100 120 140 160 180	3,77	103,2
Left Arm (kg)	40 60 80 100 120 140 160 180	3,72	101,8
Trunk (kg)	70 80 90 100 110 120 130 140	28,9	94,7
Right Leg (kg)	70 80 90 100 110 120 130 140	10,93	98,0
Left Leg (kg)	70 80 90 100 110 120 130 140	10,93	98,0

Lean Lean / Ideal Lean x 100(%)

Body Shape Graph



Overall Evaluation

Upper Body Balance:	**Balanced**	Upper Body Strength:	**Normal**
Lower Body Balance:	**Balanced**	Lower Body Strength:	**Normal**
Upper Lower Balance:	**Balanced**	Upper Lower Strength:	**Normal**

Description

What is difference between upper and lower graphs of Lean Balance?

It depends on which you compare your current muscle mass to.

- Standard: height → Ideal weight for a certain height → 100% of Ideal muscle mass in ideal weight.
- Standard: actual weight → 100% of ideal muscle mass of actual weight

As you compare both graphs, it is possible to check whether the muscle mass is enough for visual looks and your actual weight.

What is the range for Body Shape Graph?

Body Shape Graph is formed by connecting the points marked on the bars of each arm and leg.

- The dark grey area shows the range below the average.
- The grey area represents the normal range.
- The light grey area shows the range over the average.
- The solid line in grey area signifies 100%.

What is the range for Body Shape Graph?

Blue shape visualizes the upper graph and red shape visualizes the lower graph. With the shape of the square, lean balance is determined. Body type is shown in comparison of the red square with the square formed by solid lines. (ideal values)

Compare the shape of the squares.

It checks the lean balance as strong or weak body part.

Upper and Lower Balance. | Strong Upper body or Weak Lower body. | Strong Lower body or Weak Upper body.

Compare the size of red squares.

It checks the body type as strong muscle type or excessive fat type.

Weak Type with high percent body fat | Normal Type with standard ratio of body fat to muscle | Strong Type with developed muscle

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Edema

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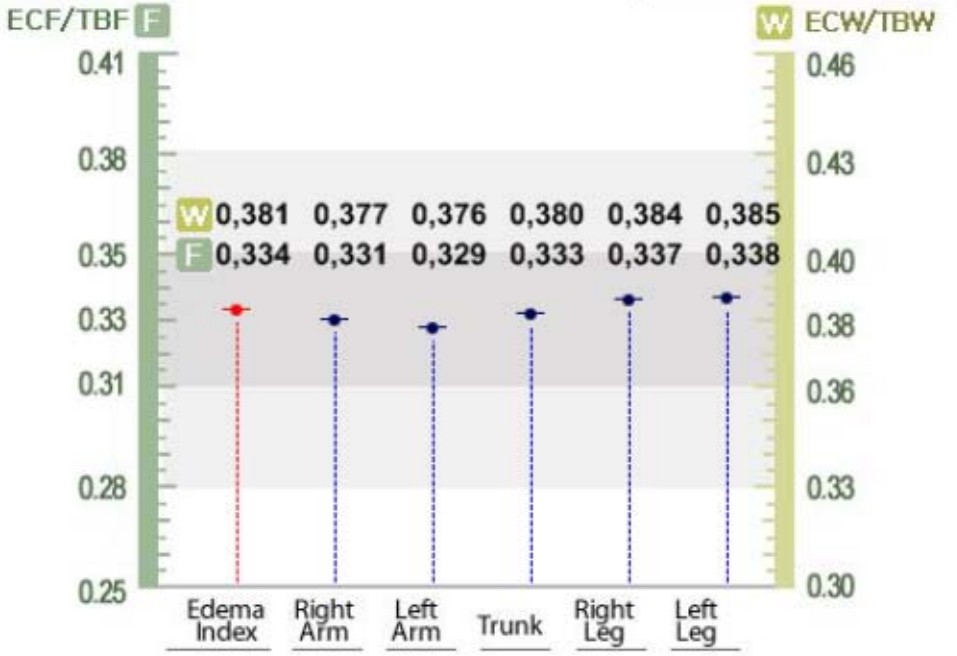


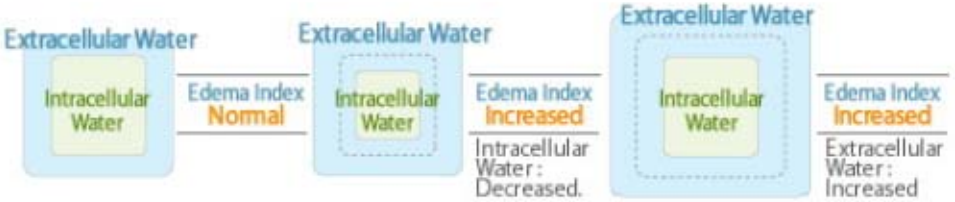
Edema Index "Normal"

Right Arm	: Normal	Right Leg	: Normal
Left Arm	: Normal	Left Leg	: Normal
Trunk	: Normal		

Description

What is Edema Index?

- Edema Index = Extra Cellular Water(ECW)/ Total Body Water(TBW)
- Total body water is divided into intracellular water and extracellular water. InBody confirms edema when the edema index is higher than the average, which means that the proportion of extra cellular water is increased. Edema index goes up when intracellular water reduces or extracellular water increases.



What's the difference of ECF/TBF and ECW/TBW?

ECF : Extracellular Fluid	ECW : Extracellular Water
ICF : Intracellular Fluid	ICW : Intracellular Water
TBF : Total Body Fluid	TBW : Total Body Water

- Fluid: the liquid form of protein and mineral
- Water: the pure water without any substances
- Both of ECF/TBF and ECW/TBW are the edema idex, calculated in regard of fluid and water, respectively.

Body fluid is not simply formed with only pure water, it rather exists as fluid with the combination of protein and mineral. Thus we show two edema index of water and fluid type.

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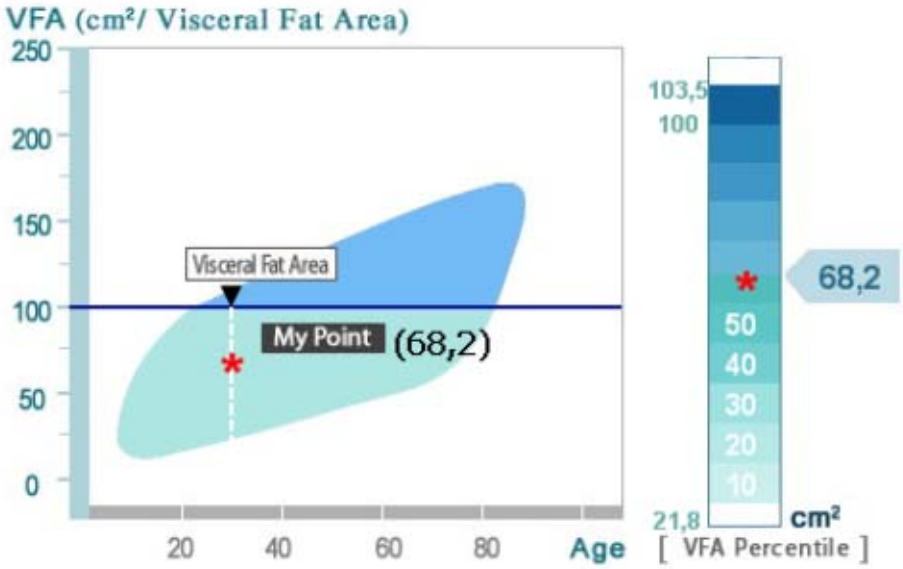
Visceral Fat

Example/27,0-yr-old/184,0cm/Male Date: 2006-08-07 15:22:37



Example's VFA is 68,2cm² and it is not visceral obesity.

Regarding Example's VFA with 27,0 Man, you are 57th out of 100.

Description

How to Read VFA Graph

When seeing cross section of your abdomen from the belly button line, the cross sectional plane is shown as left picture.
The black inside the white area is visceral fat. VFA is the area of the black. If the area is over 100cm², it is diagnosed as abdominal obesity.

How to Interprete Graphs?

- Horizontal line is for Age; Vertical line for Visceral Fat Area.
- The shaded area is the distribution based on the age for the sampled population's visceral fat area. Horizontal line is for Age; Vertical line for Visceral Fat Area.
- Over 100cm² ; under 100cm²
- The result of visceral fat area of the subject is marked at his/her age by (✳),

How to Read VFA Graph

- Percentile means where you are ranked in sequence among the 1st to 100th.
- No medical diagnostic meaning. If the area is over 100cm², it means abdominal obesity.
- Visceral Fat Area Percentile shows where you are ranked at your age.
- The largest area is ranked at 100th while the smallest area at 1st.
- You can see where you are ranked among the group of your age.

The less you have, the healthier you are.

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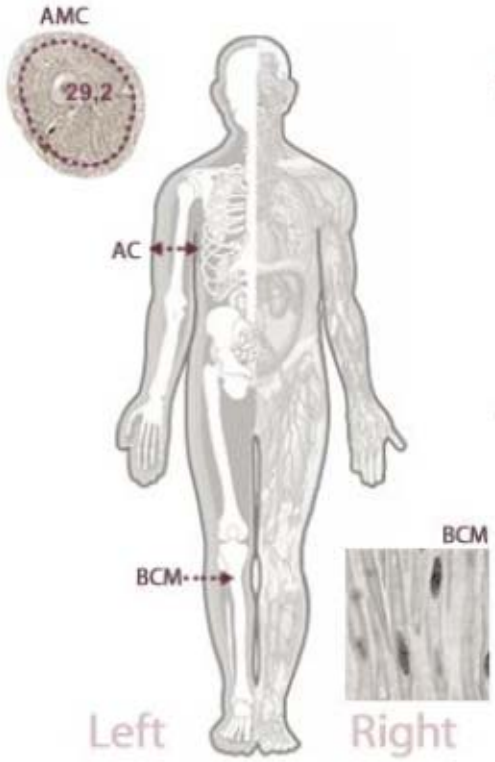
Additional Data

Example/27,0-yr-old/184,0cm/Male Date: 2006-08-07 15:22:37



Additional Data

		Normal Range
OBESITY	109%	90~110
B C M	43,8kg	37,2~45,5
B M C	3,84kg	3,19~3,90
B M R	1824kcal	1713~2011
A M C	29,2cm	
A C	31,9cm	

Description

Definition of Additional Data

Obesity Degree	Obesity Degree is the ratio of the current weight to the standard weight.
B C M	Body Cell Mass serves as one standard for evaluating the state of an examinee's nutrition.
B M C	Bone Mineral Content is used to measure minerals in bones.
B M R	Basal Metabolic Rate indicates the minimum energy required to sustain vital functions while at rest. It is about 60% of energy required for daily activities.
A M C	Arm Muscle Cincumference is one of the most reliable way to evaluate nutrition levels of the examinee. If he or she is under malnutrition, muscle will be reduced causing decrease in AMC.
A C	Arm Circumference is used to evaluate protein level along with AMC. AC decreases when muscle or subcutaneous fat reduces. If there is a change in AC and none in AMC, it's the subcutaneous fat which has been reduced.

Impedance

	RA	LA	TR	RL	LL
1 kHz	327,3	333,3	25,3	249,0	248,0
5 kHz	320,6	326,6	24,5	246,0	245,0
50 kHz	283,0	289,1	20,5	219,8	218,4
250 kHz	255,2	259,8	17,0	198,0	196,6
500 kHz	246,7	250,0	15,9	193,0	191,5
1000 kHz	241,2	242,3	15,1	190,4	189,1

Reactance

	RA	LA	TR	RL	LL
5kHz					
50kHz					
250kHz					

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Comprehensive Evaluation

Example/27,0-yr-old/184,0cm/Male **Date:** 2006-08-07 15:22:37

Body Type Evaluation

Target Weight	79,2kg	Weight Control	-2,1kg
Fat Control	-2,1kg	Muscle Control	0.0kg

Normal weight/normal muscles/normal body fat, so you have a normal body which means that muscles and body fat are well-balanced.

Body Type based on SMM-Body Fat Mass

Healthy Type 82 points

Specific Details on Segments

Abdominal Obesity

Subcutaneous Fat Type

Subcutaneous Obese type Slight Abdominal Obesity

Edema

Edema

Normal

Body Strength

Standard Upper and Lower Body

Body Balance

Balanced Balanced Balanced

Description

What is Body Type and Specific Details on Segments?

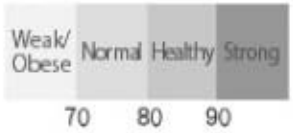
By representing image, specific details on segments indicate body type and various evaluation of the examinee.

Body Type	Specific Details on Segments
It is the image which sybolizes the body type based on Weight, SMM, Body Fat Mass, BMI, Percent Body Fat. The image distinguishes weak, normal and strong body type.	It is the image which sybolizes the examinee's state based on Abdominal Obesity, Body Strength, Edema, Body Balance. If there is a problem in any of these 4, it needs to be taken care of.

What is Body Type and Specific Details on Segments?

Fat Control	Fat Control is calculated based on the ideal body fat mass in ideal weight. If there is body fat less than the ideal mass, it's marked +00kg; if more, it's marked -00kg.
Muscle Control	Muscle Control is calculated based on the ideal muscle mass in ideal weight. If there is less than the ideal muscle mass, it's marked +00kg; if more, it's marked 00kg. If there is more than the ideal muscle mass, it's not maked -00kg, because the more muscle, the healthier the person is.
Weight Control	Weight Control is calculated based on Fat Control and Muscle Control. Target Weight is the sum of actual weight and weight control.
Target Weight	Target Weight differs from ideal weight. Ideal weight is calculated according to examinee's height. Target weight is calculated based on examinee's muscle and fat mass. If the examinee's weight is above the ideal weight while his/her muscle mass is above the ideal one, the target weight becomes higher than the ideal weight. Target weight is focused on the health condition rather than beauty.

What is Body Type and Specific Details on Segments?



The Fitness Score sets 80 points as standard. If any change is needed in muscle and/or fat, the control amount by kg is subtracted from 80 points. If muscle control is 0, it means the person has strong muscle ; the extra amount of muscle is added to the score.

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