



# MA601

## Body Composition Analyzer



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



## Medically Certified Technology

For a medical-grade body composition analyzer, quality of technology, types of results provided, accuracy, safety, and repeatability are all crucial benchmarks to reach and surpass. As a well-established manufacturer of medical measurement devices, Charder's Quality Management System is implemented in accordance with ISO 13485 medical standards to ensure performance where it matters the most!

CE  
2460

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0122

M

FDA

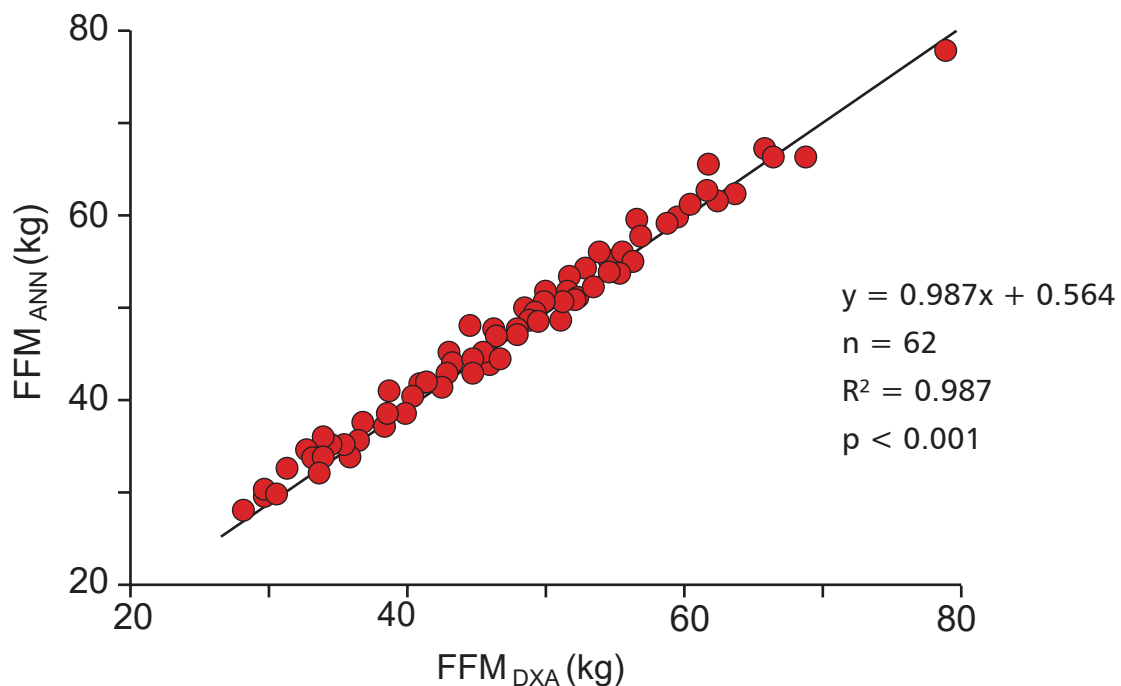
## EU MDR Certification

The EU's Medical Device Regulation is one of the world's most rigorous certifications for medical devices, with strict standards governing key safety and performance through evaluations of biocompatibility, usability, clinical performance, post-market surveillance, and more.



# Validated Results

Charder's years of research in the field of Bioelectrical Impedance Analysis include utilization of Artificial Neural Networks, with algorithms formulated and validated using gold standards such as Computed Tomography (CT) and Dual-Energy X-Ray Absorptiometry (DXA), resulting in high levels of correlation.



Relationship between FFM values predicted by Charder's Back Propagation-Artificial Neural Network model, and FFM values measured by DXA

# ALL-NEW CORE MUSCLE ASSESSMENT

A strong core is more important than most people think - it isn't just about having abs and a "sixpack"!

Insufficient core muscle mass and strength can significantly increase the risk of sports-related injuries, especially when attempting more challenging tasks requiring more flexibility or higher weight-loading. Track core muscle with the all-new Core Muscle Assessment, available only on the Charder Body Composition Analyzer.

## HOW IT WORKS

- Bioelectrical Impedance Analysis
- Safe, quick, convenient
- Complete scan in less than a minute
- Abdominal fat and muscle

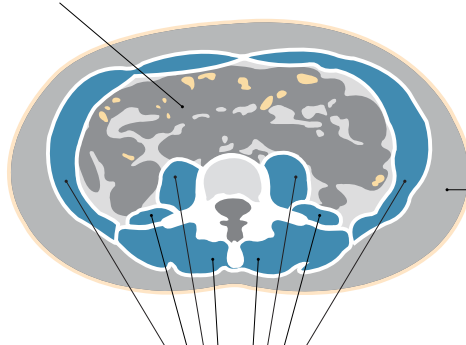


## WHY DOES IT MATTER?

"Core Muscle" refers to the muscles of the abdominal and pelvic cavity that support and stabilize the trunk. The more weight/muscle you have, the more important core muscle is for overall stability and athletic performance.

The Sports & Fitness Result Sheet provides the total area of the abdominal core muscles displayed in cm<sup>2</sup> (L4-L5 vertebrae).

### Visceral Fat



### Subcutaneous Fat

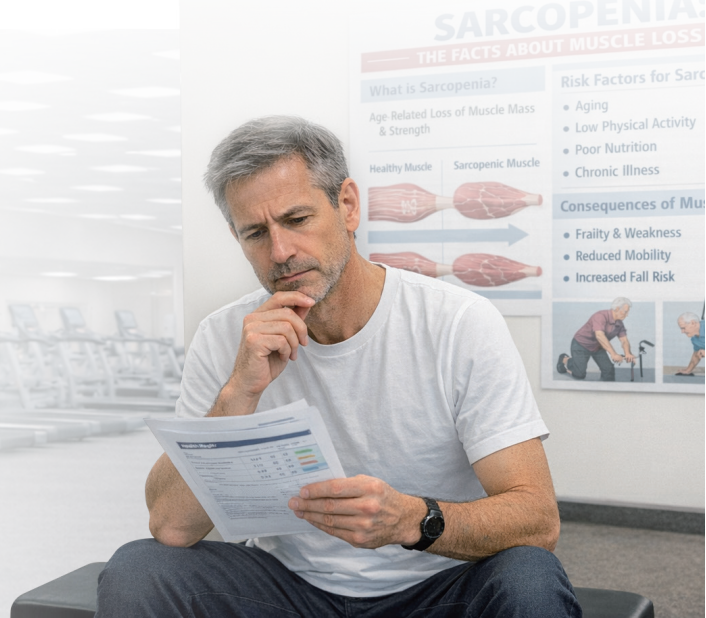
### Core Muscle



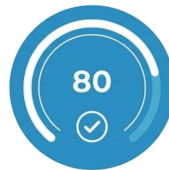
# CORE MUSCLE SCORE

Compare development of core muscle mass with the rest of the body!

High overall muscle and weight requires more core strength for better stability and enhancement of force transmission during physical activity.



**Low strength stability,  
higher injury risk**



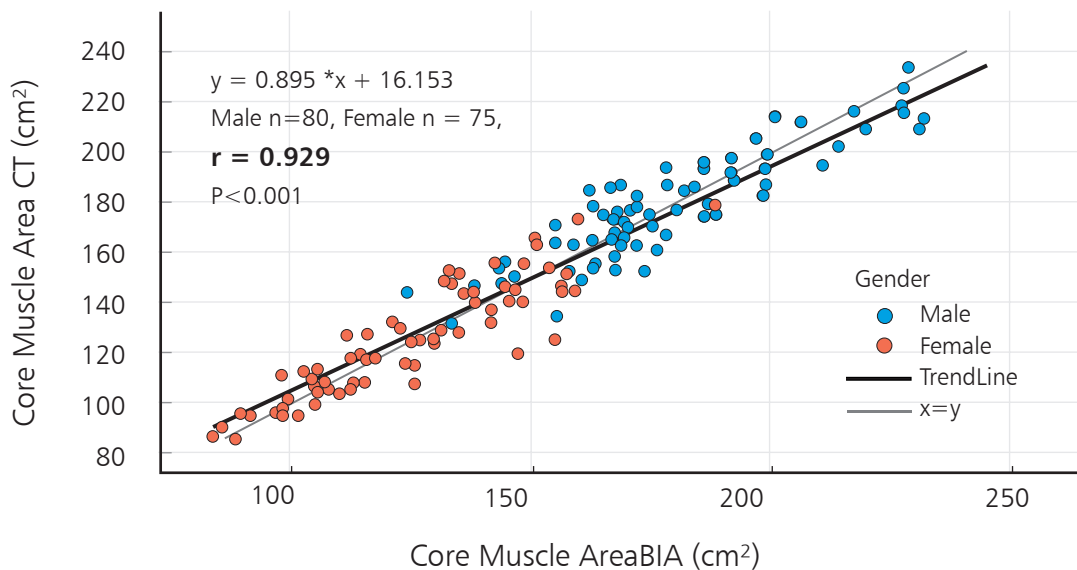
**Standard for healthy  
adults**



**Better overall athletic  
performance**

## VALIDITY

- Unique and patented assessment method
- Novel algorithms formulated and validated using gold standards such as Computed Tomography (CT)
- High levels of correlation



Correlation between Core Muscle Area calculated by Charder's BIA model, and Core Muscle Area calculated by CT

# Professional Application



## Rehabilitation / Sports Medicine .....

Assess and monitor changes in muscle mass and cellular health, using data to guide training adjustments, tracking recovery in athletes undergoing rehabilitation.



## Sarcopenia Evaluation .....

Quantify muscle mass to assist with diagnosis, monitoring, and management of sarcopenia (age-related muscle loss).



## Nutrition .....

Evaluate impact of dietary changes and nutritional interventions on fat, muscle, and body water for optimization of diet.



## Fluid Management .....

Evaluate intracellular and extracellular water balance to receive crucial insights into fluid balance, aiding in the management of conditions like edema or dehydration.



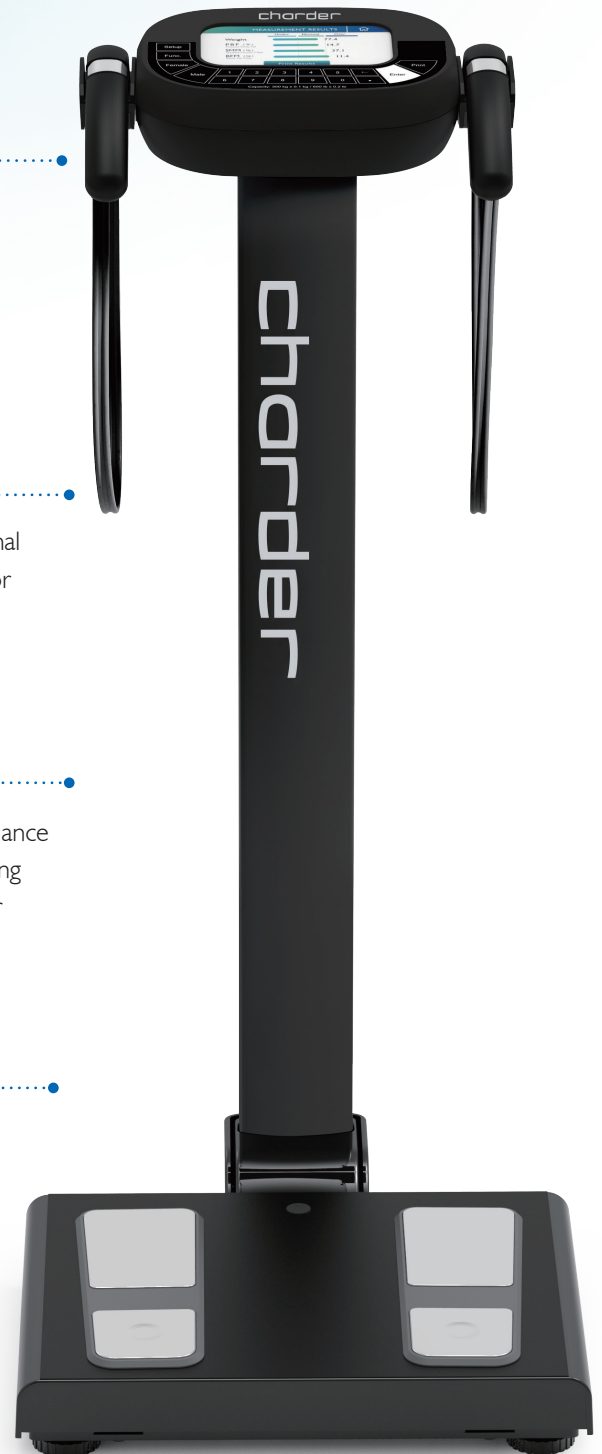
## Obesity Treatment .....

Track changes in total, segmental, and visceral fat, allowing clinicians to monitor the effectiveness of fat loss interventions beyond weight, and evaluate obesity-related risk.



## Risk Evaluation .....

Evaluate indicators for elevated health risks relating to fat, cellular integrity, body water balance, and muscle deficiencies.



# Intuitive User-Friendly Design



## Voice-Guided Measurement Procedure

7" color touchscreen combined with voice guidance throughout measurement procedure make the MA60I easy-to-operate with minimal training required, improving reliability and reproducibility.



## Quick Measurement

Input user data quickly and conveniently using a variety of methods, including connection to PC software, scanner, or touchscreen. Complete a full non-invasive segmental multifrequency assessment in less than a minute!



## Multiple Result Sheets

3 different Result Sheets available, providing relevant body composition indicators including but not limited to cellular health, sarcopenia assessment, body water evaluation, obesity risk, and more; all arranged specifically to assist practical usage and application:

- Standard Medical Result Sheet
- Fitness Result Sheet
- Child Growth Result Sheet



# Data Integration Options

Manage measurement data using a variety of tools suitable for different settings!



**Paper Result Sheet**  
(Printer)



**Charder Proscan**  
(Android/iOS App)



**Charder Insight**  
(Windows/Mac Software)



**Server**  
(via API)



**USB Flash Drive**



# Result Sheet Output

## Standard Medical Result Sheet

### Basic Measurements

- Weight
- Body Mass Index (BMI)

### Water

- Extracellular Water (ECW)
- Intracellular Water (ICW)
- Total Body Water (TBW)

### Fat & Obesity Related

- Body Fat
- Percent Body Fat (PBF)
- Segmental Fat Mass
- Visceral Fat Level
- Fat Control

### Metabolism

- Basal Metabolic Rate
- Total Energy Expenditure

### Muscle / Lean Mass

- Skeletal Muscle Mass
- Segmental Lean Mass
- Muscle Control
- Fat-Free Mass (FFM)

### Body Indices

- Fat-Free Mass Index (FFMI)
- Skeletal Muscle Index (SMI)
- Appendicular Skeletal Muscle Index (ASMI)

### Evaluation & Control

- Body Type Analysis
- Weight Control
- Body Balance Evaluation
- Health Score

### Strength & Muscle Quality

- Grip Strength
- Muscle Quality Score

### Body Composition

- Protein
- Minerals
- Soft Lean Mass

### Bioelectrical Impedance

- Impedance
- Phase Angle

### History / Trend

- Body Composition History

## Fitness Result Sheet

### Basic Measurements

- Weight
- Body Mass Index (BMI)

### Water

- Extracellular Water (ECW)
- Intracellular Water (ICW)
- Total Body Water (TBW)

### Fat & Obesity Related

- Body Fat
- Percent Body Fat (PBF)
- Segmental Fat Mass

### Metabolism

- Basal Metabolic Rate
- Total Energy Expenditure

### Muscle / Lean Mass

- Skeletal Muscle Mass
- Segmental Lean Mass
- Fat-Free Mass (FFM)

### Core & Muscle Performance

- Total Core Muscle Area
- Core Muscle Score
- Core Muscle Percentage
- Whole-Body SMM Percentage
- Muscle Balance

### Body Indices

- Fat-Free Mass Index (FFMI)
- Skeletal Muscle Index (SMI)
- Appendicular Skeletal Muscle Index (ASMI)
- Phase Angle

### Body Composition

- Protein
- Minerals

### Fitness & Activity

- Activity
- Fitness Score

### History / Trend

- Body Composition History

## Child Result Sheet

### Basic Measurements

- Weight
- Body Mass Index (BMI)

### Water

- Total Body Water (TBW)

### Fat & Obesity Related

- Body Fat
- Percent Body Fat (PBF)
- Subcutaneous Fat Area

### Bioelectrical Impedance

- Impedance
- Phase Angle

### Metabolism

- Basal Metabolic Rate

### Muscle / Lean Mass

- Skeletal Muscle Mass
- Fat-Free Mass (FFM)
- Soft Lean Mass

### Body Ratios / Indices

- Waist Height Ratio
- Waist-Hip Ratio
- TBW/FFM

### Body Composition

- Protein
- Minerals

### Growth History / Comparison

- Growth Chart
- Growth History

### Evaluation

- Evaluation & Recommendations

# Fitness Result Sheet

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MA601

6 Custom Logo

| Name   | ID       | Ethnicity | Height   | Gender | Age | Measured Time       |
|--------|----------|-----------|----------|--------|-----|---------------------|
| Steven | 20190201 |           | 182.5 cm | Male   | 38  | 2025.11.11 10:58 AM |

## 1 Body Composition Analysis

|                        |         |                         |         |                  |                    |
|------------------------|---------|-------------------------|---------|------------------|--------------------|
| <b>Weight</b>          | 79.4 kg | <b>TBW</b>              | 46.7 L  | <b>FFM Ratio</b> | 73.4% (72.9~73.5%) |
| <b>Clothing weight</b> | 1.0 kg  | <b>Total Body Water</b> |         |                  |                    |
| <b>FFM</b>             | 63.6 kg | <b>Protein</b>          | 12.7 kg |                  | 20.0% (19.8~21.0%) |
| <b>Fat-Free Mass</b>   |         | <b>Minerals</b>         | 4.2 kg  |                  | 6.6% (5.8~7.0%)    |
| <b>FM</b>              | 15.8 kg |                         |         |                  |                    |
| <b>Fat Mass</b>        |         |                         |         |                  |                    |

## 7 Metabolism

**BMR** Basal Metabolic Rate 1743 (kcal/day)

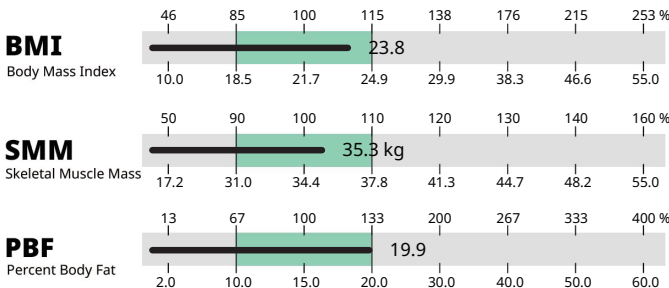
**TDEE** (kcal/day)  
Total Daily Energy Expenditure

2004 2475 2789

**PAL**  
Physical Activity Level

Sedentary Moderate High Intensity

## 2 Muscle-Fat Analysis



## 8 Activity

|                 |              |
|-----------------|--------------|
| Running         | 326~556 kcal |
| Cycling         | 302~532 kcal |
| Body Weight     | 278          |
| Machine Weights | 246          |
| Free Weights    | 302          |
| Kettlebell      | 326          |
| TRX             | 286          |
| HIIT            | 429          |
| Pilates         | 230          |
| Yoga            | 119          |
| Boxing          | 453          |
| Aerobic Dance   | 270          |

\*per 30 minutes of exercise



## 3 Core Muscle Analysis (L4-L5 vertebrae)

**Core Muscle Score**

69

**Total core muscle**

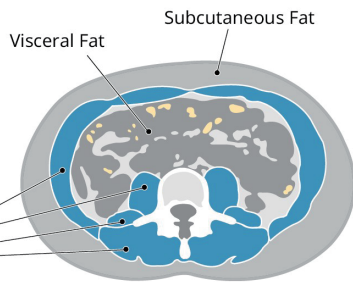
164.6 cm<sup>2</sup>

**About Core Muscle**

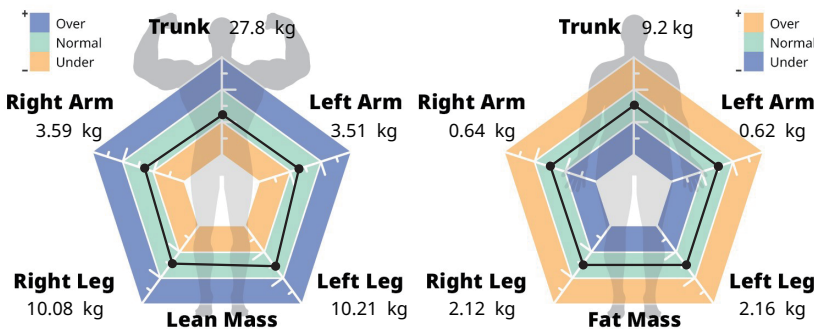
"Core Muscle" refers to the muscles of the abdominal and pelvic cavity that support and stabilize the trunk. The Core Muscle Score compares your Core Muscle with Whole-Body Skeletal Muscle Mass to identify how well-developed it is in comparison to the overall body.

|                       |      |
|-----------------------|------|
| <b>Core Muscle</b>    | 96%  |
| <b>Whole-Body SMM</b> | 103% |

**Core Muscle**



## 4 Segmental Analysis



## 9 Fitness Score

Overall  
Fitness Score

82.1

|             |                       |    |
|-------------|-----------------------|----|
| ASMI        | 8.2 kg/m <sup>2</sup> | 51 |
| FMI         | 4.7 kg/m <sup>2</sup> | 41 |
| Phase Angle | 5.5 °                 | 38 |

## 10

What is the Fitness Score?

The Fitness Score provides a quick overall summary of fitness-related body composition progress, by taking into account muscle, fat and other variables in comparison to the device's database. Increasing muscle and decreasing fat (within healthy levels) will help increase your score.

## 5 Body Composition History

|                    | 2024.10.15<br>09:39 AM | 2025.02.13<br>09:53 AM | 2025.02.13<br>10:25 AM | 2025.07.02<br>08:43 AM | 2025.09.04<br>03:44 PM | 2025.09.16<br>11:57 PM | 2025.10.23<br>08:40 AM | 2025.11.11<br>10:58 AM |
|--------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Weight (kg)</b> | 77.9                   | 82.2                   | 82.1                   | 80.0                   | 78.9                   | 79.7                   | 78.7                   | 79.4                   |
| <b>SMM (kg)</b>    | 34.0                   | 36.7                   | 36.4                   | 35.0                   | 34.5                   | 33.9                   | 35.7                   | 35.3                   |
| <b>PBF (%)</b>     | 21.5                   | 20.0                   | 20.6                   | 21.5                   | 21.1                   | 22.9                   | 18.6                   | 19.9                   |

## 11 Fitness Parameters

|                     |                        |
|---------------------|------------------------|
| Fat-free Mass Index | 19.1 kg/m <sup>2</sup> |
| SMI                 | 10.6 kg/m <sup>2</sup> |
| Extracellular Water | 18.1 L                 |
| Intracellular Water | 28.6 L                 |

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# Results Provided



**Optimized for evaluating :**  
Sarcopenia, Injury Risk,  
General Fitness

## 1 Body Composition Analysis

In the 4-compartment body composition model, body weight is divided into Water, Protein, Minerals, and Fat. Observing which results are changing provides important insight into body composition. For example, Water is highly correlated with muscle mass, and it is common for users with high muscle mass to also have higher body water.

However, if Water increases but Protein remains relatively unchanged, then it's possible that increase in muscle weight is partly caused by water retention or other factors.

## 2 Muscle-Fat Analysis

Observe balance between Skeletal Muscle Mass and Body Fat Percentage. Healthcare professionals can take the subject's muscle and fat proportions into account to provide suitable advice and guidance.

## 3 Core Muscle Analysis

"Core Muscle" refers to the muscles of the abdominal and pelvic cavity that support and stabilize the trunk. Subjects with higher weight and muscle will require a stronger core for overall stability and injury prevention.

The cross-sectional area (L4-L5 vertebrae) of the core muscles are displayed in cm<sup>2</sup>, compared with a standard physique, and displayed as percentage value.

### Core Muscle Score

This score provides a quick assessment of core muscle. If score is below 60, we recommend strengthening core muscles to avoid an increased risk of injury due to insufficient abdominal strength. The scoring is based not only on the overall development of core muscle area but also on the comparison between whole-body muscle and core muscle.

- Core Muscle > Skeletal Muscle: higher Core Muscle Score
- Core Muscle < Skeletal Muscle: lower Core Muscle Score

## 4 Segmental Analysis

Loss of lower body muscle is common among subjects at risk for sarcopenia, and insufficient leg muscle can be quickly identified at a glance.

In addition, left-right muscle imbalance in particular can increase risk of injury, and early detection is important for preventative training and adjustment of movement.

## 5 Body Composition History

A key benefit of Bioelectrical Impedance Analysis is repeatability and lack of side effects, making it easy to follow up consistently and evaluate change in body composition, for evaluation of training, nutrition, and other intervention.

## 6 Custom Logo

A customized logo (or text) can be added to the top right of the Result Sheet.

## 7 Metabolism

Energy expenditure is calculated based on Basal Metabolic Rate(BMR) and Physical Activity Level (PAL). The Result Sheet provides Total Daily Energy Expenditure (TDEE) for sedentary, moderate, and high intensity PAL. This information is important reference data for calculating ideal daily calorie consumption.

## 8 Activity

A chart with how many calories the subject's body would expend (per 30 minutes of exercise) is provided. Results will vary based on the subject's body composition and metabolism! This makes it easier to estimate the effect of training/exercise on overall energy expenditure more precisely.

## 9 Fitness Score

The Charler Fitness Score takes into account fitness-related body composition results, primarily (but not exclusively) Muscle, Fat, and Phase Angle.

As a general rule of thumb, increasing Muscle / Phase Angle will increase the score, while increasing Fat will decrease the score.

## 10 Nutrition Control Guide

Suitable level of caloric intake varies depending on if the subject's goal is Bulking (weight/muscle gain), Weight Loss, or Maintenance.

To effectively use this section, combine data from "Metabolism". To achieve goals sustainably, weight gain and loss are both set for gradual, rather than rapid change

## 11 Fitness Parameters

Various indexes used as early warning signs for malnutrition, obesity, and sarcopenia are provided for reference.

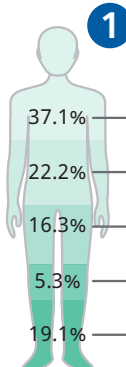
In addition, practitioners can quickly identify abnormalities in intracellular/extracellular fluid proportion, using the edema index as an indicator and warning sign for diseases. Results exceeding the normal healthy range of 0.390 may be an indication of conditions affecting body fluid balance, such as overtraining, swelling, and injury.

# Standard Medical Result Sheet

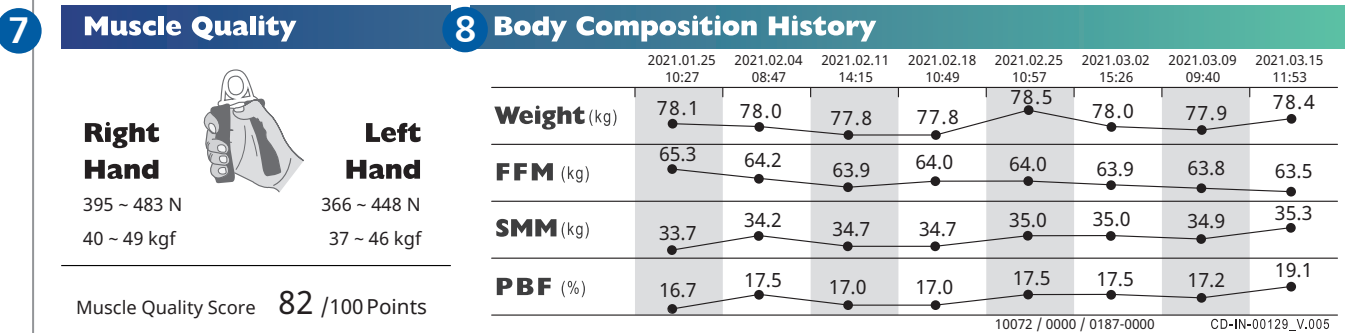
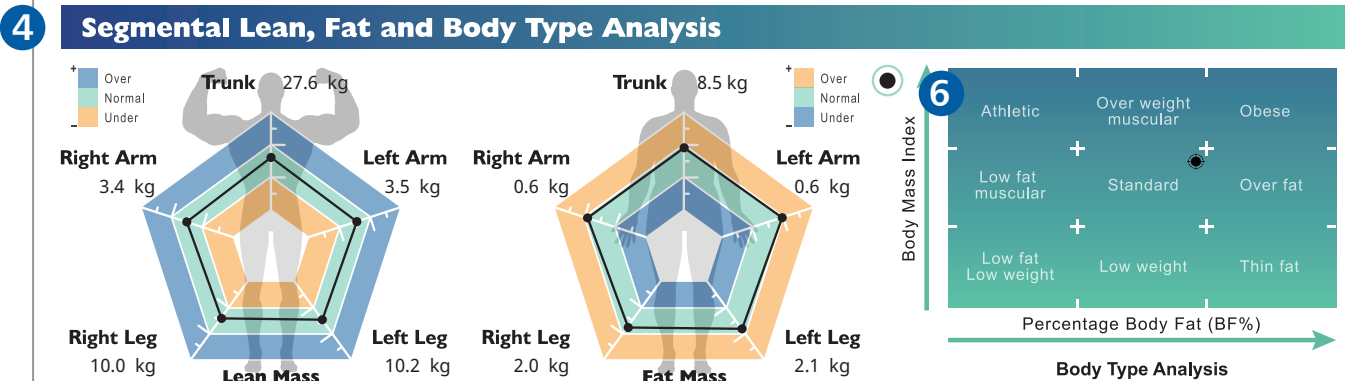
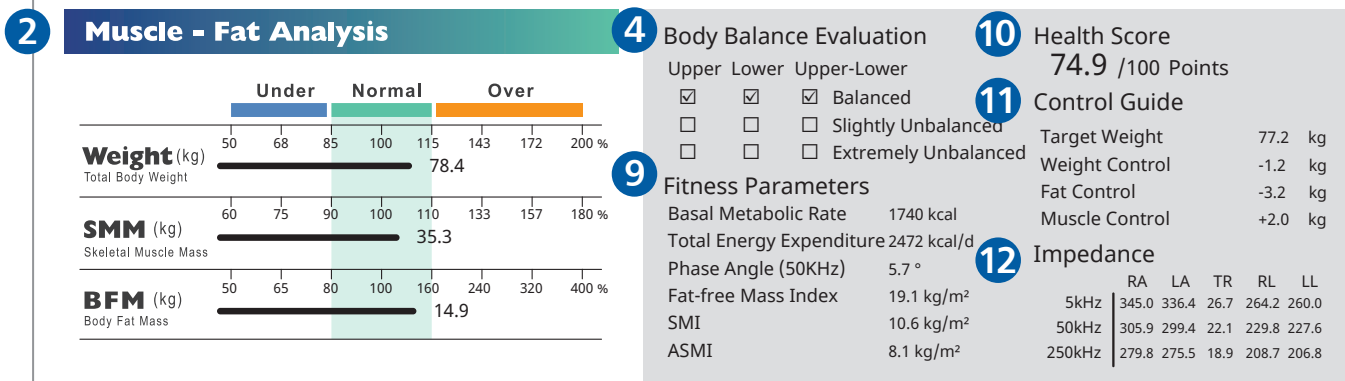
## chorder

5 Custom Logo

| Name | ID         | Ethnicity | Height   | Gender | Age | Measured Time    |
|------|------------|-----------|----------|--------|-----|------------------|
| Tim  | 7347204161 |           | 182.5 cm | Male   | 33  | 2021.03.15 03:53 |



| Body Composition Analysis      |        |      |      |      |        |              |
|--------------------------------|--------|------|------|------|--------|--------------|
| Compartment                    | Values | TBW  | SLM  | FFM  | Weight | Normal Range |
| ICW (L)<br>Intracellular Water | 29.1   | 46.5 | 59.3 | 63.5 | 78.4   | 25.4 ~ 31.0  |
| ECW (L)<br>Extracellular Water | 17.4   |      |      |      |        | 15.6 ~ 19.0  |
| Protein (kg)                   | 12.8   |      |      |      |        | 10.0 ~ 13.7  |
| Mineral (kg)                   | 4.1    |      |      |      |        | 2.6 ~ 4.4    |
| BFM (kg)<br>Body Fat Mass      | 14.9   |      |      |      |        | 7.8 ~ 15.7   |



# Results Provided



**Optimized for evaluating :**  
**Muscle-Fat Balance,**  
**General Universal Usage**

## 1 Body Composition Analysis

In the 4-compartment body composition model, body weight is divided into Water, Protein, Minerals, and Fat.

## 2 Muscle-Fat Analysis

Observe balance between Skeletal Muscle Mass and Body Fat Mass. Healthcare professionals can take the subject's muscle and fat proportions into account to provide suitable advice and guidance.

## 3 Obesity Analysis

Body Mass Index (BMI) is a commonly used indicator for obesity, but it can be potentially misleading particularly in the case of highly muscular subjects, as it does not distinguish between muscle and fat. Percent Body Fat (PBF) is a more useful indicator of obesity, allowing for improved detection of obesity even in cases where BMI is relatively normal.

In addition, when it comes to obesity-related diseases, unseen Visceral Fat is a key risk indicator. Try to keep Visceral Fat Level under 10 to reduce health risks.

## 4 Segmental Analysis

Utilize the visual "radar chart" to intuitively compare results in each segment of the body to identify imbalances in muscle and fat. Muscle imbalance in particular can increase risk of injury, and insufficient lower-body muscle is often linked to higher risk of falls, particularly for older subjects.

## 5 Custom Logo

A customized logo (or text) can be added to the top right of the Result Sheet

## 6 Body Type Analysis

The body type analysis chart combines BMI and Percent Body Fat to determine the subject's body type. Body composition changes needed to achieve ideal body type can be clearly determined using this clear and simple chart.

## 7 Muscle Quality

For elderly subjects, strength can deteriorate more quickly than muscle mass. Accordingly, the most effective evaluation of sarcopenia generally uses a combination of strength and muscle mass evaluation. Charder's unique and patented grip strength estimation provides a valuable predictor that can serve

as an early warning sign and point to possible loss of strength more quickly and noticeably than relying solely on tracking of muscle mass.

The Muscle Quality Score compares subject's grip strength with healthy results from the same gender. A higher score would mean that subject's grip strength is superior to others of the same gender.

## 8 Body Composition History

A key benefit of Bioelectrical Impedance Analysis is repeatability and lack of side effects, making it easy to follow up consistently and evaluate change in body composition, for evaluation of training, nutrition, and other intervention.

## 9 Fitness Parameters

The Standard Medical Result Sheet provides multiple body composition output parameters of particular relevance for fitness, and includes various indexes used as early warning signs for malnutrition and sarcopenia.

Make use of Phase Angle in particular for evaluation of cellular health, and analyze health status in more detail.

## 10 Health Score

The Charder Health Score provides a quick and easy evaluation of overall body composition. Building muscle will help increase the score, whereas excessive fat will decrease the score.

## 11 Control Guide

The Control Guide calculates a recommended amount of muscle and fat control in order to reach an ideal, healthy body type. This can be used as a general reference for a "standard" body type, though subjects can of course choose to use their own goals and calculations instead.

## 12 Impedance

The MA601 Body Composition Analyzer utilizes bioelectrical impedance to measure the resistance that occurs when the safe imperceptible measurement current is sent through the body.

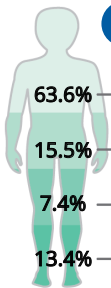
This section can be used for troubleshooting, to help determine if an impedance error has occurred and if a re-test is needed.

# Child Growth Result Sheet

chorder

5 Custom Logo

| Name     | ID   | Ethnicity | Height   | Gender | Age | Measured Time    |
|----------|------|-----------|----------|--------|-----|------------------|
| child001 | C001 |           | 135.0 cm | Male   | 9.3 | 2022.04.09 04:25 |



| 1 Body Composition Analysis |        |      |      |        |              |
|-----------------------------|--------|------|------|--------|--------------|
| Compartment                 | Values | SLM  | FFM  | Weight | Normal Range |
| TBW (L)                     | 17.1   | 21.2 | 23.2 | 26.8   | 16.2 ~ 19.8  |
| Protein (kg)                | 4.2    |      |      |        | 4.1 ~ 5.0    |
| Minerals (kg)               | 2.0    |      |      |        | 1.8 ~ 2.3    |
| BFM (kg)                    | 3.6    |      |      |        | 3.4 ~ 5.9    |

2 Muscle - Fat Analysis

6 Growth Chart

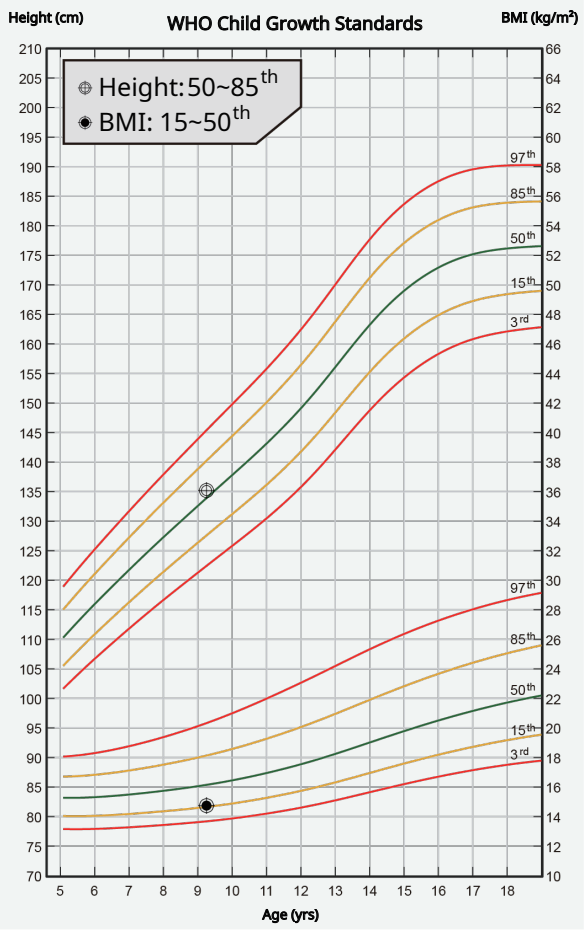
|                      | Under | Normal | Over |
|----------------------|-------|--------|------|
| Weight (kg)          | 14.7  | 19.7   | 24.6 |
| Total Body Weight    |       | 26.8   | 32.8 |
| SMM (kg)             | 7.5   | 9.4    | 11.2 |
| Skeletal Muscle Mass |       | 11.9   | 13.7 |
| BFM (kg)             | 1.5   | 2.6    | 3.6  |
| Body Fat Mass        |       | 3.6    | 7.4  |

3 Obesity Analysis

|                    | Under | Normal | Over | Obese |
|--------------------|-------|--------|------|-------|
| PBF (%)            | 2.0   | 7.4    | 12.8 | 17.5  |
| Percent Body Fat   |       | 13.4   | 22.2 | 26.8  |
| BMI (kg/m²)        | 10.0  | 11.8   | 13.5 | 16.1  |
| Body Mass Index    |       | 14.7   | 18.0 | 20.7  |
| WHtR               | 0.30  | 0.35   | 0.40 | 0.45  |
| Waist Height Ratio |       | 0.40   | 0.50 | 0.60  |

4 Growth History

| 2022.04.09  |                     |  |  |
|-------------|---------------------|--|--|
| Age (yrs)   | 9.3                 |  |  |
| Height (cm) | 135.0               |  |  |
|             | 50~85 <sup>th</sup> |  |  |
| Weight (kg) | 26.8                |  |  |
| BMI         | 15~50 <sup>th</sup> |  |  |
| SMM (%)     | 44.4                |  |  |
| PBF (%)     | 13.4                |  |  |



7 Nutrition Evaluation

8 Research Parameters

| Nutrition Evaluation     |                                     | Nutrition and Activity Recommendations |          |
|--------------------------|-------------------------------------|----------------------------------------|----------|
| Under                    | Normal                              | Over                                   |          |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>               | Protein  |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>               | Minerals |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>               | BFM      |
| Growth Evaluation        |                                     |                                        |          |
| Under                    | Normal                              | High                                   |          |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>               | Height   |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>               | BMI      |

1. Good body composition and development trends  
2. Intake sufficient high quality protein  
3. Regularly participate in various types of exercise

| Research Parameters   |                              |
|-----------------------|------------------------------|
| Phase Angle (50KHz)   | 3.8 °                        |
| Basal Metabolic Rate  | 871 kcal                     |
| Waist-Hip Ratio       | 0.71                         |
| Subcutaneous Fat Area | 5.0 cm²                      |
| TBW / FFM             | 73.5 %                       |
| 9 Impedance           |                              |
| RA                    | LA                           |
| TR                    | RL                           |
| LL                    |                              |
| 5kHz                  | 479.4 500.8 35.8 274.9 264.2 |
| 50kHz                 | 450.6 475.1 32.7 256.7 247.8 |
| 250kHz                | 420.6 445.7 30.5 235.5 227.8 |

# Results Provided



**Optimized for evaluating :**  
Height / Weight Growth Trends,  
Muscle-Fat Balance

## 1 Body Composition Analysis

In the 4-compartment body composition model, body weight is divided into Water, Protein, Minerals, and Fat.

## 2 Muscle-Fat Analysis

Measurement of weight is important, but incomplete without further analyzing the amount of muscle and fat in a child. Understanding skeletal muscle and body fat proportions can help professionals evaluate child growth more holistically, and provide suitable recommendations.

## 3 Obesity Analysis

For children, Body Mass Index (BMI) is a useful indicator for growth, but for evaluation of obesity, it can be potentially misleading because it does not distinguish between muscle and fat. Utilizing Percent Body Fat (PBF) is recommended as a more useful indicator of obesity, allowing for improved detection of obesity even in cases where BMI is relatively normal.

The child result sheet organizes common obesity-related metrics into Under, Normal, Over, and Obese categories.

**NOTE:** Normal range will adjust according to the child's age.

## 4 Growth History

By selecting the same user ID prior to measurement, growth trends can be tracked automatically (Height, Weight, BMI, Skeletal Muscle Mass, and percentiles)

## 5 Custom Logo

A customized logo (or text) can be added to the top right of the Result Sheet.

## 6 Growth Chart

The child's height and BMI results are compared with results from the same age to place results in context. Height is displayed on the upper half of the chart, while BMI is displayed on the bottom half of the chart. Results in the lowest percentiles are a potential sign of malnutrition or delayed growth, and we recommend a more detailed health check-up.

Region and country-specific standards are available to provide most suitable comparison.

## 7 Evaluation & Recommendations

Based on body composition and growth results, the result sheet will provide an evaluation and recommendations for nutrition and exercise. Results should be considered a general reading, and not for diagnostic purposes

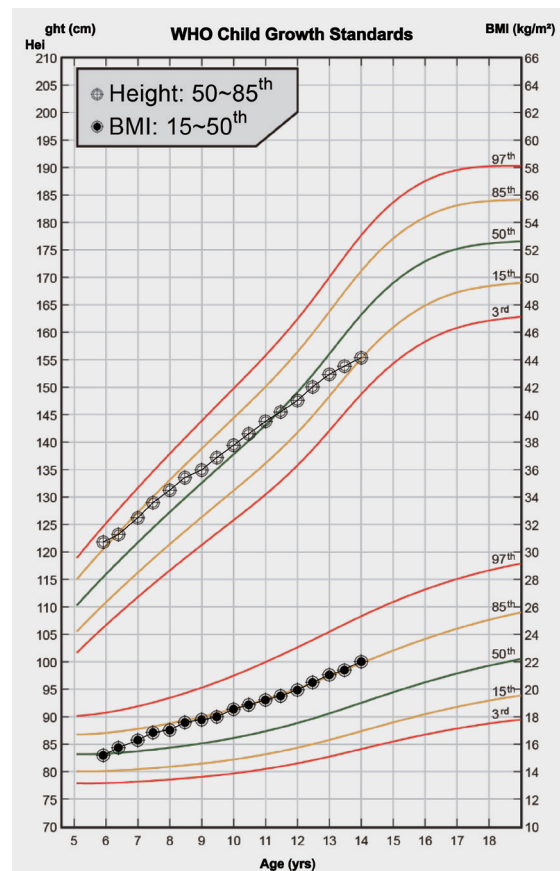
## 8 Research Parameters

The result sheet provides a variety of body composition output parameters of particular relevance for research.

## 9 Impedance

The MA601 Body Composition Analyzer utilizes bioelectrical impedance to measure the resistance that occurs when the safe imperceptible measurement current is sent through the body. This section can be used for troubleshooting, to help determine if an impedance error has occurred and if a re-test is needed

### Using the Growth Chart



Evaluate if child's height and BMI are on track in accordance with their age group, or if growth abnormalities are occurring.

In this example, the child's height was in the 85th percentile when they were 6 years old, but has dropped to the 15th percentile by the time they reach 14 years old.

In contrast, the child's BMI was in the 50th percentile when they were 6 years old, increasing to the 85th percentile by the time they have reached 14 years old.

Overall, this would be an indication that although the child's height is still increasing and growth is still occurring, the rate of growth has slowed considerably.



## MA601 Body Composition Analyzer

### Key Specifications

|                       |                                                                             |
|-----------------------|-----------------------------------------------------------------------------|
| Measurement method    | Multi-frequency Segmental Bioelectrical Impedance Analysis                  |
| Electrodes            | Eight electrodes                                                            |
| Frequency             | Three frequencies                                                           |
| Frequency range       | 5 kHz, 50 kHz, 250 kHz                                                      |
| Display               | 800 × 480 pixels, 7 inch color LCD                                          |
| Capacity              | 300 kg                                                                      |
| Graduation            | 0.1 kg                                                                      |
| Accuracy              | Impedance $\pm 3\%$                                                         |
| Applicable Age        | 6 ~ 85 years old                                                            |
| Input device          | Touch screen, Keypad, Scanner (Optional)                                    |
| Output device         | USB x 2                                                                     |
| Transmission device   | WiFi x 1, RJ45 Ethernet x 1, USB x 2, Bluetooth x 1                         |
| Dimensions            | 580 (L) × 450 (W) × 1025 (H) mm                                             |
| Weight                | About 12 kg                                                                 |
| Measuring time        | Less than 45 secs                                                           |
| Data storage          | 50,000 results                                                              |
| Electrode Current     | < 500 $\mu$ A                                                               |
| Power supply          | Input AC 100~240V, 50/60Hz, 2.0A<br>Output DC 12.0V, 5.0A adapter           |
| Printing device       | USB port                                                                    |
| Measuring range       | 100 ~ 950 $\Omega$                                                          |
| Operation Environment | +5 ~ +35°C / +41 ~ +95°F<br>30 ~ 75% RH, 70 ~ 106 kPa<br>700 hPa ~ 1060 hPa |



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