

Leg Strength Analyzer

IB-LS

The lower body is the second heart. The muscles of the thighs account for 60–70% of the total body muscle mass and are composed of the Quadriceps and Hamstring. Leg Strength Analyzer evaluates Absolute Muscle Strength, Muscle Endurance, and Muscle Balance and performs Strength Training tailored to each individual.

Absolute Muscle Strength

The Absolute Muscle Strength of the Quadriceps and Hamstring plays a crucial role in daily life and athletic ability.

Muscle Endurance

Muscle Endurance facilitating repetitive activities is as important as Absolute Muscle Strength.

Muscular Strength Balance

The balance between the two legs is important. The balance between the Quadriceps (the muscle that stretches the legs) and Hamstring (the muscle that bends the legs) is important as well.

Strength Exercise

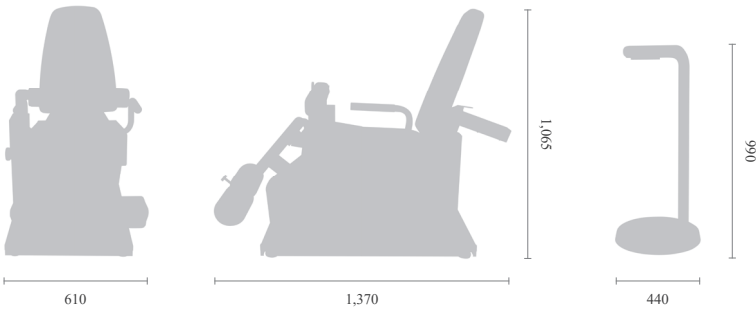
Muscle Strength and Endurance can be increased by increasing Muscle Tension through Strength Exercise. Among them, proper lower body Strength Exercise is essential for health.



Sample image of product usage▲

Leg Strength Analyzer (IB-LS) Specifications

Mesurement Method	The force applied to the leg rest is measured by a load cell.
Result Items	Left Leg Extensor Strength, Right Leg Extensor Strength, Left Leg Flexor Strength, Right Leg Flexor Strength
Adapler	Power Input: AC 100~240V, 50~60Hz, 1.2A. Power Output: DC 12V, 3.4A.
Display Screen	7inch TFT Color LCD
Input Interface	Touch Screen.
External Interfaces	RS-232C 1EA, USB 2.0 Host 1E A, USB 2.0 Slave 1EA, LAN 1EA
Device Size	IB-LS 610(W) × 1,370(L) × 1,065(H): mm Terminal Size 440 (W) × 440 (L) × 990 (H): mm
Device Weight	IB-LS 108kg, Terminal Weight 8.5kg
Operating Environment	Temperature 10 ~ 40℃, Humidity 30 ~ 75%, Atmospheric Pressure 70 ~ 106kPa
Transportation and Storage Environment	Temperature -10 ~ 70℃, Humidity 10 ~ 80%, Atmospheric Pressure 50 ~ 106kPa (No Condensation)
Measurement Range	5 ~ 150kg



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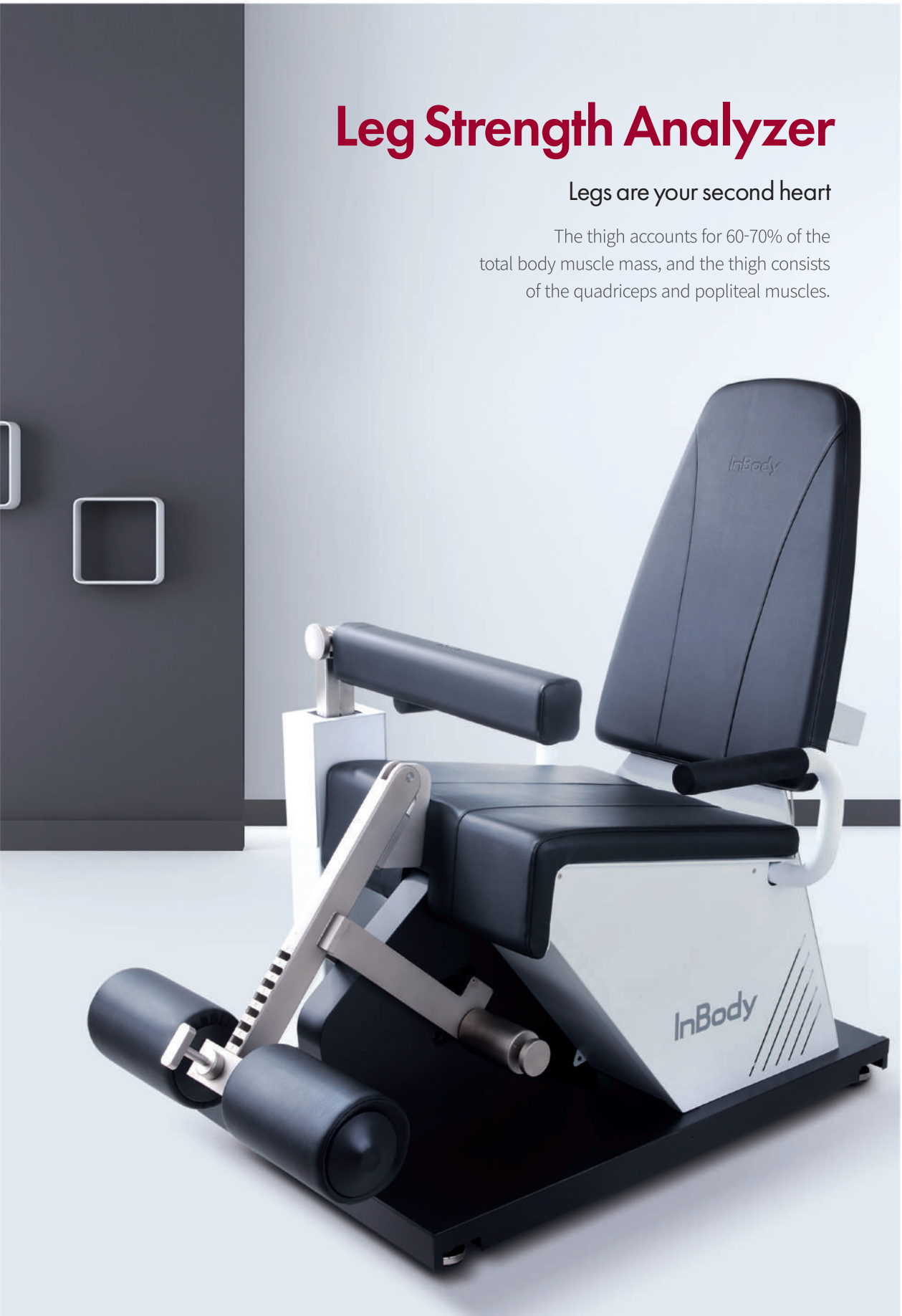
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Leg Strength Analyzer

Legs are your second heart

The thigh accounts for 60-70% of the total body muscle mass, and the thigh consists of the quadriceps and popliteal muscles.



Test Mode

Leg Extensor Strength Test

Measure the Muscle Strength of the Quadriceps in the front of the thigh used to stretch the knee.



▲ Image of Leg Extensor Strength Test Screen



Sample image of Leg Extensor Strength Test ▲

Leg Flexor Strength Test

Measure the Muscle Strength of the Hamstring at the back of the thigh used to bend the knee.



▲ Image of Leg Flexor Strength Test Screen



Sample image of Leg Flexor Strength Test ▲

Functions

Absolute Muscle Strength

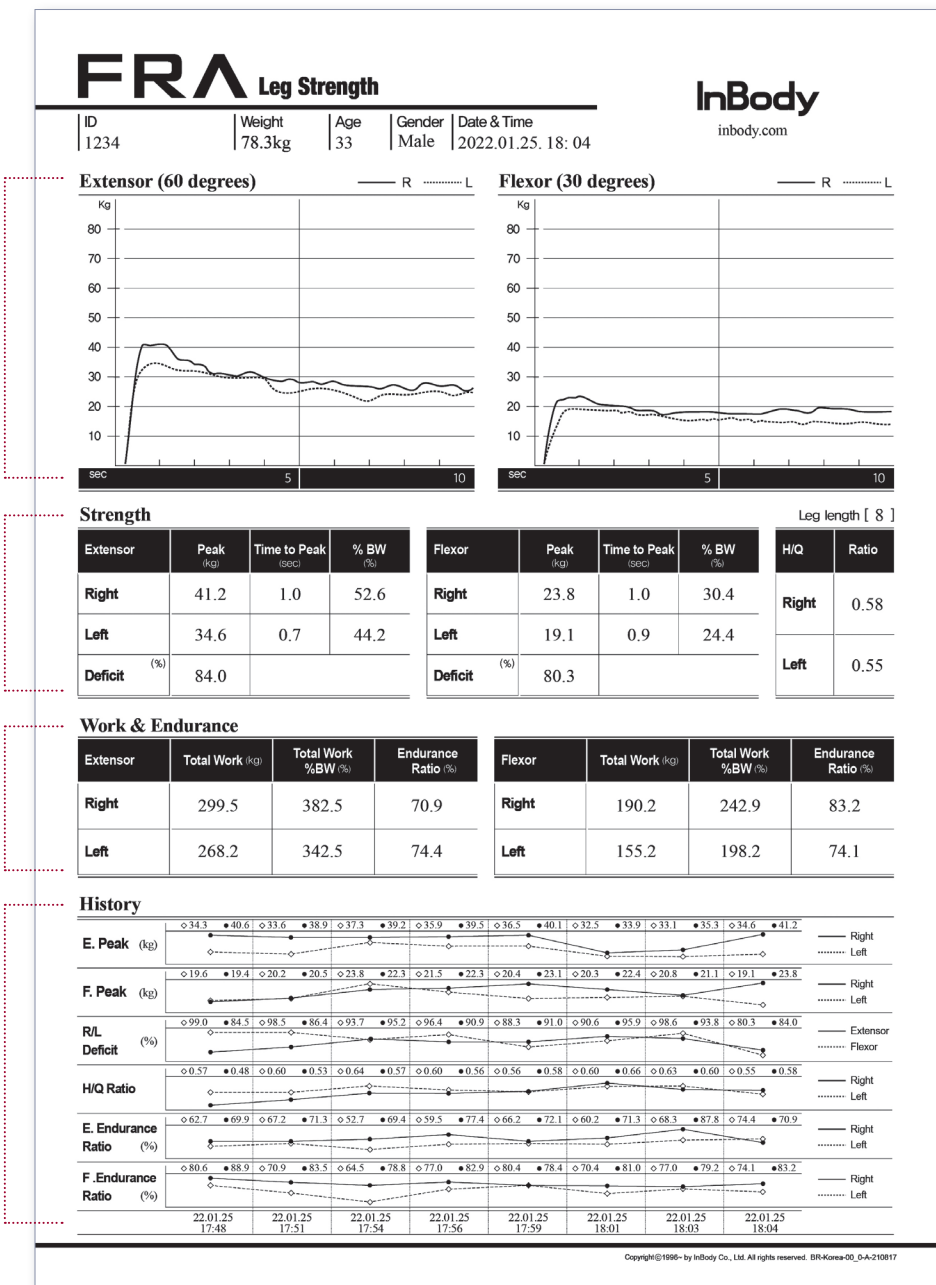
- Implemented the Isometric method to minimize the possibility of injury during the measurement.
- Measures Leg Extensor Strength and Leg Flexor Strength.
- To evaluate the Peak Strength, Leg Extensor Strength is measured at 60 degrees angle, and Leg Flexor Strength is measured at 30 degrees angle.

Muscle Endurance

- Endurance ratio is provided through measurement time analysis to provide data on Muscle Endurance (over 50% normal range).

Muscle Strength Balance

- Measures left and right separately to identify clinical differences on left and right legs.
- Check the H/Q ratio of the legs' Quadriceps and Hamstring.
- Used as an indicator to determine the possibility of knee or leg injury and recovery from injury through muscle balance.



Isometric Test Graph

: Provides measurement data of leg extensor strength and leg flexor strength in graphs.

Strength

: Provides the Peak, Ratio between left and right, Time to Peak, %BW, and H/Q ratio.

Work & Endurance

: Provides Total work, Endurance ratio.

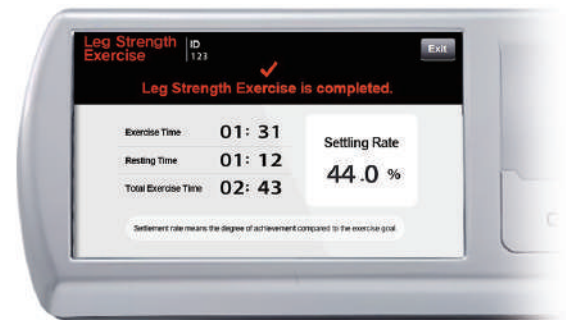
History

: Provides History of Peak, R/L Deficit, H/Q ratio, and Endurance ratio.

Exercise Mode



▲ Image of Exercise Screen 1



▲ Image of Exercise Screen2

Proceed with Isometric exercise, which repeats muscle contraction and relaxation in the range of the exercise goal.(+10~30%)

The total exercise time consists of Exercise time and Rest time, and the amount of time spent within the range during the exercise time is shown as the Settling rate to indicate how effective the exercise was.

Exercise Effect

- Isometric exercises with minimal risk of injury can maintain muscle strength by contracting at the level of 20–30% of maximum strength, only 2–3 seconds a day. Some studies show that for healthy individuals contracting only about half of their maximum strength for one second a day is effective. You can achieve muscle strength maintenance and enhancement through a simple exercise program.
- To investigate the relationship between changes in cardiovascular function and isometric exercise, 26 healthy adults were divided into two groups based on age: group 1 for those in their 20s and 30s, and group 2 for those in their 40s and 50s. Isometric exercises were performed to strengthen muscles, and although there were differences in muscle strength according to age, there were no differences in blood pressure and heart rate according to age.
- Isometric exercises are often used to evaluate or increase muscle strength. They are exercises that only contract muscles without moving the joints, allowing for localized muscle training. They are also easy to apply, can impose greater stress than isotonic exercises, and increase muscle strength quickly.

Applicable exercise programs

- Isometric exercises can be used in various exercise programs such as post-surgery rehabilitation, Sarcopenia, muscle strength enhancement, etc.

Rehabilitation exercise	Repetitive exercise for 8–10 seconds with resistance at the level of 30–50% of maximum strength.
Strength exercise	Repetitive exercise for 5 seconds with resistance at the level of 70% or more of maximum strength.

The percentage range is based on research in papers and can be adjusted according to individual ability.