



Body composition through Air Displacement Plethysmography for Research, Clinical and Sport applications

- ▶ Gold Standard accuracy using whole-body densitometric principles
- ▶ Excellent test-to-test repeatability
- ▶ Fat and Fat-Free Measurements
- ▶ Fast test time (2 minutes inside BOD POD and about 5 minutes total test time)
- ▶ Safe, non-invasive, and ideally suited for frequent testing
- ▶ Flexibility in testing special populations, including young children with the Pediatric Option™ accessory



The BOD POD is the world's only Air Displacement Plethysmography system using whole body densitometric principles to determine body composition (Fat and Fat-Free Mass) in adults and children. In comparison to other body composition assessment methods, the BOD POD's air displacement plethysmography has eliminated the invasiveness of Dual Energy X-Ray Absorptiometry (DXA) as well as the difficulties associated with underwater submersion in hydrostatic weighing. This is why the BOD POD is considered the practical Gold Standard for body composition assessment.

The BOD POD is ideal for assessing the body composition of special populations such as children, the elderly, the disabled and subjects weighing more than 200 kg. It is also completely non-invasive, making it especially suitable for frequent, longitudinal tracking of body composition and metabolic changes over time.

The BOD POD comes with a dedicated computer system with data management capability.

Proven Accuracy

Each BOD POD is a complete turnkey system based on the same Gold Standard operating principle as hydrostatic (underwater) weighing.

The BOD POD uses the principles of whole-body densitometry to determine body composition. This technique relies on a mass measurement from a highly accurate scale (provided) and a volume measurement from the BOD POD chamber.

Once body density is determined ($\text{Density} = \text{Mass}/\text{Volume}$), the BOD POD measures or predicts Thoracic Gas Volume (TGV) and then uses known (or user-customized) densitometric equations to calculate percent Fat and Fat-Free Mass.

The accuracy of the BOD POD has been shown to be very high against reference techniques in a number of research publications.

The BOD POD also provides flexibility in testing special populations - something other techniques are unable to offer.



Accommodates a wide range of subjects up to a maximum weight of 250kg



Simple and easy for both subject and operator

Applications

The BOD POD is used in a wide variety of segments:

- ▶ Academic and Medical Research
- ▶ Clinical Examination
- ▶ Elite Athletic Training
- ▶ Military and Public Safety
- ▶ Nutrition Counseling
- ▶ Bariatric Clinics
- ▶ University Fitness



The BOD POD is a complete turn-key system

Test Sequence

The BOD POD is extremely simple to use and does not require a license to operate. A full test requires only about 5 minutes:

- ▶ Basic subject information is entered into the specially configured computer system
- ▶ The BOD POD is calibrated
- ▶ The subject's mass is measured using the integrated digital scale (accuracy is assured by scale calibrations at regular intervals utilizing provided calibration weights)
- ▶ The subject's body volume is measured while sitting inside the BOD POD (2 minutes)
- ▶ Thoracic Gas Volume (TGV) is measured or predicted
- ▶ Test results are displayed and printed

Software Features

- ▶ Longitudinal reports of body composition changes
- ▶ Customizable body composition ranges
- ▶ Customizable density models based on ethnicity, gender and body type (athletic, obese, etc.)
- ▶ Data export capability

- ▶ Automatic estimates of Resting Metabolic Rate (RMR) and Total Energy Expenditure (TEE)

Maintenance

The BOD POD is designed for durability over time. Should the need arise, each BOD POD has an internal diagnostic test function to analyze system performance and provide feedback to service personnel. Extended service agreements are available to insure optimal performance for long term use.

Pediatric Option™ Accessory

The BOD POD with the Pediatric Option™ accessory allows for the assessment of body composition of young children. It includes a customized seat insert to create a safe and comfortable testing environment for subjects between 2 and 6 years of age. A modified Windows®-based software program and calibration standard are part of the testing procedure as well. This option is validated for subjects as young as 2 years of age and as small as 12 kg.



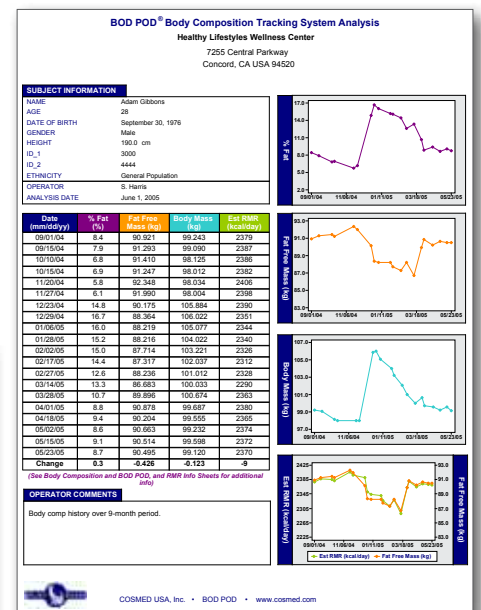
System can be rolled to various locations



The Pediatric Option™ accessory allows for easy body composition assessment of young children



User-friendly and straightforward software interface



Longitudinal reports provide detailed information on body composition changes

Published Research (Partial Listing):

- *Body composition by the four-compartment model: Validity of the BOD POD for assessing body fat in Mexican elderly* [H Alemán-Mateo, et al. *European Journal of Clinical Nutrition*, Jul;61(7):830-836, 2007. Epub 2007 Jan 17]
- *Interdevice variability in percent fat estimates using the BOD POD* [SD Ball. *European Journal of Clinical Nutrition*, Sep;59(9):996-1001,2005]
- *Air-displacement plethysmography: Here to stay* [DA Fields, et al. *Current Opinion in Clinical Nutrition and Metabolic Care*, 8(6):624-629, 2005]
- *Air-displacement plethysmography validation in overweight and obese subjects* [SR Ginde, et al. *Obesity Research*, 13(7):1232-1237, 2005]
- *Clinical evaluation of body fat percentage in 11,833 Japanese measured by air displacement plethysmograph* [N Miyatake, et al., *Internal Medicine*, 44(7):702-705, 2005]
- *A comparison of hydrostatic weighing and air displacement plethysmography in adults with spinal cord injury* [JL Clasey, DR Gater Jr. *Archives of Physical Medicine and Rehabilitation*, Nov;86(11):2106-2113, 2005]
- *Evaluation of air displacement for assessing body composition of collegiate wrestlers* [AC Utter. *Medicine and Science in Sports and Exercise*, 35(3):500-505, 2003]
- *Comparison of body composition methods in overweight and obese children* [PJ Gateley, et al. *Journal of Applied Physiology*, 95:2036-2046, 2003]
- *Body composition techniques and the four-compartment model in children* [DA Fields, MI Goran. *Journal of Applied Physiology*, Aug;89(2):613-620, 2000]
- *Evaluation of a new air displacement plethysmograph for measuring human body composition* [MA McCrory, TD Gomez, EM Bernauer, PA Molé. *Medicine and Science in Sports and Exercise*, Dec;27(12):1686-1691, 1995]
- *A new air displacement method for the determination of human body composition* [P Dempster, S Aitkens. *Medicine and Science in Sports and Exercise*, Dec;27(12):1692-1697, 1995]

Distributed by:



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Technical Specifications

Tests

Total Weight, Fat Mass, Fat-Free Mass, Thoracic Gas Volume (TGV) estimate, Thoracic Gas Volume (TGV) measurement
Resting Metabolic Rate (RMR) estimate, Total Energy Expenditure (TEE) estimate

Hardware

Dimensions	165x84x132 cm
Weight	141 kg
Maximum patient weight	250 kg
Temperature	21-27°C (operating); 5-38°C (storage)
Humidity	20%-70% (non-condensing)

Standard Packaging Includes

BOD POD unit, electronic scale, dedicated PC, cart, calibration kit, user manual

Electrical requirements

Input (50/60 Hz)	100VAC – 6.0A; 120VAC – 4.8Az 220VAC – 2.6A; 230VAC – 2.5A; 240VAC – 2.4A
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Safety and Quality Standards

Class I Equipment, Type B. Equipment has received FDA 510(k) clearance and complies with MDD (93/42 EEC), EN 60601-1 (Safety) and EN 60601-1-2 (EMC)

The COSMED USA, Inc. quality management system is certified to the ISO13485:2003 standard



Suggested room layout

