Body Composition

The world’s gold standard for fast, accurate and safe body composition assessment

“Numbers you can trust”
The BOD POD is the world’s only Air Displacement Plethysmography (ADP) 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. A full test requires only about 5 minutes, and provides highly accurate, safe, comfortable, and fast test results. 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 (young children from 2 to 6 years with Pediatric Option™), 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.

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

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 (Density = Mass/Volume) is determined, 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.

"BOD POD is a highly reliable and valid method for determining %FAT in adult humans. This new method is quick, relatively simple to operate and may be able to accommodate special populations."

Gold Standard accuracy using whole-body densitometry
- 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 Pediatric Option™

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

Simple and easy for both subject and operator

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.

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
- 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)

Pediatric Option™ Accessory
The BOD POD with the Pediatric Option™ accessory allows 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 kg².

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.

BOD POD® Body Composition Tracking System Analysis
Healthy Lifestyles Wellness Center
7255 Central Parkway
Concord, CA USA 94520

<table>
<thead>
<tr>
<th>Subject Information</th>
<th>Test Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: John</td>
<td>First Name: John</td>
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<tr>
<td>Middle Name: Smith</td>
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<td>DOB: 05/23/1999</td>
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<tr>
<td>Gender: Male</td>
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<td>Height: 180.0 cm</td>
<td>Height: 180.0 cm</td>
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<tr>
<td>Ethnicity: General Population</td>
<td>Ethnicity: General Population</td>
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<tr>
<td>Operator: MJ</td>
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<tr>
<td>Test Date: 05/23/05</td>
<td>Test Date: 05/23/05</td>
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</tbody>
</table>

User-friendly and straightforward software interface

Longitudinal reports provide detailed information on body composition changes

Technical Specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>REF</th>
</tr>
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<tbody>
<tr>
<td>BOD POD Gold Standard</td>
<td>Gold Standard body composition tracking system</td>
<td>A-661-230-023</td>
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</tbody>
</table>

**Standard packaging**
- BOD POD unit; Calibration cylinder; Electronic scale; Computer; Monitor; Power supply; Serial cable; Software CD; 10 Kg. calibration weights (2 pcs.); Nose clip; Window cleaner; Window cleaning cloths (5 pcs.); Quick reference guide; Tube and Filter Kits (1 Box); Body composition posters (1 tube); Transformer assembly; Printer; Printer cable (3 meters); Computer cart; BOD POD Operator’s manual.

**Measurements**
- **Body Composition**
  - Body weight, Body volume, Body density, Body Fat (mass and %), Body Fat-Free (mass and %), Thoracic Gas Volume (TGV), Resting Metabolic Rate (estimated), Total Energy Expenditure (estimated)
- **Accuracy**
  - Measurements have been found to be equivalent (no statistically significant difference) to those obtained using 4-Compartment Model reference techniques

**Mass Measurement (with high precision digital scale)**
- Dimensions & Weight (Scale) 6.4x34x32 cm / 11.3 Kg
- Weight range up to 250Kg
- Accuracy 0.05%
- Calibration Certified 20Kg weights

**Volume Measurement**
- Dimensions & Weight (POD) 165x84x132 cm / 141 Kg
- Chamber volume 450 L
- Accuracy ±100 ml of cylinder volume
- Calibration Certified 50 L cylinder

**Environmental Conditions**
- Temperature 21-27°C (operating); 5-38°C (storage)
- Humidity 20-70% (non-condensing)
- Barometric Pressure 75-106 KPa (562-795 mm Hg)

**Hardware**
- Power requirements 100-240V ± 10% 50/60 Hz
- **Software**
  - BOD POD Suite
  - Available languages English
  - **Required PC Configuration (PC included)**
    - Windows XP Pro (32 bit) or Windows 7 (32 bit); 256 MB RAM (XP Pro), 2 GB RAM (Windows 7)
- **Accessories & Options**
  - **Description**
  - **REF**
    - Pediatric option for subjects between 2 and 6 years of age (as small as 12 kg) A-661-923-010
    - Safety & Quality Standards
      - MDD (93/42 EEC); FDA 510(k); EN 60601-1 (safety) / EN 60601-1-2 (EMC)

**Validation articles**
- Anderson DE. et al “Reliability of air displacement plethysmography” J Strength Cond Res. 2007 Feb;21(1):169-72
- More scientific studies on www.cosmed.com/bibliography