REPORT

Validation of InBody720
1. Validation of “InBody” Bioelectrical Impedance Analysis by DEXA (Dual Energy X-ray Absorptiometry)

Research about human body Composition began during the 1940s in the laboratory of AR Behnke.

Body composition criterion methods are upon the model in which the body consists of two-component – Fat Free Mass, Fat Mass such as hydrodensitometry.

The gold standard method of body composition is hydrodensitometry.

But this is not incongruent for using on fields (Hospital, Home and so on) because that needs space, equipments, trained observer and expensive.

Otherwise after 1980s BIA method fast widely spread using for Body composition measurement.

This method is based on four-component model like DEXA.

DEXA has been used to be measuring not only for body composition but also for bone density these days.

We tested validation of InBody by DEXA.

We conclude InBody is very accuracy, reliable, reproducible and useful device as body composition analysis.

Because Technologies (Segmental BIA, Multifrequency, 8-point Tactile electrodes) applied in InBody are the more advanced rather than traditional BIA.
2. Validation of InBody720

**Date**: 2000 ~ 2002

**Where**: Sanggye Paik Hospital, YongDong Severance Hospital, Yongin Severance Hospital

**Methods**

**Subjects**: n=731 (M = 343 F = 388)

**Instruments**: BIA(InBody720), DEXA(LUNAR DPX-L,Lunar Radiation, Wisconsin, USA)

**Procedure**

1. Before any measurement were made, subjects were in a 12-h fasting, no consumption of alcohol for 12h before measurement, no meal for 2h before measurement, no exercise and no shower in the day of the test and after void

2. Measurement of Height

Height was measured to the nearest 0.5cm by using a liner height scale.

3. Measurement of BIA.

   a. Subjects were measured wearing with t-shirt, short pants

   b. Measurer Input data (Age, Height, Sex)

   c. The Subject Stands upright steeping onto the foot electrodes.

   d. The Subject Grips the hand electrodes with his (her) arms held vertically.

   e. Measurer should be Check if the measurement is all right before the subject leave.

4. Measurement of DEXA

   a. All subjects were measured wearing with gown

   b. Whole body Scan take about 15min.
c. The subject lay supine on a comfortable table.

d. DEXA result sheet: See last page.

Result

Table 1. Characteristics of the subjects (total n=731)

<table>
<thead>
<tr>
<th></th>
<th>Male (Mean±SD)</th>
<th>Female (Mean±SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>343</td>
<td>388</td>
</tr>
<tr>
<td>Age</td>
<td>39.8±17.5 (5 ~ 88)</td>
<td>40.5±17.2 (6 ~ 82)</td>
</tr>
<tr>
<td>Height</td>
<td>169.3±9.2 (106.5 ~ 193)</td>
<td>156.4±7.7 (113.6 ~ 176.5)</td>
</tr>
<tr>
<td>Weight</td>
<td>68.3±17.3 (17.3 ~ 119.7)</td>
<td>54.7±10.0 (20.1 ~ 90.9)</td>
</tr>
<tr>
<td>BMI</td>
<td>23.7±4.0 (14.3 ~ 43.0)</td>
<td>22.3±3.8 (14.0 ~ 35.4)</td>
</tr>
</tbody>
</table>

Table 2. Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ 17</td>
<td>20</td>
<td>27</td>
<td>47</td>
</tr>
<tr>
<td>18~29</td>
<td>90</td>
<td>104</td>
<td>194</td>
</tr>
<tr>
<td>30~39</td>
<td>63</td>
<td>67</td>
<td>130</td>
</tr>
<tr>
<td>40~49</td>
<td>61</td>
<td>63</td>
<td>124</td>
</tr>
<tr>
<td>50~59</td>
<td>52</td>
<td>64</td>
<td>116</td>
</tr>
<tr>
<td>60~69</td>
<td>35</td>
<td>43</td>
<td>78</td>
</tr>
<tr>
<td>70~</td>
<td>22</td>
<td>20</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td>343</td>
<td>388</td>
<td>731</td>
</tr>
</tbody>
</table>
InBody720 FFM

N=731
r=0.984
SEE=1.948kg

DEXA FFM