Electronic literature search:
(sepsis OR septic OR intensive care OR critical care) AND (glucose OR sugar OR glycemic OR insulin) AND (Bland Altman OR agreement OR validation OR reliability OR accuracy OR correlation OR Clarke grid OR bias) (publish data 2000/01/01-2012/8/31)

- 879 potentially relevant studies

  - 716 studies excluded
    (animal studies, non-clinical studies, non-English language papers, non-related studies)

  - 116 studies excluded (studies in Infant or pediatric patients)

  - 47 studies for full text review

  - 26 studies excluded (reference was not laboratory blood glucose method, non-critically ill)

21 studies assessed the accuracy of blood glucose monitoring using ABGs and/or glucose meters using central laboratory methods as reference in adult critically ill patients.

- 11 studies using 1) International Organization for Standardization criteria, 2) error grid analysis or 3) percentage of values within 20 % of reference value
- 2 studies using percentage of values within 10 % of reference value
- 1 study using percentage of values within 20 mg/dL difference from reference value
- 7 studies using solely bias for evaluation
Figure 2: the comparisons of accuracy of point of blood glucose monitoring.

**A)**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Events</th>
<th>Total</th>
<th>Events</th>
<th>Total</th>
<th>Weight</th>
<th>Odds Ratio (M-H, Random, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slater-MacLean L (2008)</td>
<td>1</td>
<td>603</td>
<td>24</td>
<td>1555</td>
<td>40.0%</td>
<td>0.10 [0.01, 0.74]</td>
</tr>
<tr>
<td>Kanji S (2005)</td>
<td>1</td>
<td>115</td>
<td>32</td>
<td>110</td>
<td>39.7%</td>
<td>0.02 [0.00, 0.18]</td>
</tr>
<tr>
<td>Petersen JR (2008)</td>
<td>0</td>
<td>130</td>
<td>134</td>
<td>114</td>
<td>20.3%</td>
<td>0.02 [0.00, 0.28]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>2</td>
<td>79</td>
<td></td>
<td>1888</td>
<td>100.0%</td>
<td>0.04 [0.01, 0.14]</td>
</tr>
<tr>
<td>Total events</td>
<td>2</td>
<td>79</td>
<td></td>
<td>1888</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Heterogeneity: Tau² = 0.00; Chi² = 1.43, df = 2 (P = 0.49), I² = 0%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 5.01 (P &lt; 0.00001)</td>
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**B)**

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<th>Study or Subgroup</th>
<th>Events</th>
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<th>Events</th>
<th>Total</th>
<th>Weight</th>
<th>Odds Ratio (M-H, Random, 95% CI)</th>
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<tr>
<td>Slater-MacLean L (2008)</td>
<td>1</td>
<td>692</td>
<td>1</td>
<td>2048</td>
<td>31.6%</td>
<td>3.00 [0.19, 48.05]</td>
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<tr>
<td>Kanji S (2005)</td>
<td>1</td>
<td>14</td>
<td>14</td>
<td>113</td>
<td>37.4%</td>
<td>0.06 [0.01, 0.48]</td>
</tr>
<tr>
<td>Petersen JR (2008)</td>
<td>0</td>
<td>14</td>
<td>13</td>
<td>114</td>
<td>31.1%</td>
<td>0.03 [0.00, 0.56]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>2</td>
<td>29</td>
<td></td>
<td>2275</td>
<td>100.0%</td>
<td>0.17 [0.01, 2.46]</td>
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<tr>
<td>Total events</td>
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<td>29</td>
<td></td>
<td>2275</td>
<td>100.0%</td>
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<tr>
<td>Heterogeneity: Tau² = 3.82; Chi² = 6.57, df = 2 (P = 0.04); I² = 70%</td>
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<tr>
<td>Test for overall effect: Z = 1.29 (P = 0.20)</td>
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**C)**

<table>
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<th>Study or Subgroup</th>
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<th>Events</th>
<th>Total</th>
<th>Weight</th>
<th>Odds Ratio (M-H, Random, 95% CI)</th>
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<tr>
<td>Slater-MacLean L (2008)</td>
<td>1</td>
<td>2048</td>
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<td>1656</td>
<td>3.2%</td>
<td>0.03 [0.00, 0.25]</td>
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<tr>
<td>Kanji S (2005)</td>
<td>14</td>
<td>113</td>
<td>32</td>
<td>118</td>
<td>19.4%</td>
<td>0.38 [0.19, 0.76]</td>
</tr>
<tr>
<td>Petersen JR (2008)</td>
<td>13</td>
<td>114</td>
<td>23</td>
<td>114</td>
<td>17.7%</td>
<td>0.51 [0.24, 1.06]</td>
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<tr>
<td>Desachy A (2008)</td>
<td>13</td>
<td>232</td>
<td>41</td>
<td>273</td>
<td>21.0%</td>
<td>0.34 [0.18, 0.64]</td>
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<tr>
<td>PulzJúnior SA (2009)</td>
<td>3</td>
<td>38</td>
<td>9</td>
<td>38</td>
<td>6.3%</td>
<td>0.28 [0.07, 1.12]</td>
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<tr>
<td>Lonjaret L (2012)</td>
<td>35</td>
<td>302</td>
<td>75</td>
<td>302</td>
<td>32.4%</td>
<td>0.40 [0.26, 0.62]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
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<td>2501</td>
<td>100.0%</td>
<td>204</td>
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<td>0.36 [0.25, 0.52]</td>
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<tr>
<td>Total events</td>
<td>79</td>
<td>204</td>
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<tr>
<td>Heterogeneity: Tau² = 0.06; Chi² = 7.07, df = 5 (P = 0.22); I² = 29%</td>
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<tr>
<td>Test for overall effect: Z = 5.43 (P &lt; 0.00001)</td>
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