<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Country</th>
<th>Age Range/Median (yr)</th>
<th>Male/Female</th>
<th>Primary Tumor/ Other Information</th>
<th>Radiotherapy Method</th>
<th>Tracer</th>
<th>Patients</th>
<th>Lesions</th>
<th>Analytic Method Used</th>
<th>Study Design</th>
<th>Follow-Up Time</th>
<th>Standard References</th>
<th>Cutoff Indexa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bělohlávek et al22</td>
<td>2003</td>
<td>Czech Republic</td>
<td>36–76</td>
<td>14:11</td>
<td>RCC, NSCLC, BC, NC, CC, melanoma</td>
<td>SRS</td>
<td>18F-FDG</td>
<td>25</td>
<td>57</td>
<td>Lesions Prospective</td>
<td>26 wk/mean</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>U</td>
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<tr>
<td>Cecon et al8</td>
<td>2007</td>
<td>Germany</td>
<td>17–78/55(mean)</td>
<td>14:48</td>
<td>NSCLC, BC, melanoma</td>
<td>SRS, WBRT, EFRT, brachytherapy</td>
<td>18F-FET</td>
<td>62</td>
<td>76</td>
<td>Lesions Retrospective</td>
<td>16 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>TBRmean &gt; 1.95 + presence of TAC slope &lt; 0.37 SUV/ h</td>
<td></td>
</tr>
<tr>
<td>Chao et al23</td>
<td>2001</td>
<td>United States</td>
<td>U</td>
<td>U</td>
<td>LC, B, RCC, CC, cervical cancer, melanoma, bladder cancer</td>
<td>SRS</td>
<td>18F-FDG</td>
<td>36</td>
<td>36</td>
<td>Lesions Retrospective</td>
<td>5.6 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>U</td>
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<tr>
<td>Cicone et al92</td>
<td>2015</td>
<td>Italy</td>
<td>38–84/64</td>
<td>19:23</td>
<td>LC, B, RCC, GC, TC, CC, cervical cancer, melanoma, bladder cancer</td>
<td>SRS, WBRt, EFRT, brachytherapy</td>
<td>18F-FDOPA</td>
<td>42 (50 available)</td>
<td>Lesions Prospective</td>
<td>16 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>SUVmax/Bkgmax (SUV)</td>
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<tr>
<td>Gallidakis et al32</td>
<td>2012</td>
<td>Germany</td>
<td>17–70/53(mean)</td>
<td>5:26</td>
<td>LC, B, RCC, CC, SC, bone cancer</td>
<td>SRS</td>
<td>18F-FET</td>
<td>31</td>
<td>40</td>
<td>Lesions Prospective</td>
<td>12 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>TAC curve pattern II and III + TBRmean &gt; 1.95</td>
<td></td>
</tr>
<tr>
<td>Guffens et al33</td>
<td>2015</td>
<td>Belgium</td>
<td>U</td>
<td>U</td>
<td>BC, LC, HNC, melanoma</td>
<td>SRS</td>
<td>18F-FET</td>
<td>29</td>
<td>39</td>
<td>Lesions Retrospective</td>
<td>U</td>
<td>History + clinical follow-up</td>
<td>TAC curve pattern II and III vs curve pattern I</td>
<td></td>
</tr>
<tr>
<td>Hatzoglou et al34</td>
<td>2016</td>
<td>United States</td>
<td>24–81/63</td>
<td>U</td>
<td>NSCLC, BC, melanoma</td>
<td>SRS, WBRT, PBRT</td>
<td>18F-FDG</td>
<td>24</td>
<td>26</td>
<td>Lesions Prospective</td>
<td>9 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>SUVmax/SUVnormal brain = 14 SUV V20</td>
<td></td>
</tr>
<tr>
<td>Heesters et al33</td>
<td>2012</td>
<td>The Netherlands</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>SRS</td>
<td>18F-MET</td>
<td>26</td>
<td>U</td>
<td>Patients Retrospective</td>
<td>U</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>SUVmax/SUVnormal brain + SUVmax gray matter change with time (%)</td>
<td>SUVmax &gt; 3.0</td>
</tr>
<tr>
<td>La et al36</td>
<td>2015</td>
<td>United States</td>
<td>46–79</td>
<td>9:5</td>
<td>LC, B, RCC, melanoma, esophageal cancer</td>
<td>SRS</td>
<td>18F-FDG</td>
<td>14</td>
<td>U</td>
<td>Patients Retrospective</td>
<td>U</td>
<td>Histopathology</td>
<td>SUVmax &gt; 3.0</td>
<td></td>
</tr>
<tr>
<td>Lizardaga et al37</td>
<td>2014</td>
<td>United States</td>
<td>21–77/58</td>
<td>6:26</td>
<td>LC, B, TC, CC, OC, melanoma, tests cancer</td>
<td>SRS, WBRT</td>
<td>18F-FDOPA</td>
<td>32</td>
<td>83</td>
<td>Lesions Retrospective</td>
<td>U</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>Visual scale</td>
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<tr>
<td>Lohmann et al13</td>
<td>2017</td>
<td>Germany</td>
<td>17–79</td>
<td>11:36</td>
<td>BC, EC, CC, CC, OC, bronchial cancer, melanoma, Ewing sarcoma, hypernephroma</td>
<td>SRS, WBRT</td>
<td>18F-FET</td>
<td>47</td>
<td>54</td>
<td>Lesions Retrospective</td>
<td>12 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>TBRmean + TBRmax</td>
<td></td>
</tr>
<tr>
<td>Matuszak et al38</td>
<td>2016</td>
<td>France</td>
<td>27–81/57</td>
<td>14:23</td>
<td>BC, RCC, CC, bronchial cancer</td>
<td>U</td>
<td>18F-FDG</td>
<td>39</td>
<td>49</td>
<td>Lesions Retrospective</td>
<td>U</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>Visual scale (FDG 4 hr)</td>
<td></td>
</tr>
<tr>
<td>Romagna et al39</td>
<td>2016</td>
<td>Germany</td>
<td>61·9</td>
<td>11:11</td>
<td>NSCLC, BC, RCC, GC, melanoma</td>
<td>SRS, SBT</td>
<td>18F-FET</td>
<td>22</td>
<td>34 (50 scans)</td>
<td>Lesions Prospective</td>
<td>28.3 mo/median</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>Decreasing TAC’s + TBRmax &gt; 2.15 + TBRmean &gt; 1.95</td>
<td></td>
</tr>
<tr>
<td>Terakawa et al40</td>
<td>2008</td>
<td>Japan</td>
<td>U</td>
<td>U</td>
<td>LC, B, CC, RCC, CC, OC, melanoma</td>
<td>Conventional radiotherapy, SRS, C-MET</td>
<td>11C-MET</td>
<td>51</td>
<td>56</td>
<td>Lesions Retrospective</td>
<td>U</td>
<td>Histopathology + clinical and radiologic follow-up</td>
<td>SUVmax/SUVnormal brain &gt; 1.4</td>
<td>SUVmax &gt; 0.25 SUVnormal brain</td>
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On-line Table 2: Quality assessment (QUADAS-2)

<table>
<thead>
<tr>
<th>Study</th>
<th>Risk of Bias</th>
<th>Applicability Concerns</th>
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<tr>
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<td>Patient Selection</td>
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<tr>
<td>Bělohlávek et al22</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Ceccon et al8</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Chao et al10</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Ciccone et al23</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Galldiks et al12</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Guffens et al13</td>
<td>H</td>
<td>U</td>
</tr>
<tr>
<td>Hatzoglou et al34</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Heesters et al24</td>
<td>H</td>
<td>U</td>
</tr>
<tr>
<td>Horky et al15</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Lai et al16</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Lizarraga et al17</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Lohmann et al13</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Matuszak et al18</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Romagna et al19</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Terakawa et al10</td>
<td>H</td>
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</table>

Note: —L indicates low risk; H, high risk; U, unclear.

On-line Table 3: Meta-regression and subgroup analysis

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Number of Studies</th>
<th>Pooled Sensitivity</th>
<th>Pooled Specificity</th>
<th>Joint P Value</th>
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</thead>
<tbody>
<tr>
<td>Study design</td>
<td></td>
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</tr>
<tr>
<td>Prospective</td>
<td>6</td>
<td>0.90 (0.83–0.96)</td>
<td>0.88 (0.83–0.94)</td>
<td>.38</td>
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<tr>
<td>Retrospective</td>
<td>9</td>
<td>0.82 (0.77–0.88)</td>
<td>0.87 (0.82–0.93)</td>
<td>.38</td>
</tr>
<tr>
<td>Country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>5</td>
<td>0.83 (0.73–0.92)</td>
<td>0.84 (0.76–0.92)</td>
<td>.52</td>
</tr>
<tr>
<td>Germany</td>
<td>4</td>
<td>0.87 (0.80–0.95)</td>
<td>0.90 (0.84–0.96)</td>
<td>.66</td>
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<tr>
<td>Others</td>
<td>6</td>
<td>0.84 (0.77–0.92)</td>
<td>0.89 (0.83–0.95)</td>
<td>.91</td>
</tr>
<tr>
<td>Radiotherapy methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRS only</td>
<td>5</td>
<td>0.84 (0.74–0.94)</td>
<td>0.90 (0.84–0.96)</td>
<td>.76</td>
</tr>
<tr>
<td>SRS + other methods</td>
<td>7</td>
<td>0.86 (0.78–0.91)</td>
<td>0.86 (0.80–0.91)</td>
<td>.39</td>
</tr>
<tr>
<td>Unclear</td>
<td>3</td>
<td>0.85 (0.76–0.95)</td>
<td>0.94 (0.86–1.00)</td>
<td>.49</td>
</tr>
<tr>
<td>Tracer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11C-MET</td>
<td>2</td>
<td>0.86 (0.74–0.98)</td>
<td>0.79 (0.66–0.93)</td>
<td>.31</td>
</tr>
<tr>
<td>18F-FDOPA</td>
<td>2</td>
<td>0.86 (0.74–0.97)</td>
<td>0.88 (0.79–0.97)</td>
<td>.99</td>
</tr>
<tr>
<td>18F-FET</td>
<td>5</td>
<td>0.83 (0.76–0.91)</td>
<td>0.89 (0.83–0.95)</td>
<td>.77</td>
</tr>
<tr>
<td>18F-FDG</td>
<td>6</td>
<td>0.85 (0.77–0.94)</td>
<td>0.90 (0.83–0.96)</td>
<td>.81</td>
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<tr>
<td>Cutoff index</td>
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<tr>
<td>Quantitative methods without TAC curve pattern</td>
<td>7</td>
<td>0.86 (0.79–0.93)</td>
<td>0.86 (0.80–0.93)</td>
<td>.70</td>
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<tr>
<td>Quantitative methods with TAC curve pattern</td>
<td>4</td>
<td>0.84 (0.76–0.93)</td>
<td>0.88 (0.81–0.96)</td>
<td>.98</td>
</tr>
<tr>
<td>Visual scale</td>
<td>2</td>
<td>0.88 (0.78–0.97)</td>
<td>0.88 (0.79–0.97)</td>
<td>.83</td>
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<tr>
<td>Unclear</td>
<td>2</td>
<td>0.74 (0.55–0.92)</td>
<td>0.90 (0.82–0.98)</td>
<td>.26</td>
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<tr>
<td>Method of quantification</td>
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<td></td>
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<td></td>
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<tr>
<td>Lesions</td>
<td>11</td>
<td>0.82 (0.77–0.87)</td>
<td>0.88 (0.84–0.92)</td>
<td>.07</td>
</tr>
<tr>
<td>Patients</td>
<td>2</td>
<td>0.91 (0.78–1.00)</td>
<td>0.84 (0.85–1.00)</td>
<td>.60</td>
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<tr>
<td>Scans</td>
<td>2</td>
<td>0.95 (0.88–1.00)</td>
<td>0.88 (0.77–0.99)</td>
<td>.11</td>
</tr>
<tr>
<td>Sample size</td>
<td>15</td>
<td>0.85 (0.79–0.89)</td>
<td>0.88 (0.83–0.91)</td>
<td>.81</td>
</tr>
<tr>
<td>Median age</td>
<td>6</td>
<td>0.89 (0.81–0.94)</td>
<td>0.87 (0.80–0.92)</td>
<td>.67</td>
</tr>
<tr>
<td>Male percentage</td>
<td>10</td>
<td>0.97 (0.48–1.00)</td>
<td>0.91 (0.44–0.99)</td>
<td>.69</td>
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</tbody>
</table>

Note: —TAC indicates time-activity curve.

*Data in parentheses are 95% CIs.
On-line Table 4: Sensitivity analysis

<table>
<thead>
<tr>
<th>Excluding Studies</th>
<th>Pooled Sensitivity (95% CI)</th>
<th>Comparison with Overall (P Value)a</th>
<th>Pooled Specificity (95% CI)</th>
<th>Comparison with Overall (P Value)a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>0.85 (0.79–0.89)</td>
<td>–</td>
<td>0.88 (0.83–0.91)</td>
<td>–</td>
</tr>
<tr>
<td>Bělohávek et al22</td>
<td>0.85 (0.79–0.90)</td>
<td>&gt;.05</td>
<td>0.87 (0.82–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Ceccon et al8</td>
<td>0.85 (0.79–0.90)</td>
<td>&gt;.05</td>
<td>0.87 (0.82–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Chao et al31</td>
<td>0.86 (0.80–0.90)</td>
<td>&gt;.05</td>
<td>0.88 (0.84–0.92)</td>
<td>&gt;.05</td>
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<tr>
<td>Ciccone et al23</td>
<td>0.84 (0.79–0.89)</td>
<td>&gt;.05</td>
<td>0.87 (0.83–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Galldiks et al122</td>
<td>0.84 (0.78–0.88)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Guffens et al133</td>
<td>0.86 (0.81–0.90)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.92)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Hatzoglou et al34</td>
<td>0.85 (0.79–0.89)</td>
<td>&gt;.05</td>
<td>0.88 (0.84–0.92)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Heesters et al24</td>
<td>0.84 (0.78–0.89)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.91)</td>
<td>&gt;.05</td>
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<tr>
<td>Horky et al35</td>
<td>0.84 (0.78–0.88)</td>
<td>&gt;.05</td>
<td>0.87 (0.83–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Lai et al36</td>
<td>0.85 (0.79–0.89)</td>
<td>&gt;.05</td>
<td>0.88 (0.84–0.92)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Lizarraga et al37</td>
<td>0.85 (0.79–0.90)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.92)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Lohmann et al15</td>
<td>0.85 (0.79–0.90)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Matuszak et al38</td>
<td>0.84 (0.78–0.88)</td>
<td>&gt;.05</td>
<td>0.87 (0.83–0.91)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Romagna et al39</td>
<td>0.84 (0.78–0.89)</td>
<td>&gt;.05</td>
<td>0.88 (0.83–0.92)</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>Terakawa et al40</td>
<td>0.85 (0.79–0.90)</td>
<td>&gt;.05</td>
<td>0.89 (0.85–0.92)</td>
<td>&gt;.05</td>
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<td>Guffens et al133 and Heesters et al24</td>
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<td>&gt;.05</td>
<td>0.88 (0.83–0.92)</td>
<td>&gt;.05</td>
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Note: — – indicates not applicable.

a P < .05 was considered statistically significant.