Berlin Questionnaire

1. Complete the following:
   height ______________ age ______________
   weight______________ male/female __________

2. Do you snore?
   □ yes
   □ no
   □ don’t know

   If you snore:

3. Your snoring is?
   □ slightly louder than breathing
   □ as loud as talking
   □ louder than talking
   □ very loud. Can be heard in adjacent rooms.

4. How often do you snore?
   □ nearly every day
   □ 3-4 times a week
   □ 1-2 times a week
   □ 1-2 times a month
   □ never or nearly never

5. Has your snoring ever bothered other people?
   □ yes
   □ no

6. Has anyone noticed that you quit breathing during your sleep?
   □ nearly every day
   □ 3-4 times a week
   □ 1-2 times a week
   □ 1-2 times a month
   □ never or nearly never

7. How often do you feel tired or fatigued after your sleep?
   □ nearly every day
   □ 3-4 times a week
   □ 1-2 times a week
   □ 1-2 times a month
   □ never or nearly never

8. During your waketime, do you feel tired, fatigued or not up to par?
   □ nearly every day
   □ 3-4 times a week
   □ 1-2 times a week
   □ 1-2 times a month
   □ never or nearly never

9. Have you ever nodded off or fallen asleep while driving a vehicle?
   □ yes
   □ no

   If yes, how often does it occur?
   □ nearly every day
   □ 3-4 times a week
   □ 1-2 times a week
   □ 1-2 times a month
   □ never or nearly never

10. Do you have high blood pressure?
    □ yes
    □ no
    □ don’t know

Name ____________________________________________

Address __________________________________________

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PTSchIt J 08/03/09 MCI 4102600 PN 1040664
1. Complete the following:
   height __________ age __________ age __________ weight __________ male/female __________

2. Do you snore?
   - yes
   - no
   - don’t know

   If you snore:

3. Your snoring is?
   - slightly louder than breathing
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   - louder than talking
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    - yes
    - no
    - don’t know

   BMI = ______________________

Scoring Questions:
Any answer within black box outline is a positive response.

Scoring Categories:
Category 1 is positive with 2 or more positive responses to questions 2-6
Category 2 is positive with 2 or more positive responses to questions 7-9
Category 3 is positive with 1 positive response and/or a BMI >30

Final Result:
Two or more positive categories indicates a high likelihood of sleep disordered breathing.

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Ptech J 08/03/09 MCI 4102600 PN 1040664
1. Complete the following:
   height ______________ age ______________
   weight ______________ male/female __________

2. Do you snore?
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   - don’t know

If you snore:

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10. Do you have high blood pressure?
    - yes
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    BMI =

Scoring Questions:
Any answer within black box outline is a positive response.

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Category 1 is positive with 2 or more positive responses to questions 2-6
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PTech JJ 08/03/09 MCI 4102600 PN 1040664
### Body Mass Index Table

<table>
<thead>
<tr>
<th>Height</th>
<th>Weight in Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-10</td>
<td>91 96 100 105 110 114 120 124 129 134 139 143 147 167 191</td>
</tr>
<tr>
<td>4-11</td>
<td>94 99 104 109 114 119 124 129 133 138 143 148 173 198</td>
</tr>
<tr>
<td>5-0</td>
<td>97 102 108 112 118 123 128 133 138 143 149 153 179 204</td>
</tr>
<tr>
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<td>100 106 111 116 122 127 132 137 143 148 153 158 185 211</td>
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<tr>
<td>5-2</td>
<td>104 109 115 120 126 131 136 142 147 153 158 164 191 218</td>
</tr>
<tr>
<td>5-3</td>
<td>107 113 118 124 130 135 141 147 152 156 163 169 197 225</td>
</tr>
<tr>
<td>5-4</td>
<td>111 116 122 128 134 140 145 151 157 163 168 174 204 233</td>
</tr>
<tr>
<td>5-5</td>
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<td>118 124 130 136 142 148 155 161 167 173 179 185 216 248</td>
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<tr>
<td>5-7</td>
<td>121 127 134 140 147 153 159 166 172 178 185 191 223 255</td>
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<tr>
<td>5-8</td>
<td>125 131 138 144 151 158 164 171 177 187 190 197 230 263</td>
</tr>
<tr>
<td>5-9</td>
<td>128 135 142 149 155 162 169 176 183 189 196 203 237 270</td>
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<tr>
<td>5-10</td>
<td>132 139 146 153 160 167 174 181 188 195 202 209 249 278</td>
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<td>5-11</td>
<td>136 143 150 157 165 172 179 186 193 200 208 215 250 286</td>
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<tr>
<td>6-0</td>
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<td>6-3</td>
<td>152 160 168 176 184 192 200 208 216 224 232 240 279 319</td>
</tr>
<tr>
<td>6-4</td>
<td>156 164 172 180 189 197 205 213 221 230 238 246 287 328</td>
</tr>
</tbody>
</table>

1. Look down the left column to find patient’s height in feet and inches.
2. In the same row, find the number closest to the patient’s weight in pounds.
3. BMI appears at the bottom of the column below the patient’s weight.

Note: To calculate BMI with kilograms and meters use this formula: $\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)}^2}$
Berlin Questionnaire overview and instructions

Purpose
The Berlin Questionnaire is a validated patient survey that helps to identify Obstructive Sleep Apnea (OSA). It was developed in 1998 at a medical conference in Berlin, Germany, by a group of family practice physicians and sleep researchers.

The purpose of the Berlin Questionnaire is twofold: to identify patients who are at high risk for OSA and to identify those snoring patients who have a low risk for OSA. It is a simple, self-administered patient questionnaire and a validated predictive assessment tool designed to assess three OSA risk categories:
• the presence and frequency of snoring behavior
• wake time sleepiness or fatigue
• a history of obesity and/or hypertension

Instructions for use
Step 1: Have patient complete questionnaire. Using the NCR form, the patient needs to press down for marks to register on all three pages.

Step 2: Using the NCR form, the medical professional removes the top copy (white) and scores page two (yellow).

How to score a questionnaire
Once you have removed the top, white copy, you will see that the scoring is divided into three categories marked in blue. The positive questions are framed within the black box outline; negative questions are not framed.

Category 1 evaluates sleep and snoring behavior. If there are two or more answers inside the black boxes, this is considered to be a positive response. Check the box in the lower left-hand corner to indicate a positive category.

Category 2 determines the presence of daytime sleepiness. If there are two or more answers inside the black box, this is considered to be a positive response. Check the box in the lower left-hand corner to indicate a positive category.

Category 3 assesses patient’s history of hypertension and obesity. Category 3 requires you to calculate the Body Mass Index (BMI) and document if the patient has hypertension. To calculate the BMI, use the chart on the back of the physician copy. If the BMI is greater than 30, it is a positive response. If the patient has a history of hypertension, it is a positive response. Category 3 is considered positive when only one of the two questions is positive.

Step 3: Discussing questionnaire results with patient
A patient has a positive questionnaire if he or she scores “positive” in two or more sections. If two or more sections are positive, discuss with the patient the risks of having untreated sleep apnea and explore the patient’s willingness to go to a sleep center for further testing. If the patient is willing, he or she should be directed to a sleep center for further information and additional testing for sleep apnea.
Summary of validation studies –

Berlin Questionnaire

Using the Berlin Questionnaire to Identify Patients at Risk for the Sleep Apnea Syndrome
Netzer, N.C., Strohls, R.A., Netzer, C.M., Clark, K., Strohl, K.P.
Ann Intern Med 1999;131:485-491

Prevalence of Symptoms and Risk of Sleep Apnea in Primary Care
Chest 2003;4:1406-1414

According to Netzer, et al., there is evidence that the prevalence of OSA in primary care offices is higher than in the community. In the 1999 Annals of Internal Medicine study, 744 patients in five primary care sites in Cleveland, Ohio, were surveyed, of whom 100 underwent sleep studies. Of the 744 respondents, 297 (37.5%) were in the high-risk group. The high-risk group for OSA was comprised of patients with persistent and frequent symptoms in two of the following three categories: presence and frequency of snoring; wake-time sleepiness or fatigue; and a history of obesity or hypertension.

Being in the high-risk group predicted an RDI greater than 5 with a sensitivity of 86%, a specificity of 77%, a positive predictive value of 89%, and a likelihood ratio of 3.79.

In the Chest 2003 study, data was collected from 6,223 consecutive patients who were more than 15 years of age, in 40 offices and clinics in the United States, Germany, and Spain. This is the first large data set providing information collected by a standardized protocol on snoring, sleepiness, and other features associated with sleep apnea across many primary care sites.

The results show that one-third of participants (32%) had a high pretest probability for OSA with a higher rate in the United States (35.8% of 3,915 participants) than in Europe (26.3% of 2,308 participants). Other categories measured sleepiness (32.4% vs. 11.8%, respectively), followed by obesity and/or hypertension (44.8% vs. 37.1%), contributed to the OSA risk differences between participants in the U.S. and Europe, as frequent snoring and pauses in breathing were similarly reported.

Conclusion
Primary care physicians in the U.S. and Europe will encounter a high demand for services to confirm or manage sleep apnea, sleepiness, and obesity. The Berlin Questionnaire provides a means of identifying patients who are likely to have sleep apnea.