

## Internet-Based Monitoring in the Severe Asthma Research Program Identifies a Subgroup of Patients With Labile Asthma Control

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**e-Table 1.** IBS Monthly Survey Questions

<p>1. Choose what type of survey you are here to complete:</p> <ul style="list-style-type: none"> <li><input type="radio"/> To complete a monthly survey (<i>Jump to 7, after ACT</i>)</li> <li><input type="radio"/> To tell us about a new asthma attack or episode of worsening asthma symptoms (<i>Jump to 8, after ACT</i>)</li> <li><input type="radio"/> To update us about an asthma attack or episode of worsening asthma symptoms that you have already started a survey about (<i>Jump to 8, after ACT</i>)</li> </ul>
<p>Asthma Control Test™</p> <p>Five (5) Asthma Control Test™ were replicated here with permission from QualityMetric, Inc (Lincoln, RI). Visit <a href="http://www.asthma.com/additional-resources/asthma-control-test.html">http://www.asthma.com/additional-resources/asthma-control-test.html</a> for question text and answer choices.</p>
<p>7. Did you experience an episode of worsening symptoms this past month?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No (<i>Jump to 21</i>)</li> </ul>
<p>8. Please enter the date that your episode of worsening symptoms first began:</p> <ul style="list-style-type: none"> <li><input type="radio"/> Enter the date (mm/dd/yyyy): _____</li> <li><input type="radio"/> I don't know</li> </ul>
<p>9. What Zip Code were you in when this episode of worsening asthma began?</p> <ul style="list-style-type: none"> <li><input type="radio"/> I was in this Zip Code: _____</li> <li><input type="radio"/> I was in another country (please enter city and country): _____</li> <li><input type="radio"/> I don't know</li> </ul>
<p>10. Are you still experiencing symptoms of this episode?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes (<i>Jump to 12</i>)</li> <li><input type="radio"/> No</li> </ul>
<p>11. Please enter the date that your asthma symptoms returned to normal?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Enter the date (mm/dd/yyyy): _____</li> <li><input type="radio"/> I don't know</li> </ul>
<p>12. Since your last survey, have you seen your regular doctor for your breathing problems?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>13. Since your last survey, have you had an unscheduled doctor visit for your breathing problems?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>14. Since your last survey, have you visited a hospital emergency room because of your breathing problems?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>15. Since your last survey, have you spent a night in the hospital because of breathing problems?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No (<i>Jump to 19</i>)</li> </ul>

<p>16. Since your last survey, have you been admitted to an intensive care unit for asthma?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>17. Did you need a ventilator (breathing machine)?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>18. Did you need CPAP or BiPAP during this asthma attack?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>19. How long before you got medical help for your asthma did this episode of worsening asthma begin?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Less than 3 hours</li> <li><input type="radio"/> 4-12 hours</li> <li><input type="radio"/> 13-23 hours</li> <li><input type="radio"/> 1-3 days</li> <li><input type="radio"/> 4-7 days</li> <li><input type="radio"/> More than 7 days</li> </ul>
<p>20. Did you get any new treatments from a doctor or other healthcare provider for this episode of worsening symptoms?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No (<i>Jump to 22</i>)</li> </ul>
<p>21. Please check all medications that were prescribed to you for this episode of worsening symptoms: (<i>Question presented as "Please check any new medications that were prescribed to you in the last month" if participant did not identify that they had had an episode of worsening asthma symptoms. This is where the survey ended for participants who did not identify as having a period of worsening asthma</i>)</p> <ul style="list-style-type: none"> <li><input type="radio"/> Oral Corticosteroids (e.g. prednisone, prednisolone, methylprednisolone)</li> <li><input type="radio"/> Antibiotics</li> <li><input type="radio"/> Inhaled Corticosteroids (e.g. Advair, Alvesco, Azmacort, Dulera, Flovent, Pulmicort, Qvar, Symbicort)</li> <li><input type="radio"/> Short-Acting Beta-Agonists (e.g. Albuterol, Ventoline, ProAir, Xopenex)</li> <li><input type="radio"/> Inhaled Anticholinergic (e.g. Atrovent)</li> <li><input type="radio"/> Long-Acting Anticholinergic (e.g. Spiriva)</li> <li><input type="radio"/> Short Acting Combination Therapy (e.g. Combivent, Duoneb)</li> <li><input type="radio"/> Leukotriene Modifier (e.g. Singulair, Accolate, Zflo)</li> <li><input type="radio"/> Other: _____</li> </ul>
<p>22. Were you prescribed an inhaled corticosteroid (like Advair, Flovent, Qvar, etc) before this episode began?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>23. Did you have any changes to your medications before this episode began?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul>
<p>24. Did you run out of your corticosteroid inhaler in the week leading up to this episode?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No (<i>Jump to 26</i>)</li> </ul>

25. What date did you run out of this medication?

- Enter the date (mm/dd/yyyy): \_\_\_\_\_
- I don't know

26. Do you think that any of the following triggers caused this episode of worsening symptoms? (Check all that apply):

- Illness (e.g. cold, flu)
- Airborne Irritants (e.g. paint fumes, cigarette smoke, sprays, pollution)
- Emotion (e.g. feeling angry, sad, or stressed, laughing, being excited)
- Tobacco Smoke
- Physical Activity (e.g. running, biking, playing sports, climbing stairs)
- Unknown
- Allergens (e.g. animals, pollen, feathers, dust)
- Other: \_\_\_\_\_

27. Did you smoke in the days leading up to this episode of worsening symptoms?

- Yes
- No








28. You may be eligible to participate in another visit to collect samples of your breath, blood, and sputum. If you are eligible, a SARP coordinator from your study site will call you. Would you be willing to come in for a SARP Asthma Attack visit?

- Yes
- No

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**e-Figure 1.** Layout for worsening asthma triggers survey question.

Do you think that any of the following **triggers** caused this episode of worsening symptoms? (Check all that apply)

<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 
<p><b>Illness</b> (e.g. cold, flu)</p>	<p><b>Emotion</b> (e.g. feeling angry, sad, or stressed, laughing, being excited)</p>	<p><b>Physical Activity</b> (e.g. running, biking, playing sports, climbing stairs)</p>	<p><b>Allergens</b> (e.g. animals, pollen, feathers, dust)</p>
<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> <b>Other:</b> <input type="text"/>
<p><b>Airborne Irritants</b> (e.g. paint fumes, cigarette smoke, sprays, pollution)</p>	<p><b>Tobacco Smoke</b></p>	<p><b>Unknown</b></p>	

**e-Figure 2.** Kernel density plot for the standard deviation of ACT variability using the Internet Based monitoring Survey (IBS, blue line) compared to the SARP biannual ACT survey (red line). The plot shows that ACT variability measured using the IBS tool was significantly higher than the variability measured using the biannual ACT survey \* =  $p < 0.001$

