

SURVEY – IMPACT OF THE 2019/2020 AUSTRALIAN BUSHFIRE SEASON IN PEOPLE WITH SEVERE ASTHMA

The 2019/2020 bushfire season has had a widespread impact on the health and well-being of people in Australia. Individuals with respiratory conditions are particularly vulnerable to bushfire smoke exposure. However, there is limited data available on the impact of bushfire smoke exposure specifically in people with a diagnosis of severe asthma.

To address this, we are undertaking a survey to investigate the experiences of people with severe asthma during the bushfires, and in the months following.

As you have been enrolled in an Australian severe asthma registry (either the Australian Mepolizumab Registry or Australasian Severe Asthma Registry), we would appreciate if you could please complete this survey to share your experiences.

It will take approximately 20 minutes to complete the survey.

We will ask you questions about the following:

- your general health, smoking history and occupation,
- any symptoms you experienced during and after the bushfire season,
- your asthma, and whether you required treatment for asthma symptoms during the bushfire season,
- whether you took any actions to avoid being exposed to bushfire smoke,
- your location during the bushfire season, so that we can work out how much bushfire smoke you may have been exposed to.

Please follow these instructions for completing the survey:

[to retain instructions that are applicable to the distribution method]

[If completing survey on paper]

1. Please read the instructions and questions carefully.
2. Unless directed otherwise, please complete EVERY question possible.
3. Please complete this survey in pen.
4. To answer a question, please place crosses ☒ in the box next to your answer or write a number/response when required.
5. If you have any questions about completing the survey, please call Dr Erin Harvey on 02 4042 0099.

6. **Once you have completed the survey, please send it back to the research team using the enclosed reply paid envelope.**

[Directions to be given to participant if completing survey over the phone with research staff member]

1. Please listen to the instructions and questions carefully.
2. Please ask if you did not understand or did not hear a question.
3. Please answer EVERY question possible. We will write down your answers.

[If completing survey online/via the web-link]

1. Please read the instructions and questions carefully.
2. Unless directed otherwise, please complete EVERY question possible.
3. To answer a question, please select the box next to your answer or write a number/response when required.
4. If you have any questions about completing the survey, please call Dr Erin Harvey on 02 4042 0099.
5. **Once you have completed the survey questions, please select the ‘Submit’ button.**

This survey is approved by the Hunter New England Human Research Ethics Committee (number AMR: 2019/ETH00986 and ASAR: 2019/ETH03836). If you have any concerns about completing this survey please contact Dr Nicole Gerrand on 02 49214950 or HNELHD-HREC@health.nsw.gov.au .

Participant ID: _____ - _____ (_____)

Date survey completed: ____ / ____ / ____ (day/month/year)

Survey completed: by mail/on paper

by phone

online

Face-to-face

DETAILS ABOUT YOU

1	What is your age?	_____ (years old)
2	Are you currently in paid employment?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Which of these best describes your current employment status?	<i>(select all that apply)</i> <input type="checkbox"/> Self employed <input type="checkbox"/> Employed full-time <input type="checkbox"/> Employed part-time or casual <input type="checkbox"/> Unemployed <input type="checkbox"/> A student <input type="checkbox"/> Engaged in home duties <input type="checkbox"/> Retired <input type="checkbox"/> Unable to work <input type="checkbox"/> Other (please specify) _____
4	Were you involved in fighting fires as a firefighter (volunteer or paid) during the 2019/2020 bushfire season?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5	Were you involved in other emergency services (police, ambulance, other) during the 2019/2020 bushfire season?	<input type="checkbox"/> Yes <input type="checkbox"/> No

SMOKING HISTORY

1	Do you currently smoke? (cigarettes, tobacco)	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Have you ever smoked? (cigarettes, tobacco)	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	<i>If YES to Question 1 or Question 2, how old</i> were you when you began smoking?	_____ (years)
4	If you don't smoke now but you used to, how old were you when you gave up smoking?	_____ (years)
5	How many cigarettes per day did you smoke?	_____

GENERAL HEALTH

1	In general, would you say your health is (select one option):	<input type="checkbox"/> Excellent <input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
2	Have you been diagnosed by a health professional with any NEW conditions in the past 6 months?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2A	If YES, please specify condition(s) and approximate date of diagnosis (month/year)	1. _____ 2. _____ 3. _____ _____

EXPERIENCE DURING THE BUSHFIRE SEASON

The following questions relate to your experiences and actions during the prolonged periods of smoke exposure in the 2019/2020 Australian bushfire season.

During the 2019/2020 Australian bushfire season:		
1A	<p>Did you experience any symptoms in the time period? (Eye or respiratory symptoms, headache, anxiety, feeling depressed)</p> <p><i>Symptoms include: Eye irritation, Throat irritation/dry throat, Cough, Wheeze or whistling chest, Sneezing, Chest tightness/pain, Breathlessness, Headache, Anxiety, Feeling depressed, Other</i></p>	<p><i>(please select)</i></p> <p><input type="checkbox"/> Yes → <i>continue</i></p> <p><input type="checkbox"/> No → <i>skip to Q2A</i></p> <p><input type="checkbox"/> Don't know → <i>skip to Q2A</i></p>
1B	<p style="text-align: center;"><i>If YES to Question 1A, Please indicate which symptom(s) by checking all that apply</i></p>	<p><i>(select all that apply)</i></p> <p><input type="checkbox"/> Eye irritation/watery eyes</p> <p><input type="checkbox"/> Throat irritation/dry throat</p> <p><input type="checkbox"/> Cough</p> <p><input type="checkbox"/> Wheeze or whistling chest</p> <p><input type="checkbox"/> Sneezing</p> <p><input type="checkbox"/> Chest tightness/pain</p> <p><input type="checkbox"/> Breathlessness</p> <p><input type="checkbox"/> Headache</p> <p><input type="checkbox"/> Anxiety</p> <p><input type="checkbox"/> Feeling depressed</p> <p><input type="checkbox"/> Other (if other, please specify _____)</p>
1C	<p><i>If YES to Question 1A, Did you seek health advice from a health professional because of any of these symptom(s)?</i></p>	<p><i>(select all that apply)</i></p> <p><input type="checkbox"/> No advice sought</p> <p><input type="checkbox"/> Hospital inpatient</p> <p><input type="checkbox"/> Emergency department</p> <p><input type="checkbox"/> General practitioner</p> <p><input type="checkbox"/> 24 hour health advice hotline</p> <p><input type="checkbox"/> Pharmacist</p> <p><input type="checkbox"/> Other medical professional (If other, specify _____)</p>

1D	<i>If YES to Question 1A, Did you take any time off work or daily activities because of these symptom(s)?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
1E	<i>If Yes to Question 1A, Do you think that smoke from bushfires was the main reason for any of your symptom(s) in this period?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/> Don't know <input type="checkbox"/> No, not applicable (not exposed to bushfire smoke)

Please answer the following questions regarding your **asthma** during the period of prolonged smoke exposure during the 2019/2020 Australian bushfire season.

2A	Did you experience asthma symptoms (eg. shortness of breath, chest tightness, wheeze or cough) during the bushfire season?	<input type="checkbox"/> Yes → <i>continue</i> <input type="checkbox"/> No → <i>go to Q3A</i> <input type="checkbox"/> Don't know → <i>go to Q3A</i>
2B	<i>If yes to Question 2A</i> , do you think that exposure to smoke from the bushfires was the main reason for your asthma symptoms during the bushfire season?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/> Don't know <input type="checkbox"/> No, not applicable (not exposed to bushfire smoke)
3A	During the 2019/2020 bushfire season, did you experience an attack /flare up /exacerbation of your asthma that resulted in: <p style="text-align: center;">Admission to hospital</p> <p style="text-align: center;">Emergency department visit</p> <p style="text-align: center;">Unscheduled doctor visit</p> <p>Starting or increasing your dose of oral corticosteroid medication (eg. prednisone, solone) for at least 3 days?</p> <p>Parenteral (intravenous) corticosteroids administered</p> <p>Increased use of your blue reliever inhaler (eg. salbutamol, asmol, Ventolin) for a short period of time</p> <p>Increase dose or frequency of your existing preventer medication (eg. Flixotide, Pulmicort, Qvar, Symbicort, Seretide, Flutiform, Breo, Trelegy)</p>	<i>(select for each option)</i> <p style="text-align: right;">If Yes, how many times?</p> <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____
3B	<i>If Yes to Q3A</i> , Do you think that exposure to smoke from the bushfires was the main reason for your attack(s) / flare up(s) / exacerbation(s) of your asthma symptoms in the bushfire period?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> No, not applicable (not exposed to bushfire smoke)

3C	<i>If yes in Q3A, WHEN did you attend the Emergency Department:</i>	1. ___ / ___ / 20 ___ (dd/mm/yyyy) 2. ___ / ___ / 20 ___ 3. ___ / ___ / 20 ___
3D	<i>If yes in Q3A, WHEN were you admitted to hospital?</i>	1. ___ / ___ / 20 ___ (dd/mm/yyyy) 2. ___ / ___ / 20 ___ 3. ___ / ___ / 20 ___

Please answer the following questions about advice you received during the 2019/2020 Australian bushfire season.

4A	Did you receive advice/information about how you should manage your asthma DURING the bushfire season?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4B	<i>If YES to Question 4A, from where did you receive advice? (select all that apply)</i>	
	<input type="checkbox"/> General practitioner <input type="checkbox"/> News/current affairs stories <input type="checkbox"/> Pharmacist <input type="checkbox"/> Social media <input type="checkbox"/> Nurse <input type="checkbox"/> Family/friends <input type="checkbox"/> Respiratory/asthma specialist <input type="checkbox"/> Support group <input type="checkbox"/> Other medical professional <input type="checkbox"/> 24 hour health advice hotline <input type="checkbox"/> Asthma Australia <input type="checkbox"/> Other (<i>specify</i> _____) <input type="checkbox"/> Health department (eg. local health department, state health department)	
5A	Did you receive advice/information about how to avoid or minimise your exposure to bushfire smoke DURING the bushfire season?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5B	<i>If YES to Question 5A, from where did you receive advice? (select all that apply)</i>	
	<input type="checkbox"/> General practitioner <input type="checkbox"/> News/current affairs stories <input type="checkbox"/> Pharmacist <input type="checkbox"/> Social media <input type="checkbox"/> Nurse <input type="checkbox"/> Family/friends <input type="checkbox"/> Respiratory/asthma specialist <input type="checkbox"/> Support group <input type="checkbox"/> Other medical professional <input type="checkbox"/> 24 hour health advice hotline <input type="checkbox"/> Asthma Australia <input type="checkbox"/> Other (<i>specify</i> _____) <input type="checkbox"/> Health department (eg. local health department, state health department)	

Please answer the following questions regarding any actions you took to avoid or reduce your exposure to smoke during the 2019/2020 Australian bushfire period.

6A	<p>Did you take any of the following actions to avoid or minimise exposure to the bushfire smoke during the bushfire season?</p> <p>Stayed indoors/avoided going outdoors</p> <p>Kept windows and doors shut when inside</p> <p>Used a face mask</p> <p>Used an air conditioner in your home</p> <p>Used an indoor air cleaner/purifier in your home</p> <p>Avoided exercising outdoors</p> <p>Relocated to another area</p> <p>Other</p> <p><i>If other, please specify</i> 1. _____ 2. _____ 3. _____</p>	<p><i>(Please select a response for each action)</i></p> <p>Yes No Not an option</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <i>If Yes →</i></p>	<p>B. If Yes, do you think the action(s) helped reduce your symptoms?</p> <p>Yes No Unsure</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
6B	<p>If you used a face mask to avoid exposure to the smoke, what type did you use?</p>	<p><input type="checkbox"/> P2/N95 mask</p> <p><input type="checkbox"/> Surgical mask</p> <p><input type="checkbox"/> Other (<i>specify</i> _____)</p> <p><input type="checkbox"/> Don't know</p>	
6C	<p>If you used an indoor air cleaner/purifier in your home, what type did you use?</p>	<p><input type="checkbox"/> HEPA filter</p> <p><input type="checkbox"/> Other (<i>specify</i> _____)</p> <p><input type="checkbox"/> Don't know</p>	

7A	<p>If your job involves working outside, did you do any of the following to avoid or minimise exposure to the bushfire smoke?</p> <p style="text-align: center;">Relocated to another area</p> <p style="text-align: center;">Reduced or change work activities</p> <p style="text-align: center;">Wore a face mask</p>	<p>Yes No Not applicable</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
8A	<p>Did you avoid or reduce any indoor activities to improve indoor air quality? (eg. smoking, burning candles/incense, vacuuming, dusting)</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
9	<p>Please describe any challenges you faced in avoiding exposure to the smoke. <i>(free text)</i></p> <hr/> <hr/> <hr/>	
10	<p>Did the bushfires affect your health in any other way? <i>(free text)</i></p> <hr/> <hr/> <hr/>	
11	<p>Is there anything else you would like to tell us? Please share your experience and how you felt during the period of intense bushfire smoke during the 2019/2020 Australian bushfire season. <i>(free text)</i></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

12	<p>Did you face any of the following impacts on your quality of life as a result of the prolonged smoke period during the 2019/2020 Australian bushfire season?</p> <p style="text-align: right;">Sick for longer than a week</p> <p>Financial stress due to additional non-budgeted expenses (e.g. extra medication, equipment or increased bills)</p> <p style="text-align: right;">Needing to be absent from work or school due to symptoms triggered by smoke</p> <p style="text-align: right;">Lost salary or other penalty (e.g. loss of leave entitlement)</p> <p style="text-align: right;">Reduced capacity to participate in usual activities</p> <p style="text-align: right;">Missed opportunity e.g. exam or interview</p> <p style="text-align: right;">Needed to cancel important sporting or social engagement</p> <p style="text-align: right;">Other</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>(If Other, please specify _____)</p>
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YOUR RESIDENCE DURING THE BUSHFIRE SEASON

The following questions relate to where you lived during the prolonged periods of smoke exposure during the 2019/2020 Australian bushfire season, and any occasions you slept away from home.

1	During the 2019/2020 Australian bushfire season, what was the postcode of the home you lived in?	<i>postcode</i> _____
2	What was the street address of that home? <i>(number, street, suburb)</i>	_____ _____ _____
3	When was that home built? or, if you do not know the exact year, please estimate using the year ranges provided:	<i>year</i> _____ or <input type="checkbox"/> Prior to 1986 <input type="checkbox"/> 1986-2004 <input type="checkbox"/> After 2004 <input type="checkbox"/> After 2010
4	Did you spend the majority of the bushfire season in your postcode of residence? <i>Select 'Yes' unless you were travelling outside of your usual place of school, work or home for the majority of the period.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
5	During the 2019/2020 Australian bushfire season did you sleep at a different location , other than your usual home that you listed in Q1?	<input type="checkbox"/> Yes <input type="checkbox"/> No → <i>if No, skip to Q6</i>
5A	If YES to Question 5, please specify the first location that you slept at during the fire period, other than your usual home? Please specify the dates for the nights that you slept at this location.	<i>postcode</i> _____ <i>Street address (number, street, suburb)</i> _____ <i>Date range (day/month/year)</i> ____ / ____ / 20 ____ to ____ / ____ / 20 ____

<p>5B</p>	<p>If applicable, please specify a second location that you slept at during the fire period, other than your usual home?</p> <p>Please specify the dates for the nights that you slept at this location.</p>	<p><i>postcode</i> _____</p> <p><i>Street address (number, street, suburb)</i> _____</p> <p><i>Date range (day/month/year)</i> ____ / ____ / 20 ____ to ____ / ____ / 20 ____</p>
<p>5C</p>	<p>If applicable, please specify a third location that you slept at during the fire period, other than your usual home?</p> <p>Please specify the dates for the nights that you slept at this location.</p>	<p><i>postcode</i> _____</p> <p><i>Street address (number, street, suburb)</i> _____</p> <p><i>Date range (day/month/year)</i> ____ / ____ / 20 ____ to ____ / ____ / 20 ____</p>
<p>6</p>	<p>Were you required to evacuate/leave your home during the bushfire season?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

CURRENT WELLBEING

Please answer the following questions relating to how you have been feeling in the past **4 weeks**.

1A	<p>Have you been experiencing any symptoms during the PAST 4 WEEKS?</p> <p><i>Symptoms include: Eye irritation, Throat irritation/dry throat, Cough, Wheeze or whistling chest, Sneezing, Chest tightness/pain, Breathlessness, Headache, Anxiety, Feeling depressed, Headache Other</i></p>	<p><i>(please select)</i></p> <p><input type="checkbox"/> Yes → <i>continue</i></p> <p><input type="checkbox"/> No → <i>skip to Q2</i></p> <p><input type="checkbox"/> Don't know → <i>skip to Q2</i></p>
1B	<p>If YES to Question 1A, Please indicate which symptom(s) by checking all that apply</p>	<p><i>(select all that apply during past 4 weeks)</i></p> <p><input type="checkbox"/> Eye irritation/watery eyes</p> <p><input type="checkbox"/> Throat irritation/dry throat</p> <p><input type="checkbox"/> Cough</p> <p><input type="checkbox"/> Wheeze or whistling chest</p> <p><input type="checkbox"/> Sneezing</p> <p><input type="checkbox"/> Chest tightness/pain</p> <p><input type="checkbox"/> Breathlessness</p> <p><input type="checkbox"/> Headache</p> <p><input type="checkbox"/> Anxiety</p> <p><input type="checkbox"/> Feeling depressed</p> <p><input type="checkbox"/> Other (other, please specify _____)</p>

Please answer the following questions relating to your **asthma** during the past **1 week**.

2	<p>On how many NIGHTS in the past week were you woken by asthma symptoms?</p>	<p>_____ (number out of 7)</p>
3	<p>On how many MORNINGS in the past week did you have asthma symptoms on awaking?</p>	<p>_____ (number out of 7)</p>
4	<p>On how many DAYS in the last week was your activity limited by asthma?</p>	<p>_____ (number out of 7)</p>
5A	<p>How many DAYS in the past week did you use your reliever medication (asmol / Ventolin /salbutamol)?</p>	<p>_____ (number out of 7)</p>

5B	How many TIMES on those days did you use your reliever medication (asmol / Ventolin / salbutamol)?	_____ (number of times)
5C	How many PUFFS of your reliever medication did you take each time ?	_____ (number of puffs)
6A	Are you currently taking oral corticosteroids (prednisone, prednisolone, solone) for your asthma?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6B	<i>If yes to Question 6A, oral corticosteroid dose per day</i>	_____ mg/day

Please complete the following questionnaires:

1. Newcastle Laryngeal hypersensitivity questionnaire

Leicester cough questionnaire (if you have identified **COUGH** as a symptom in the past 4 weeks)

Thank you for taking the time to complete this survey.

Reference for survey items:

GENERAL HEALTH - Question 1 is the first question from the RAND 36-item Short Form Health Survey, developed at RAND as part of the Medical Outcomes Study.

EXPERIENCE DURING THE BUSHFIRE SEASON – Questions used/adapted with permission from:

Howard ZL, Carlson SJ, Baldwin Z, Johnston F, Durrheim DN, Dalton CB. High community burden of smoke-related symptoms in the Hunter and New England regions during the 2019-2020 Australian bushfires. *Public Health Res Pract.* 2020;30(4).

Bui D, Davis S, Flynn A, Bell R, Dharmage S. Impact of recent catastrophic bushfires on people with asthma in Australia: Health, social and financial burdens. *Respirology.* 2021;26(4):296-7.

DETAILS ABOUT YOU and YOUR RESIDENCE DURING THE BUSHFIRE SEASON – questions used/adapted with permission from:

Abramson M, Blackman J, Carroll M, Dimitriadis C, Del Monaco A, Dennekamp M, Denny S, Gao C, Liew D, Maybery D. *et al.* Hazelwood Health Study Adult Survey. In Comparison of Morwell and Sale; Monash University: Clayton VIC, Australia, 2017; Volume 1, p. 22. Available online: www.hazelwoodhealthstudy.org.au/study-findings/study-reports/

[The following questionnaires completed as part of the survey are published separately]:

Vertigan AE, Bone SL, Gibson PG. Development and validation of the Newcastle laryngeal hypersensitivity questionnaire. *Cough.* 2014;10(1):1. Published 2014 Feb 19. doi:10.1186/1745-9974-10-1

Birring SS, Prudon B, Carr AJ, Singh SJ, Morgan MD, Pavord ID. Development of a symptom specific health status measure for patients with chronic cough: Leicester Cough Questionnaire (LCQ). *Thorax.* 2003;58(4):339-343. doi:10.1136/thorax.58.4.339