Questionnaire of the European Community for Coal and Steel (ECSC) on respiratory symptoms

1987 - updating of the 1962 and 1967 questionnaires for studying chronic bronchitis and emphysema†

A. Minette‡‡

In 1962 a first version of an ECSC Questionnaire on Bronchitis and Emphysema was produced for epidemiological studies in coal miners and steel workers in the four languages of the Community of Six at that time, Dutch, French, German and Italian. This document closely followed the 1960 British MRC Questionnaire [1]. Basically it was a translation, with the addition of certain items regarding asthma and occupational history, which were requested by some Community experts [2]. Like its British counterpart, this original questionnaire was in two forms: one complete and one abridged.

In 1967, the original document was revised at the request of German experts. It was then extended by the introduction of a number of supplementary examinations which also appear in a questionnaire published in the meantime by the Ministry of Labour and Social Affairs of the German Federal Republic [3, 4]. Indeed, it seemed essential that investigators studying these problems in different countries and population groups of the ECSC should use the same standard document so that their results could be compared‡‡.

Experience has shown that this extended document has not generally been used in its complete form. Most ECSC researchers have been content to use the abridged version of the 1962 questionnaire. Moreover, many British researchers in the Coal Industry have used a simplified document which was derived from the MRC Questionnaire. It contained only 19 questions on cough, phlegm, breathlessness, wheezing, the effects of the weather, smoking habits and previous chest complaints, supplemented by measurement of forced expiratory volume in one second (FEV1) [5].

Taking into account the practical experience with the 1962 and 1967 questionnaire and the lack of real standardization in this field in the current Community of Twelve, and considering a recent revision of the MRC Questionnaire [6] and a recent publication of an IAUT Questionnaire on bronchial symptoms, it was decided to simplify and standardize the 1967 ECSC Questionnaire, so that it can be used throughout the ECSC industries.

This new questionnaire is reproduced in the Appendix‡‡. Explanatory notes have also been produced. Both documents exist in different official languages of the ECSC of Twelve: Danish, Dutch, English, French, German, Greek, Italian, Portuguese and Spanish. Originals of these documents can be obtained on demand from the ECSC Division of Employment and Social Affairs in Luxembourg***.

One must stress that this questionnaire has not been designed to be used for all investigations in respiratory epidemiology. The purpose of the revision was to produce a document aimed at ECSC problems. It is intended to pinpoint groups characterized by the prevalence of particular symptoms and relate these to certain respiratory risks.

By comparison with the former documents the following points may be put forward:

1) In the documentary data, the 1967 questionnaire contained an item "Nationality". The reason for this was the high proportion of recent immigrants present at that time in the ECSC industries of Belgium, France and the Federal Republic of Germany. Some investigators advocated that the answers to the questions could be influenced by cultural factors. Others suspected that the prevalence of symptoms could be modified by some unidentified factors linked to the ethnic origin of these workers. There was a choice of 22 nationality codes.

However, the situation in these countries has changed since. The numbers of recent immigrants have fallen considerably and immigration is less diversified. In contrast, the entry of the United Kingdom into the Common Market has raised new problems because of the large numbers of Indian and Afro-Caribbean workers employed in UK Industries.

† Established by a working group consisting of the following members quoted in alphabetical order: Aresini G., Minette A., Sanna-Randaccio F., Seaton A., Smith U. and Teculescu D.
‡‡ Medisch Instituut St.-Barbara, B-3760 Lanaken. Chargé de cours à l'Université catholique de Louvain, B-1200 Brussels. Member of the ECSC Research Committee in Luxembourg.
* The working party consisted then of the following members quoted in alphabetical order: Bolt W., Brille D., Greve L.H., Minette A. and Santorelli E.
** The working group involved in this 1967 revision consisted of the following members quoted in alphabetical order: Brille D., Lende (van der) R., Minette A., Sanna-Randaccio F. and Smith U.
*** Any reproduction must state the origin of the document (Commission of the European Community).
Moreover, the concept of "Nationality" used in the questionnaire has appeared inadequate since, in many cases it failed to provide the desired information on the basic item concerned, namely the ethnic characteristics of the workers under study. In the new document, therefore, the concept of "Nationality" has been replaced by the concept of "Ethnic origin".

Seven codes have been provided, covering six fundamentally different types, with an additional code for those who do not fall into these categories: a) European type; b) Afro-Mediterranean type; c) Afro-Caribbean type; d) Middle Eastern type; e) Indo-Pakistani type; f) Far-Eastern type; g) any other type (with specification).

It must be pointed out that this categorization is not intended for detailed investigation of racial factors in respiratory health. If investigators wish to study such factors it would be necessary for them to devise their own coding system.

2) Regarding the symptoms of wheezing and tightness in the chest, both the original ECSC Questionnaire and the MRC Questionnaire contained more than three gradings for this symptom. These did not prove very useful. The 1967 ECSC Questionnaire made it possible to distinguish the test subjects who had never experienced wheeze from those who had, subdividing this latter category into cases where the troubles were either occasional or practically constant. For the present revision the members of the working party unanimously agreed that it is only necessary to distinguish between test subjects who have never experienced wheezes when they breathe, and those who have. Two questions make this distinction possible.

3) In 1967 three questions were introduced on asthma, in view of the prevalence of disorders of this type in the Coal and Steel Industries. It was thought necessary to be able, as far as possible, to distinguish between subjects with asthma and subjects with bronchitis caused by exposure to dust and/or other irritants.

However, there were discussions on the suitability of the word "asthma", since there is no generally accepted definition of the term. For the present version it was finally decided not to use this term in the questions but to focus attention on the description of the attacks of shortness of breath and on the length of the past history in this regard. The members of the working group also agreed that it is useful to put a confirmatory question focusing on previous medical diagnosis and one on the family history in this respect (see Appendix questions 22 and 24).

4) The section on Previous Chest Disease has also been modified. The questions are so designed as to provide additional information on the test subject's allergic history and on eventual sinus trouble, and to enable the data collected on cough and sputum to be weighted.

5) In an appropriate place, after the questions on medical history and before the questions on smoking and occupational history, the correct order of which must be strictly respected, space has been provided for additional questions, so that the eventual personal objectives can be met, in particular the study of various aetiological factors such as the existence of allergies in the test subject or in his family, or any other matters of special interest to the investigator.

6) All members of the working party also agreed that it was necessary to give more emphasis to recent acute disorders than had been the case in previous questionnaires. Therefore, provision has been made for questioners to record any drugs, which respondents were taking, which could have a bearing on their replies on chronic conditions.

7) Most of the working party were also dissatisfied with the previous coding arrangement for tobacco smoking. This section has therefore been completely revised. Referring to questions 28-43 (see Appendix), ten questions (28-37) will permit separation of those who have never smoked cigarettes from those who have. Moreover, it will be possible to classify reasonably the present and/or past habits from a quantitative point of view. One question (37) on the brand smoked is intended to allow more precise quantification. Negative answers to questions 28, 33, 38 and 40 combined with a yes-answer to question 43 will permit identification of pure passive smokers: in question 43, the word "regularly" means "daily during at least the five days of the working week". Negative answers to questions 28-37 and a yes-answer to question 38 would characterize the light smokers.

8) The recording of the occupational history has been simplified. The former versions contained a large number of closed questions on this subject followed by a summarizing table entitled "Occupational and residential history". In the light of experience, it was decided to retain only this table. It is to be completed at the end of an open discussion intended to establish a chronological record of the subject's occupational and residential history since leaving school. Moreover, the table has been slightly modified in order to provide more information on previous jobs and successive places of residence.

9) The relevance and usefulness of the extensive section in the 1967 questionnaire devoted to physical examination was disputed by all members of the working party. However, most of the physicians consulted thought that the possibility should be left open for auscultatory data, since repeated findings of auscultatory abnormalities in a subject monitored longitudinally could be significant for occupational health purposes. However, only obvious abnormalities should be recorded and it needs to be borne in mind that data collected on this point cannot be compared internationally, on account of the large inter-observer variability existing in this field.

10) The sections "X-ray examination of the chest" and "Lung function tests" have been greatly simplified in
comparison with the former version. A chest X-ray is obligatory in subjects exposed to dust. It must be performed, read and coded in accordance with the 1980 ILO standards. As regards lung function it was decided that only vital capacity (VC), forced vital capacity (FVC) and PEFR, supplemented by measurement of peak flow rate (PFR), and maximal expiratory flow rates $M_{FE}_{25,75}$, $M_{FE}_{50,75}$ and $M_{FE}_{25,75}$ of FVC should be made obligatory. The values obtained must be expressed in accordance with the rules laid down in this field by the European Working Party on standardization of lung function tests.

The members of the working party feel that the present version of the ECSC Questionnaire answers most of the criticisms made to the former versions. However, there remain points of dispute in the document. Identifying the asthmatic patterns remains a difficult challenge in epidemiology. The majority of the members of the group felt that question 22 on previous medical diagnosis could be helpful in this regard. Question 25 on family history, as well as question 25 a/b, should also help evaluate an hypothesis of underlying allergy.

Similarly, any quantification code of tobacco use may raise criticisms. But the present solutions undoubtedly represent an advance with respect to the former ones. The introduction of an item on the brand smoked responds to the modern preoccupation in this field. As far as passive smoking is concerned an estimation will be possible.

On the other hand, the section “Ethnic origin”, although rather crude, combined with the response to the preliminary question on page 2, seems to afford a reasonable solution for those who feel that cultural factors may intervene by systematically biasing some of the results.

The changes made in the sections “Occupational and residential history” should make the recording of the basic data in this regard much simpler. One may reasonably expect that they will also make the results more accurate.

The recording of the respiratory drugs presently used should also help in assessing the answers on chronic symptoms. Moreover, the compulsory use of the ILO X-ray classification will improve the reliability of studies referring to standardized exposure to dust. The use of a small number of discriminating and well-standardized function tests of obstruction will favour a more critical evaluation of the bearing of the complaints upon the subject’s health.

Finally, it must be stressed that the fundamental questions on cough, phlegm and breathlessness remain basically unchanged. Only minor changes of wording have been made in these sections. They have consisted in dropping some comments which have proved to be useless, and in slightly adapting some questions with a view to facilitating their comprehension by the test subjects. Actually, some authors have advocated that changes in the wording of the questions may significantly influence the results [8]. In fact, the changes brought about here are smaller than those analysed by these investigators. On the other hand, they are no larger than the differences between the old MRC Questionnaire and its 1986 version, and those existing between the old MRC document and the ATS Questionnaire. Actually, it has been shown that such small differences do not statistically modify the results [9-11]. We must add that the present simplified ECSC version has been tested in various small groups. The changes brought about did not appear to be of any consequence for the comparability with the past.

Taking all this into account, the ECSC Research Committee and its working party “Epidemiological Investigations” decided to make the use of this document compulsory for their research, beginning from the next 5-year research programme. The relevance of the changes brought about could then be critically evaluated, after having completed this programme.

References


IAU T Bronchial Symptoms Questionnaire, 1986.


CONFIDENTIAL

QUESTIONNAIRE OF THE EUROPEAN COMMUNITY FOR COAL AND STEEL ON RESPIRATORY SYMPTOMS*
(1987-Updating of the 1962 and 1967 questionnaires for studying chronic bronchitis and emphysema)

Place of examination .................................................................
Identification of the survey (Nr)

Stamp

Subject no

Examiner

Surname

Date of examination
day  month  year

Given names

Sex
(0=male, 1=female)

Date of birth
day  month  year

Country and place of birth

Address

Ethnic origin

Other information:

* In order to ensure reproducibility of the findings obtained by this questionnaire, it is essential to stick strictly to the instructions in the associated booklet.
For questions on symptoms, use the exact wording of each question; if in doubt, note "no". It is suggested that the reply is indicated in the appropriate box by 0 for no and 1 for yes.
**Preamble:** I am going to ask you some questions, mainly about your chest. Of course, all the information you give me will be treated confidentially. I will ask you to reply as far as possible simply "yes" or "no". If you do not understand a question, please tell me.

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**Preliminary question:**

Were you brought up speaking the language used for this questionnaire?

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<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>1. Do you usually cough when you get up?</td>
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<tr>
<td>Count cough with the first cigarette or on going out of your house.</td>
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<tr>
<td>Do not count an occasional cough.</td>
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<tr>
<td>2. Do you usually cough during the day or during the night?</td>
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<tr>
<td>Do not count occasional cough.</td>
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<tr>
<td>If &quot;no&quot; to 1 and 2, proceed to question 5</td>
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<tr>
<td>3. Do you cough like this on most days or nights for 3 months each year</td>
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<tr>
<td>4. How old were you when you started to cough like this? (in years)</td>
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**II. SPUTUM**

5. Do you usually cough up phlegm when you get up?
   Count phlegm with the first cigarette or going out of your house.
   Do not count mucus from the throat.
6. Do you usually cough up phlegm during the day or during the night? Do not count mucus from the throat.

   **If “no” to 5 and 6, proceed to question 9**

7. Do you cough up phlegm like this most days or nights for 3 months each year?

8. How old were you when you began to cough up phlegm like this? (in years)

9. Over the last 3 years have your normal activities been interrupted by (increased*) cough and phlegm for at least a three-week period?

**III. BREATHELESSNESS**

(These questions apply to the subject's usual condition)

10. Does the subject have difficulty walking because of a condition other than due to heart or lung disease?

11. Do you get breathless going up one flight of stairs at your normal pace?

   **If “no”, proceed to question 17**

12. Do you get breathless when you walk with other people of your own age on the flat at a normal pace?

   **If “no”, proceed to question 15**

13. Do you have to stop for breath when you walk at your own pace on the flat?

   **If “no”, proceed to question 15**

14. Do you get breathless when dressing or undressing?

*For those who regularly cough and produce sputum
15. How old were you when you noticed that your breathing was not normal? (in years)

16. How old were you when you first noticed that you were as short of breath as you are now? (in years)

IV. WHEEZES AND TIGHTNESS IN THE CHEST

17. Have you ever had wheezing or whistling in your chest?

18. Have you ever woken up with a feeling of tightness in your chest first thing in the morning?

V. ATTACKS OF ASTHMA*

19. Have you ever had an attack of shortness of breath that came on during the day when you were not doing anything strenuous?

20. Have you ever had an attack of shortness of breath that came on after you stopped exercising?

21. Have you ever been woken at night by an attack of shortness of breath?

22. Has a doctor ever told you that you have asthma?

If "no" to all the questions 19 to 22, proceed to question 25

23. How old were you when you had the first attack? (in years)

24. How old were you when you had the last attack? (in years)

25. Are any of your relatives known to have asthma?*

*See instructions
VI. PREVIOUS AIRWAYS AND HEART ILLNESSES

26. Have you ever had:

   a. hay fever?

   b. sinus trouble?

   c. any heart condition?

   d. any lung condition?

   e. any chest infection in the last 2 months?

   f. any other chest illness, injury or operation on your chest?

SPACE FOR EXTRA QUESTIONS

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

VII. INHALERS, SUPPOSITORY, SWALLOWED OR INJECTED MEDICINES

27. Are you taking any treatment to help your breathing?

If yes, give its name

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
VIII. CIGARETTE SMOKING

28. Do you smoke cigarettes?

If "no" proceed to question 33

29. How old were you when you started?
(in years)

30. How many cigarettes do you smoke each day?

31. How many years have you smoked this many?

32. Before that, how many cigarettes did you smoke on average each day?

Now proceed to question 37

33. If you do not smoke cigarettes now, did you smoke previously?

If "no" to 33, proceed to question 38

34. For how many years did you smoke cigarettes?

35. How many cigarettes did you smoke on average each day?

36. How old were you when you stopped?
(in years)

37. What is (was) the main brand you smoke(d)?

38. Do you smoke a pipe, cigars or cigarillos?

If "no" to 38, proceed to question 40
39. How old were you when you started? 
   (in years)

40. Did you smoke a pipe, cigars or cigarillos previously?

   If "no" to 40, proceed to question 43

41. How old were you when you started? 
   (in years)

42. How old were you when you stopped? 
   (in years)

43. Do you consider that you have ever been regularly* exposed to smoke of family members or colleagues?

* see notes page 11
OCCUPATIONAL AND RESIDENTIAL HISTORY

<table>
<thead>
<tr>
<th>Age</th>
<th>Economic activity</th>
<th>Name of employer</th>
<th>Main site or work</th>
<th>Position in organization</th>
<th>Place of residence</th>
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Thank-you.
That is all I have to ask you.
Thank you very much for your assistance.
EXAMINATION FINDINGS

I. CLINICAL FINDINGS

Height in cm

Weight in kg, half dressed

Pulse rate (lying)

- Breath sounds
  (0=none, 1=noisy inspiration,
   2=prolonged expiration, 3=combination
   of 1 and 2, 4=weak sounds)

- Added sounds
  (0=none, 1=wheezing, 2=others,
   3=combination of 1 and 2)

II. OTHER INVESTIGATIONS

A. X-ray
   A PA-film is generally recommended. In workers exposed to dust it would be taken according to the
   standards of ILO 1980.

B. Lung function tests
   Spirometry, in sitting position with mouth piece (BTPS values)
   Apparatus (maker) ..............................................................
   Technician .................................................................

   a. Vital capacity (l)
      - slow VC (l)

   - forced VC (l)
b. FEV₁ (l)

c. FEV₁/slow VC (%)

. Peak Flow Rate (l·s⁻¹)

. Peak Flow Rate (l·min⁻¹)

. MEF₂⁵₋₇⁵ (l·s⁻¹)

. MEF₅₀₋₇₅ (l·s⁻¹)

. MEF₂₅₋₅₀ (l·s⁻¹)

Other lung function tests, at the physician's wish

Please record - if the subject has smoked during the two hours preceding the tests

- if the subject has taken any treatment to help his breathing in the four hours preceding the test. If yes, record the name(s)