



THE DEVELOPMENT OF A SELF-ADMINISTERED QUESTIONNAIRE TO ASSESS EXPOSURES TO HAND-TRANSMITTED AND WHOLE-BODY VIBRATION AND THEIR HEALTH EFFECTS

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A large British survey is being conducted to identify sources of occupational exposure to hand-transmitted and whole-body vibration, and to estimate the approximate extent of such exposures and their health effects. The principal information on exposures and morbidity will be derived from responses to a postal questionnaire specially developed by the Medical Research Council and the Institute of Sound and Vibration Research, Southampton University. In this paper some of the underlying considerations are described and the iterative process of consultation, refinement and field testing employed in the questionnaire's development. The questionnaire is fully documented in an accompanying appendix.

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1. INTRODUCTION

The last British survey of occupational exposure to vibration, which was undertaken more than a decade ago, concerned exposures to hand-transmitted vibration (HTV). Selected visits were made to workplaces registered with the Health and Safety Executive (HSE), and exposure histories of workers were obtained by proxy, by questioning their managers. No attempt was made at the time to measure workplace exposures directly, or to obtain information on health complaints. However, it was estimated that more than 400 000 workers were regularly exposed to the potentially injurious effects of HTV [1].

No comparable national survey has ever been conducted on occupational exposures to whole-body vibration (WBV) in Britain, but one such study is now underway. The Medical Research Council (MRC) and Institute of Sound and Vibration Research (ISVR), Southampton University are undertaking a further investigation on behalf of HSE, aimed at obtaining a contemporary estimate of the size and health impact of occupational exposures to vibration, including WBV as well as HTV. The study's principal aims are: to estimate the number of workers in Great Britain employed in processes that entail significant exposure to HTV and WBV; to identify the occupations and the industrial sectors where the exposures arise; to estimate the approximate extent of these exposures in occupations and industries where exposure is likely to be significant; and to identify the tools, machines and vehicles that give rise to exposure. One important facet of the survey

involves identifying unsuspected pockets of exposure; another involves estimating the prevalence and prevalence rate ratios for symptoms attributable to HTV and WBV, by occupation and industry, thus providing an insight into those exposures most likely to matter in terms of health.

The MRC–ISVR study will collect information on exposure to vibration and symptom prevalences from the community. A postal questionnaire is being mailed to 22 000 working-aged adults selected from the registration lists of family doctors in England, Wales and Scotland. Subjects will be classified by occupation and industry, and prevalence estimates for the national population will be derived from national census information on occupational frequencies [2].

The study questionnaire was developed over a nine month period by an iterative process of consultation, refinement and field testing. The process, the issues that were raised, and the end result are documented in this paper.

2. OBJECTIVE

The objective was to develop a postal questionnaire suitable to assess community exposures to HTV and WBV and their associated health effects.

3. METHODS

The questionnaire was developed within a multidisciplinary team of two occupational epidemiologists, an occupational hygienist, and two vibration specialists. The broad components of the questionnaire were first identified, and were closely dictated by the aims of the study. They included occupational history, exposures to HTV and WBV (sources and extent), relevant health outcomes, and potential confounders of associations with these outcomes. More particularly, a deliberate decision was taken to focus on contemporary exposures (particularly those within the week preceding completion of the questionnaire), rather than lifetime work histories; and to include exposures arising from second jobs and leisure-time pursuits. The principal health outcomes selected for investigation were: Raynaud's phenomenon, sensorineural complaints of the upper limbs, musculoskeletal complaints of the upper limbs, low back pain, noise-induced hearing loss and tinnitus.

A panel of health questions was selected from existing models used in other settings. The Nordic questionnaire [3] is a validated, repeatable questionnaire, widely used in surveys of musculoskeletal complaint; while questions on low back pain [4], finger blanching [5] and hearing impairment [6] have all been used and validated in earlier MRC community surveys. These questions permit an assessment of the severity and frequency of symptoms, and the extent to which they interfere with work and leisure. "Dummy" health outcome questions (pain reports at sites other than those of principal interest, such as hip and knee pain in subjects with HTV exposure) were also included to help assess potential reporting biases; and questions about headaches, tiredness, low spirits and feelings of stress, to ascertain possible psychological risk factors for complaint.

No widely accepted or validated questionnaire could be found for assessing exposure to vibration, and most effort was expended in this area. A preliminary list of exposure sources was drawn up, based on tools identified by CEN/TC 231/WG2 as requiring type testing, and a literature review by the Institute of Sound and Vibration Research. The researchers then invited comment on notable omissions and errors, and received responses from 10 HSE specialist and principal inspectors, 12 members of a working group on HTV at the Royal College of Physicians Faculty of Occupational Medicine, UK [7], and 12

trades unions and trade associations representing relevant occupational groups. All sources of information were collated and used to identify a list of named tools and vehicles that might be considered for inclusion.

These processes identified 151 descriptions of sources of HTV and 64 descriptions of sources of WBV (see Table 1). Overlapping and synonymous descriptors were aggregated as far as possible to abbreviate the list. (Thus, for example, it was considered justifiable to replace the four items “riveting hammer”, “riveting bolster”, “riveting tool” and “bucking bar” with one item called “riveting hammer or dolly”.) However, the shortened list was still considered too long for all of its items to be included in a postal questionnaire. The final selection, of 38 HTV categories and 26 WBV categories, was made qualitatively from the short list, consideration having been given to the frequency with which tools and machines were identified by the consultees and sources, the degree of overlap between descriptors, and existing ideas about the frequency of use in the community. (The items that were selected are marked in the final column of Table 1).

The process of assembling the exposure list highlighted an important area of difficulty: a comprehensive list of exposure sources, though desirable, was incompatible with the requirements (comprehensibility and brevity) of a self-completed postal questionnaire. The variety of tools, vehicles and machines was too wide; and this difficulty was compounded by the variety of uses to which apparently similar tools, vehicles and machines were put in different occupations and industries, and the thousands of synonyms by which exposure sources were described and recognized by workers. Whichever the choices made, it seemed unlikely that any list would cover all possible patterns of response. So, to cover omissions and failures of recognition, an open section was provided in which respondents were permitted to record other sources of exposure in their own words.

The precise wording and ordering of exposure questions underwent several revisions prior to field testing. The panel was concerned that workers' *perceptions* of relevant exposure thresholds and intervals might be inappropriate. For example, the magnitude of vibration recognized as “vibrating” or “shaking” the hands or body could be higher than the biologically relevant threshold; workers might have difficulty distinguishing relevant exposure windows, such as hand-tool contact time or time with a vehicle's engine running, from the total time taken to complete a task; and could fail to recognize circumstances where the principal exposure arose through contact with an article being worked, rather than from direct contact with the machine that was the source of vibration. These concerns were addressed in various ways. In the closed section on exposure sources, the element of judgement on relevant exposures was eliminated by enquiring not about vibration, shaking or jolting, but about “use” of specified tools or machines (HTV), or “driving/riding/standing” on specified machines, vehicles or platforms (WBV) in the previous week. Where most confusion was anticipated concerning threshold or route of exposure, the tools or WBV environments were deliberately placed in this section. Finally, in all questions concerning exposure durations, it was emphasised that the time interval of interest was the time “with the tool switched on and held” (HTV), or the time that “the engine was running or power on” (WBV).

The draft questionnaire was evaluated for a sample of workers from occupations and industries with likely exposure to a variety of sources of HTV and WBV. Responses were evaluated to ascertain their completeness, and to identify the questions that most often led to default. Interviews were conducted with a small subset of respondents to determine the time taken to complete the questionnaire and to test understanding of the questions. Further discussions and consultation with a third vibration specialist led to some refinements and two further rounds of field testing, consultation and amendment, as described below.

TABLE I
Tools, vehicles and machines identified by a literature review and consultation process for possible inclusion in the postal questionnaire

| Equipment | HSE Book | | CEN | | CEN | | ISSA brochure (5) | Handbook of Human Vibration (6) | 1st draft of Questionnaire (8) | Consultation responses (9) | Final draft Questionnaire (10) |
|---|-------------|----------------|---------------|---------------|-----|---|-------------------|---------------------------------|--------------------------------|----------------------------|--------------------------------|
| | HS(G)88 (1) | ISO 8662.X (2) | TC231 WG2 (3) | TC231 WG2 (4) | | | | | | | |
| A. Hand-transmitted vibration | | | | | | | | | | | |
| Percussive metal-working tools | | | | | | | | | | | |
| Riveting hammer | ● | — | ● | — | ● | — | — | ● | — | — | — |
| Riveting bolster (dolly) | — | — | ● | — | — | — | — | ● | — | — | — |
| Riveting tool | — | — | — | — | — | — | — | — | ● | — | — |
| Bucking bar | — | — | ● | — | — | — | — | — | — | — | — |
| Riveting hammer or dolly | — | — | — | — | — | — | — | — | — | — | ● |
| Caulking hammer | ● | — | ● | — | — | — | — | ● | — | — | ● |
| Caulking tool | — | — | — | — | — | — | — | — | — | — | — |
| Chipping hammer | — | ● | ● | — | — | — | — | ● | ● | — | ● |
| Pneumatic chiselling | — | — | — | — | — | — | — | — | — | — | — |
| Fetting tool | — | — | — | — | — | — | — | — | ● | — | — |
| Clinching and flanging tool | ● | — | ● | — | — | — | — | ● | ● | — | ● |
| Hammer swager | ● | — | — | — | — | — | — | — | — | — | — |
| Swaging tool | — | — | — | — | — | — | — | — | — | ● | — |
| Needle gun | — | — | ● | — | — | — | — | — | ● | — | — |
| Scaler | — | ● | ● | — | — | — | — | ● | ● | — | — |
| Descaling hammer | — | — | ● | — | — | — | — | — | — | — | — |
| Sheet metal hammering | — | — | — | — | — | — | — | — | — | — | — |
| Drilling | — | — | — | — | — | — | — | — | — | — | — |
| Wire drawing | — | — | — | — | — | — | — | — | — | ● | — |
| Percussive tools used in stoneworking, quarrying, construction, etc. | | | | | | | | | | | |
| Percussive hammer | ● | ● | — | — | — | — | — | ● | — | ● | — |
| Hammer drill | — | ● | ● | — | — | — | — | ● | — | — | ● |
| Impact drill | — | ● | — | — | — | — | — | ● | — | — | — |
| Vibratory compactor | ● | — | — | — | — | — | — | — | — | — | — |
| Concrete breaker | ● | — | ● | — | — | — | — | — | — | — | — |
| Pneumatic breaker | — | ● | — | — | — | — | — | — | — | — | — |
| Hydraulic breaker | — | — | — | — | — | — | — | — | — | — | — |
| Jackhammer | — | — | — | — | — | — | — | — | — | — | — |
| Road drill | — | — | — | — | — | — | — | — | ● | — | — |

TABLE 1 (Continued)

| Equipment | HSE Book | | CEN | | ISSA brochure (5) | Handbook of Human Vibration (6) | 1st draft of Questionnaire (8) | Consultation responses (9) | Final draft Questionnaire (10) |
|---------------------------------|-------------|----------------|---------------|---------------|-------------------|---------------------------------|--------------------------------|----------------------------|--------------------------------|
| | HS(G)88 (1) | ISO 8662-X (2) | TC231 WG2 (3) | TC231 WG2 (4) | | | | | |
| Rotary de-burring tool | ● | — | — | — | — | ● | ● | ● | ● |
| Engraving pen | — | — | — | ● | — | — | — | — | ● |
| Die-grinder | — | ● | ● | — | — | — | — | — | — |
| Stone cutter | — | — | — | — | — | ● | — | — | — |
| File | — | ● | ● | — | — | — | — | — | — |
| Reamer | — | — | — | — | — | — | ● | ● | — |
| Limisher | — | — | — | — | — | — | ● | ● | — |
| Fixed linisher | — | — | — | — | — | — | ● | ● | ● |
| Hand-held cutter | — | — | — | — | — | — | ● | ● | — |
| Glass engraving | — | — | — | — | — | — | ● | ● | — |
| Lathe-turning machine | — | — | — | — | — | — | ● | ● | — |
| Timber and wood machining tools | | | | | | | | | |
| Chain saw | ● | — | ● | — | ● | — | ● | — | ● |
| Non-A/V chain saw | — | — | — | — | — | ● | — | — | — |
| A/V chain saw | — | — | — | — | — | ● | ● | — | — |
| Brush cutter | ● | — | ● | — | — | — | — | — | — |
| Brush saw | ● | — | ● | — | ● | — | — | — | ● |
| Circular saw | ● | — | ● | — | — | ● | — | — | ● |
| Mower | — | — | — | — | — | — | — | — | — |
| Motor mower | — | — | — | — | — | — | — | ● | — |
| Hand-guided mower with shears | — | — | — | — | ● | — | — | — | — |
| Lawn mower | — | — | ● | — | — | — | — | ● | — |
| Hand-guided mower | — | — | — | — | — | — | — | — | — |
| Shears | ● | — | ● | — | — | ● | — | — | — |
| Hedge cutter (shears) | — | — | — | — | — | — | — | — | — |
| Hedge trimmer | — | — | ● | — | — | — | — | — | — |
| Hand-held hedge trimmer | — | — | ● | — | — | — | — | — | ● |
| Hardwood cutting machine | ● | — | — | — | — | — | — | — | — |
| Barking machine | ● | — | — | — | ● | — | — | — | ● |
| Stump grinder | — | — | ● | — | — | — | ● | — | ● |

| Equipment | ISSA brochure (5) | Handbook of Human Vibration (6) | HSE leaflet IND (G) 242L (7) | 1st draft of Questionnaire (8) | Consultation responses (9) | Final Questionnaire (10) |
|---|-------------------|---------------------------------|------------------------------|--------------------------------|----------------------------|--------------------------|
| Agricultural and earth-moving equipment | | | | | | |
| Tractor | ● | ● | ● | — | — | ● |
| Tractor and other agricultural and forestry machinery | — | — | — | ● | — | — |
| Earth-moving machinery | — | ● | ● | — | — | ● |
| Other earth-moving machinery—specify: | — | — | — | — | — | — |
| Grader | ● | ● | ● | — | — | ● |
| Road roller | ● | ● | — | — | — | ● |
| Roller | — | ● | ● | — | — | — |
| Off-road truck, dumper | ● | — | — | — | — | — |
| Dumper truck | — | ● | — | — | — | — |
| Dumper | — | — | ● | — | — | ● |
| Scraper | ● | ● | ● | — | — | ● |
| Loader | — | ● | ● | — | — | ● |
| Wheel loader | ● | — | — | — | — | — |
| Track-type loader | ● | — | — | — | — | — |
| Bulldozer | ● | — | — | — | — | — |
| Excavator | ● | ● | ● | — | — | ● |
| Sugar beet harvester | — | — | — | — | ● | — |
| Forage harvester | — | — | — | — | ● | — |
| Combine harvester | — | — | — | — | ● | — |
| Lawnmower | — | — | — | — | — | — |
| Mower (seated) | ● | — | — | — | — | — |
| Off-road forestry vehicle | — | ● | — | — | — | ● |
| Mine/quarry machine | — | ● | — | — | — | ● |
| Other off-road vehicle | — | — | — | — | — | — |
| Other off-road vehicle—specify: | — | — | ● | — | — | ● |
| Construction and quarrying vehicles and machinery | — | — | — | ● | — | — |

(Continued on next page)

| Equipment | ISSA brochure (5) | Handbook of Human Vibration (6) | HSE leaflet IND (G) 242L (7) | 1st draft of Questionnaire (8) | Consultation responses (9) | Final Questionnaire (10) |
|---|-------------------|---------------------------------|------------------------------|--------------------------------|----------------------------|--------------------------|
| Vehicles of other types | | | | | | |
| Forklift truck | ● | ● | ● | — | ● ● | ● — |
| Industrial truck, such as lift truck and straddle carrier | — | — | — | ● | ● | — |
| Road haulage vehicle | — | — | — | ● | — | — |
| Articulated truck | ● | ● | — | — | — | — |
| Truck | ● | ● | — | — | — | — |
| Lorry | — | — | ● | — | — | ● |
| Truck/Lorry/Van | — | — | — | — | — | — |
| Van | ● | — | — | — | — | ● |
| Car | — | ● | — | — | ● ● | ● ● |
| Taxi | — | — | — | — | — | — |
| Bus or coach | — | — | — | — | — | ● |
| Bus | — | — | — | — | — | — |
| Tram | — | ● | ● | — | — | — |
| Mobile crane | — | — | — | — | — | — |
| Bridge crane (on rails) | ● | ● | — | — | — | ● |
| Other crane | — | ● | — | — | ● | — |
| Container truck | — | — | — | — | — | — |
| Locomotive | ● | ● | — | — | ● | — |
| Rail vehicle (train/tram) | — | — | — | — | — | ● ● |
| Motorcycle | — | ● | — | — | ● ● | — |
| Airport baggage tug | — | — | — | — | — | — |
| Industrial machines | | | | | | |
| Rock crusher | ● | — | — | — | ● | ● |
| Concrete tile and pipe vibrating machinery | ● | — | — | — | — | — |
| Car body sheet press | ● | — | — | — | — | — |
| Concrete production machine | — | ● | — | — | — | ● |
| Concrete making machine | — | — | ● | — | — | — |
| Engine test facilities | — | ● | — | — | — | — |
| Large static compaction, | — | — | — | ● | — | — |

hammering, or punching machinery – e.g. hammer mill

| Military environments | |
|--|-----------------------------------|
| Tank | — — — — — ● — — — — — |
| Personnel carrier | — — — — — ● — — — — — |
| Armoured vehicle | — — — — — — ● — — — — — |
| Aircraft | |
| Helicopter | — — — — — ● — — — — — |
| Fixed wing | — — — — — ● — — — — — |
| Aeroplane | — — — — — — ● — — — — — |
| Other aircraft | — — — — — — — — — — — ● — — — — — |
| Sea craft | |
| High speed boats | — — — — — ● — — — — — |
| High speed boat or hydrofoil | — — — — — — ● — — — — — |
| High speed boat, hovercraft or hydrofoil | — — — — — — — — — — — ● — — — — — |
| Other | |
| Other machine or vehicle that causes vibration, frequent jolting or both (name of machine or vehicle and its use): | — — — — — — ● — — — — — |

HSE—Health and Safety Executive; ISO—International Organization for Standardization; CEN—European Committee for Standardization; ISSA—International Social Security Association.
 (1) From *Hand-Arm Vibration* [8]. (2) Tools currently planned to be covered by parts 2 to 17 of ISO 8662. (3) Tools for which there is a need for vibration type tests and specific clauses on vibration in tool safety standards according to CEN/TC 231/WG 2 (N99 March 1994). (4) Tools for which more information is sought on vibration emissions according to CEN/TC 231/WG 2 (N99 March 1994). (5) From *Vibration at Work* [9]. (6) From *Handbook of Human Vibration* [10]. (7) From HSE Guidance Leaflet *In the Driving Seat* [11]. (8) Tools, vehicles and machines in first draft of the questionnaire (June 1996). (9) Suggestions made by consultative parties (see text). (10) Tools, vehicles and machines selected to appear in the final questionnaire.

4. RESULTS

Altogether the questionnaire was tested in 116 workers (98 men and 18 women aged 20–60 years) from a variety of industries, including a foundry workshop (17 subjects), the subassembly department of a company manufacturing radiators and heating appliances (38 subjects), the works department of a hospital (10 subjects), the highways maintenance department of a local authority (22 subjects), and the fabrication and product development departments at a shipbuilder's yard (29 subjects). The departments were chosen to include workers known in the main to have exposure (83 respondents had been exposed to HTV in the previous week, and 40 to WBV), but also included a small group of white collar workers (ten) with no prior exposure history. Occupations represented in the sample included fettlers, die casters, moulders, furnacemen, machinists, assemblers and packers, electricians and engineers, carpenters, plumbers, fitters, turners, gardeners and groundsmen, road workers, metal fabricators, shipwrights, and heavy goods vehicle and lift truck drivers. A wide range of exposures were reported by pilot participants, encompassing 28 of the 38 tool families subsequently included in the final questionnaire, and 11 of the 26 exposure sources finally selected for the whole body section. Twelve workers were later interviewed to identify particular difficulties encountered in completing the questionnaire.

Fifty per cent of the questions remained unaltered throughout the test period; and a further 42% were changed in layout, wording or emphasis, but not in substance between the first and last rounds of testing.

However, several significant changes were made. The open section on sources of exposure was used by some 56% of respondents in the first round of piloting, so more space was allocated to it in revision, and respondents were asked to identify the relevant task, as an aid to interpretation of responses. The questions on exposure duration also underwent revision. Initially, banded estimates of weekly exposure times ("less than an hour per week", "1–4 hours per week", etc.) were employed, but it was discovered, when respondents were later interviewed, that several had confused daily with weekly time estimates. The approach was considered to have other undesirable properties—in particular it led to estimates in multiple tool users that could not readily be combined to produce an overall estimate of personal daily exposure (A_s), and involved making *a priori* assumptions about the most appropriate bandings. So, banded time estimates were replaced with a request to estimate weekly exposure times on a continuous scale (in "hours and/or minutes over the whole week"). Finally, the questions on duration and seasonal pattern of exposure were simplified, some of those on past exposure were removed, and the layout and directions of several sections of the questionnaire were strengthened.

These changes markedly enhanced the completeness of returns: in the first round of piloting the key questions (occupation, industry, exposure in the previous week and health outcomes) were completed in all particulars by only 40% of respondents, but this had improved to 88% in the final version, which is reproduced for information in the appendix that follows.

An occupational hygienist compared the exposure responses with his knowledge of the industries and their likely exposure sources, and considered them reasonable. However, a more formal evaluation of workers' ability to estimate weekly exposure times is planned, including direct observation and measurement in a sample of employees who complete the exposure section of the questionnaire.

5. CONCLUSIONS

The pilot sample was chosen to include a cross-section of workers considered qualitatively to be representative of those most likely to complete the exposure section of

the principal study. It included a high proportion of workers from manual occupations with recent occupational exposure to HTV and WBV, and highlighted a number of areas capable of improvement.

In some cases this meant foregoing items of information that were subsidiary to the study's principal aims. The design of a questionnaire suitable for self-completion by a large community sample inevitably involves some element of compromise. It proved impractical to offer a complete, comprehensible list of exposure sources, and the trade-off will be extra difficulty in data coding and interpretation of open responses. The complexity (and long-term recall requirements) of lifetime and seasonal exposure estimation were similarly eschewed, and weekly exposure estimates were selected in preference to more detailed information on daily exposure patterns. The choice of wording in key exposure questions represented a trade-off between precision and simplicity, but the balance was struck in favour of clarity and a much improved completion rate.

Workers' capacity to estimate their own exposures still requires more formal evaluation; while variations in pattern of exposure over time represents a remaining area of concern. It seems likely that short cycle variations and periods of atypical exposure will even out within a large sample, and do, in any case, contribute to the broad picture of national exposure, which is dynamic rather than static; but estimates in occupations with strong seasonal work patterns may give a misleading impression of the annual exposure picture. The questionnaire will be distributed in summer and winter mailings, permitting a cross-check of responses within occupations at different calendar periods, while the questions on representativeness of exposure (questions 15 and 19 in the appendix) permit biases to be detected, at least at a qualitative level.

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MRC

MEDICAL RESEARCH COUNCIL

**National Survey of Health
and Vibration**

The answers given on this form are confidential.

You do not need to write your name on the form.

Replies will be seen by MRC staff ONLY

YOURSELF

SECTION ONE ABOUT YOURSELF

1. Please fill in your date of birth

| | | | | | |
|-----|-------|------|--|--|--|
| | | | | | |
| day | month | year | | | |

and your sex

| | | | |
|------|--|--------|--|
| male | | female | |
|------|--|--------|--|

2. How tall are you? ____ feet ____ inches
or ____ cm

3. Are you right or left handed?

Right

Left

Able to use both hands equally

4. How would you best describe your racial origin?

European

India/Pakistan

Afro-caribbean

South-east Asia

Other _____

5. Have you ever smoked regularly (i.e. at least once a day for a month or longer)?

No

Yes

If yes, how old were you when you first smoked regularly?

| | |
|-------|--|
| | |
| years | |

And do you still smoke regularly?

No

Yes

If no, how old were you when you last smoked regularly?

| | |
|-------|--|
| | |
| years | |

6. Have you had a paid job during the past week?

No

Yes

If no, please go to Section Four on page 14

If yes, please continue.

MAIN JOB

SECTION TWO MAIN JOB

| | |
|---|---|
| 7. What was your main OCCUPATION during the past week? _____ | In what INDUSTRY did you carry out this occupation (e.g. farming, shipyard, car factory, shoe shop, hospital, insurance office)? _____ |
|---|---|

On what date did you start this job?

Date started

| | | | | | |
|--|--|-------|--|--|------|
| | | month | | | year |
|--|--|-------|--|--|------|

8. Are you self employed in this job? No Yes
9. Does an **average working day** in the job involve any of the following?
- Working outdoors for more than two hours (i.e. not in a building or enclosed vehicle) No Yes
 - Working in a refrigerated building or room (e.g. a coldstore) No Yes
 - Lifting or moving weights of 20 lbs (10 kg) or more by hand No Yes
 - Lifting or moving weights of 56 lbs (25 kg) or more by hand No Yes
 - Digging or shovelling No Yes
 - Working with your hands above shoulder height for more than one hour No Yes
 - Needing to shout most of the time to be heard by your colleagues No Yes
 - Use of a computer keyboard or typewriter for more than four hours No Yes
 - Work on a night shift. No Yes
10. **Were you at work in the past week?** No Yes
- If no, please go to Section Three on page 12. If yes, please continue.*

| MAIN JOB | | PAST WEEK | |
|--|--------------------------|-----------------------------|--------------------------|
| 11. During the <u>past week</u>, did you use any of the following powered tools or machines in the job? (tick as many boxes as apply) | | | |
| Tool or machine | | Tool or machine | |
| Floor polisher | <input type="checkbox"/> | Stone-working hammer | <input type="checkbox"/> |
| Nut runner | <input type="checkbox"/> | Rotary hammer swager | <input type="checkbox"/> |
| Impact wrench | <input type="checkbox"/> | Rotary burring tool | <input type="checkbox"/> |
| Impact screwdriver | <input type="checkbox"/> | Engraving pen | <input type="checkbox"/> |
| Jig saw | <input type="checkbox"/> | Hammer drill | <input type="checkbox"/> |
| Circular saw | <input type="checkbox"/> | Riveting hammer or dolly | <input type="checkbox"/> |
| Chain saw | <input type="checkbox"/> | Chipping hammer | <input type="checkbox"/> |
| Hand-guided mower | <input type="checkbox"/> | Scaling hammer | <input type="checkbox"/> |
| Hand-held hedge trimmer | <input type="checkbox"/> | Caulking hammer | <input type="checkbox"/> |
| Brush saw | <input type="checkbox"/> | Rammer | <input type="checkbox"/> |
| Barking machine | <input type="checkbox"/> | Needle gun | <input type="checkbox"/> |
| Stump grinder | <input type="checkbox"/> | Nibbling machine | <input type="checkbox"/> |
| Concrete breaker (road breaker) | <input type="checkbox"/> | Clinching and flanging tool | <input type="checkbox"/> |
| Rock Drill | <input type="checkbox"/> | Concrete vibrothickener | <input type="checkbox"/> |
| Tamper | <input type="checkbox"/> | Nailing or stapling gun | <input type="checkbox"/> |
| Scabblor | <input type="checkbox"/> | Pedestal grinder | <input type="checkbox"/> |

MAIN JOB

PAST WEEK

Continued

Pedestal finisher

Hand-held sander

Hand-held portable grinder

Shoe pounding-up machine

Hand-held polisher

Vibratory roller

Or None of these (If none, go to question 13, page 6)

12. For those tools/machines that you have ticked in question 11, we would like to know the total number of hours (or minutes) you worked with them over the whole week.

Please only count the time that the tool was SWITCHED ON AND HELD. If you cannot give the exact time, please give your best estimate.

| Write the name of the tool/machine below | Write the total time you used it over the whole week in the boxes below | | | | |
|--|--|----------------------|----------------------|-------|------|
| 1. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |
| 2. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |
| 3. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |
| 4. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |
| 5. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |
| 6. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins |
| <input type="text"/> | <input type="text"/> | | | | |
| hours | mins | | | | |

MAIN JOB

PAST WEEK

13. During the past week did you use any other powered tools or machines in the job that vibrated your hands?

No
(go to question 14)

Yes
(continue below)

If yes, we would like to know which tools or machines, and the total number of hours (or minutes) you worked with them over the whole week.

Please only count the time that the tool was SWITCHED ON AND HELD. If you cannot give t exact time please give your best estimate.

| Write the name of the tool/machine below | Write the total time you used it over the whole week | Describe the job that the tool/machine was used to do |
|--|---|---|
| 1. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 2. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 3. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 4. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 5. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 6. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 7. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |
| 8. _____ | <input type="text"/> <input type="text"/> hours mins | _____ |

MAIN JOB

PAST WEEK

14. In your main job, do you ever use other powered vibrating tools that you have not already told us about (e.g. tools used only occasionally or at certain times of the year)?

No

Yes

If yes, which tools?

1 _____

4 _____

2 _____

5 _____

3 _____

6 _____

15. Was your use of powered vibrating tools/machines in the past week fairly typical of the current job?

Not applicable (don't use them)

No

Yes

If no, in what way was it unusual?

| MAIN JOB | | PAST WEEK |
|--|--------------------------|---|
| 16. During the past week did you drive, ride or stand on any of the following machines or vehicles in the job? <i>(tick as many boxes as apply)</i> | | |
| Vehicle or machine | | Vehicle or machine |
| Car (other than going to and from work) | <input type="checkbox"/> | Dumper <input type="checkbox"/> |
| Van (other than going to and from work) | <input type="checkbox"/> | Other earth-moving machinery (specify) <input type="checkbox"/> |
| Bus or coach (other than going to and from work) | <input type="checkbox"/> | Road Roller <input type="checkbox"/> |
| Train (other than going to and from work) | <input type="checkbox"/> | Mower (seated) <input type="checkbox"/> |
| Motor cycle (other than going to and from work) | <input type="checkbox"/> | Off road forestry vehicle <input type="checkbox"/> |
| Rock crusher | <input type="checkbox"/> | Armoured vehicle <input type="checkbox"/> |
| Concrete production machinery | <input type="checkbox"/> | Other off-road vehicle (specify) <input type="checkbox"/> |
| Tractor | <input type="checkbox"/> | Lift truck/Forklift truck <input type="checkbox"/> |
| Loader | <input type="checkbox"/> | Mobile crane <input type="checkbox"/> |
| Excavator | <input type="checkbox"/> | Lorry <input type="checkbox"/> |
| Bulldozer | <input type="checkbox"/> | Helicopter <input type="checkbox"/> |
| Grader | <input type="checkbox"/> | Other aircraft <input type="checkbox"/> |
| Scraper | <input type="checkbox"/> | Highspeedboat, hovercraft or hydrofoil <input type="checkbox"/> |
| Or None of these | <input type="checkbox"/> | <i>(if none, go to question 18, page 10)</i> |

MAIN JOB

PAST WEEK

17. For those machines or vehicles that you have ticked in question 16, we would like to know the total number of hours (or minutes) that you drove/rode/stood on them over the whole week.

Please only count the time that the ENGINE WAS RUNNING OR POWER ON.
If you cannot give the exact time, please give your best estimate.

| Write the name of the machine/vehicle below | Write the total time you drove/rode/stood on it over the whole week in the boxes below | | | | | | | | | | |
|---|---|--|------|--|--|--|-------|--|--|------|--|
| 1. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 2. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |
| 3. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 4. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 5. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |
| 6. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |
| 7. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 8. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="width: 10px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |

MAIN JOB

PAST WEEK

18. During the past week in your job did you drive/ride/sit or stand on any other vehicles or machines that caused vibration or frequent jolting or both?

No
(go to question 19)

Yes

If yes, we would like to know which machines/vehicles, and how long in total you drove/rode/stood on them over the whole week.

Please only count the time that the ENGINE WAS RUNNING OR POWER ON. If you cannot give the exact time, please give your best estimate.

| Write the name of the vehicle/machine | Write the total time over the whole week | Describe the job the vehicle/machine was used to do | | | | |
|---------------------------------------|--|---|----------------------|-------|------|-------|
| 1. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |
| 2. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |
| 3. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |
| 4. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |
| 5. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |
| 6. _____ | <table border="0"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>hours</td> <td>mins</td> </tr> </table> | <input type="text"/> | <input type="text"/> | hours | mins | _____ |
| <input type="text"/> | <input type="text"/> | | | | | |
| hours | mins | | | | | |

MAIN JOB

PAST WEEK

19. Was the time you spent over the past week riding/driving/standing on such machines typical of the job?

Not applicable No Yes
 (Don't ride or drive vehicle or machine)

If no, in what way was it unusual?

20. In your main job do you ever ride on/drive/stand on vehicles or machines (other than those you have already described) that cause vibration or frequent jolting that you can feel (e.g. vehicles only used occasionally or at certain times of the year)?

No Yes

If yes, which vehicles/machines?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

OTHER JOBS

PAST WEEK

SECTION THREE OTHER JOBS HELD

21. Did you work at any other job during the past week?

No Yes *If no, please move on to Section Four on page 14.**If yes, please continue*

22. What was the other job?

Occupation _____ Industry _____

Are you self-employed in this job?

No Yes Does an **average working day** in the job involve any of the following?

Working outdoors for more than two hours (i.e. not in a building or enclosed vehicle)

No Yes

Working in a refrigerated building or room (e.g. a coldstore)

No Yes

Lifting or moving weights of 20 lbs (10 kg) or more by hand

No Yes

Lifting or moving weights of 56 lbs (25 kg) or more by hand

No Yes

Digging or shovelling

No Yes

Working with your hands above shoulder height for more than one hour

No Yes

Use of a computer keyboard or typewriter for more than four hours

No Yes

Needing to shout most of the time to be heard by your colleagues?

No Yes

Work on a night shift

No Yes

OTHER JOBS

PAST WEEK

25. During the past week did the job involve work with a powered tool or machine that made your hands vibrate?

No

Yes

If yes, we would like to know which tools and for how long (in hours or minutes) you worked with them over the whole week. Please only count the time that the tool was SWITCHED ON AND HELD.

| Write the name of the tool/machine below | Write the total time you used it over the whole week in the boxes below | | | | | | | | | | |
|--|---|--|------|--|--|--|-------|--|--|------|--|
| 1. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 2. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 3. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 4. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |

26. During the past week did the job involve driving/riding/standing on a vehicle/machine (such as those listed in question 16 page 8)?

No

Yes

If yes, We would like to know which machines or vehicles and for how long (in hours or minutes) you drove /rode /stood on them over the whole week. Please count only the time with THE ENGINE RUNNING OR POWER ON.

| Write the name of the vehicle/machine below | Write the total time you drove/rode/stood on it over the whole week in the boxes below | | | | | | | | | | |
|---|---|--|------|--|--|--|-------|--|--|------|--|
| 1. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 2. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
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| hours | | | mins | | | | | | | | |
| 3. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |
| 4. _____ | <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> <td style="border: 1px solid black; width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2">hours</td> <td></td> <td colspan="2">mins</td> </tr> </table> | | | | | | hours | | | mins | |
| | | | | | | | | | | | |
| hours | | | mins | | | | | | | | |

PAST JOBS

EXPOSURES

SECTION FOUR EARLIER JOBS AND EXPOSURES

27. Other than in the work you have already told us about, have you EVER had a paid job which involved working with a powered tool or machine that made your hands vibrate for more than an hour a week?

No
(go to question 29)

Yes
(continue)

Approximately how old were you when you first did this work?

years

28. What were the tools/machines you used at that time?
(Question 11 page 4 lists some possible tools)

1. _____

3. _____

2. _____

4. _____

And what was the job and industry?

Occupation

Industry (e.g. farming, shipyard, car factory etc.)

29. In your spare time (i.e. outside work), have you ever *regularly* used a tool or machine that made your hands vibrate, for more than an hour per week?

No
(go to question 30)

Yes
(continue)

Approximately how old were you when you first did this?

years

And what were the tools or machines? (Question 11 page 4 lists some possible tools)

1. _____

3. _____

2. _____

4. _____

PAST JOBS

HEALTH

30. In your spare time (i.e outside work and going to and from work), please estimate for the past week the **total number** of hours (or minutes) you spent driving or riding in the vehicles listed below. If you cannot give the exact time please give your best estimate.

| | | | | | |
|--------------|----------------------|----------------------|------------|----------------------|----------------------|
| | Total time over week | | | Total time over week | |
| Car or van | <input type="text"/> | <input type="text"/> | Train | <input type="text"/> | <input type="text"/> |
| | hours | mins | | hours | mins |
| Bus or coach | <input type="text"/> | <input type="text"/> | Motorcycle | <input type="text"/> | <input type="text"/> |
| | hours | mins | | hours | mins |

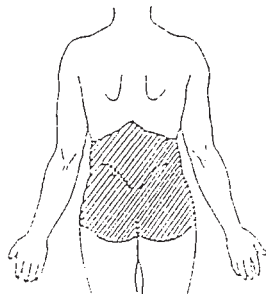
31. How long altogether have you worked in noisy places where you had to shout to be heard?

| | | | | | |
|------------|--------------------------|---------------------|--------------------------|-----------|--------------------------|
| Never | <input type="checkbox"/> | less than 12 months | <input type="checkbox"/> | 1-5 years | <input type="checkbox"/> |
| 6-10 years | <input type="checkbox"/> | More than 10 years | <input type="checkbox"/> | | |

SECTION FIVE HEALTH

32. During the **PAST 12 MONTHS**, have you had back pain in the area shown in the diagram, which lasted for more than a day? (Do not include pain occurring only during pregnancy, during menstrual periods, or during the course of a feverish illness such as 'flu).

No Yes



If yes, did the pain spread down your leg to below your knee?

No Yes

Did it make it difficult or impossible to put on socks, stockings or tights?

No difficulty Difficult but not impossible Impossible

And have you had the pain during the past week?

No Yes

HEALTH

PAIN

33. PAIN IN THE PAST WEEK AND PAST YEAR:

Answer the questions below using the tick boxes - one tick for each question. Please answer these questions even if you have never had any trouble in these parts of your body.

| During the past week have you had pain lasting a day or more in your: | During the past 12 months have you had pain lasting a day or more in your: | During the past 12 months have you been prevented from carrying out normal activities (eg. job, housework, hobbies) because of pain in your: |
|--|--|---|
| Knees No <input type="checkbox"/> Yes <input type="checkbox"/> | Knees No <input type="checkbox"/> Yes <input type="checkbox"/> | Knees No <input type="checkbox"/> Yes <input type="checkbox"/> |
| Hips No <input type="checkbox"/> Yes <input type="checkbox"/> | Hips No <input type="checkbox"/> Yes <input type="checkbox"/> | Hips No <input type="checkbox"/> Yes <input type="checkbox"/> |
| Shoulders No <input type="checkbox"/> Yes <input type="checkbox"/> right shoulder <input type="checkbox"/> left shoulder <input type="checkbox"/> both shoulders | Shoulders No <input type="checkbox"/> Yes <input type="checkbox"/> right shoulder <input type="checkbox"/> left shoulder <input type="checkbox"/> both shoulders | Shoulders No <input type="checkbox"/> Yes <input type="checkbox"/> right shoulder <input type="checkbox"/> left shoulder <input type="checkbox"/> both shoulders |
| Neck No <input type="checkbox"/> Yes <input type="checkbox"/> | Neck No <input type="checkbox"/> Yes <input type="checkbox"/> | Neck No <input type="checkbox"/> Yes <input type="checkbox"/> |
| Wrists/hands No <input type="checkbox"/> Yes <input type="checkbox"/> right wrist/hand <input type="checkbox"/> left wrist/hand <input type="checkbox"/> both wrists/hands | Wrists/hands No <input type="checkbox"/> Yes <input type="checkbox"/> right wrist/hand <input type="checkbox"/> left wrist/hand <input type="checkbox"/> both wrists/hands | Wrist/hands No <input type="checkbox"/> Yes <input type="checkbox"/> right wrist/hand <input type="checkbox"/> left wrist/hand <input type="checkbox"/> both wrists/hands |
| Elbows No <input type="checkbox"/> Yes <input type="checkbox"/> right elbow <input type="checkbox"/> left elbow <input type="checkbox"/> both elbows | Elbows No <input type="checkbox"/> Yes <input type="checkbox"/> right elbow <input type="checkbox"/> left elbow <input type="checkbox"/> both elbows | Elbows No <input type="checkbox"/> Yes <input type="checkbox"/> right elbow <input type="checkbox"/> left elbow <input type="checkbox"/> both elbows |

HEALTH

HANDS AND ARMS

34. If you have had elbow pain in the last year, have you received an injection from a doctor to treat it?

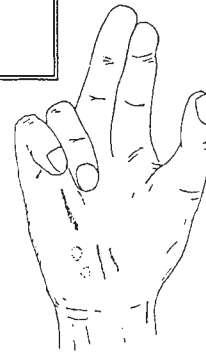
No Yes No elbow pain

35. NUMBNESS OR "PINS AND NEEDLES" IN THE PAST WEEK AND PAST YEAR.

| | In the past week have you had tingling or numbness that lasted at least three minutes in your: | In the past 12 months have you had tingling or numbness that lasted at least three minutes in your: |
|--|--|---|
| Fingers/thumbs? | No <input type="checkbox"/> Yes <input type="checkbox"/> | No <input type="checkbox"/> Yes <input type="checkbox"/> |
| Other parts of the hand(s)? | No <input type="checkbox"/> Yes <input type="checkbox"/> | No <input type="checkbox"/> Yes <input type="checkbox"/> |
| Other parts of the arm(s)? | No <input type="checkbox"/> Yes <input type="checkbox"/> | No <input type="checkbox"/> Yes <input type="checkbox"/> |
| If yes to any of the above, has the tingling or numbness disturbed your sleep? | (PAST WEEK) No <input type="checkbox"/> Yes <input type="checkbox"/> | (PAST 12 MONTHS) No <input type="checkbox"/> Yes <input type="checkbox"/> |

36. Is your little finger (or little and ring finger) of either hand permanently bent as shown opposite so that you cannot straighten it, even with the other hand?

No Yes

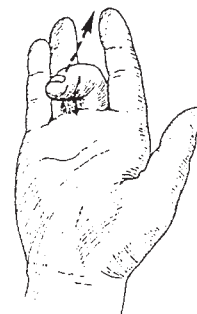


37. In the past year have you once or more had episodes when a finger or fingers have locked (got stuck), in the position shown in the diagram opposite and needed to be straightened using the other hand to help?

No Yes

If yes, how many fingers have got locked or stuck?
(write a number in the boxes below)

Number in the right hand Number in the left hand



HEALTH

FINGERS AND THUMBS

38. Have you ever had attacks in which any or all of your fingers suddenly became cold and numb, and at the same time turned white or pale?

No

Yes

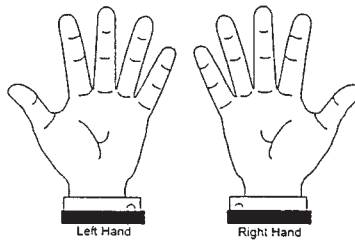
If no please move on to question 47. If yes please continue

39. Approximately how old were you when you first had one of these attacks?

| | |
|--|--|
| | |
|--|--|

years

40. Which fingers/thumbs have gone white or pale? (Indicate by shading the parts that have gone pale on the diagram).



41. Have attacks ever been brought on by any of the following?

Cold conditions

No

Yes

Washing up

No

Yes

Use of a tool or machine

No

Yes

(If yes, which tools or machines?) _____

42. During an attack, have you ever noticed a clear "edge" between the white or pale part of your finger and the normal colour of your hand?

No

Yes

43. Have you ever had an attack during the summer?

No

Yes

44. Have you ever had an attack so bad that you were unable to carry on with what you were doing at the time?

No

Yes

45. Have the attacks ever been bad enough for you to see a doctor about them?

No

Yes

If yes, what did the doctor say the problem was? _____

HEALTH

FINGERS AND THUMBS

46. How many attacks have you had during the past 12 months?

0 1-9 10 - 49 50 - 99 100+

47. Have you ever noticed that any of the following have also gone white or pale?

Toes No Yes

Ears No Yes

Nose No Yes

48. In the past week have you found it difficult to do any of the following activities? *(please tick)*.

| | No difficulty | Difficult but not impossible | Impossible |
|-----------------------------|--------------------------|------------------------------|--------------------------|
| Turn a door knob or lever | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Open a tight jar lid | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Put on a jacket or pullover | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fasten buttons | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Pour from a jug or teapot | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

49. Do you use a hearing aid? No Yes

(if you do, please answer the following questions as if not wearing the aid)

50. How well you can hear a person who is talking to you when he is sitting on your RIGHT SIDE in a quiet room? *(Please tick one box)*

Cannot hear him at all With great difficulty With moderate difficulty

With slight difficulty With no difficulty

HEALTH**OTHER HEALTH PROBLEMS**

51. How well you can hear a person who is talking to you when he is sitting on your LEFT SIDE in a quiet room? (Please tick one box)

Cannot hear him at all With great difficulty With moderate difficulty
 With slight difficulty With no difficulty

52. During the past 12 months have you had noises in your head or ears (such as ringing, buzzing or whistling) which lasted longer than five minutes?

No, never Yes, but not most of the time Yes, most or all of the time

53. **OTHER HEALTH PROBLEMS:**

How often do you suffer from the following?

| | | | |
|--------------------------------|--------------------------------|---------------------------------------|-------------------------------------|
| Headaches | Never <input type="checkbox"/> | Occasionally <input type="checkbox"/> | Frequently <input type="checkbox"/> |
| Feeling constantly tired | Never <input type="checkbox"/> | Occasionally <input type="checkbox"/> | Frequently <input type="checkbox"/> |
| Feeling low in mood or spirits | Never <input type="checkbox"/> | Occasionally <input type="checkbox"/> | Frequently <input type="checkbox"/> |
| Feeling tired or under stress | Never <input type="checkbox"/> | Occasionally <input type="checkbox"/> | Frequently <input type="checkbox"/> |

You have finished. Thank you for completing the form. Please could you now post it back in the envelope provided? We are grateful for your help.