



The PIPAH Study Newsletter

January 2021



Introduction

The year started normally for us but then came news of a previously unknown virus which causes COVID-19 that very quickly took centre stage. After the pandemic was declared and Britain was locked down in March it became all too real for everyone. In common with many in Britain, this meant working at home for the PIPAH study team. Despite this, the PIPAH study has been progressing steadily and the international collaborations that the study is part of are beginning to yield results. We are always pleased to continue working with City & Guilds on our annual recruitment programme when we invite new members of NRoSO to join the PIPAH study. This allows the study to keep growing and we are grateful to everyone who is prepared to join and contribute to the study.

Why are we interested in pesticides?

The PIPAH study is trying to better understand if health problems are associated with regular pesticide use, and how to keep people who use these safe and healthy at work. The use of pesticides is very important to our lives in many ways, and we are keen to make sure that when they are used, they are used safely.

Our eighth year...

For several years we have been developing a Crop Exposure Matrix that uses information provided by you in the PIPAH study questionnaires and information collected by Fera in its annual pesticide usage surveys (<https://secure.fera.defra.gov.uk/pusstats/surveys/>). During the year we finalised the methodology, and we will move on to testing the methodology using a number of active ingredients and crop areas. The methodology is very flexible and it could be applied to any area of work where pesticides have been used, for example in forestry, pest control or amenity weed control. The matrix will provide an estimate of a study member's potential exposure to specific pesticides or active ingredients, relative to other study members.

In January 2020 we invited everyone to complete a new questionnaire. The health section in this questionnaire asked about musculoskeletal conditions, an area of health we know is particularly important for men and women engaged in physically active work. We had a great response to this invitation. Altogether 2,154 of you completed the questionnaire – a big thank you to everyone who took the time to return a completed questionnaire. You will find a summary of the data collected at the end of the newsletter. We are now working on a more detailed analysis of the musculoskeletal conditions data collected in the questionnaire.



The HSE Science and Research Centre, Buxton

Cereals 2020

This is the first year since the PIPAH study started that we have not attended Cereals. Our main purpose in attending Cereals is to have the opportunity to meet with members of the study and to talk about the study with members of the public. This clearly is not possible in the new world of web-based meetings and conferences, and so we had to miss out this year. We very much hope that we will be able to attend Cereals next year because we enjoy meeting our study members and value the feedback and suggestions that we receive.



International collaborations

The PIPAH study has been contributing to two collaborative projects. The first is the international group of agricultural studies called AGRICOH (<https://agricoh.iarc.fr/>). AGRICOH was set up to enable the member studies to work together on specific projects by sharing the data they have collected. The shared data are completely anonymous and take the form of summary tables. The last collaboration that included PIPAH study data has just published its findings on gender differences in respiratory health outcomes¹. The findings showed that respiratory problems were common in all of the agricultural studies and that there were some gender differences. Respiratory symptoms were more common in men while asthma was more common in women.

The other collaboration involving the PIPAH study is the IMPRESS project (<http://www.impress-project.org/>). The aims of this project are to understand and improve the methods used to assess exposure to pesticides at work. PIPAH study participants have been much more actively involved in this project. The PIPAH study team contacted you on behalf of the IMPRESS project and invited you to take part in the data collection stages of the project. The PIPAH study team processed the questionnaire data and shared the anonymised data with the IMPRESS project statisticians working at the Institute of Occupational Medicine in Edinburgh. The statisticians have been analysing the data and the IMPRESS project team have been looking at early results from the analyses. The Biological Monitoring team at HSE's Science and Research Centre in Buxton were responsible for collecting, storing and analysing urine samples from the PIPAH study participants and from the participants in the collaborating studies in Malaysia and Uganda. Analysing the samples was delayed by the COVID-19 shutdown but work in the laboratory has now resumed.

In the meantime, the IMPRESS project team has published two scientific papers. The first paper describes the project protocol, giving details of the work undertaken in the project. The second paper describes the findings from a major review of the various methods of assessing exposure to pesticides published in the scientific literature. If you are interested in either of these papers, you can access

copies of them on the IMPRESS project website (<http://www.impress-project.org/index.php/conferences-and-publications/>).



¹ Fix J, Annesi-Maesano I, Baldi I et al (2020) Gender differences in respiratory health outcomes among farming cohorts around the globe: findings from the AGRICOH consortium, *Journal of Agromedicine*, DOI: 10.1080/1059924X.2020.1713274

Behind the scenes

The COVID-19 lockdown in March certainly changed the study team's ways of working. Since March we have been working at home. Apart from very infrequent visits to the HSE Science and Research Centre in Buxton to do specific tasks, such as collect essential items or return things for storage in the office, none of the PIPAH study team has been back into the office since March. We all have the necessary IT equipment so we could continue working at home. At times this was less efficient than working in the office – child care, intermittent internet connections and other issues could get in the way. However, HSE has done everything it could to make it easier for us to work at home and work on the PIPAH study has hardly been affected by the lockdown. One change that may affect you is that we cannot monitor the PIPAH study phone or the post regularly. If you would like to get in touch with us, email is the best option. You can still leave a voicemail message or send a letter, but it may take a while for us to respond to these.

During the year we started looking into a new Clinical Data Management System to house the PIPAH study data, as well as the data belonging to HSE's other two follow-up studies. The databases for these other studies need to be updated so to improve overall efficiency, the data for all three studies will be stored using the same system. This is exciting for the PIPAH study because the new system will enable us to provide online questionnaire completion which some people find more convenient than completing a paper copy.



What's next?

The IMPRESS project will be entering its final stages in the coming year, with the project scheduled to complete by 31st December 2021. Much of the project work will focus on statistical analysis and modelling, and on writing up and publishing the findings. The PIPAH study team and our colleagues in HSE's Biological Monitoring team will continue supporting and contributing to the project as required.

The PIPAH study team will finalise the scientific paper describing the respiratory health data we collected in the January 2018 questionnaire. We will also continue working on the musculoskeletal health data with the aim of publishing the findings in a scientific paper.

This year we are inviting you to complete a short two-section questionnaire again. The section asking about your main areas of pesticide use is the question set that we include in our questionnaires every year. These questions help us to build up a history of your work with pesticides. The other section asks more detailed questions about a health topic which is potentially important in the PIPAH study population. The January 2021 topic is skin health. The questions included are a subset of the much longer Nordic Skin Health Questionnaire that is widely used in assessing skin health. Although you are not in what HSE considers to be a high-risk job or workplace for work-related skin problems, skin problems can happen in most workplaces.



Analysis of January 2020 Short Questionnaire on Musculoskeletal Disorders (MSDs)

Musculoskeletal disorders, or MSDs, include conditions that affect the muscles, bones and joints. They have a big impact on the National Health Service; according to Public Health England², each year 20% of the population in the UK consult their GP about a musculoskeletal condition. They are also the single biggest cause of work-related sickness absence; in 2019/20 in GB³, work-related musculoskeletal conditions accounted for 30% of all work-related ill-health and accounted for 27% of all working days lost due to work-related ill-health. In the Agriculture, forestry and fishing sector, 44% of all work-related ill-health was due to work-related musculoskeletal conditions. So tackling work-related musculoskeletal disorders is a priority for HSE.

In January 2020 we invited everyone to complete a short questionnaire that covered two topics: the first asked about your musculoskeletal health and the second about your use of pesticides in the previous year. The pesticide use questions fit into the series of similar questions that we ask every year and we will be using this information in analyses that investigate health outcomes over longer periods of time. For this Newsletter, we have summarised the information on musculoskeletal health provided by 2,154 PIPAH participants and report on some of the impact these conditions have.

Four in five of you (78%) who completed the January 2020 questionnaire said that you had troubles in one or more regions of the body and one in five did not have any trouble⁴ in any of the listed regions of the body during the last three months. Of those of you who reported that you had musculoskeletal troubles in one or more regions of the body: 20% reported troubles in one region of the body only, another 20% reported troubles in two regions, and 38% of you reported troubles in three or more regions of the body.

The lower back was the most frequently reported region with musculoskeletal troubles: 43% of respondents said they had issues with their lower back. The next most frequently reported regions were knees (33%), wrists/hands (28%), shoulders (28%) and neck (28%). Elbows (10%) and upper back (7%) were mentioned less frequently. However, many

participants reported having musculoskeletal troubles in more than one region of the body.

When we took this into account we identified many different combinations. Despite this, having musculoskeletal troubles in only one region of the body was still more common than the commonest combinations. The most common sole complaints were musculoskeletal troubles in the lower back (6.0%), knees (3.6%) or wrists/hands (2.7%), while the commonest combinations were neck and lower back (2.4%), lower back and knees (1.6%), lower back and hips/thighs/buttocks (1.6%), and lower back and ankles/feet (1.3%). The accompanying chart (page 6) only identifies the combinations which represent at least 1% of the participants; 46% of participants had other less common combinations of regions of the body affected.

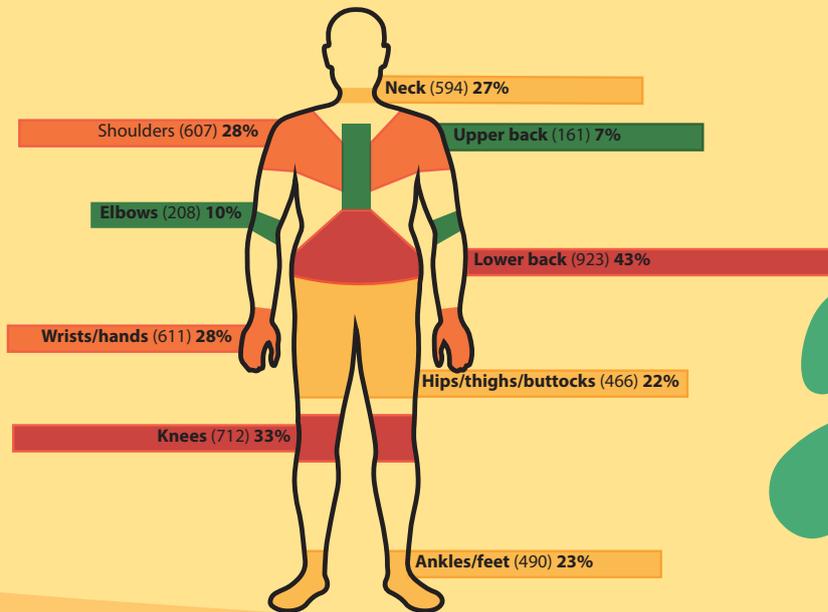


² <https://www.gov.uk/government/publications/musculoskeletal-health-applying-all-our-health/musculoskeletal-health-applying-all-our-health>

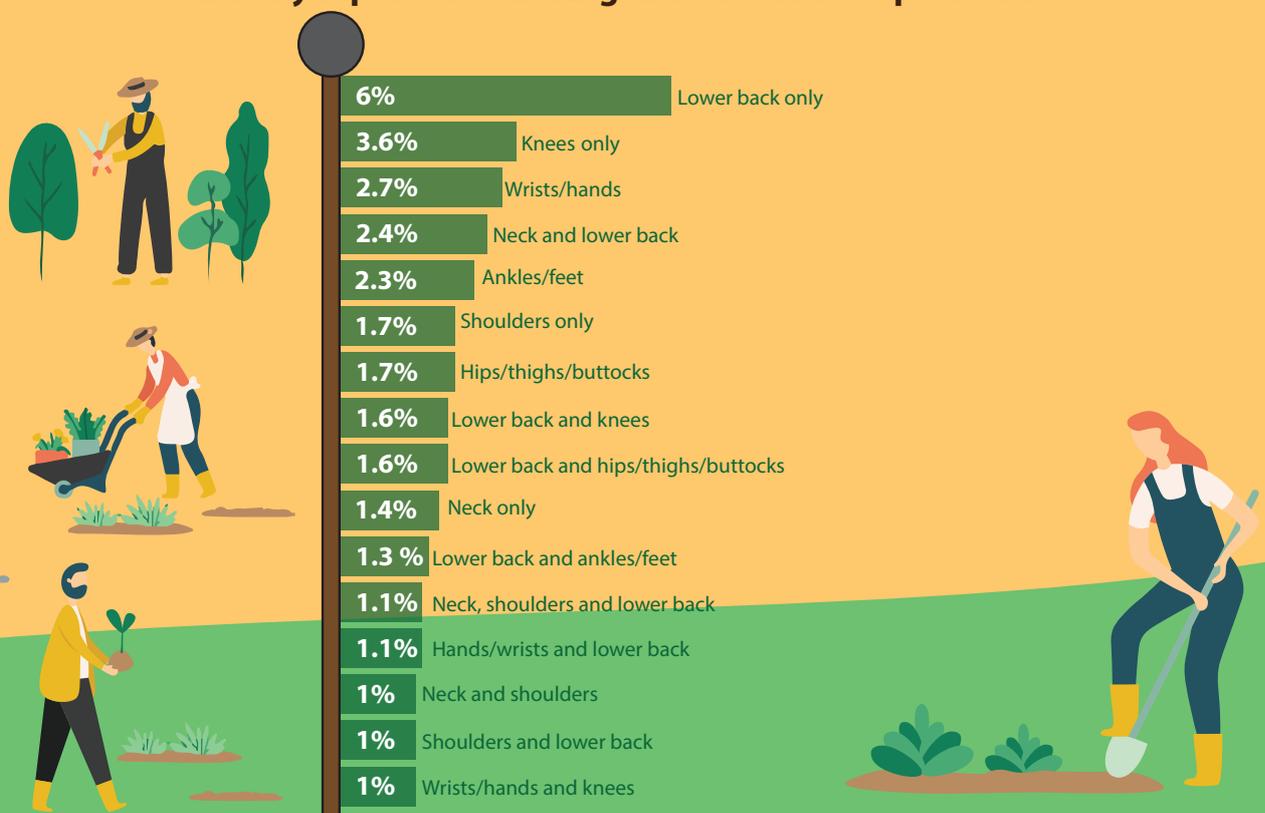
³ <https://www.hse.gov.uk/statistics/causdis/>

⁴ Trouble was defined as having, for example, ache, pain, discomfort, numbness, tingling or pins and needles in the named regions of the body during the last three months

Regions of the body most commonly reported as having musculoskeletal troubles



The individual regions and combinations of regions most commonly reported as having musculoskeletal problems



Graphic shows combinations that represent at least 1% of participants

The questionnaire also asked you to report whether, in the last three months, the musculoskeletal troubles had affected your normal activities, whether they were caused or made worse by your job, and whether you had taken time off work because of the musculoskeletal troubles. These questions provide some insight into the impact that the musculoskeletal troubles had on you over a three-month period. Although nearly four in five of you (78%) reported having musculoskeletal troubles in the last three months, fewer (23%) said that these troubles affected their normal activities. The regions most commonly reported by you as affecting normal activities were the lower back (reported by 75 respondents), the knees (51 respondents) and the ankles/feet (31 respondents). The normal activities of over 200 of you, with other less common combinations of musculoskeletal conditions, were also affected.

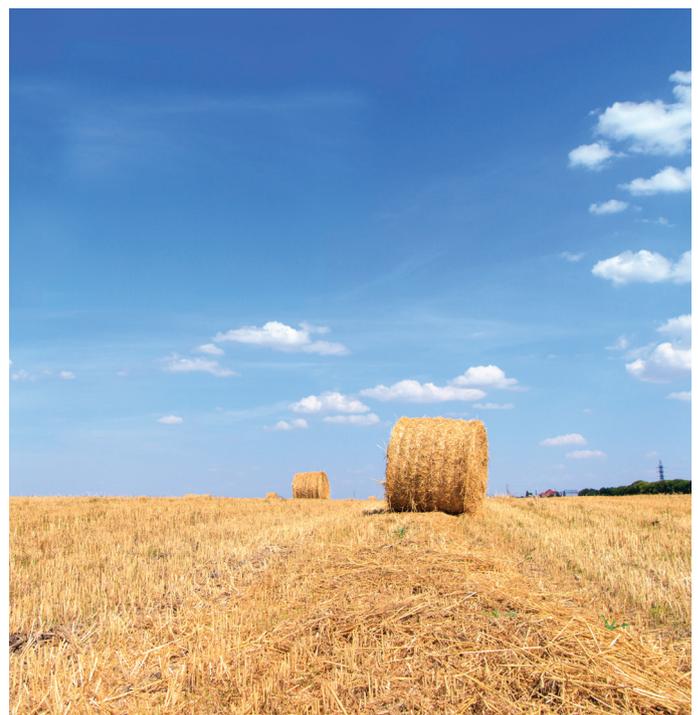
Of those of you who said that you had musculoskeletal troubles, 35% reported that these troubles were caused or made worse by your job. The commonest musculoskeletal troubles that were caused or made worse by the job were in the lower back (reported by 87 respondents) and knees (34 respondents). The chart shows (page 8-9) that each individual region of the body was mentioned by at least 10 of you who said that your job had affected your musculoskeletal health.

Altogether 100 (4.6%) of you who had musculoskeletal troubles in the last three months took time off work because of your musculoskeletal health. The lower back (reported by 32 respondents) and knees (13 respondents) were the two commonest causes of time off work. Two in three of you who had to take time off work also stated that your musculoskeletal troubles had been caused or made worse by your job. For this subgroup, the musculoskeletal troubles in the lower back (33.3%), knees (9.5%) and hips/thighs/buttocks (9.5%) were the commonest work-related causes of time off work. For those of you who took time off work because of musculoskeletal troubles, a third of you reported taking a maximum of less than three days off work, a third reported taking a maximum of more than three or more days but less than 10 days off, and a third reported taking a maximum of 10 or more days off work for these conditions. A number reported taking the entire previous three months off work; three in four of these participants reported that

their musculoskeletal trouble was caused or made worse by their job.

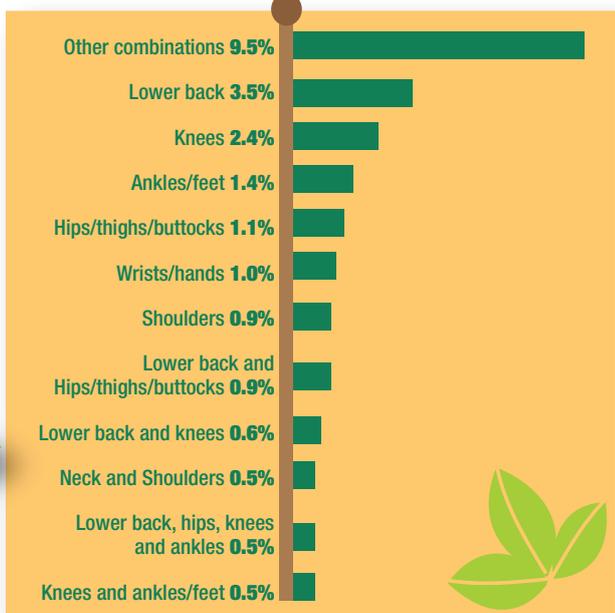
These summary data have not taken into account factors such as age, that are known to affect the occurrence of musculoskeletal conditions and a more complex analysis will be carried out that will do this. For this reason, comparing these summary data with national population data could be misleading. It is however clear that musculoskeletal conditions are common among the PIPAH study participants, with lower back musculoskeletal conditions, followed by knee conditions, being reported most frequently. Only 22% of you reported no musculoskeletal troubles while at the other end of the scale, the normal activities of 23% of you were affected by your musculoskeletal troubles and 4.6% of you had musculoskeletal troubles that were severe enough to cause you to take time off work. The costs associated with musculoskeletal conditions can be considerable on a financial and on a personal level.

Our next step in analysing the musculoskeletal health data will be to work with a team of experts, for example ergonomists and physicians, to carry out more complex analyses. These analyses may help us to better understand some of the factors associated with the musculoskeletal conditions you reported in the January 2020 questionnaire.

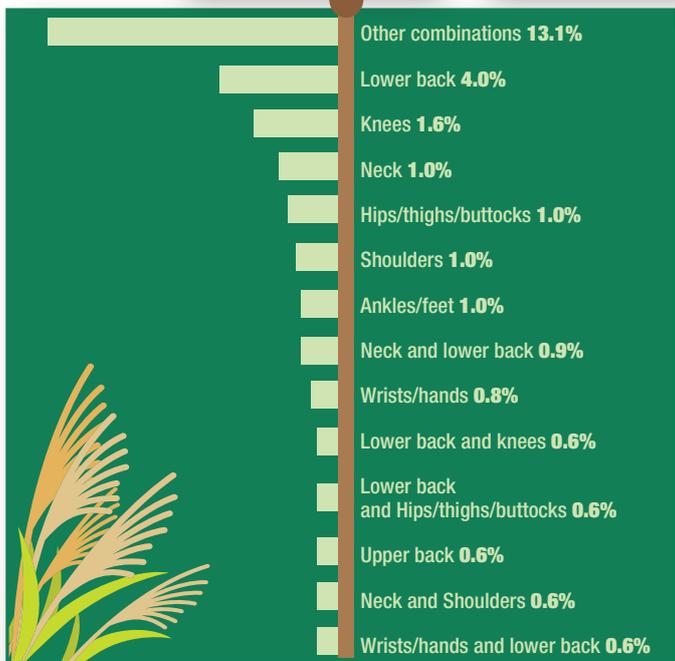


Charts showing the commonest regions of the body where musculoskeletal troubles:

- (i) affected normal activities;
- (ii) were caused or made worse by the job;
- (iii) caused participants to take time off work;
- (iv) were caused or made worse by the job and caused the participants to take time off work.

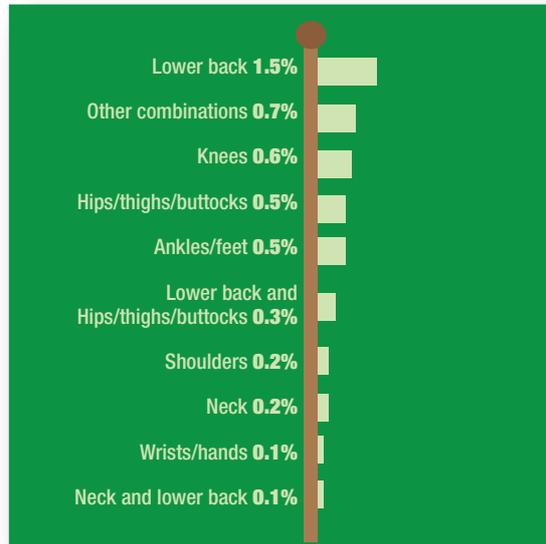


(i) Affected normal activities*

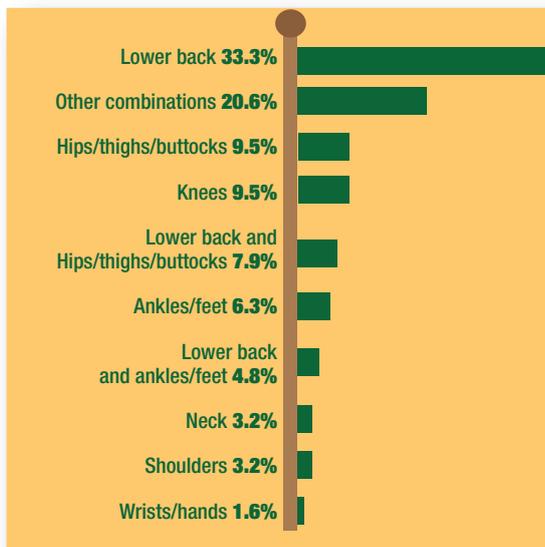


(ii) Were caused or made worse by the job*





(iii) Caused participants to take time off work*



(iv) Were caused or made worse by the job and caused the participants to take time off work**



* Percent of all respondents
 ** Percent of respondents whose musculoskeletal troubles were affected by their job and caused them to take time off work



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Once again, we would like to thank you for taking part in the PIPAH study and hope you continue to remain members of it. We certainly can't do without you and we look forward to sending you another update. In the meantime, please don't hesitate to contact us preferably by email PIPAH@hse.gov.uk or alternatively by freephone **0800 093 4809** if you have any queries, want to discuss any aspect of the PIPAH study with us, or if you would like to update your current contact information.

The PIPAH study team:

Anne-Helen Harding
(Principal Investigator)

David Fox
(Researcher)

Claire Collins
(Administrative Support)

David Fishwick
(Study Medical Officer)

Gillian Frost
(Researcher)

Carl Gartside
(Administrative Support)

Claudia Tarr
(Data Management Team Lead)

Charlotte Young
(Researcher)

Belinda Oakley
(Administrative Support)

Yiqun Chen
(Researcher)

Neil Bennett
(Researcher)



Visit our webpage <http://www.hsl.gov.uk/resources/major-projects/pipah>

