Why do you need my written consent?
Your participation in the project is entirely voluntary. By signing the consent form, you would be confirming your willingness to take part and whether or not you would like to receive your results. In particular, you would be agreeing to:

- Answer some questions
- Give small samples of urine, toenails and hair – optionally one, two or all of these
- Agree to have the samples and information from the interview used, in confidence, by approved researchers.

We will also ask you to agree to have the samples stored for up to 10 years.

Even if you do consent to participate, you would be free to withdraw later at any time if you wished to do so (see below).

Are there any costs involved?
There is no cost whatsoever involved in volunteering – other than that we ask you to give us about 1 hour of your time, and donation of samples so that we can undertake the project.

Do I get paid?
No. But we would very much appreciate your time in participating in the survey.

What if I change my mind? Can I withdraw from participating in the study?
Yes – you can withdraw from the study at any time.

Do I need to give a reason to withdraw from the study?
No. You can withdraw for any reason & you do not even need to tell us what your reason is (although we would like to know, if you are happy to tell us).

Will I be able to see my own results?
Yes. Once we have completed our analysis and irrespective of what the results are (i.e. be they “low”, “average” or “high”) you will be sent a results sheet containing the different values found in your samples. If your results are high you will receive a specific advice sheet alongside the results and will be advised to contact your GP for follow up testing. PHE will send out a briefing note to all GP’s for up to 10 years.

If you are happy to be involved in the study:
Please email: epht@phe.gov.uk
Or call us on: 01235 825 042
We will then contact you to provide further details of the study.

Can I get advice about my results?
Yes. If your results are high, you will be advised to see your GP. On doing so, please take your results sheet along with you. You will also be able to contact the Devon, Cornwall & Somerset Public Health England Centre on 0844 225 3557 for further advice or information.

Also, please keep in mind that this study and the results represent only a snapshot of your exposure to these environmental chemicals. Elevated values can occur due to a temporary exposure to a chemical and may decrease naturally if exposure is reduced.

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What do I do if I am concerned/want to complain about any aspect of the project?
In the first instance, make the researchers administering the questionnaire aware of any concerns you have. They will address any questions or concerns that you have on the spot or, in the event that they cannot answer questions to your satisfaction they will, with your permission, pass on your query to the project managers. We hope that we would never do anything that would give you occasion to complain, but if there is anything that you would wish to complain about, please call Dr Michael Watts: 0115 936 3042 or email: mwatts@bgs.ac.uk

What do you want to take my biological samples?
We will ask you to agree to have the samples stored for up to 10 years.

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Additionally, you would be helping others in the community, by enabling us to improve our measurements and understanding of arsenic exposure in South West England.

Is the sample collection safe?
Yes - as safe as going to the hairdressers or the barbers or getting a manicure! Scissors for cutting hair will be sterilised between household visits. If you prefer, we can clip and collect your toenails. If you are due a visit to the hairdressers before our arrival, you could ask them to save the hair from the back of your neck for you to store until we arrive. If not, we would prefer one of the team to take your hair sample with your permission, to ensure that the samples are collected in the same way.

Measuring biological levels of Arsenic in the population of Cornwall

Questions you might be asking...

Why do you want to take my biological samples?
We are all exposed to chemicals – both natural and those released by human activity – in the environment. Many of these exposures are essential for our health and well-being, others have little or no demonstrable impact, whilst high exposures to some chemicals can lead to varying degrees of adverse health effects. We can estimate chemical exposures through questionnaires and analysing chemicals in food, water, dusts and soils, but there are considerable uncertainties in these indirect measurement calculations. Biomonitoring directly measures chemicals in the body – from these measurements on parts of the body that are normally shed or discarded (hair, toenails, urine) we can get a more direct measure of exposure. If we have both questionnaire results and biomonitoring results, then we can compare the two, to give us more confidence in our conclusions.

What environmental element exposures will you be testing for?
Arsenic is our focus, due to the large amounts present in the local area as a result of natural processes and human activities (e.g. mining) and the long term health risks associated with the element.

What are the benefits of taking part?
You will receive results on your personal exposure to arsenic. In the vast majority of volunteers we do not expect to see any values of particular concern, but if we do, you would also be sent a further advice sheet on what the results mean, what possible action you could take to avoid or minimise exposure, and who you can talk to for more advice and information. Additionally, you would be helping others in the community, by enabling us to improve our measurements and understanding of arsenic exposure in South West England.

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Why do you want a urine sample?  
We will analyse urine for arsenic and its chemical forms. These data will tell us whether arsenic has actually entered the body and will help us to estimate health risks arising from this exposure to the whole study population.

I don’t want to give a urine sample whilst there are other people in the house.  
We understand this. We are asking those participating in the study to give their urine sample into a pre-provided plastic pot, on the morning of the appointment before any of our sampling team arrives. Indeed, for purposes of this study we require a sample collected first thing in the morning and refrigerated until we arrive.

Why do you want nail and hair samples?  
Many environmental elements tend to accumulate in human tissues, such as hair or nails, so analysis of hair and nails will tell us about exposure to arsenic. The factors controlling how arsenic concentrates into hair and toenails are very complex and vary not only from individual-to-individual but also for a given individual – so taking both hair and toenail samples will better our understanding of potential exposures. Concentrations of arsenic in urine tend to reflect very recent exposures (hours, days), whilst those in hair and nails reflect longer timescale exposures (weeks, months).

Why do you want me to grow my toenails for at least 4-6 weeks prior to your visit?  
So that we have enough material to analyse! Typically we need around 500 milligrams (mg) of toenail to allow us to get a good analysis.

Why do you want me to avoid the use of nail varnish prior to your visit?  
The chemical content of these products would contaminate toenail samples externally. We are only interested in arsenic that gets into the body, so analysing toenails which are covered in varnish would confuse these results.

Why do you want to collect a rice sample?  
Rice is grown in waterlogged conditions and can accumulate arsenic through root uptake of contaminated water during its cultivation. This means that the rice grains that we eat can contain varying concentrations of the element which could be significant depending on the amount and frequency of rice in our diets. Taking samples from householders will allow us to assess first-hand the types of rice people are using to cook and the arsenic content of this rice.

Why do you want to collect a soil sample?  
Soils in the South West and much of the UK have been shown to be above average. If people are using the soil in their gardens for growing vegetables or gardening there is a risk of this soil being unintentionally consumed, possibly by not properly washing vegetables, or transfer from hands to food following outdoor activities. Taking a soil sample will allow us to understand the soil that individual residents come into contact with. This sample will help us support some of the information we collect from our questionnaire regarding home grown vegetables and garden usage.

Why do you want to collect a dust sample?  
Previous studies have shown concentrations of arsenic in house dust to be higher than those collected elsewhere in the country. We have a quick and simple method that will allow us to collect a large number of dust samples in the region by using specially manufactured wet wipes. This will allow us to take a number of samples from different locations in a single household (2 to 4) and compare results to those found in soils as well as information about the surrounding landscape and industrial history. We are asking people to clean their windowsills as soon as they have booked an appointment over the phone and record the date. By the time we arrive, enough dust should have settled for us to be able to take a sample.

Do I have to provide all three samples (hair, nails and urine) to participate in the study?  
It would really help us if you provided all of the samples. However, you do not need to provide all three to participate in the study, if you wish you can just provide one or two, for example just hair and nails.

I am very busy and don’t have time to wait around for a sampler to turn up. Can you provide me with appointment timeslot that is at my convenience?  
Yes. If you agree to participate, then our staff will call you to arrange a time for a visit at your convenience. Typically, we will arrange appointments within 2 hour timeslots between 8 am and 6 pm, but we will have some time slots after 5pm. We will telephone you about 10-15 minutes before we anticipate arriving. A visit will typically last about one hour.

Why do you want me not to eat seafood for 4 days prior to your visit?  
Seafood is well known as providing exposure to some compounds of arsenic and, although non-toxic forms, this can mask exposure from other sources – so it will make our data much easier to interpret if we can avoid seafood as a possible exposure route. Seafood includes white fish (e.g. cod, haddock), salmon, mackerel, shellfish (e.g. prawns, mussels, shrimps, cockles), tuna, oily fish (e.g. sardines, anchovies) and other fish products such as crab sticks, fish fingers etc.

What about my DNA?  
Absolutely not. This would constitute a breach of the terms of our Ethical Approval. All researchers involved in the handling of data and samples will be required to sign a form to indicate their compliance with the data protection rules governing the project.

Will my personal data be passed on to other agencies?  
We will not be undertaking any analysis of human DNA, indeed as part of our sampling procedures. Any DNA present in urine samples will be destroyed after sampling by adding a cell-breaking chemical to the samples.

Will what will happen to my samples after they have been collected?  
Firstly, your name will not be placed on any samples or questionnaires. Rather we will use a unique code that is sufficient for the purposes of the study – your name and the code will only be known by the researchers, so this is a safeguard that the identity of individual residents will not be revealed. Samples will then be analysed for concentrations of arsenic as well as its chemical forms. Unless you provide consent for us to retain your samples for future analysis we will keep the samples for no longer than the duration of the study, after which they will be properly destroyed and disposed of.