

exposure

March 2020

The combined magazine for the nuclear community

Covid-19

All the latest advice on how to Isolate yourself at this time.

P04

Conversa

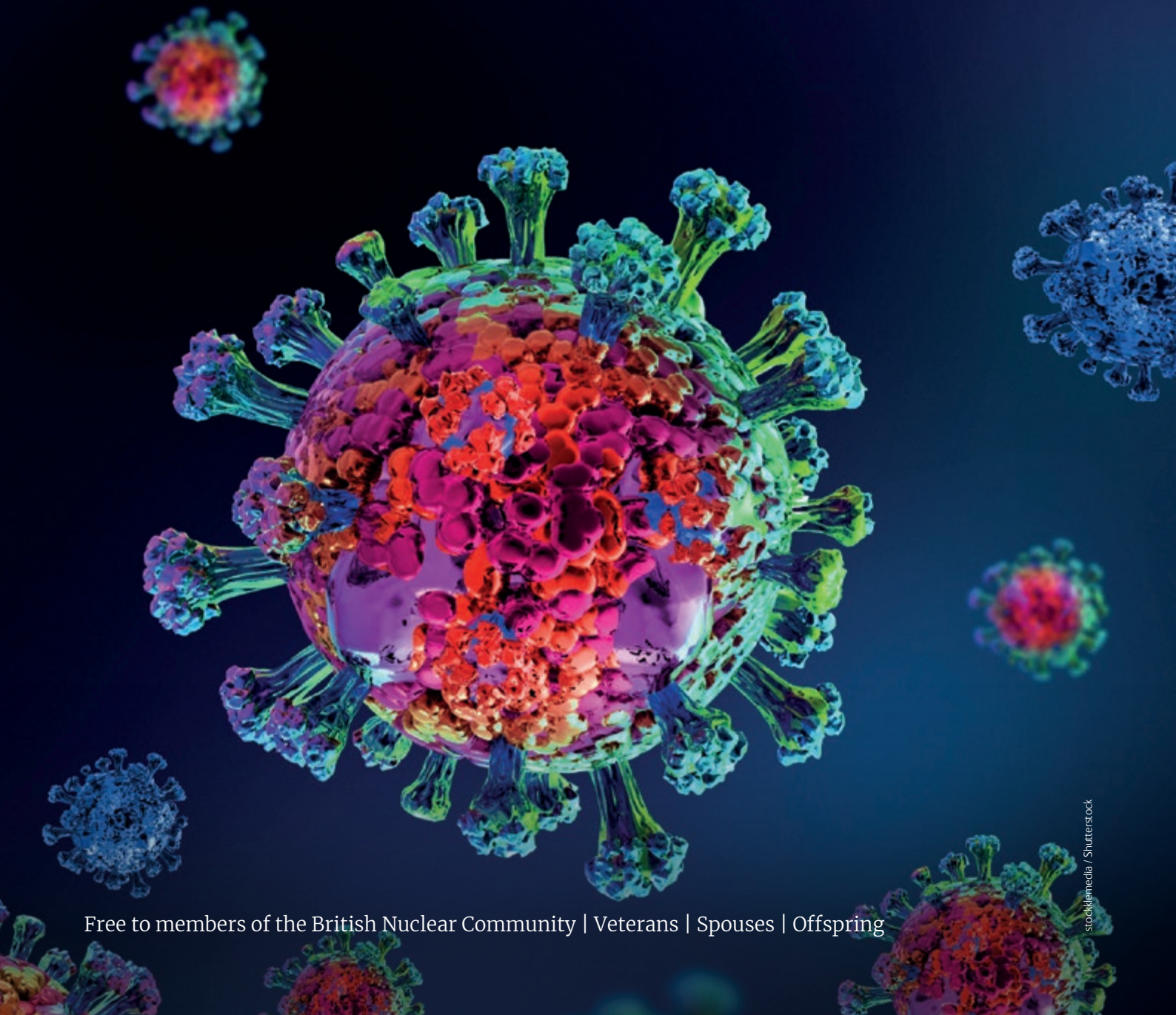
How the NCCF can help you stay in touch with your friends and family.

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Ionising Radiation and Tissue Effects

We discuss the non-cancer health-related effects of ionising radiation on exposed individuals.

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Foreword

Since the last edition we have held the NCCF Annual General Meeting, set budgets for the forthcoming Care Wellbeing and Inclusion Fund year, have undertaken training in the new IT systems and made major changes to the assessment and decision making processes of the Fund.

Our overreaching goal of continuous professional improvement is driving these changes forward and improving the quality of the services we provide to our beneficiaries.

As we approach the end of the grant-funded activities we are now considering our options to manage the charity going forward. Our principal source of funding is now the returns on the endowment we received from the Government, the conditions of the grant are such that we have to manage the fund to alleviate suffering and increase wellbeing amongst the most affected within our beneficiary community for a fifteen-year period. This is achievable and working closely with our business partners we are confident of our ability to deliver on this undertaking.

This is not the sole activity of the NCCF and building on the provenance of our ability to manage and deliver multi-million-pound projects we will be seeking to increase funding over the coming years.

As always your Exposure Magazine remains the best source for factual information on matters affecting the British Nuclear Survivor Community and we have made an undertaking to continue the production and distribution beyond the initial three-year project to ensure that Exposure is here to stay. With the outbreak of the Coronavirus, we decided the NCCF had to step up and do whatever we can for the vulnerable members of our nuclear community. In this edition, you will find specific information directly from the British Government, National Health Service and World Health Organisation. You will also learn how to stay in contact with friends and family using the latest video calling technology.

We are also proud to announce the launch of Project Conversa, The NCCF initiative to ensure no one in our community is left isolated and alone during this crisis. If you have a story to tell please send it to the editor so we can share with the community.

You can also visit the Exposure Online Magazine at
www.exposure.press

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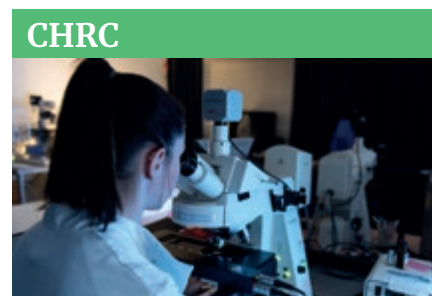


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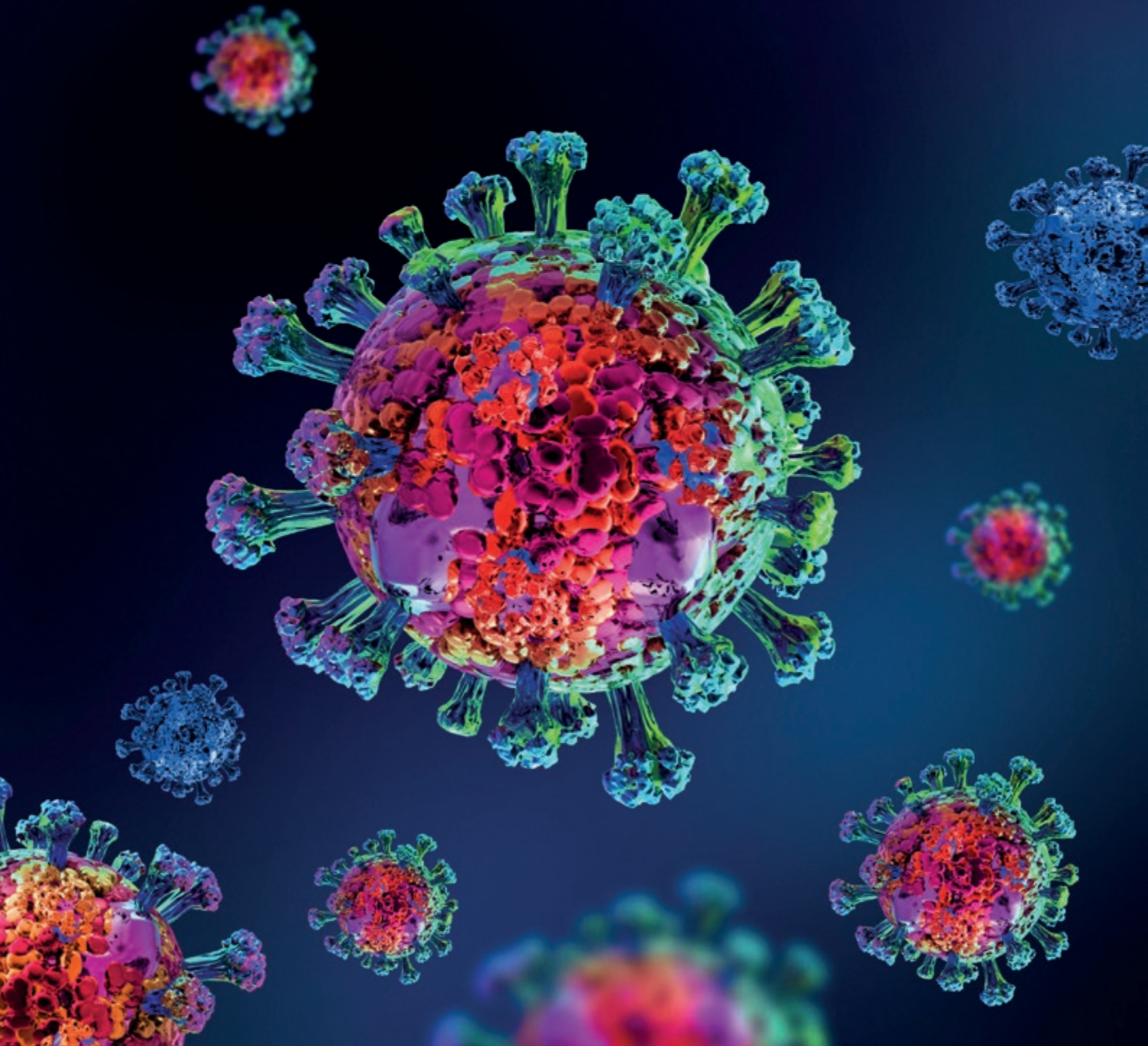


Exposure Online

See the magazine website at:
www.exposure.press

Covid-19 Coronavirus NCCF Update

In this special edition of Exposure, we are bringing you all the latest advice and information from the Government, National Health Service and World Health Organisation. Much of the information is only available online but we decided it needed to be shared amongst our beneficiaries.



As the situation evolves the advice may change and we urge you all to watch the news for any major developments.

Beware of fake news

You should be aware that lots of inaccurate and misleading information has been circulated on Social Media by both the well meaning and the irresponsible. Do not take anything you may hear from Social Media as fact. All the information you need can be found on the official news programs, their websites and the UK Government website at <https://www.gov.uk/>

The measures introduced by the Government will slow the spread of the virus hopefully preventing a log jam in accessing the NHS for treatment.

If you, like many of our beneficiaries, are in a vulnerable at risk group we urge you to follow all the guidance to minimise the chance of you contracting the virus.

Taking deliveries of mail and goods

The Post Office has published guidance on their procedures for making deliveries to your home along with most other delivery companies.



mikecphoto / Shutterstock.com

Extract from Post Office Website:

“In order to protect both our people and customers as much as possible, we will not be handing over our hand-held devices to customers to capture signatures. Postmen and women will instead log the name of the person accepting the item. This will apply to all deliveries that require a signature.

For all customers (including those who are self-isolating) where we need to deliver any parcel that won't fit through your letterbox, we will place your item at your door. Having knocked on your door, we will then step aside to a safe distance while you retrieve your item. This will ensure your item is delivered securely rather than being left outside.

If you are unable to come to the door at all we will issue a 'Something for You' card, advising of other ways you can arrange to get your item. For example, by getting a friend or family member to collect the parcel from our local Customer Service Point on your behalf.

In this situation, and to keep your mail as secure as possible, they will need to bring along the card we left you and relevant ID.”

Getting your medication

If you are Self Isolating and have regular medication contact your local pharmacy, many of them will provide a delivery service using trained staff who can get your medication to you in a safe manner.

If they do not offer the service contact your GP and the receptionist may be able to advise you of alternative arrangements. You can also sign up for the national delivery of prescriptions from Chemist4U which is an online pharmacy. You can find more information and sign up for their services <https://www.chemist-4-u.com/prescription/>



Beware of fraudsters exploiting the situation

It is a sad fact that criminals are preying on vulnerable people during this time of crisis. Senior Police Officers have revealed reports of fraudsters knocking on the doors of the elderly and vulnerable, offering to buy their food for them and claiming they are licensed by the Government before running off with money and credit cards.

In Wakefield, a local councillor posted a warning to her constituents after cases of gangs turning up on the doorsteps of the elderly or at care homes offering to do their shopping to protect them from the Coronavirus before stealing their money.

Be on your guard for this type of crime. Never give anyone who turns up at your door your debit card, credit card or any cash. There are rare occasions when officials from some businesses may request cash on the doorstep but you should always validate the identity of the employee by contacting the company. Whilst you do this make them wait outside your home, close and lock the door, any genuine delivery worker will understand this.

Using gloves

There is often confusion regarding the protection from wearing rubber or latex gloves. Many people believe that just by wearing these gloves they are protected. This is not the case.

Gloves create a barrier between what you are touching and the skin of your hands. Good for preventing anything getting on your hands and entering your body through any cuts on your hands. The biggest danger of using gloves is that anything you touch contaminates the outside of the glove. If you then touch your face, hair or wipe your gloves on your clothes, in doing this you are at risk of transferring the contamination.

We all touch our faces and hair subconsciously. When wearing gloves please make a conscious effort to avoid this behaviour.

Putting on and removing disposable gloves

- Do not wear any jewellery or anything that can puncture the gloves
- Wash hands before and after wearing gloves
- Try to only touch the inside of the gloves
- Dispose of gloves immediately after use

Do not wash disposable gloves and re use them again later. Use a new set of gloves for each different task you carry out to minimise the risk of cross contamination. Don't touch your face or clothes with contaminated gloves or until you have washed your hands after removing your gloves.

There are videos on YouTube showing how to use protective gloves. If you have access to the internet just search for 'using latex gloves'.

Getting help or offering help

If you have a mental health issue check out the Government recommended organisation hot-lines detailed in this magazine. One of the positive things to come from the current situation is that it is bringing out the very best in many people. Across most of the country volunteer groups are being organised to help people who are having to self isolate. You should have already been contacted by your local group, keep their details handy even if you don't need them at this time. Most areas are covered by a 'Volunteer Bureau', these organisations link to local and parish councils and other volunteer groups within the area.

They usually coordinate services like community buses and other support to the vulnerable. We have been advised that in many areas they have already published plans for a support network of Street Wardens and Coordinators and that leaflets have been posted out.

If you have not yet received any information on local volunteer and council help you should be able to contact your local bureau by searching for them on the internet or contacting your local council help line.

If you are in a position to help out in your local community please contact your local bureau and council.

You may be able to trace your local volunteer organisation through the National Council of Volunteer Organisations (NCVO) at <https://www.ncvo.org.uk/ncvo-volunteering/find-a-volunteer-centre>

If you have access to Facebook a lot of local support groups are also being established.

Help from the NCCF

We have filled this edition with as much information as we can to try and help you through this crisis. Please look at our article on using technology to video call and keep in touch with friends and family. For those without a machine to make video calls and get information from the internet we have launched Project Conversa where, for the duration of the crisis, beneficiaries will be loaned a specially adapted android pad which can either work on their internet or connect through mobile data.

If you are self-isolating please use our special poster by cutting out the back page of this magazine and placing it where it can be seen by people approaching your front door.

People of all ages can be infected by the new coronavirus (nCoV-2019).

Older people, and people with pre-existing medical conditions (such as asthma, diabetes, heart disease) appear to be more vulnerable to becoming severely ill with the virus.

WHO advise people of all age to take steps to protect themselves from the virus, for example by following good hand hygiene and good respiratory hygiene.



#Coronavirus

Does the new coronavirus affect older people, or are younger people also susceptible?



Protect yourself and others from getting sick

Wash your hands

- after coughing or sneezing
- when caring for the sick
- before, during and after you prepare food
- before eating
- after toilet use
- when hands are visibly dirty
- after handling animals or animal waste



Protect others from getting sick

When coughing and sneezing **cover mouth and nose** with flexed elbow or tissue



Throw tissue into closed bin immediately after use

Clean hands with alcohol-based hand rub or soap and water after coughing or sneezing and when caring for the sick



For those with problems the Care Wellbeing and Inclusion Fund is still there for you. We will not be conducting Independent Living Assessments in the home until it is safe to do so but we will continue to look at whatever methods we can to reduce suffering and promote wellbeing within the constraints of the virus reduction measures.

For Care Wellbeing and Inclusion support please contact:
office@thencf.org

Write a short note asking for a claim form and post it in to us at:

**NCCF
PO Box 8244
Castle Donington
DE74 2BY**

or visit:
www.thencf.org/make-application
to get a form.

All information correct at time of going to print.

Stay at home advice from the NHS Coronavirus (Covid-19)

Staying at home can help stop Coronavirus spreading. You'll need to stay at home if you have symptoms of Coronavirus (COVID-19) or live with someone who does.

Staying at home means you should:

- Not go to work, school or public areas
- Not use public transport or taxis
- Not have visitors, such as friends and family, in your home
- Not go out to buy food or collect medicine – order them by phone or online, or ask someone else to drop them off at your home
- You can use your garden, if you have one. You can also leave the house to exercise – but stay at least 2 metres away from other people.

If you're not sure if you need to stay at home:

If you have symptoms of Coronavirus (a high temperature or a new, continuous cough), use the 111 Coronavirus online service to find out what to do. <https://111.nhs.uk/covid-19/>

How long to stay at home

If you have symptoms:

If you have symptoms of Coronavirus, you'll need to stay at home for 7 days.

After 7 days:

- If you do not have a high temperature, you do not need to stay at home
- If you still have a high temperature, stay at home until your temperature returns to normal
- You do not need to stay at home if you just have a cough after 7 days. A cough can last for several weeks after the infection has gone.

If you live with someone who has symptoms

- If you live with someone who has symptoms, you'll need to stay at home for 14 days from the day their symptoms started. This is because it can take 14 days for symptoms to appear
- If more than 1 person at home has symptoms, stay at home for 14 days from the day the first person started having symptoms
- If you get symptoms, stay at home for 7 days from when your symptoms start, even if it means you're at home for longer than 14 days
- If you do not get symptoms, you can stop staying at home after 14 days.

Get an isolation note to give to your employer

- If you live with someone who has symptoms of Coronavirus, you can get an isolation note to send to your employer as proof you need to stay off work.
- You do not need to get a note from a GP
- You can get an isolation note on line by visiting <https://111.nhs.uk/isolation-note/>

If you have symptoms and live with a vulnerable person

If you live with someone who is 70 or over, has a long-term condition, is pregnant or has a weakened immune system, try to arrange for them to stay with friends or family for 14 days.

If you have to stay at home together, try to keep away from each other as much as possible.

Don't

- ✗ Do not share a bed if possible
- ✗ Do not share towels, including hand towels and tea towels

Do

- ✓ Try to keep 2 metres (5 steps) away from each other
- ✓ Avoid using shared spaces, such as kitchens or bathrooms, at the same time as each other
- ✓ Open windows in shared spaces if you can
- ✓ Clean a shared bathroom each time you use it, for example by wiping the surfaces you have touched
- ✓ Use a dishwasher if you have one – if you do not have one, use washing-up liquid and warm water and dry everything thoroughly.

Reducing the spread of infection in your home**While you're staying at home, you should**

- Wash your hands with soap and water often, for at least 20 seconds
- Use hand sanitiser gel if soap and water are not available
- Cover your mouth and nose with a tissue or your sleeve (not your hands) when you cough or sneeze
- Put used tissues in the bin straight away and wash your hands afterwards
- Clean objects and surfaces you touch often (like door handles, kettles and phones) using your regular cleaning products.

How to do your cleaning and laundry

Use your usual household products, such as detergents and bleach, when you clean your home.

Put used tissues and disposable cleaning cloths in rubbish bags. Then put the bag into a second bag and tie it securely. Wait 3 days before putting it in your outside bin.

Dispose of other household waste as normal.

Wash your laundry in the washing machine in the usual way. Laundry that has been in contact with an ill person can be washed with other people's items. Do not shake dirty laundry, as this may spread the virus in the air.

If you do not have a washing machine, wait for 3 days after your stay at home has ended before taking your laundry to a launderette.

Looking after your health and wellbeing**To help yourself stay well while you're at home:**

- Drink plenty of water to stay hydrated – drink enough so your pee is pale and clear
- Take paracetamol to help ease your symptoms
- Stay in touch with family and friends over the phone or on social media, to help you avoid feeling low or lonely
- Try to keep yourself busy – you could try activities like cooking, reading, online learning and watching films
- Do light exercise, if you feel well enough to.

We have published information about how to look after your mental wellbeing while staying at home from 'Every Mind Matters' in this edition.

Ibuprofen

There is currently no strong evidence that ibuprofen can make Coronavirus (COVID-19) worse. But until we have more information, take paracetamol to treat the symptoms of Coronavirus, unless your doctor has told you paracetamol is not suitable for you. If you are already taking ibuprofen or another non-steroidal anti-inflammatory (NSAID) on the advice of a doctor, do not stop taking it without checking first.

What to do if you need medical help if you have to stay at home

If you get symptoms not related to Coronavirus and need medical help:

- Do not go to a GP surgery, pharmacy or hospital
- If it's not an emergency, use the NHS 111 online service – call 111 if you cannot get help online
- If it's an emergency, call 999 – tell the call handler you may have Coronavirus
- Cancel all routine face-to-face medical and dental appointments while you're staying at home. You may be able to do some appointments over the phone.

Urgent advice**Use the NHS 111 online Coronavirus service if:**

- You feel you cannot cope with your symptoms at home
- Your condition gets worse

Use the 111 Coronavirus on-line service
<https://111.nhs.uk/covid-19/>

Only call **111** if you cannot get help online.

What's the difference between self-isolation and social distancing?

Social distancing and self-isolation are important ways to protect yourselves and others from Coronavirus. The British Heart Foundation provided the following explanation of what they are and the difference between them.

Both self-isolation and social distancing are important ways to protect yourself and others, and to slow down the spread of Coronavirus (Covid-19).

Social distancing is advised for everyone, while self-isolation applies to those who have symptoms of Coronavirus or live with someone who does.

Social distancing

Social distancing is about limiting face-to-face interactions with people. This helps to slow the spread of Covid-19 and to help protect yourself from catching it.

Who should be doing it?

Everyone should be practising social distancing right now. If you're over 70 years old, pregnant, or under 70 years old and have a long-term underlying health condition that means you are offered the flu jab each year, you should be taking extra care to follow social distancing guidelines.

How do I do it?

The measures for social distancing are:

- Avoid contact with someone who is displaying symptoms of Coronavirus (Covid-19). These symptoms include high temperature and/or new and continuous cough
- Avoid non-essential use of public transport. Vary your travel times to avoid rush hour, when possible
- Work from home, where possible. Your employer should support you to do this. Please refer to employer guidance for more information
- Avoid large gatherings. Also avoid gatherings in smaller public spaces such as pubs, cinemas, restaurants, theatres, bars, and clubs
- Avoid gatherings with friends and family. Keep in touch using remote technology such as phone, internet, and social media
- Use online or telephone services to contact your GP or other essential services.

You should also make sure that you and any essential visitors (like carers or family members) wash your hands regularly and take extra care of your hygiene. You can go outside for a walk, but make sure that you stay more than 2 metres from other people.

Self-isolation

Self-isolation means staying at home. Self-isolation is the most effective way of preventing the Coronavirus from spreading.

Who should be doing it?

Self-isolation is strongly advised for anyone who has the symptoms of Coronavirus (high temperature and/or new and continuous cough) or might have been exposed to it, or lives with someone who does.

How long should I self-isolate?

If you live alone and you have symptoms of COVID-19, however mild, stay at home for 7 days from when your symptoms started.

If you live with others and you're the first to have symptoms, then you must stay home for 7 days. But all other household members must stay in the house for 14 days. The 14-day period starts from the day the first person in the house became ill.

How do I self-isolate?

The measures for self-isolation are:

- Stay at home and do not go out. Don't go to work, school, or use public transportation or taxis
- Stay at least five steps (2m) away from other people in your home. Be particularly careful around those who are over 70, are pregnant, or who have a long-term underlying health condition
- Avoid having any visitors in your home. Ask them to leave any deliveries at your door
- Don't go out to buy food or collect medicine, if possible. Order them by phone or online, or ask someone else to drop them off at your home
- Stay at least three steps away (two metres away or six feet) from other people outside if you need to leave your home to exercise
- Sleep alone if you can.

You should also make sure that you and any household members are washing your hands regularly and taking extra care of your hygiene.

How to look after your mental wellbeing while staying at home

If you have to stay at home because of Coronavirus (COVID-19), it's important to take care of your mind as well as your body.

You may feel bored, frustrated or lonely. You may also be low, worried or anxious, or concerned about your finances, your health or those close to you.

It is OK to feel like this – everyone reacts in their own way to challenging events and uncertainty. It's important to remember that staying at home may be difficult, but you are helping to protect yourself and others by doing it.

The tips and advice here are things you can do now to help you keep on top of your mental wellbeing and cope with how you may feel while staying at home. Make sure you get further support if you feel you need it.

1. Find out about your employment and benefits rights

You may be worried about work and money if you have to stay home – these issues can have a big effect on your mental health. If you have not already, talk with your employer about staying at home, and learn about your sick pay and benefits rights. Knowing the details about what the coronavirus outbreak means for you for you can reduce worry and help you feel more in control.

GOV.UK: Coronavirus support <https://www.gov.uk/government/news/coronavirus-support-for-employees-benefit-claimants-and-businesses>

2. Think about where to stay

If you would prefer not to stay where you usually do, consider whether there are other options available, like staying with family or friends.

If you live with other people, think about or discuss with them what challenges you might all face if you all need to stay at home or one of you gets Coronavirus. If there are problems with your housing conditions, there is help and support out there.

Remember, it's really important to follow the social distancing and stay at home guidance when it comes to seeing and being around others.

Mind: Housing guidance <https://www.mind.org.uk/information-support/guides-to-support-and-services/housing/useful-contacts/>

3. Plan practical things

Work out how you can get any household supplies you need. You could try asking neighbours or family friends, or find a delivery service.

Continue accessing treatment and support for any existing physical or mental health problems where possible. Let services know you are staying at home, and discuss how to continue receiving support.

If you need regular medicine, you might be able to order repeat prescriptions by phone, or online via a website or app. Contact your GP and ask if they offer this. You can also ask your pharmacy about getting your medicine delivered, or ask someone else to collect it for you.

If you support or care for others, either in your home or by visiting them regularly, think about who can help out while you are staying at home. Carers UK has further advice on creating a contingency plan if you care for others.

Carers UK: Coronavirus <https://www.carersuk.org/help-and-advice/health/looking-after-your-health/coronavirus-covid-19?id=6268:coronavirus-guidance>



4. Connect with others

Maintaining healthy relationships with people you trust is important for your mental wellbeing. Think about how you can stay in touch with friends and family while you are at home – by phone, messaging, video calls or online – whether it's people you usually see often, or reconnecting with old friends or neighbours.

We have produced information on using technology to interact with family and friends during this situation in this issue.

5. Talk about your worries

It is quite common to feel worried, scared or helpless about the current situation. Remember, it is OK to share your concerns with others you trust – doing so could help them too. Or you could try a charity helpline or webchat. Please see the Mental Health Helplines article in this edition

6. Look after your body

Our physical health really affects how we feel. Try to make sure you and your family eat healthy, well-balanced meals, drink enough water and exercise regularly. Avoid smoking or drugs, and try not to drink too much alcohol. It can be easy to fall into unhealthy patterns of behaviour that end up making you feel worse. Get outside for a walk or a run if you can.

7. Stay on top of difficult feelings

Concern about the Coronavirus outbreak is perfectly normal. However, some people may experience intense anxiety that can affect their day-to-day life. Try to focus on the things you can control, such as how you act, who you speak to and where you get information from.

It's fine to acknowledge that some things are outside of your control, but if constant thoughts about the situation are making you feel anxious or overwhelmed, there are some things you can try to help manage your anxiety, like listen to a mental wellbeing audio guide.

Watch: Re-framing unhelpful thoughts
<https://www.nhs.uk/oneyou/every-mind-matters/coronavirus-covid-19-staying-at-home-tips/#>



8. Do not stay glued to the news

Try to limit the time you spend watching, reading or listening to coverage of the outbreak, including on social media, and think about turning off breaking-news alerts on your phone.

You could set yourself a specific time to read updates or limit yourself to checking a couple of times a day.

Use trustworthy sources – such as <https://www.gov.uk/coronavirus> or the <https://www.nhs.uk/coronavirus> – and fact-check information from the news, social media or other people.

9. Carry on doing things you enjoy

If we are feeling worried, anxious, lonely or low, we may stop doing things we usually enjoy. Make an effort to focus on your favourite hobby if it is something you can still do at home. If not, picking something new to learn at home might help – there are lots of ideas online.

10. Take time to relax

This can help with difficult emotions and worries, and improve our wellbeing. Relaxation techniques can also help deal with feelings of anxiety.

11. Stick to daily routines as far as possible

Think about how you can carry on your normal routines, and try to do things that are useful or meaningful.

For example, if you are working from home, try to get up and get ready in the same way as normal, keep to the same hours you would normally work and stick to the same sleeping schedule.

If you cannot do this, think about how you can create new routines and set yourself goals. You could set a new alarm for the morning, do a daily home workout, and pick a regular time to clean, read, watch a TV programme or film, or cook.

12. Look after your sleep

Good-quality sleep makes a big difference to how we feel, so it's important to get enough. Try to maintain your regular sleeping pattern and stick to good sleep practices.

Watch: Sleep tips

<https://www.nhs.uk/oneyou/every-mind-matters/coronavirus-covid-19-staying-at-home-tips/#>

13. Keep your mind active

Read, write, play games, do crosswords, complete sudoku puzzles, finish jigsaws, or try drawing and painting.

Whatever it is, find something that works for you.



The Nuclear Community Charity Fund

Its good to talk

How to keep in touch with your friends and family during lock-down.

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Conversa

The NCCF project to keep you talking and socially inclusive.

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Meet the trustees

Meet our trustees and why they want to work with the NCCF.

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Care Wellbeing and Inclusion Fund - Reducing Suffering and Increasing Wellbeing



The Coronavirus outbreak is affecting all our daily lives but we want to reassure you that the NCCF Care Wellbeing and Inclusion Fund is still very much operational. Our development and adoption of IT solutions mean that we can receive, consider and award grants without compromising virus reduction measures.

Care for the vulnerable is a key work area and the NCCF is ready to step up and help our beneficiaries. The fund is still taking applications and making grants. If you need help don't delay. Get in touch with us.

Get your application form: Write to

The NCCF
PO Box 8244
Castle Donington
DE74 2BY

Telephone:
0115 8883442

Online:
www.thenccf.org/make-application/



Coronavirus Safety

For the safety of our Beneficiaries, our Contractors and Case Workers we have had to implement restrictions on travel and contact. This has impacted on some provisions, mostly internal building adaptations. But we have ring-fenced all current awarded funding and the works will be undertaken as soon as the virus situation reduces.

For new applications we will review what we can achieve within the safe working practises, clearly we will be unable to perform any Independent Living Assessments at this time but we can discuss and work with you to identify any achievable measures during the crisis. If we find that we can not deliver some or all of the identified provision during the crisis we will complete what we can and place the balance on hold until the situation eases.

It's Good To Talk

Social Inclusion is one of the key factors we consider when assessing an applicant's needs. When a person is isolated and alone they have no one and no way to share not only the high's and the low's but just the little everyday things. This isolation can have a dramatic effect on mental and physical health.

Many members of our nuclear community are facing increased isolation as we all struggle to get through the measures put in place to manage the Coronavirus.

Modern technology offers many ways to communicate with each other and video calling is now an easily achievable reality. The benefit of being able to see a person's face whilst having a conversation is huge. It's less than 150 years since we started using the telephone.

The NCCF wants to encourage you all to start making use of video calling, don't just chat with the grandchildren, let them show you the latest thing they have built or picture they have painted, they may even take you on a tour of their home!

Many of you have access to the internet and use Computers, Tablets or Smartphones. We have produced a guide to the most popular video chat and messaging platforms.

All we can say is give it a go, once you get used to it you will never want to go back to the telephone again.

If you don't have internet or a device which you can use for video calling then please read the article "**Conversa 'Keeping communities in touch' from the NCCF**" which is our initiative to provide isolated community members with video calling and access to our news and support services.

Apple FaceTime

The Apple audio and video calling app FaceTime works on their iPhone, iPad, iPod touch, and Mac laptops and computers. FaceTime works great within the Apple community but there is no connection with other devices running android or windows. This is a restriction unless you and the people you want to communicate with already have Apple devices.



Compatible with:
Apple iOS and Mac OS



Set up FaceTime on iPhone

In the FaceTime app, you can make video or audio calls to friends and family, whether they're using an iPhone, iPad, iPod touch, or a Mac. With the front-facing camera, you can talk face-to-face; switch to the rear camera to share what you see around you. To capture a moment of your conversation, take a FaceTime Live Photo. Note: FaceTime, or some FaceTime features, may not be available in all regions.

Go to Settings > FaceTime, then turn on FaceTime.

If you want to be able to take Live Photos during FaceTime calls, turn on FaceTime Live Photos.

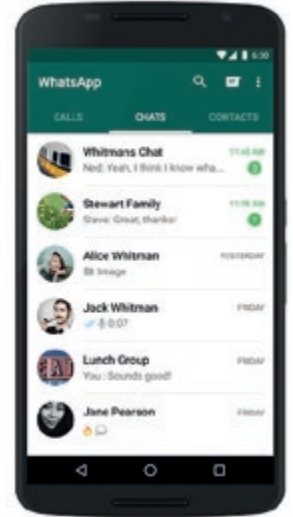
Enter your phone number, Apple ID, or email address to use with FaceTime.

WhatsApp

Chances are you will have already heard of WhatsApp, the communication application that revolutionised the genre. WhatsApp is cross platform, which means it can work on many different types of devices so you are not restricted to only contacting people with the same devices as you. It is easy to set up and provides different options allowing for sending simple text messages, sharing photographs in messages, recording short voice messages, full audio calling and full video calling. The application works well on wifi and mobile networks and is free. The only restriction with WhatsApp is that it has to be registered to a mobile telephone number so to use on a computer you have to use their WhatsApp for Web application that links to the app on your mobile phone.



Compatible with:
Apple iOS and Mac OS
Android and Windows



Download and install WhatsApp on Android Phone

Follow the steps below to download and Install the latest version of WhatsApp from Google Play Store to your Android Phone.

1. Open Google Play Store on your Android Phone.
2. Search for WhatsApp on Google Play Store and tap on WhatsApp Messenger as it come up in search results.
3. Next, tap on Install to download WhatsApp to your Android Phone.
4. On the next screen, tap on Accept to provide WhatsApp with access to your contacts, photos and others.
5. Once you tap on Accept, WhatsApp Messenger app will start downloading to your Android Phone.
6. After WhatsApp is downloaded to your device, you will see an option to open WhatsApp. Tap on Open.
7. Next, you will see Welcome to WhatsApp screen, tap on Agree and Continue to convey your agreement to WhatsApp Terms of Service and Privacy policy
8. On the next screen, select your Country, Enter your Phone Number and tap on Next.
9. Once you provide your phone number, WhatsApp will send a six digit verification code to your phone number by SMS Message.
10. On the next screen, enter the six digit Verification Code as received from WhatsApp.
Do not close the screen or try to change the phone number, in case you did not receive the verification code by SMS. Just wait for five minutes and tap on the Call Me option to receive the verification code via the WhatsApp Automated Calling system.
11. On the next screen, enter your Name and tap on Next. You can also upload a profile image and come back to your Profile at any time to change your name or to upload a different profile picture.

Invite contacts to WhatsApp

Once activated, WhatsApp automatically goes through the Contact List on your Android phone and adds Contacts to your WhatsApp Account (those who are on WhatsApp). In case some of your Contacts are not on WhatsApp, you can send them an invitation to join WhatsApp by following the steps below.

1. Open WhatsApp on your Android Phone.
2. Next, tap on the Contacts tab from the top menu.
3. On the Contacts Screen, tap on the green Invite button beside the contact's name.
4. The next screen will open with a pre-composed ready to send Message, simply tap on Send to send a WhatsApp invitation to your Contact.

Add contacts to WhatsApp

Follow the steps below to add New Contacts to WhatsApp (those who are not on your Contact List).

1. Open WhatsApp on your Android Phone.
2. Next, tap on the Contacts tab and then tap on +Add People icon.
3. On the next screen, fill in your new Contact's Name, Phone Number, other details (if any) and tap on Save.

How to chat on WhatsApp

Initiating a Chat with any of your Contacts on WhatsApp is easy.

1. Open WhatsApp on your Android Phone.
2. Tap on the Contacts tab from the top menu.
3. On the next screen, tap on the Contact's Name that you would like to Chat with.
4. On the next screen, type your Message and send the Message.

How to make calls using WhatsApp

WhatsApp allows you to place free local, national and International calls to any of your Contacts, as long as you are connected to a WiFi network.

1. Open WhatsApp on your Android Phone.
2. Next, tap on Calls from the top menu.
3. Now tap on the Call Icon from the top right corner of your screen.
4. On the next screen, select the Contact that you want to call.
5. WhatsApp will start ringing your Contacts Phone number.

Google Hangouts

Google has a number of chat applications which can appear confusing, they all offer core services like video chat but vary on additional features. In this article we are recommending the Google Hangouts application, its tried and tested features perform well across different platforms and devices. The system used to make video calling work provides a superior quality experience. It integrates with all the other free Google services and is easy to use. Hangouts also works across operating systems with downloads for iOS, MacOS, Windows, Android and Chrome. To set up Hangouts all you need is a Google account, in fact if you already use googlemail or gmail then you can access hangouts straight away.



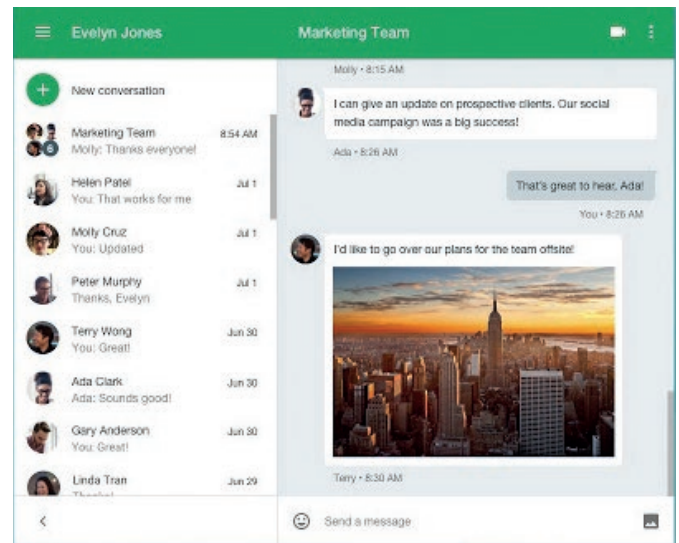
Compatible with:

Apple iOS, Mac OS, Android, Windows and Chrome

How to set up and use Google Hangouts

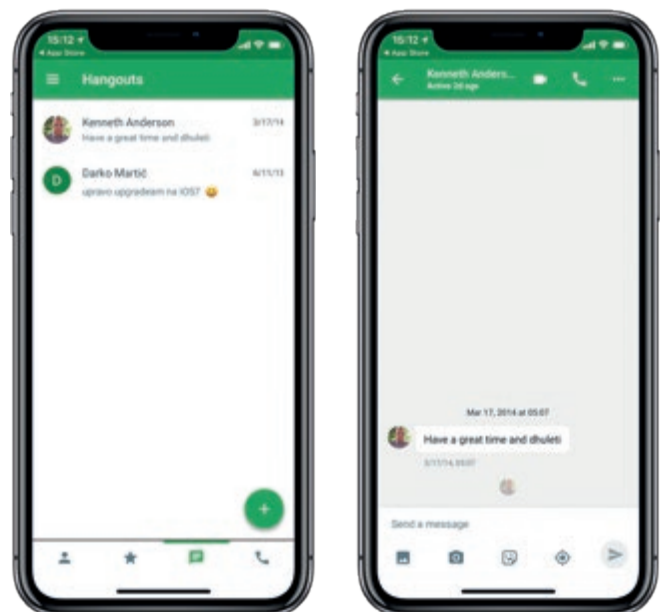
Once you figure out how to set up a Google Hangout, you can easily use it to connect with colleagues, clients, or friends and family over the computer. You can use Google Hangouts for voice calls, video calls, or text-based chat, and you can connect with multiple people at the same time. When you create a group in Google Hangouts, you can quickly reconnect with the same people later when you click on the group again.

1. Log into your Google account, then type: "hangouts.google.com" into the browser bar at the top of the screen.
2. Click through the intro screen until you land on your Hangouts homepage, which will have a list of any ongoing chats on the left and will offer you three options in the centre of the page, "Video Call," "Phone Call," and "Message."
3. Click the option you want, then type the phone number to call, or the contact you want to video chat or message into the search bar that pops up on the top left corner of the screen (if you are reaching out to someone who is not yet a contact, type in their email address).
4. If you want to message several people at once, instead of entering the contact to text, click "New group" and then enter a series of contact names, emails, or phone numbers.



How to set up and use Google Hangouts on mobile

1. Download the Google Hangouts app and open it on your phone.
2. Allow the app to access your Google account.
3. Tap the "+" symbol in the green circle at the bottom right corner of the screen.
4. Type in contact you wish to reach, or hit "New group" and enter multiple people.
5. Start a text chat, or hit the camera icon for a video call, or the phone icon for a phone call.



Amazon Alexa & Echo

The Amazon smart speakers can be used to make voice calls, they can even route through your smartphone, if you have the app installed, to make telephone calls through your mobile phone network.

Echo devices with video screens and other Amazon products, like their range of Fire tablets can also make video calls. Most smartphones can run the Alexa application and depending on their system they may be able to be used for video calling. In our experience the performance of video calling on this system is not as good a quality as achieved by Google Hangouts but if you already have these devices at home you should try-out the features.



Compatible with:
Apple iOS & Android



Amazon Echo Dot



Amazon Echo Spot



Amazon Echo Show

How do I make a call using Alexa?

The first thing you need to do is give Alexa access to your contacts. Head over the Alexa app on your iPhone or Android phone and tap the Calling & Messaging tab on the bar at the bottom of the screen (the icon second from the left that looks like a chat bubble). If you haven't already enabled it, the app will ask permission to access your contacts and register your phone number. (That's for caller ID purposes. If you opt-out, your calls will show up as "Unknown.")

Once you finish, you'll instantly be able to call and message your friends and family who have Echo devices. Then, placing a call is as simple as asking Alexa to call someone. For example, if you want to call your mom, just say, "Alexa, call mom." What if the person I'm trying to call doesn't have an Echo? If you try to call someone who has an Echo, Alexa will automatically ring it (assuming they've also signed up for calling and messaging in their Alexa app). If your recipient doesn't have an Echo device (or it isn't enabled), Alexa will do one of two things: call the Alexa app on their phone (if it's been set up to receive calls), or dial the number associated with the contact. If there are multiple numbers attached to a contact, it will ask which one you want to call. Then say, "mobile" or "home phone," and Alexa will dial the appropriate number.

Can I call a number that's not in my contacts?

Yes, you can call a number that's not in your contacts by speaking the number to Alexa, e.g. "Alexa, call 01234 567 890".

How do I answer an incoming call?

When a call comes in, your Echo will play a ringing sound and its ring will glow yellow. To answer the call, just say, "Alexa, answer the call."

How do I end a call?

Simply say, "Alexa, end the call" or "Alexa, hang up." On Echo Spots and Echo Shows you can also tap the red phone icon on the screen.

How do I make a video call?

If you initiate a call from an Echo Show or Echo Spot, it will default to a video call, as if you were using Apple's Facetime or Google Duo. If you don't want to be on camera, just say, "Alexa, turn the video off" or tap the camera icon on the screen.

Facebook Messenger



If you have access to Facebook (or have a family member willing to help you get set up) then you already have access to a messaging service with Facebook Messenger. Many people do not realise that the Facebook webpage and Facebook apps on mobile devices can also make video calls. You can only contact people who are users of Facebook but the system is easy to use, free and provides a reasonable user experience.



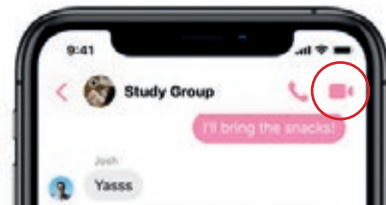
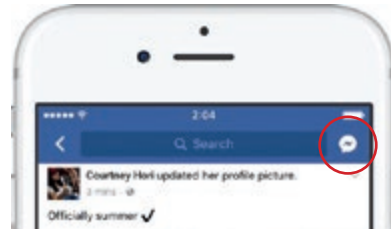
Compatible with:
Apple iOS, Mac OS, Android, Windows
and Chrome



To video chat on Facebook:

- 1 Click  at the top right of the screen.
- 2 Open a conversation with the person or people you want to video chat with.
- 3 Click  in the top right corner of the chat window.

If your screen locks during a call, your video may continue to stream. If you're ready to end a call, be sure to hang up before locking your computer.



Where do you go from here?

Well with us all likely to be living isolated lives for some time you now have the opportunity to try out these new technologies and put them to use giving you access to family and friends.

If you are struggling to set up one of the systems in this article remember to get hold of your family tech specialist, you can usually find them cunningly disguised as grandchildren!

Don't be frightened, you won't break anything or run up a massive bill using this technology and we guarantee that if you stick with it you will quickly adapt and look forward to chatting with friends and family face to face throughout this unprecedented event.



Exposure Online

See the magazine website at:
www.exposure.press



'Keeping communities in touch' from the NCCF

With the clear issue of social isolation becoming a reality during the Coronavirus crisis the NCCF asked BH Associates to come up with ideas to help combat it within our beneficiary community.

Working together we quickly identified that promoting the use of video chat technology is one of the most effective ways we could combat the enforced isolation being felt during this pandemic. We also identified easy access to official news services and access to further support from the NCCF.

Because the key to the project was communication we chose the name Conversa which is a play on conversation and also means 'talk' in Portuguese.

Any UK Based member of the British Nuclear Community can apply for a Conversa pad during the Coronavirus crisis. Following a few basic checks, we will courier their pad to them.

Once the crisis is passed they will be given the option to keep the pad for a small fee or return it to us.

There are two versions of the Conversa pad; one which operates on mobile data so can be used wherever there is no wifi available, the other version will run on your home wifi.

The mobile data version of Conversa is much more expensive for the charity to supply so if you do have wifi access we would ask that you only request the wifi one.

From the Conversa pad you can easily call family and friends to chat with them, either using audio or with full video and the 10-inch screen ensures that you have a great view of your call. We have simplified the operation of the application and a comprehensive guide is also included in the package.

The Conversa system doesn't stop there you have special access to Exposure magazine online giving you all the great articles in a compact easy to read format. We have also linked all the essential Government and National Health Service portals so you can access essential information throughout the crisis.

Through the pad you will also have your own dedicated email address and access to a whole range of android apps like the BBC iplayer & the ITV Hub.

Our final feature is the ability to make a request for Care Wellbeing and Inclusion support direct to the NCCF through the Conversa pad.

Providing you advise us of audio, visual or dexterity issues before we send your Conversa pad out, we can produce a tailored setup implementing the accessibility features to make using your Conversa even easier.

The EE network, which we will use to provide mobile data, is well established and provides excellent coverage across most of the country. Where people do not have wifi access we are able to check the EE mobile data availability at their location as there may be the odd case where we could not connect the pad to the internet.

To get a Conversa pad all you need to do is complete a simple application form.

Contact us to request your Conversa pad application form now - Send your name and address to **NCCF, PO Box 8244, Castle Donington DE74 2BY** or call **0115 8883442** and leave your contact details on the answering service.



BH Associates write about creating Conversa

The first part of the project was to test and review the most common communication applications available at the moment, we looked at accessibility, performance, popularity and potential ease of use amongst the NCCF beneficiary demographic. From this we were able to identify a number of preferred options.

We also turned this research into the guide article published in this edition under 'Its Good to Talk' so that people who already have access to the equipment needed could get themselves up and chatting.

We decided that the Google Hangouts system addressed our prerequisites better than the others and proceeded to review devices upon which it could be installed and operated with ease.

In selecting a specific device to run the Hangouts application we are able to set each one up customised to the needs of the beneficiary to make use as simple as possible.

Whilst home broadband and wifi is the best option for getting online and video chatting we are aware that not all beneficiaries have access to this. To solve the problem we ensured the devices used had the capability to access mobile data the same way that modern smart phones do.

Access to mobile data can be expensive and video calling uses a lot of data. We have negotiated a special deal that gives us access to mobile data through EE with a 50% discount.

With the inclusion of mobile data access to the Conversa pad a new opportunity was presented and we were also able to add the multi-format communication platform WhatsApp to the devices along with the traditional mobile phone abilities. This provides further options for communicating with friends and family.

Our final task was to bundle this all into a usable friendly package that we could update and maintain without the need for users to do anything.

Our hope is that we can use Conversa pads long after the Coronavirus crisis is over, increasing inclusion and enhance wellbeing within the British Nuclear Community.

Meet the Trustees - Ian Hall

Hi, my name is Ian Hall and I've been involved with Nuclear Veterans charities for around 10 years.

My father, John Hall, who was from Burnhope, Co Durham, was an RAF Ground Crewman in the 76 Squadron and he witnessed Operation Grapple Y on Christmas Island in 1958 aged just 19. Years later he and my mother, Marilyn, answered an advert in the local paper in the mid 1980's and joined a group of Nuclear Veterans in the East Midlands. In the late 1980's my father became ill and was diagnosed with a rare form of Hairy cell leukaemia. At one of his first appointments the doctor had asked if he'd ever been in contact with radiation. Despite years of Chemotherapy he passed away in 1992.

My mother continued to work with the group for many years and as numbers dwindled descendants were actively encouraged to join.

Whilst with the old national BNTVA I occupied a number of roles including running the shop, looking after the post and responding to phone line. Over the years I've gotten to know many veterans, their families and also other trustees who have taken a great interest in those involved within the Nuclear community. Many have devoted many hours, weeks, months and even years to promoting awareness of Nuclear Veterans and their families and assisting those suffering from events many years ago. I share those aims and would like to contribute to the NCCF achieving those goals. I have recently been elected as the next treasurer.

As for me, I'm a 50yr old warehouse manager from Leicester and my partner is Sue.



© BH Associates

I'm a huge sports fan and particularly follow Leicester City, Leicester Tigers and the England cricket team. I love quizzes, both setting and taking part and I'm also captain of a long alley Skittles team.

Meet the Trustees - Andrew Kirk

I am recently retired from the Home Office, after 32 years of service. During my career, I held a number of senior management posts with responsibility for large numbers of technical law enforcement staff, and as primary budget holder for national programmes of training delivery.

I chose HM Civil service as a career because I aspired to provide a meaningful contribution to the safety, security and welfare of the citizens of the UK. I have always held very strong views about the potential menace of drugs, firearms, and other dangerous items to our society, and I joined the Customs and Excise Preventive wing, to fulfil this aspiration.

As a Senior Technical Assurance Manager, across several HMG departments, I worked in the most sensitive law-enforcement and legal/

technical policy areas, and was continually required to evidence and demonstrate qualities of strong leadership, integrity, and inclusivity. After ten years in the Operational sphere of HM Customs enforcement activity, I became the Senior Instructor and Policy Manager for Personal Safety, Firearms, and Critical Incident Gold Command training. This role placed me at the heart of Strategic and Tactical decision-making in a changing and occasionally hostile environment. I had to develop, perform, a wide range of communication skills, in order to effectively engage with senior Civil Servants, Ministers, and Departmental Trade Union officials.

I am the son of a former serving Royal Navy Nuclear Submariner, and am acutely aware of the health hazards and implications of service in the Nuclear Industry.

My father died young, from a condition which can only have been exacerbated by his exposure to radiation, and this loss has galvanised me to devote time and energy, which I now have in abundance, to the welfare and care of victims and families of others who have suffered a similar fate.

I will bring sincere commitment and motive energy to the charity's aims and direction, and endeavour to articulate and advocate effectively on behalf of the board, and all its beneficiaries.

I have previously raised money for local charity through various endeavours... most recently a circumnavigation of Iceland by Motorbike in 2018... The organisational skills, and tenacity required in getting people to invest their time, and money (!) which I had to develop, I believe I could bring to promoting the aims and ideals of this vital charity.



CHRC

Centre for Health Effects of Radiological and Chemical Agents

Exposure Editorial Spring 2020

A round up of what's been happening at the CHRC

P26

Ionising Radiation and Tissue Effects

We discuss the non-cancer health effects of ionising radiation on exposed individuals.

P27

Basic Facts

We have prepared online resources for the CHRC website called "Basic Facts" for all stakeholders, and members of the nuclear community.

P32

ICCR

News from the International Congress of Radiation Research (ICCR 2019)

P33

Exposure Editorial Spring 2020



In this issue, Alex Perry describes non-cancer health effects of ionising radiation in an article titled 'Ionising Radiation and Tissue Effects'. His article summarises medical conditions such as radiation sickness and sterility that can arise a short time after exposure and effects such as cardiovascular disease which can arise several years later. There is also discussion of cataracts and about how scientific understanding of these effects, collectively described as 'tissue effects', has progressed.

We also provide a short summary of our 'Basic Facts' series which we are populating onto the CHRC website

<https://chrc4veterans.uk/knowledge-hub-basic-facts/>.

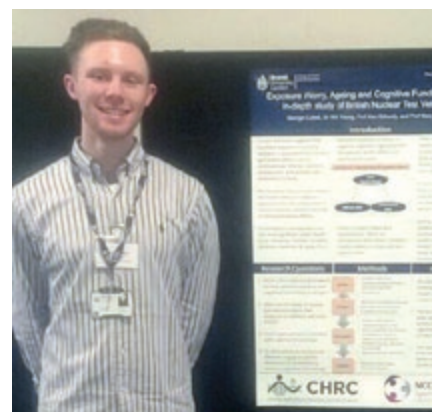
The purpose of this interactive, educational resource is to provide interested readers with knowledge of the science that underpins our research.

Speaking of our research, we continue to be busy with the processing and analysing of blood samples in the Genetic and Cytogenetic Study. We have now received samples from over 80% of our recruited families, which is excellent and are on course to complete analysis on some aspects of this study by the end of this year. We remain very grateful to all those who have taken part and those participants who are continuing to provide blood samples for this study.

With regards to the social science studies, George has finished collecting data for his exposure worry study and is currently analysing the results of the surveys and the transcripts of the interviews which took place. Amy has completed the collection of data from two rounds of in-depth interviews. She is currently using a process of creative nonfiction writing to represent the findings in a way that is both novel and accessible to all. Both George and Amy would like to thank everyone who volunteered and contributed to these projects.

Last August researchers from the CHRC participated in the International Congress of Radiation Research (ICRR) in Manchester. The ICRR is the premier international scientific conference which brings together scientists from all over the world who study the effects of ionising radiation. CHRC staff and students participated in the programme of this 5-day event with oral and poster presentations about our research with British nuclear test veterans. This forum not only increases the profile of CHRC's research to an international scientific audience but also promotes potential collaborative new research partnerships.

From everyone at the CHRC, we wish you a happy Easter. Our office will be closed over the holiday from Wednesday 8th April to Tuesday 14th April and will re-open on Wednesday 15th April.



George Collett



Amy Prescott

Ionising Radiation and Tissue Effects

Part 1

In this article, we discuss the non-cancer health effects of ionising radiation on exposed individuals. We begin by explaining how ionising radiation can cause damage to cells that can lead to cellular death and, how this in-turn can produce damage in tissues and organs known as 'tissue effects'.

Tissue effects can occur a short time (e.g. minutes, days or months) or a long time (e.g. several years) after exposure and are called early and late effects respectively. In Part 1 of this two-part article we provide examples of early tissue effects including radiation sickness and sterility. In Part 2 (in the next issue of Exposure) we will provide examples of late tissue effects including cardiovascular disease and cataracts.

All early and most late tissue effects are deterministic, i.e. they occur as a result of the same biological mechanism which we will now explain.

Deterministic Effects

When ionising radiation passes through a cell there is a transfer of energy to that cell which removes electrons from atoms and molecules in a process called ionisation. Ionisation triggers chemical reactions which can damage the cell and in particular damage the DNA inside the cell. In response to this damage, the cell can very efficiently repair this damage, incorrectly repair the damage or instruct itself to die in a process called apoptosis. Incorrectly repaired damage may also lead to cell death. Overall, this means that individual cells can be lost through cell death if they are exposed to radiation¹.

In the body, organs are made of tissues and tissues are composed of billions of cells. Thus, depending upon the number of individual cells lethally damaged then this may affect the normal working of tissues and organs. The precise biological effects depend upon the radiation dose as shown in **Figure 1**. This shows that as the radiation dose is increased an increasing proportion of cells in a tissue are lethally damaged.

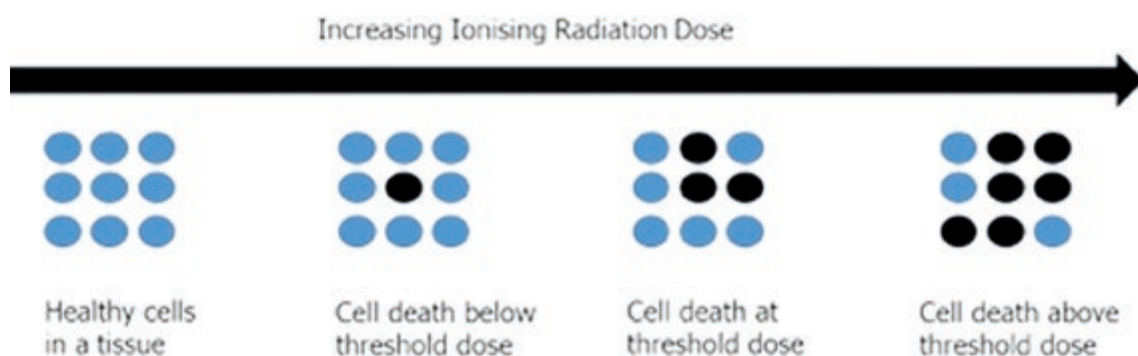


Figure 1. The effects of ionising radiation on cells and tissues.

Scientists have found that there is a minimum dose, known as the threshold dose, which must be received for enough cells within a tissue to be lethally damaged so that clinical symptoms arise². Below the threshold dose, as only limited cells are affected, tissues and organs work correctly. Above the threshold dose the severity of any symptoms seen will increase as the dose increases because there is an increasing amount of cell death.

Health effects brought about by this process are called 'deterministic effects', because they will occur if the threshold dose for a given effect is achieved or exceeded.

Absorbed Radiation Dose

Scientists investigating deterministic effects measure the absorbed radiation dose in Grays (Gy). This is the energy absorbed in joules per kilogramme by a substance such as human tissue.

Threshold doses vary between individuals. The scientific organisation, the International Commission for Radiation Protection (ICRP) have defined a threshold dose as producing effects in 1% of the population³. For example, the threshold dose for cardiovascular disease is 0.5 Gy. This means that if 100 people receive a dose of 0.5 Gy, then 1 person will get cardiovascular disease over the course of their lifetime because of that exposure.

Above the threshold dose the occurrence of deterministic effects increases with dose up to 100% as shown in **Figure 2**. This graph shows that every member of an exposed group of people will have a deterministic medical condition if they receive enough radiation.

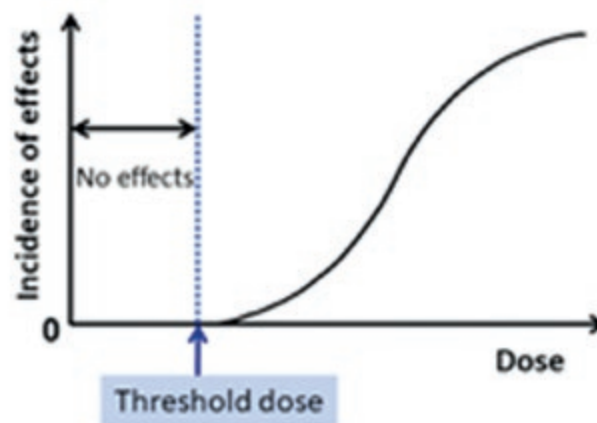


Figure 2. The incidence of deterministic effects versus the dose.

Radiation Sickness

Radiation sickness is caused by a person receiving a high radiation dose (threshold dose ~ 0.7 Gy) to the whole body within a short space of time. Some people have had this condition as a result of the atomic bombings of Japan, the accident at the Chernobyl nuclear power plant and other industrial accidents¹.

Radiation sickness begins with early symptoms including nausea, vomiting, diarrhoea, headache and fever. The number of different symptoms experienced by the patient and their severity increases as the dose received increases as shown in **Table 1**⁴.

Table 1. Radiation Sickness Early Symptoms and Dose.

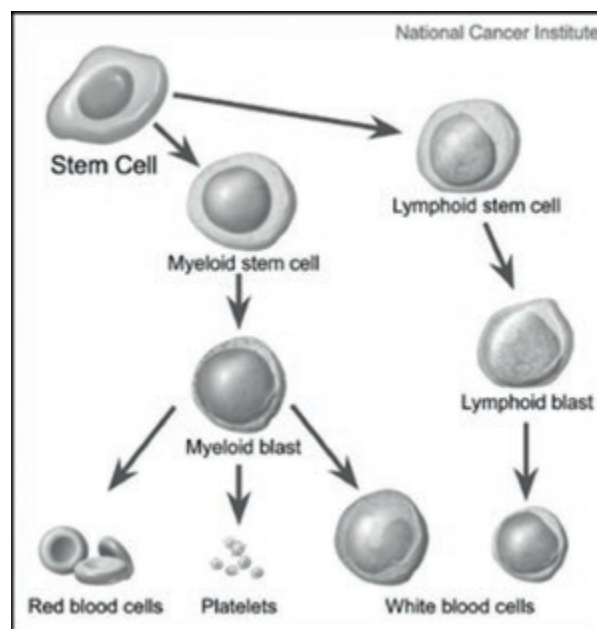
Whole body dose (Gy)	Early symptoms of radiation sickness and time to symptom onset
1-2	Nausea and Vomiting (6 hours)
2-6	Nausea and Vomiting (2 hours), Diarrhoea (8 hours), Headache (24 hours) and Fever (3 hours)
6-8	Nausea and Vomiting (1 hour), Diarrhoea (3 hours), Headache (4 hours) and Fever (1 hours)
8-10	Nausea and Vomiting (10 minutes), Diarrhoea (1 hour), Headache (2 hours) and Fever (1 hour)

Reference: EU CONCERT, https://concert-h2020.eu/en/Stakeholders/effects_health

Then there is a latency period when the patient appears to have recovered from these early symptoms. However, cells can continue to die during this period as a result of the initial exposure⁵.

Some cells are more sensitive to radiation (radiosensitive) than others, in particular the organs associated with blood production are the most radiosensitive in the body. This is because blood production cells divide more often than most other cells and cell death occurs mostly during cell division².

The blood production system includes stem cells that are located in the bone marrow. Stem cells can make copies of themselves or change to become a more specialised type of cell (a process called differentiation) such as a lymphocyte (white blood cell), a red blood cell or a platelet as shown in **Figure 3**.

**Figure 3.** Blood cell differentiation (National Cancer Institute)

If the bone marrow has been exposed to enough radiation this will kill stem cells and hence reduce an individual's number of blood cells, including their lymphocytes (lymphocyte count) as shown in **Figure 4**⁵. The graph shows the lymphocyte count falling to different extents over a 2 day period.

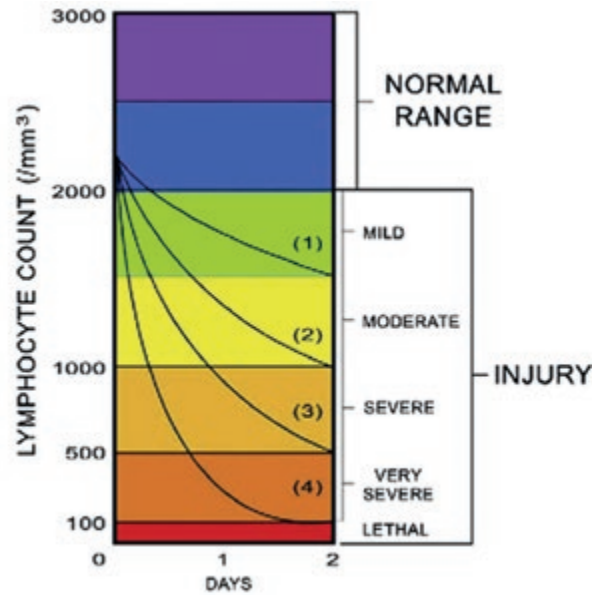


Figure 4. Lymphocyte count reduced by radiation (IAEA)

Reference: CDC, <https://www.cdc.gov/nceh/radiation/emergencies/arsphysicianfactsheet.htm>

Lymphocytes are an important part of the immune system and a reduction in their number renders the body vulnerable to infections. Patients may recover from these infections, but some are so serious that they may not recover. The main cause of death from a whole-body radiation dose in the region of 2-6 Gy is from damage to the red bone marrow¹. Above 6 Gy ionising radiation can also damage the gastrointestinal system⁵ (this includes the oesophagus, the stomach and the intestines) which increases the risk of death.

The patient’s chances of survival for doses below 8 Gy can be improved if the patient receives suitable medical care as shown in **Table 2**⁴.

Table 2. Radiation Dose and Risk of Death.

Whole body dose (Gy)	Risk of death without medical care (%)	Risk of death with medical care (%)
1-2	0-5	0-5
2-6	5-100	5-50
6-8	95-100	50-100
> 8	100	100

Reference: EU CONCERT, https://concert-h2020.eu/en/Stakeholders/effects_health

If a dose of 10 Gy or greater is received the combination of red bone marrow and gastrointestinal damage causes death within two weeks⁵. Doses greater than 20 Gy can damage the cardiovascular system and the central nervous system which causes the patient to die in three days or less.

Sterility

There are other organs which will show health effects within a few weeks after exposure if the threshold dose or greater is received including those required for sexual reproduction (**Table 3**)³.

Table 3. Organs affected by radiation a short period after exposure.

Organ	Effect	Threshold Dose (Gy)
Skin	Burn	5-10
Skin	Temporary hair loss	4
Testis	Temporary hair loss	0.1
Testis	Permanent sterility	6
Ovary	Permanent sterility	3

Reference: ICRP, <https://www.icrp.org/publication.asp?id=ICRP%20Publication%20118>

Ionising radiation can both reduce sperm production in men and kill sperm cells and this sterility in males can be temporary or permanent depending on the dose. Radiation can damage a woman's ovaries and damage her eggs. However, these effects will only occur if the threshold doses are exceeded and for permanent sterility for both sexes these threshold doses are high³.

Summary

In this article we have discussed how radiation can damage tissues and organs and that this is referred to as tissue effects. The article has stated that most tissue effects are deterministic which means that they are the consequences of cellular death within organs. The threshold dose has been discussed with respect to the relationship between dose and health outcomes including that the severity of effects increases with dose above the threshold dose. Indeed, in all of these examples the health effects depend upon the dose received.

The various stages and symptoms of radiation sickness and other early health effects such as sterility have also been discussed, including that some of the body's organs and systems are more sensitive to radiation than others.

We at the CHRC do hope you have found this article informative and references are included for further reading. Please also refer to the Basic Facts which can be found on the CHRC website:

<https://chrc4veterans.uk/knowledge-hub-basic-facts/>.

Further Reading

1. United Nations Environment Programme (2016) Radiation Effects and Sources: What is Radiation? What does Radiation do to us? Where does Radiation come from? United Nations, New York, viewed 18 February 2020, <<https://doi.org/10.18356/b1749f17-en>>. An overview of radiation and health.
2. Ministry of the Environment, Government of Japan (2019) Booklet to Provide Basic Information Regarding Health Effects of Radiation, Government of Japan, viewed 17 January 2020, <<https://www.env.go.jp/en/chemi/rhm/basic-info/index.html>>. The health effects of radiation.
3. International Commission on Radiological Protection (ICRP) (2012) ICRP Publication 118, ICRP Statement on Tissue Reactions / Early and Late Effects of Radiation in Normal Tissues and Organs – Threshold Doses for Tissue Reactions in a Radiation Protection Context, ICRP, viewed 26 February 2020, <<http://www.icrp.org/publication.asp?id=ICRP%20Publication%20118>>. Tissue effects including discussions of the eye and the heart.
4. European Joint Programme for the Integration of Radiation Protection Research CONCERT, What are the effects of ionising radiation on my health? European Joint Programme for the Integration of Radiation Protection Research CONCERT, viewed 7 January 2020, <https://concert-h2020.eu/en/Stakeholders/effects_health>. Health effects of ionising radiation.
5. Centres for Disease Control and Prevention (CDC), Radiation and Your Health, Acute Radiation Syndrome: A Fact Sheet for Clinicians, CDC, viewed 26 February 2020, <<https://www.cdc.gov/nceh/radiation/emergencies/arsphysicianfactsheet.htm>>. Information about radiation sickness.

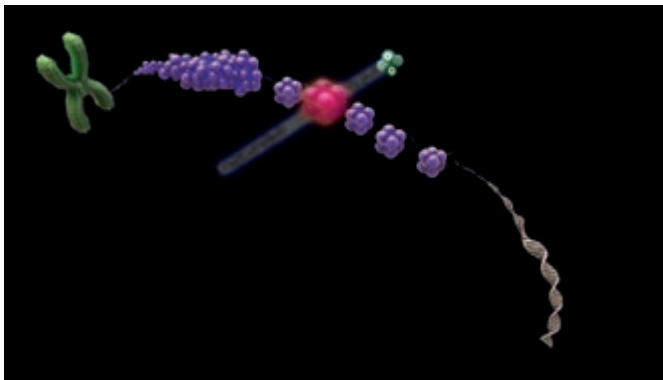
Basic Facts

We have prepared educational, online resources for the CHRC website called “Basic Facts” for all stakeholders, including members of the nuclear test veteran community, students and health professionals who would like to know more about the science which underpins our research

<https://chrc4veterans.uk/knowledge-hub-basic-facts/>.

These resources contain key information which will be useful in understanding the specialist research publications which will arise as outcomes from CHRC research. Each Basic Fact has an interactive structure so that the user can be in control of their own learning experience.

Some of these Basic Facts contain brief animations which have been prepared by Digital Design students at Brunel University London.



Animation Example 1:

An alpha particle transferring energy to chromatin



Animation Example 2:

An alpha particle damaging DNA

At present there are five Basic Facts:

1. Ionising Radiation: contains introductory information about the type of energy that is commonly referred to as ‘radiation’ whose effects we are investigating.
2. Cellular Effects: considers the changes that ionising radiation can cause to cells and to the DNA within cells and about how the cell can respond to these changes.
3. Dosimetry: describes the different ways that scientists can estimate the dose of ionising radiation that an individual has received.
4. Epidemiology: introduces a science which investigates whether there is a relationship between a variable such as ionising radiation and a health outcome such as heart disease for a given group of people.
5. Confounders: describes how variables which scientists are not investigating in a given epidemiology study have the potential to affect the study results and how scientists deal with these confounding variables.

Each Basic Fact contains a “Further Information” section which will enable the user to add to their learning. In addition, we intend to add more Basic Facts to the CHRC website over the course of the year. We trust that you find these Basic Facts to be interesting, informative and useful for understanding our research. Please provide us with feedback and any suggestions that you may have for additional Basic Facts so that we can provide you with the scientific information that you need.

ICCR

Last August researchers from the CHRC participated in the International Congress of Radiation Research (ICRR2019). The ICRR is the premier international scientific conference which brings together scientists from all over the world who study a wide spectrum of topics relevant for all aspects of radiation research including basic mechanisms, translational research, radiotherapy and health effects. This conference is held every four years in different countries and this year it was hosted in Manchester (August 25-29) by the UK Association for Radiation Research.



CHRC's Finlay Smith presenting his research poster at the ICRR2019

The conference consisted of a series of parallel lectures and workshops about a wide variety of subjects including studies about the survivors of the atomic bombing of Japan, the nuclear accidents in Chernobyl and Fukushima, improved ways of performing radiotherapy, the impact of radiation on wildlife and ecosystems and the risks of exposure faced by astronauts.

CHRC staff and students participated fully in all aspects of this Congress including an oral presentation summarising the methodological approach for the 'Cytogenetic and Genetic project' by Dr Rhona Anderson and, through poster presentations by our students. A full list of speakers and 'Abstracts' of the work presented at the Congress can be accessed through www.icrr2019manchester.com. A meeting report which focuses mainly on sessions which encompassed 'Health effects and Ecology' and which may be of interest has been published (Williams et al.) 'Meeting report of the 16th international congress of radiation research and the 12th international symposium on chromosomal aberrations' by the Society for Radiological Protection in 2020, <https://iopscience.iop.org/article/10.1088/1361-6498/ab52de>.

Key speakers to draw your attention to are Professor John Boice, a distinguished American scientist, who gave a presentation about studies with American nuclear test veterans. This research, which is part of a larger American "million person study", is concerned with ascertaining the doses that that 115,000 US test veterans have received and whether this can be related to their health outcomes. Professor Boice shared the findings that the majority of US veterans had received low doses (99% had doses < 50 mSv). However, there were notable exceptions such as "the weathermen" (personnel who monitored weather conditions during the Castle Bravo test in 1954) who received doses in the range of 200 mSv – 800 mSv. Professor Boice also discussed the interesting finding that some US naval veterans had suffered health effects due to exposure by asbestos.

Dr Yulia Malova, a Russian psychologist, gave a fascinating talk about her work with "the liquidators", those who had performed clean-up and containment work in the aftermath of the 1986 accident at the Chernobyl nuclear power plant. Dr Malova's research found that most of the health effects experienced by the liquidators she studied were not due to radiation exposure but were related to psychological stress. This stress stemmed from harm suffered by loved ones at the time of the accident, the evacuations from their homes, economic uncertainty and exposure worry. This had resulted in obesity, substance abuse, depression, suicide, marriage breakdown for the liquidators and this in turn increased the incidence of heart disease and cancer.

Overall, we found the ICRR2019 to be a rewarding experience in which we learned much about the research into the health effects of radiation that is being performed all over the world and also gave us the opportunity to share our research with British nuclear test veterans with the international scientific community.

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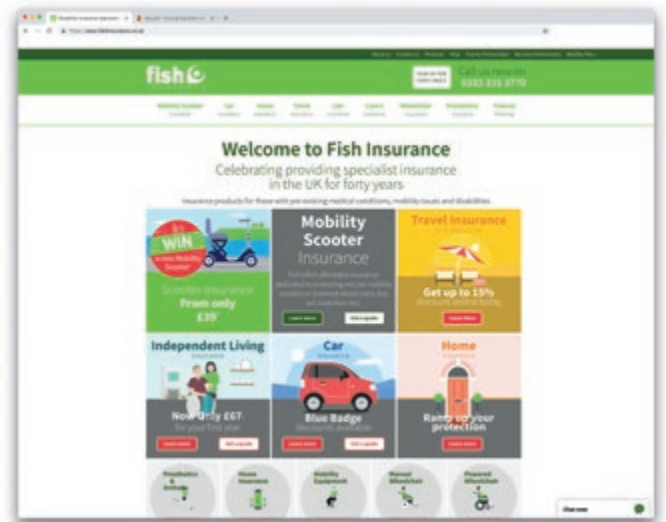


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Beyond...

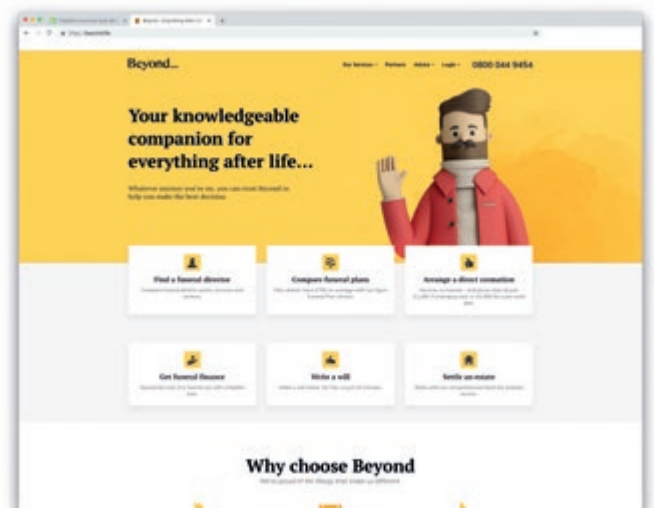
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HMS Plym – you will never be forgotten

As all the letters, photos, articles etc. in the magazine are about Christmas Island. I thought I ought to give you my part of Operation Hurricane 1952, Monte Bello Islands.



HMS Plym (K271) was a River-class frigate that served in the Royal Navy between 1943 and 1952. The ship was destroyed in the United Kingdom's first nuclear weapon test, Operation Hurricane in 1952. Wikipedia.

I got married on April 7th 1952. Late May 1952 on HMS Plym, we set sail from Chatham for Sheerness, where took the bomb aboard, then off to Gibraltar, Freetown, Simonstown, Mauritius finally Perth after a few days, off to Monte Bello where we anchored off Trimouille Island "with 6 Blocks of concrete" as anchors well we didn't want the ship to move and disturb the bomb, after all we got it this far, without trouble. The following weeks we entertained ourselves the drinking the odd can of beer, fishing, sailing, football, hocky and cribbage, what a riotous time we had, still it kept boredom away.

The ships company was reduced, till, the day before when it was reduced still further to 2AB's, 1 Stoker, 1 Steward and me, oh yes 2 Officers and I think 4 Boffins. After breakfast LAB the steward and myself were taken to HMS Campania After the bomb was exploded and made a mess of "Plym", I am told that some time later a few bits of "Plym" were found.

When all the excitement died down, me and my cooks mate were ferried to the Island (I think Hermitage Island) where we joined the shore party who were charged with cleaning up all the articles put

there to find out what effect the radiation had. This was the first time we had experience of "Camp Cooking" though the Corporal and Private I suppose, were used to it. still, we through and nobody died of food poisoning!!

We sailed home on "Campania" arriving December, just in time for Xmas.

Danny Pullen

Brian Tipper – Looking for Christmas Island comrades

My name is Brian Tipper (TIP). I am looking for my old comrades who I was with on Christmas Island.

We were the advance party of 20 squadron 36 C.E.R. Royal Engineers from Invicta Lines Maidstone, flying to the island in July 1958. We were to take part in “Operation Grapple” (Bomb tests) and returning to Invicta Lines in July 1959.

Some of the men I am looking for (I can’t remember their full names) are **Mick Baker** who lived in Maidstone, **Ginger Merry** and **Spindley Hindley** who came from Leicestershire. **Swiftly Swift** from Stone.

Lanky Len from the West Country. **Duckworth** from Banstead in Surrey. **Jack Findley** and **George Pirie** from Fraserborough. **Pete Marshall** from Bridlington. **John** from Wigan. **Brummy** short dark haired chap. **Taffy** from Cardiff who was a rugby player, and many others who may have served with me.

I took my wife to the BNTVA AGM at Chateau Impney, Worcester last year in 2019. It was my first attendance where I hoped to find some of my old comrades but sadly found none.

If you are a relation to any of the people I have mentioned or anybody who knows me, please get in touch with me as there are so many who might have passed away, and it would be great to chat to you about them.

Yours Sincerely

Brian Tipper



© Brian Tipper

Me outside my humble abode – Brian Tipper Christmas Island 1958 – 1959

© Brian Tipper



Brian Tipper Christmas Island - January 1958 - 1959

Left to right:

- Len Duckworth
- Ginger Merry
- Spindley Hindley
- Unknown
- Jock Findley
- Mick Baker

© Brian Tipper



Brian Tipper Christmas Island - January 1959

Left to right:

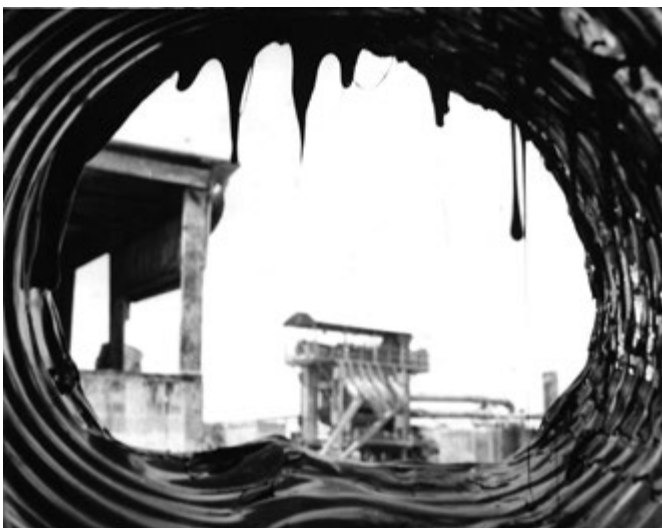
- Spindley Hindley
- Unknown
- Duckworth Driver

If you want to get in touch with Brian write or email us at:
editor@exposure.press

Exposure
PO Box 8244
Castle Donington
DE74 2BY

We will pass your details onto him.

© Brian Tipper



The "Starmix Machine" through an empty tar barrel

© Brian Tipper



Christmas Island sign

Useful Contacts

We've put together a list of contacts that you will find useful during the current situation.

Whether you're concerned about yourself or a loved one, these helplines and support groups can offer professional expert advice.²

Mental Health

Anxiety UK

Charity providing support if you have been diagnosed with an anxiety condition. Phone: **03444 775 774** (Monday to Friday, 9.30am to 5.30pm). Website: www.anxietyuk.org.uk

Bipolar UK

A charity helping people living with manic depression or bipolar disorder. Website: www.bipolaruk.org.uk

CALM

CALM is the Campaign Against Living Miserably, for men aged 15 to 35. Phone: **0800 58 58 58** (daily, 5pm to midnight). Website: www.thecalmzone.net

Men's Health Forum

24/7 stress support for men by text, chat and email. Website: www.menshealthforum.org.uk

Mental Health Foundation

Provides information and support for anyone with mental health problems or learning disabilities. Website: www.mentalhealth.org.uk

Mind

Promotes the views and needs of people with mental health problems. Phone: 0300 123 3393 (Monday to Friday, 9am to 6pm). Website: www.mind.org.uk

No Panic

Voluntary charity offering support for sufferers of panic attacks and obsessive compulsive disorder (OCD). Offers a course to help overcome your phobia or OCD. Phone: **0844 967 4848** (daily, 10am to 10pm). Calls cost 5p per minute plus your phone provider's Access Charge. Website: www.nopanic.org.uk

OCD Action

Support for people with OCD. Includes information on treatment and online resources. Phone: **0845 390 6232** (Monday to Friday, 9.30am to 5pm). Calls cost 5p per minute plus your phone provider's Access Charge. Website: www.ocdaction.org.uk

OCD UK

A charity run by people with OCD, for people with OCD. Includes facts, news and treatments. Phone: **0333 212 7890** (Monday to Friday, 9am to 5pm). Website: www.ocduk.org

PAPYRUS

Young suicide prevention society. Phone: HOPELINEUK **0800 068 4141** (Monday to Friday, 10am to 10pm, and 2pm to 10pm on weekends and bank holidays). Website: www.papyrus-uk.org

Rethink Mental Illness

Support and advice for people living with mental illness. Phone: **0300 5000 927** (Monday to Friday, 9.30am to 4pm). Website: www.rethink.org

Samaritans

Confidential support for people experiencing feelings of distress or despair. Phone: **116 123** (free 24-hour helpline). Website: www.samaritans.org.uk

SANE

Emotional support, information and guidance for people affected by mental illness, their families and carers. SANEline: **0300 304 7000** (daily, 4.30pm to 10.30pm) Textcare: comfort and care via text message, sent when the person needs it most: www.sane.org.uk/textcare Peer support forum: www.sane.org.uk/supportforum Website: www.sane.org.uk/support

YoungMinds

Information on child and adolescent mental health. Services for parents and professionals. Phone: Parents' helpline **0808 802 5544** (Monday to Friday, 9.30am to 4pm). Website: www.youngminds.org.uk

Abuse (child, sexual, domestic violence)

NSPCC

Children's charity dedicated to ending child abuse and child cruelty. Phone: **0800 1111** for Childline for children (24-hour helpline). **0808 800 5000** for adults concerned about a child (24-hour helpline). Website: www.nspcc.org.uk

Refuge

Advice on dealing with domestic violence. Phone: **0808 2000 247** (24-hour helpline). Website: www.refuge.org.uk

Addiction (drugs, alcohol, gambling)

Alcoholics Anonymous

Phone: **0800 917 7650** (24-hour helpline)
Website: www.alcoholics-anonymous.org.uk

National Gambling Helpline

Phone: **0808 8020 133** (daily, 8am to midnight)
Website: www.begambleaware.org

Narcotics Anonymous

Phone: **0300 999 1212** (daily, 10am to midnight)
Website: www.ukna.org

Alzheimer's

Alzheimer's Society

Provides information on dementia, including factsheets and helplines. Phone: **0300 222 1122** (Monday to Friday, 9am to 5pm and 10am to 4pm on weekends). Website: www.alzheimers.org.uk

Bereavement

Cruse Bereavement Care

Phone: **0808 808 1677** (Monday to Friday, 9am to 5pm). Website: www.cruse.org.uk

Crime Victims

Rape Crisis

To find your local services phone: **0808 802 9999** (daily, 12pm to 2.30pm and 7pm to 9.30pm)
Website: www.rapecrisis.org.uk

Victim Support

Phone: **0808 168 9111** (24-hour helpline)
Website: www.victimsupport.org

Eating disorders

Beat

Phone: **0808 801 0677** (adults) or **0808 801 0711** (for under-18s). Website: www.b-eat.co.uk

Learning disabilities

Mencap

Charity working with people with a learning disability, their families and carers.
Phone: **0808 808 1111** (Monday to Friday, 9am to 5pm). Website: www.mencap.org.uk

Parenting

Family Lives

Advice on all aspects of parenting, including dealing with bullying. Phone: **0808 800 2222** (Monday to Friday, 9am to 9pm and Saturday to Sunday, 10am to 3pm). Website: www.familylives.org.uk

Relationships

Relate

The UK's largest provider of relationship support.
Website: www.relate.org.uk

NHS

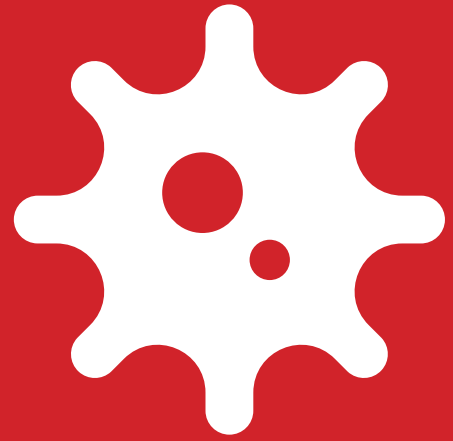
NHS111

NHS 111 can help if you have an urgent medical problem and you're not sure what to do. Phone **111** or **18001 111** on a textphone. (NHS 111 is available 24 hours a day, 7 days a week).
Website: www.111.nhs.uk

Life-threatening emergencies

Call **999** in a medical emergency. This is when someone is seriously ill or injured and their life is at risk.

Covid-19



SELF ISOLATING

Do not enter

Website: www.thenccf.org
Email: office@thenccf.org
Telephone: 0115 8883442 - Answer machine

The Nuclear Community
Charity Fund
Making that difference

