



# YOUNG

## How to stay productive and effective as young researchers during the Covid-19 pandemic

As humans have spread across the world, so have infectious diseases. Covid-19 is having an enormous impact on everyone's daily life, and the mix of our personal and professional lives is at a maximum. Most of us have to remain at home and away from our lab and tech equipment, but perhaps more importantly, away from our friends, family, co-workers and supervisors. How do we remain productive and effective as PhD students or young researchers? This article aims to provide some tips and tricks - from one quarantined researcher to another.



The number one rule that every quarantine specialist swears by right now is to **have a schedule**. Set your alarm for the same time every morning, take time for breakfast, get ready as you would to go to work, have a lunch break, and stop at an appropriate time to relax in the evening. Keeping my weekend as work-free as possible and creating some difference with business days has helped me to start again with fresh motivation on Monday.

**Revise the literature** and review what is missing. This period of isolation might actually be the one time we can get up to date on all the literature. Before you start, make sure you have a good reference editor installed (Mendeley, JabRef,...) and consider writing a review article if your field of expertise is lacking a thorough overview.



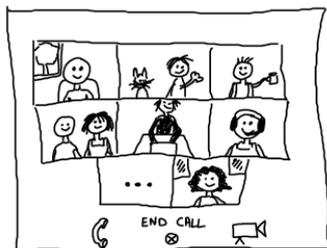
Are you still in the middle of experiments and gathering results, but unable to perform any lab work because access to your lab equipment is temporarily denied? Prepare for your return to work as much as you can and start writing down the **materials and methods** section to save time later. If you're not yet sure of your set-up, thought experiments might be helpful to optimise your set-up before you start. Einstein would approve.

**Create beautiful diagrams**, learn to use dedicated software and get to know the etiquette of scientific figures. When writing a new article, most of my time goes into creating figures, which would be acceptable if I ended up with great examples, but I don't. This is one of those skills that young researchers are simply supposed to have, so now is the time to self-educate.

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IF quarantined
  learn to code ;
ELSE
  continue life ;
END
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On the same topic, this is a great time to **learn to code!** Computer science is taking up an increasingly large portion of the radiation oncology workflow. For a young researcher, the ability to code is becoming more mandatory than optional, so now is the time to become familiar with functions, classes and arrays. Already fluent in Python or C++? Why not introduce yourself to some machine- and deep-learning using open-source Sci-kit and Tensorflow.

With little distraction, now is the time to **write**. Finishing the paper from a previous experiment or starting a brand-new project; we all know which we prefer. But with access to our offices denied, limited communication with supervisors and overall chaotic circumstances, it might be better to stick with the familiar. Finish papers, draft those for which you still need a few results, write abstracts and seriously consider starting the introduction of your PhD if its deadline is on the horizon.



Physical distancing but social solidarity: **connect** with colleagues through Slack, Skype, Zoom or whichever digital platform you prefer. Schedule coffee breaks together, meet over lunch, or follow the Manchester radiotherapy physics group's great example and hold your weekly after-work Thursday drinks in a virtual group chat. When all this is over, we might actually be able to set up a teleconference on the first try.

Organising virtual hangouts with peers is not only great for socialising, it also helps to decrease any awkwardness that might come with this type of interaction. This is especially helpful when you have a conference call planned with your **supervisor**. As we are no longer able to drop by their offices hoping they have some spare time, communication with our supervisors has become a little more complicated. Scheduling a conference call in the near future to discuss current activities or progress might help with motivation. However, supervisors who work in the clinic might have particularly busy schedules right now. See what works best for both of you, prepare what you want to mention or ask during conference calls and if all else fails, believe in yourself to find the right solution or make the best decision independently.

Take time to **relax**, take care of your health and **let go of the guilt**. Everyone is going through the same situation; it is normal that productivity will drop and this is not your fault. Some countries might still allow outdoor walks; take advantage of this freedom! (But seriously, keep your distance.) If not, the internet is currently a great source of live yoga classes, cardio workouts and improv weight training. Above all, find things to enjoy, whether it's being artistic, cooking delicious food or watching all the Harry Potter movies in one take.

Well-meant anecdotes such as the suggestion that Shakespeare wrote Macbeth and several other of his most famous plays while quarantined from the bubonic plague, or that Newton developed most of his calculus and probably defined gravity during a period of social distancing when the same disease forced the University of Cambridge to close, can come across as both inspiring and intimidating. Are we really supposed to have the biggest breakthrough in our scientific career right now? I don't think so, and luckily, neither does my head of department. When lockdown rules were introduced, he sent an e-mail encouraging all of us not to put professional pressure on ourselves and our collaborators, but rather to focus on the most essential parts that needed to be done and find a sustainable mix between both our professional and private responsibilities. I encourage all heads of department, managers and team leaders to send out the same type of message, and to all young researchers I would like to say: stay productive, but know we still have plenty of time to reach that breakthrough.



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