

In lectures, use slides and graphical representations of information as much as possible. Think carefully about how you can translate information into a visual format – creating simple figures accompanied by a few printed short sentences, and bold keywords, for example. Try to make your voice, and talking, the least important aspect of a lecture.

When you do speak, make your voice as clear as possible: concentrate on articulating every word; make sure you pause regularly; and, if people are struggling to understand your accent, attenuate it as best you can.

Try to remove all background noise. If students are disruptive or talk during lectures, put a stop to this behaviour: it could make the environment impossible for hearing-impaired students. From experience, a reminder at the start of the lecture should be enough.

If a student asks a question during a lecture, repeat it before answering, to make sure the entire class has heard and understood the question. This will also help with the overall comprehension of the class.

Record your lectures and make them available online for students to download and listen to a second time. Often, institutions do this automatically and will make the necessary tools available – especially now, because of the coronavirus – but, if they don't, ask for equipment, or find your own solutions.

Consider delivering your lectures over a videoconference platform, or re-recording them for this purpose. Making your face clear in the video will help lip-readers.

Be careful about sound quality when using YouTube, podcasts or other third-party materials. Background sound or music could disturb understanding, so try to select videos with just spoken words (and, ideally, subtitles).

Test masks, and find the most 'inclusive' one possible. Transparent face masks make lip-reading possible and facial expressions more visible, but they tend not to be cheap (more than €10, or US\$12, per unit). They can also take some time to get – we ordered some in early August for our son's teachers and received them only in mid-September.

Be willing to learn, change and ask for feedback. Your students will be the people best placed to help you make your lectures more accommodating to them. Set up a way for them to feed thoughts back to you, ideally anonymously, so that they feel they can provide honest feedback.

The coronavirus has made life more difficult for many of us, but universities, lecturers and teachers should make an effort to include and help all students.

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MY ILLNESS GAVE ME SKILLS FOR MY PHD

How living with type 1 diabetes taught me the importance of record-keeping. By Olivia Favor

I was diagnosed with type 1 diabetes (T1D) when I was just 16 months old. The disease prevents my pancreas from producing its own insulin, so a normal day involves puncturing my body with lancets every few hours, performing calculations on the fly to convert carbohydrate levels into insulin doses, and constantly worrying about how insulin doses and physical activity are affecting my blood sugar levels. On some days, it doesn't require much effort to keep these stable. On others, my diabetes takes me on a rollercoaster ride of headaches, shakiness, fatigue and frustration, despite my best efforts to tame it.

But when I began my PhD in 2018, I realized that my chronic illness had prepared me well for a graduate programme. Here's how.

Record-keeping

At seven years old, I started taking over the task of keeping meticulous daily records of my diabetes management: blood sugar levels and when they were tested; the amount of carbs I ate; and the amount of insulin I gave myself. As a child, I couldn't see the value of this detailed logbook, but I eventually realized it was meant to help me (and my endocrinologist) to come up with better therapeutic strategies.

“Diabetes has prepared me for a PhD by giving me a dream of seeing the disease cured in my lifetime.”

In the laboratory, keeping meticulous records has been of paramount importance. Sometimes it is inconvenient to jot down every calculation or record antibody dilutions for a Western blot, but otherwise I might later forget the intricate details of an experiment. By maintaining a lab notebook, I can revisit experimental strategies tried in the past and discuss alternatives with my lab-mates. Taking a few minutes to update the lab notebook every day has undoubtedly saved hours of trying to remember protocols and redoing calculations.

Problem solving

As a second-year undergraduate, I returned to my dorm after a morning of classes one day feeling exceptionally weak, shaky and dizzy.

When I finally worked up the strength to check my blood sugar, the meter read “35 mg/dL” – a level at which people can easily slip into a coma. Several similar experiences during the semester prompted me to troubleshoot my diabetes management. I spent months adjusting my insulin pump's settings to prevent episodes of severely low blood sugar while avoiding letting it get too high. Although it was hard, it paid off: the standard deviation of my blood sugar levels began to decrease and I felt healthier and happier.

A large part of my PhD research involves performing Western blots to investigate inflammatory pathways. At the beginning, I spent hours obtaining inconclusive results and doubting my scientific abilities. However, after a few months of optimizing the experimental conditions, I was eventually able to replicate my results with confidence. This, too, paid off, because I can now test my hypotheses effectively.

Perseverance

Some days I'm tempted to give up on my diabetes management when, despite my best efforts, my blood sugar levels run amok for no apparent reason. I remind myself that giving up would cause long-term damage to my eyes, kidneys, nerves and heart. That reminder is enough for me to continue fighting for my health, no matter how difficult it can be.

I'm sometimes tempted to give up on my PhD programme, too, when, despite my best efforts to perform robust experiments, they also run amok for no apparent reason. I remind myself that giving up on my PhD would lead to regret, damage to my self-worth, loss of potential career options and death to my goal of becoming an independent scientist.

Another way in which diabetes has prepared me for a PhD is by giving me a dream of seeing the disease cured in my lifetime. Although diabetes can knock the breath out of me at times, it also breathes purpose and passion into my PhD work. As I constantly tell my peers and family, “I'll find a cure for T1D or die trying!”

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