BRAIN STIMULATION
Training programs

TMS for Depression Online Course
Frequently Asked Questions

Is TMS dangerous if targeted incorrectly?

In brief, the evidence we have is that TMS seems to be remarkably safe even when it is not being used in a therapeutic context. There have been an enormous range of research studies done in healthy control individuals and none of these have shown any persistent deficits or the like. I suspect that there is a strong homeostatic push back against any changes in brain function if there isn't an underlying problem to begin with. Having said this, we are very careful around targeting as we want to maximise the likelihood of benefit and not take any risks, but TMS generally seems to be an extremely safe procedure.

What is involved in the placement of right sided DLPFC?

Localization of treatment on the right just mimics what is done on the left. You can use the beam F3 or 5-6cm approaches and just adapt to the other side.

How do you approach off-label applications?

Use of all TMS to treat conditions that are not listed on the device indication on the Australian register for therapeutic goods (ARTG) is typically considered off label. Providing treatment for off label conditions should be done under the auspices of a clinical trial or potentially using the Special Access Scheme (SAS) scheme for approval of off label treatments. There should be a process within an organisation for the institutional approval of the TMS application that is being considered, whether this is on or off label.

Patient Status and assessment of RMT

A number of factors can alter cortical excitability and should be taken into account when assessing the RMT and then determining the intensive treatment. Ideally, the patient will be in a similar physiological state when they have their RMT done as when they are receiving treatment. We do know that things like sleep deprivation can affect cortical excitability and this can certainly be modified by medication. If there are significant changes in the patient status between when they had their RMT measured and when they present for a new treatment, it would be sensible to treat at a somewhat lower intensity for the current treatment session or reassess the RMT intensity before treatment if possible.

Different methods for RMT assessment

We have provided an outline of one method for RMT assessment in the course but this is not the only way in which it can be done appropriately. For example, there are adaptive algorithms for devices that determine the RMT based upon a series of pulses of varying intensity. Some of these algorithms have been systematically evaluated and validated. Coil manufacturers also have some variations in the methods of actually localizing the coil based on their specific hardware.

Alternative treatment site such as the DMPFC

Studies have explored the DMPFC and the orbitofrontal cortex as potential treatment targets. However, there are no substantive sham controlled clinical trial or equivalence / noninferiority trials have indicated that these targets are as effective as standard treatment approaches. As such, they still should be considered somewhat experimental. It is my view that treatment at these sites should only be done as part of research or under special circumstances and where a patient is clearly informed of the non-standard nature of the treatment they are receiving.

Use of multiple TBS sessions in a day

The use of intensive/accelerated TMS or TBS protocols has gathered a lot of attention in recent years. However, these approaches are still very new and have not been evaluated in large non-inferiority or sham -controlled trials. At this stage I think they are still experimental and should be used in clinical trials or only under special circumstances where patients provide explicit informed consent as to the non-standard nature of the treatment they are receiving.