

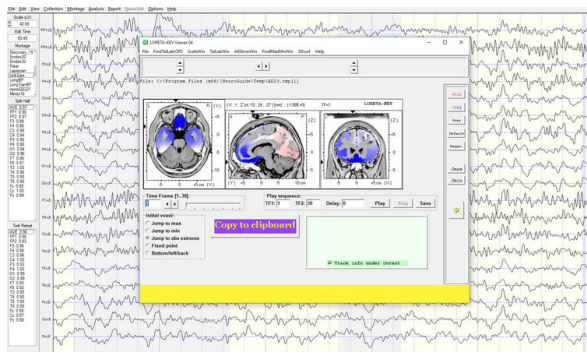


### What is LORETA?

LORETA Neurotherapy is a modern form of brain wave biofeedback.

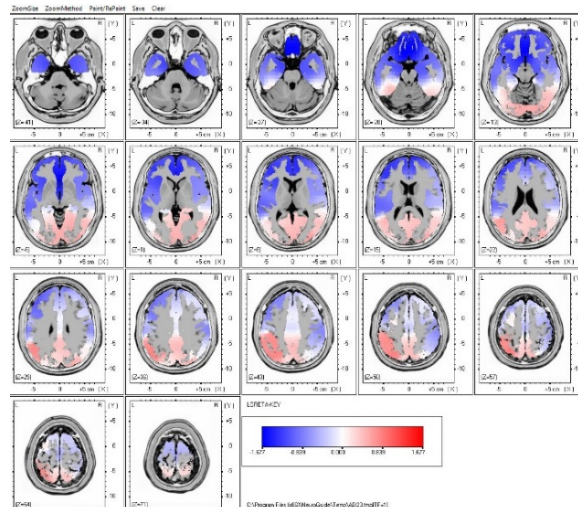
Standard or "surface" EEG measures the top 3 mm of the brain's activity. However, often we are wanting to see where the source of an electrical impulse is coming from. Through complex mathematical calculations, the LORETA or Low Resolution Electro Tomography combines EEG (electroencephalography) with the EMG (electromagnetoencephalography) to be able to calculate the source of electrical activity deeper in the brain.

Thus, LORETA allows us to look deeper than the top 3mm of the surface of the brain.



Using standard LORETA we can see down to around 2700 tiny 7x7 x7mm little cubed areas of the brain and see exactly the electrical signals occurring in these "voxels". This LORETA recording can then be compared to a LORETA normative data base. The normative data base consists of the results of similar recordings done with many people who are symptom free (with no anxiety, depression, ADHD etc). We are then able to look at the areas of the brain that through fMRI studies are known to be associated with the symptoms the person is suffering from and to see if indeed, the person's brain waves are different in those areas compared to the normative database records. If a person's LORETA recording is significantly different from the normative database, training of the brain waves in the area of their symptoms often leads to a resolution of the symptoms.

This is a modern technology which has been found to be faster than comparable methods, thus decreasing the amount of treatments needed.



### What happens in a LORETA session?

LORETA requires a "whole cap" recording. The EEG cap is placed on the patient's head and a recording of the electrical waves underneath the cap are taken at the first visit. We take this recording and discuss it with some of the top experts in the US. Presently the clinic works with Joel Lubar, Jay Gunkleman, Merlyn Hurd and Nick Dogris, all leaders in the field of Neurotherapy. In discussing your symptoms and the recorded "maps" (and with a lot of complex analysis) a brain training protocol is derived.

The patient then returns to the clinic for brain training sessions. The cap is again used to allow recording of the EEG whilst performing biofeedback. This usually consists of watching a movie which will become brighter and bigger or dimmer and smaller depending on whether the brain is practicing the new patterns. It's a little bit like pumping iron for very targeted areas of your brain to make them stronger!

This new form of Neurotherapy is called Z score LORETA brain training and is the present cutting edge in Neurotherapy practice.

It allows us to address whole network functions within the brain. Our latest understanding of brain function is that the brain works by activating different networks of neurons based in areas of where there are increased areas of communication. There are networks for thinking (the salience network), networks for relaxing (the default mode network) and many others. Whole cap LORETA Neurotherapy allows us to target networks in the brain to support their different functions.

The Brain Health and Biofeedback Clinic is the only clinical LORETA Neurotherapy provider presently in New Zealand. We are also lucky enough to have one of the world's greatest researchers in Neurotherapy across the road at the Dunedin Public Hospital.

#### [More about Integrative Medicine](#)

Here at the Brain Health and Biofeedback Clinic we offer you holistic care as we are an integrative medicine clinic. Integrative medicine consists of a combination of two approaches to health.

Firstly, a functional view of health in which we look at your lifestyle. While we know that diet, sleep, stress management and exercise are all critical for health, many of these areas are difficult to cover in standard care as there often just isn't the time to address lifestyle factors. One solution would be referral to a nutritionist, a psychologist or mindfulness coach and a personal trainer to separately address these areas in a patient's life. Functional practices include a lifestyle assessment and plan.

At the Brain Health and Biofeedback Clinic we provide the latest technology in stress management assessment including capnometry, galvanic skin response and heart rate variability assessments. Personalised diet, sleep and exercise support is provided.

Added to this is a systems-based approach in which we look to understand the root cause of diseases or symptoms. The person is a whole and in an integrative medicine framework, we treat the person rather than the disease. The latest advances in medical science are supporting a move towards

personalized medicine. New technological developments allow us for the first time to offer individualized testing if indicated when no progress is being made with simpler approaches. Genomics (genetic testing), metabolomics (testing of individual biochemistry such as methylation capacity), autonomic assessments (the balance between the "fight and flight" and "rest and digest" systems which is often an issue in chronic disease), and microbiome studies (to identify imbalances in gut organisms which impact our health) are all now possible. Combining this with a person's environment (their environment including lifestyle) allows for the ability to look across systems to determine an underlying cause behind an individual person's presentation.

Integrative Medicine has gained popularity. Here at the clinic we believe that personalized medicine is without a doubt, the future model of medical care.

#### Your Practitioner



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*The Brain Health and Biofeedback Clinic is here to partner with you on your wellness journey. We do this by offering a range of innovative technology, diagnostic tools, and a holistic view to those who are looking to address the root cause of their problem and supplement their experience within the traditional health structure. We are more than a clinic; we are a community who are here to empower you to reach your complete and full human potential, in wellness, happiness and health.*