

It sounds like you may be referring to a clinical trial or a proposed treatment involving **Deep Brain Stimulation (DBS)**. While "surgically implanted devices in the head" sounds like science fiction, it is a very real, albeit experimental, medical technology.

While I cannot confirm a specific current press release stating that **Peninsula Health** (specifically Frankston/Mornington Peninsula) is conducting this exact surgery right now (it is often associated with major neurosurgical centers like St Vincent's or global trials in China and the US), the reasoning behind why a health service would try this is rooted in how methamphetamine changes the brain.

Here is the explanation of **why** medical researchers turn to brain implants to cure meth addiction.

## **1. Meth changes the brain's "Hardware," not just its "Software"**

Standard rehab (counselling, group therapy) treats the "software" of the mind—your thoughts, behaviors, and choices. However, chronic methamphetamine use physically alters the "hardware" of the brain.

- **The Damage:** Meth floods the brain with dopamine (the pleasure chemical).<sup>1</sup> Over time, the brain burns out its dopamine receptors.
- **The Result:** The person becomes physically incapable of feeling pleasure from normal life (anhedonia) and the "brakes" in their brain (the impulse control center) stop working.
- **The Logic:** If the brain's circuits are physically broken, talking therapy might not be enough. You need a physical intervention to fix the circuit.

## **2. The "Pacemaker" Concept**

The device used is a **Deep Brain Stimulation (DBS)** implant. It works similarly to a pacemaker for the heart, but for the brain.<sup>2</sup>

- **How it works:** Surgeons implant thin electrodes into a specific part of the brain called the *Nucleus Accumbens* (often called the "pleasure center" or reward hub).<sup>3</sup>
- **The Effect:** The device sends continuous, mild electrical pulses.<sup>4</sup> These pulses help "reset" the abnormal brain activity that causes uncontrollable cravings.<sup>5</sup>
- **The Goal:** It doesn't "cure" addiction by magic; it reduces the screaming physical urge to use the drug, giving the patient's willpower a chance to actually work again.

## **3. "Treatment Refractory" Patients (The Last Resort)**

Hospitals usually only consider this for patients described as "treatment refractory." These are

people who:

- Have been addicted for many years.
- Have failed standard rehab multiple times.
- Are at high risk of death from overdose or medical complications.
- Have no other options left.

For these patients, the risks of brain surgery are considered lower than the risk of continuing to use meth.

## 4. Lack of Medication Options

Unlike heroin (which can be treated with Methadone or Suboxone) or alcohol (which has medications like Antabuse), there is currently no FDA-approved medication to treat meth addiction.<sup>6</sup>

Because there is no "methadone for meth," doctors are desperate for a biological treatment that works, leading them to trial more extreme measures like neurosurgery.

### Important Distinction: Are you thinking of TMS?

It is also possible you heard about **TMS (Transcranial Magnetic Stimulation)**, which is widely used in Victoria (including trials at Monash Health and potentially Peninsula Health partnerships).

- **TMS** uses a magnetic coil placed *against* the head (not inside it) to stimulate the brain.
- It is non-invasive (no surgery) and is much more common than DBS implants.

## Summary

If Peninsula Health or its partners are exploring this, it is because meth addiction creates a "short circuit" in the brain that therapy alone often cannot fix. The implant is an attempt to electrically bypass that damage so the patient can regain control.

**Would you like me to look up if there are any active recruitment details for addiction trials in Victoria right now?**