Clinical Tip – *'e-stim' When do I use it?*

There is no doubt that the use of electrical modalities as a treatment (eg therapeutic ultrasound, TENS, interferential, muscular stimulation) is one that tends to divide physiotherapists across Australia. There appears to be an unspoken judgment that electrical modalities are only used by private practitioners who want to simply put people on a machine for 30min and make money without having to do any hands on treatment.

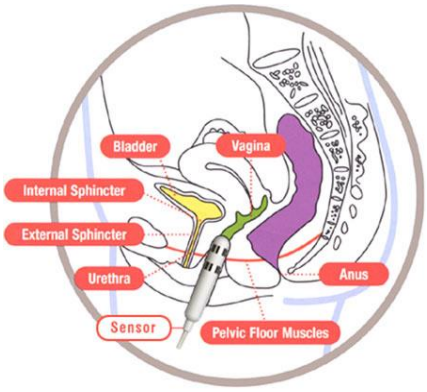
Whilst I am sure this scenario was true for a certain period in physiotherapy history, personally, I find very few examples of this today. Unfortunately though, it seems many people are now reluctant to use electrical modalities for fear of being branded as one of these "lazy practitioners".

The other difficulty is that different research papers on electrical modalities tend to always have different protocols regarding length of treatment, settings that should be used, frequency of sessions etc. This means that you virtually never get enough research on one type of protocol to be sure it is the best method to use. It is not surprising then that systematic reviews generally coming out saying "there is currently insufficient data".

It is understandable therefore that I regularly get questions from WHTA members about the use of e-stim, ranging from "Do you use e-stim?", "When do you choose to use e-stim?", "What settings do you use?", "How long before you notice a difference?"

So I thought I would just give you my opinion of what I find works. It is based as much as I can on the research, but it is also largely just my own clinical experience with patients as well.

Vaginal E-Stim: When do I use it?



There are six main scenarios where I will use vaginal e-stim in the clinical setting;

SCENARIO ONE: ***To ELICIT a Pelvic Floor Contraction***

We've all had them….. the patient who you just can't get a pelvic floor contraction. You have asked them to try to stop the flow, you have tried so many verbal descriptions and visual metaphors you think you could write a literary piece better than Shakespeare, you have tried proprioceptive feedback of pressing on the pelvic floor during a VE, you have tried RTUS for visual feedback, you have tried eliciting a co-contraction via TA and any other muscle group you can think of…… and STILL NO CONTRACTION!!

This is the group I am most likely to use vaginal electrical stimulation treatment on very early in the process of treating them.

Settings:	Frequency:	35-50Hz (usually ~40Hz),
	Intermittent:	3-4seconds on : 6-8sec off time
	Duration:	Minimum of 5minutes, often up to 20minutes.
	How often	Preferably at least 3 times per week.

Clinical Tips

The degree of activation of the muscle depends on its activation capability

a. If it is simply a co-ordination issue (ie on palpation the muscle has lots of bulk as though it should be strong), you should feel the probe move with activation of the muscle on the first session. In these cases, you often only need one or two sessions for them to work out what they are meant to be feeling, and they start doing it voluntarily without stim.

b. If it is an extremely weak, atrophic muscle, the person may feel the stim but you can't feel the probe move. It may be only activating the slightest flicker in the muscle. If used regularly I find the muscle should have developed enough strength to create a palpable voluntary flicker (Grade 1 - 2) within 3 weeks.

SCENARIO TWO: *To EXTEND the Length of a Contraction*

Sometimes I have someone attend the clinic who can contract their pelvic floor very strongly (Grade 4) but only for 1-2seconds and then it disappears completely. I try numerous strategies to get them to hold longer but they just can't. I assess them with a Peritron Perineometer and they squeeze up to 45cmH20 initially, and then immediately drop to 21cmH20, 12cmH20, 5cmH20 over just 1-2seconds. We start by just trying a 2-3 sec contraction but they can't hold it.

In this scenario I often use e-stim again. I am not doing this for strength, I am purely doing it to draw out the contraction.

Settings	Frequency:	35-50Hz (usually ~40Hz),
	Intermittent:	Starting with a minimum of 5 sec on time, and then each week increasing
	Duration:	Minimum of 5minutes, often up to 20minutes.
	How often	Preferably at least 3 times per week.

Clinical Tips

1. Make sure they are squeezing with the machine
2. The goal is to get them to start feeling the muscle squeeze for a longer duration

SCENARIO THREE: ***To INCREASE RESTING TONE / REDUCE HIATUS***

Ok… now I want to state this up front…… I have absolutely no research to back me up on this. But my clinical experience having used an objective measure of pelvic floor (Peritron Perineometer) with nearly all my incontinence and prolapse patients for over a decade is that Pelvic Floor exercises are excellent at increasing squeeze pressure, but they are only ok at increasing resting tone.

I can have a patient whose fortnightly results with PFMT are (I see most patients fortnightly):

Session One	Resting Tone = 18cmH20	Max Squeeze = 12cmH20 (MOS Gd 1-2)
Session Two	Resting Tone = 19cmH20	Max Squeeze = 18cmH20 (MOS Gd 2)
Session Three	Resting Tone = 19cmH20	Max Squeeze = 23cmH20 (MOS Gd 2)
Session Four	Resting Tone = 20cmH20	Max Squeeze = 29cmH20 (MOS Gd 2-3)
Session Five	Resting Tone = 20cmH20	Max Squeeze = 31cmH20 (MOS Gd 3)

By the end of session five I am becoming fairly happy with the *Strength* of their squeeze, but their resting tone is still quite low. If this person is a runner I really want to increase their resting tone.

This is a person I will do e-stim on. I tend to find really **high intensity e-stim** is one of the easiest ways to get resting tone up. They also come back saying that the vagina feels tighter.

What do I mean by high intensity??

Settings	Frequency:	35-50Hz (usually ~40Hz),
	Intermittent:	6-8 sec on time, 3-4sec off
	Duration:	20-25 min
	How often	At least 3 times per week, preferably everyday

Clinical Tips

1. This is an intense program. The ratio is 2:1.
2. Make sure they are squeezing with the machine for at least the first few minutes.
3. If doing this daily, or twice per day warn them to watch for signs of pain. If they develop any pain they need to reduce back to only using every second day.

In the example above it is not uncommon that I will have someone come back after 3 weeks of doing this e-stim everyday and their results are then:

Session Six	Resting Tone = 28cmH20	Max Squeeze = 31cmH20 (MOS Gd 3)

SCENARIO FOUR: ***To INCREASE the SPEED of the Contraction***

Sometimes I have someone who can perform a reasonably strong Pelvic Floor contraction but the speed of the

contraction is really sluggish. It takes some people 2-3 seconds to get to maximum squeeze. This isn't particularly helpful if they are trying to squeeze quickly before a cough or sneeze. Obviously I simply try getting them to practice voluntarily doing a faster squeeze initially, but if it stays really sluggish and slow I will also use e-stim.

To get this to work you need to use a customizable program on your machine as you will want to specifically set the "Ramp Time". (Ramp time = the time the machine takes to increase to maximum set intensity)

Both the Pericalm and the Neurotrac Pelvitone and Neurtrac Continence allow you to set the ramp time when using a Customisable program.

Settings	Frequency:	35-50Hz (usually ~40Hz),
	Intermittent:	3 sec on time, 3sec off
	Ramp Time:	0.6 – 0.7sec
	Duration:	20-25 min

Clinical Tips

0.6 – 0.7 seconds ramp time is quite a quick ramp time. Warn the patient that when it goes onto the On Cycle it will climb to its max stimulation intensity very quickly. The Patient will feel it as a very sudden contraction.

Note: in reverse, if I have someone in scenario One (no pelvic floor contraction) who is postmenopausal, atrophic and is very sensitive I will slow the ramp time right down. People who are sensitive and find the sensation of electrical stim uncomfortable usually cope better with a slow ramp time. I would then set the ramp time to 2.0 – 2.5sec.

SCENARIO FIVE: *For Urgency, Frequency and Nocturia (not related to Nocturnal Polyuria)*

If I have someone who has urgency, frequency and nocturia who has plateaued despite using manual therapy, behaviour retraining, bladder retraining/bladder drills, lifestyle modification etc. I will then implement vaginal e-stim.

The research on settings for urgency, frequency, detrusor overactivity etc is quite variable. They tend to range from 10-20Hz. Personally, I have often had better success closer to 20Hz.

Settings	Frequency:	trial 10Hz for 2 weeks
		If no change, change to 15Hz for 2 weeks
		If no change, trial 20Hz for 2 weeks
	Continuous Stimulation	
	Duration:	30-45minutes
		3—4 times per week

Clinical Tip I tend to find that the first sign of improvement is a reduction in nocturia. People come in saying "I slept all through the night for the first time in years". Depending on how severe they were to start with, I often find this happens within 3-4 weeks of using the machine.

SCENARIO SIX: ***In severe PF pain patients with allodynia / extreme sensitisation***

Again – I need to state that this is not from research. It is just my clinical experience. Some of my pain patients have the unusual combination of extreme vaginal pain to touch despite only mild hypertonia. They are the patients than can accommodate a single finger examination quite easily from a tension point of view, but the pain trigger occurs if you move your finger over the vaginal mucosa or with gentle tension on the muscle.

NOTE: The patients I am referring to are very specific!!!

- They have minimal pain on a single finger examination if you keep your finger still.
- They have excruciating pain any time you are moving your examining finger
- The pain is not related to pressure onto the muscle belly of levators or superficial pelvic floor, it is more related to the mechanoreceptor stimulation of a moving examining finger.

These patients seem to respond really well to low frequency vaginal e-stim for pain.

Settings
Frequency: 3Hz
Continuous Stimulation
Duration: Start with 5minutes each night
If tolerating well, increase to 10min after 1 week.
If tolerating well, increase to 15min after another week
If tolerating well, increase to 20min after another week.

Clinical Tip There is not a consistent response to this. Some patient respond really well and there pain is down to a manageable level for VE's within 3-4 weeks, other people feel it irritates their pain. You start with a small duration and simply see how they go.