

EQUIPMENT REVIEW

Neuromuscular electrical stimulation devices

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Abstract

Neuromuscular electrical stimulation (NMES) can provide neurostimulation, neuromodulation and/or pain relief, thereby bringing about physiological changes in the pelvic floor region. This paper reviews the NMES devices that are available in the UK that can be used in clinical practice. This is a complex market, and the author highlights points of difference in order to help clinicians choose the most suitable equipment for their clinic, or for an individual patient's needs. The review will also allow practitioners to better understand how to add value to a patient's experience of working with an NMES device.

Keywords: medical devices, neuromodulation, neuromuscular electrical stimulation, neurostimulation, pelvic floor muscle training.

Introduction

The use of neuromuscular electrical stimulation in clinical practice

Physiotherapy aims to improve incontinence, urinary urgency, the symptoms of overactive bladder, pelvic organ prolapse and pelvic pain where pelvic floor muscle (PFM) dysfunction is thought to be wholly or partially the underlying cause.

Neuromuscular electrical stimulation (NMES) devices can provide neurostimulation, neuromodulation and/or pain relief, thereby bringing about physiological changes in the pelvic floor region. Routine use of NMES is not recommended in the treatment of overactive bladder, or in combination with PFM training (PFMT). However, in clinical situations in which patients are unable to contract their PFMs actively, the employment of NMES in order to provide motivation and encourage adherence to therapy is recommended (NICE 2006, 2019) (Box 1). This approach requires individual assessment, good clinical reasoning and treatment prescription that addresses the specific needs of each patient, all of which are part of the skillset of the specialist physiotherapist.

Neurostimulation. This involves stimulation of the efferent, or motor, fibres of the pudendal nerve in

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Box 1. Guidelines for electrical stimulation (NICE 2006, 2019): (PFMs) pelvic floor muscles

- Do not routinely use electrical stimulation in the treatment of women with overactive bladder
- Do not routinely use electrical stimulation in combination with PFM training
- Electrical stimulation and/or biofeedback should be considered for women who cannot actively contract PFMs to aid motivation and adherence to therapy

order to elicit a direct response from the effector organ (i.e. a contraction of the PFMs). As part of this goal, the clinician may wish to favour a contraction of the slow- or fast-twitch fibres, depending upon the underlying dysfunction.

Neuromodulation. This involves stimulation of the afferent fibres of the pudendal nerve in order to remodel neuronal reflex loops (e.g. the detrusor inhibition reflex). Neuromodulation could be a helpful approach when urinary urgency, frequency and urge incontinence have not been positively affected by fluid management, lifestyle changes and bladder retraining strategies, which would suggest an underlying neural dysfunction. N.B. Neurostimulation targeted at muscle endurance function would also be an appropriate rationale for treatment, although a physiologically different one.

Pain relief. Transcutaneous electrical nerve stimulation (TENS) may be considered when a non-pharmacological approach to reducing pain symptoms caused by hypertonic and painful PFMs is adopted.

Aims and objectives

The present equipment review is intended as a pragmatic overview of the devices that are available in the UK that deliver NMES in clinical practice. The article is intended to complement the good practice statement (GPS) issued by the POGP Education Subcommittee (POGP 2019). The reader is directed to this GPS for a full review of the mechanism of action of stimulation, suitable parameters, and issues around safety and best practice. A review of the process of CE marking and regulation, the Chartered Society of Physiotherapy (CSP) Quality Assurance and Advertising Standards, and safety regulations regarding medical devices in the UK may also be helpful (Savage 2018).

The present review is primarily aimed at clinicians who are making decisions about selecting equipment in order to:

- administer NMES as a treatment modality in their clinics; and
- make products available to a patient to “try before you buy” or provide these on loan.

The CSP Quality Assurance Standards recognize that giving advice about products and services, including retail outlets, is a holistic part of what it means to be a physiotherapist (CSP 2013). The present author has previously discussed how ideally skilled physiotherapists are to offer unbiased, clinically reasoned opinions to the public (Savage 2018). Therefore, consideration is also given to the needs of the clinician, who is likely to need to be able to:

- assess an NMES device that a patient may have purchased independently, or be planning to purchase;
- help a patient optimize the potential of a device and choose appropriate settings for their needs; and
- make recommendations for a patient to purchase a device to use at home in order to implement the treatment modality that the clinician deems beneficial.

Market overview

In the past, NMES was only offered to patients in clinical settings. It was administered using large and cumbersome machines, which required

patients to attend two or three appointments a week in order to follow a stimulation protocol. Many more-senior POGP members will remember condom protocols allowing the shared use of rather phallic vaginal electrodes, or cupboards full of bagged and labelled probes. Although some clinics may still employ mains-operated models, the present market almost entirely consists of small, handheld, battery-operated units that are intended for use at home by the patient. The development of relatively cheap, small and ergonomically designed vaginal and anal electrodes has facilitated the direct application of NMES to the PFMs, rather than an indirect application via skin electrodes (Fig. 1).

Today’s clinicians and patients are offered multiple options with regard to muscle stimulation devices. These are not only sold through medical supply companies, but also made available directly to the public through advertising campaigns in magazines and newspapers, and on social media.

An increase in the over-the-counter market has been inevitable for two reasons:

- (1) National Health Service funding for non-acute care continues to be reduced; and
- (2) there has been a cultural shift to patients being encouraged to take control of their own health and well-being.

Viewing the descriptions of the devices through the eyes of a layperson makes one sympathetic to an incontinence sufferer’s plight. The promises made are attractive: the inference is that a customer can achieve complete success with a do-it-yourself approach. However, the nomenclature used to describe the equipment is confusing and inconsistent, and there is often little differentiation between biofeedback and stimulation devices. A simple Internet search for products that might be included in the present article identified over 15 options for the online shopper. Every device was not only available from medical device distributors that you will be familiar with from Conference, but also from popular auction and retail websites, and as easily purchased as a smartphone exercise tracker app or rechargeable batteries. In light of this hugely complex market, it was an impossible task to succinctly address each available device in turn. Table 1 is intended to provide a fair snapshot of the products that are available, and the present author’s comments, points of reflection and personal suggestions follow below.

Table 1. Characteristics of the neuromuscular electrical stimulation (NMES) devices available in the UK: (PFMs) pelvic floor muscles; (TENS) transcutaneous electrical nerve stimulation; (EMG) electromyography; and (N/A) not applicable

| Device | Price (including VAT) | Type of probe/ electrodes supplied | Point of difference* | Pre-set and customizable programmes | Pre-set programme parameters clearly identifiable | Pre-set suitable for PFM stimulation | Pre-set suitable for neuromodulation | Pre-set suitable for pain relief | Compatible with variety of probes/ electrodes | Number of channels | Lockable programmes |
|---|-----------------------|---|--|-------------------------------------|---|--------------------------------------|--------------------------------------|------------------------------------|---|--------------------|---------------------|
| <i>Handheld NMES units marketed for women</i> | | | | | | | | | | | |
| Neurotrac Continenace | £74.99/£96.00 | None/VeriProbe | Large buttons, large screen | 9 pre-set, 3 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| Neurotrac Pelvitone | £108.00 | Kegel8 Comfort Probe (gold plated) | | 11 pre-set, 3 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| Pericalm (Neen) | £64.95–68.99/£89.99 | None/Comfort Probe | | 6 pre-set, 3 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| TensCare Perfect Pelvic Floor Exerciser | £59.99 | Periform | AA batteries | 4 pre-set | Yes | Yes | Yes | Yes | Yes | 1 | No |
| TensCare iTouch Pelvic Floor Exerciser | £49.95–59.99 | Liberty Vaginal Probe | AA batteries | 5 pre-set | Yes | Yes | Yes | No | Yes | 1 | No |
| Kegel8 Ultra 20 | £149.99 | Kegel8 Glide Gold Vaginal Probe and 4 electrodes | | 20 pre-set, 3 custom | Yes† | Yes | Yes | Yes | Yes | 2 | Yes |
| Kegel8 Ultra Vitality | £129.99 | Pelvine Vaginal Probe | | 12 pre-set, 2 custom | Yes† | Yes | Yes | Yes | Yes | 2 | Yes |
| Kegel8 Tight & Tone | £98.99 | Pelvine Vaginal Probe | Very similar to Neurotrac Continenace | 9 pre-set, 3 custom | Yes† | Yes | Yes | Yes | Yes | 2 | Yes |
| Kegel8 Mother Nurture | £94.99 | Kegel8 Comfort Probe (gold plated), and electrodes and boost button | Also functions as an obstetric TENS unit with boost button | 8 pre-set | Yes† | Yes | Yes | Yes – specifically, obstetric TENS | Yes | 2 | Yes |
| Nu-Tek Levator Mini | £59.35/£72.00 | None/Nu-Tek Vaginal or Anal Probe | AAA batteries × 4 | 20 pre-set, 2 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| EvoStim UG (Beamed) | £180.00 | Mimima Vaginal Probe (gold) | Gender-neutral colours? Touch screen | 40 pre-set, 5 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |

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Table 1. (Continued)

| Device | Price (including VAT) | Type of probe/ electrodes supplied | Point of difference* | Pre-set and customizable programmes | Pre-set programme parameters clearly identifiable | Pre-set suitable for PFM stimulation | Pre-set suitable for neuromodulation | Pre-set suitable for pain relief | Compatible with variety of probes/ electrodes | Number of channels | Lockable programmes |
|---|-----------------------|---|--|--|---|--------------------------------------|--------------------------------------|----------------------------------|---|--------------------|---------------------|
| SensaTONE Pelvic Floor Stimulator | £53.94–54.95 | Vaginal probe | Probe lead wires not compatible with other units | No | No | Yes | Yes | No | No – lead wire not compatible | 1 | |
| Pocket Physio URO for Women | £330.00 | Vaginal probe and skin electrodes | Rechargeable battery | 20 pre-set, 10 custom, several TENS programmes | Yes | Yes | Yes | Yes | Yes | 2 | ? |
| IntelliSTIM UG | £63.54 | Can be supplied as unit only, or with anal or vaginal probe | Gender neutral design? AA batteries × 2 | 11 pre-set, 1 custom | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| <i>Handheld NMES units marketed for men</i> | | | | | | | | | | | |
| Perfect PFE Men – Pelvic Floor Exerciser (TensCare) | £79.99 | Anal probe and 4 electrodes | Reviewed in <i>JPOGP</i> (Igalada Martinez 2016) | No | Yes | Yes | Yes | Yes | Yes | 2 | Yes |
| SensaTONE for Men | £64.74 | Anal probe (Anuform) | | No | Yes | Yes | Yes | No | Yes | 1 | |
| Pocket Physio URO for Men | £330.00 | Anal probe and skin electrodes | Rechargeable battery | 20 pre-set, 10 custom, several TENS programmes | Yes | Yes | Yes | Yes | Yes | 2 | ? |
| <i>Dual function NMES and biofeedback</i> | | | | | | | | | | | |
| EvoStim P | £300.00 | Balloon probe | Stimulation and pressure biofeedback unit | 4 pre-set | Yes | Yes | Yes | Yes | Yes | 1 | |

Continued/

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| Device | Price (including VAT) | Type of probe/ electrodes supplied | Point of difference* | Pre-set and customizable programmes | Pre-set programme parameters clearly identifiable | Pre-set suitable for PFM stimulation | Pre-set suitable for neuromodulation | Pre-set suitable for pain relief | Compatible with variety of probes/ electrodes | Number of channels | Lockable programmes |
|---|--|---|---|-------------------------------------|---|--------------------------------------|--------------------------------------|----------------------------------|---|--------------------|---------------------|
| Nu-Tek Levator Elite | £264.00 | Nu-Tek vaginal probe and surface electrodes | EMG-triggered stimulation and biofeedback data transfer to personal computer possible | 20 pre-set, 2 custom | Yes | Yes | Yes | Yes | Yes | 1 | Yes |
| NeuroTrac MyoPlus 2‡ | £369.60 | None | Stimulation and EMG data transfer to personal computer possible AAA batteries | 22 pre-set, 5 custom | Yes | Yes | Yes | Yes | Yes | 1 | |
| <i>Portable NMES unit with a wearable garment</i> | | | | | | | | | | | |
| INNOVO | £249.00 | | Electrodes embedded in shorts | N/A | N/A | Yes | Yes | No | N/A | 1 | |
| <i>PFM re-trainer</i> | | | | | | | | | | | |
| Pelviva | £44.95 for starter pack of 3/ £214.95 for 1-month pack (× 15)/£599.95 for 3-month treatment (× 45) | | Wireless, disposable | N/A | N/A | N/A | N/A | N/A | N/A | | |

*Unless specified, 9-V battery.

†Details online.

‡The more expensive Myoplus2Pro model is also available (£894.00).

i.e. neurostimulation, neuromodulation and pain relief. However, the exact parameters offered by each pre-set programme can be hard to identify. Clinicians may need to sift through the technical instructions, ignoring the names of the programmes, in order to find the actual parameters and ensure that the pre-set that they have selected is appropriate to the needs of their patient. Some devices do not provide parameter settings at all (i.e. SensaTONE, Body Clock Health Care Ltd, London, UK, and Cleo Discreet, KayCo2 Ltd, Leeds, UK), but most can be found within the accompanying instruction booklet. Some can only be seen on the display screen when the programme is active, but the detail is available online (www.kegel8.co.uk).

Clinicians choosing an NMES device for use in a clinical setting may want to select a device that offers a wide range of pre-set and customizable options. The GPS (POGP 2019) covers the detail of the parameters that physiotherapists might need to modify or adjust in order to optimize NMES. However, a large range of pre-set programmes can be confusing for a patient choosing a unit to use at home. If a patient will be using a device largely unsupervised, a “less is more” product may be the pragmatic choice. A programme “lock” feature may also be helpful.

Type of electrode supplied with the device

A broad range of vaginal and anal electrodes are available to purchase in combination with an NMES device or separately. All electrodes have pigtail connectors (2-mm male and female pins) that allow these to be connected to the lead wires of any of the units listed. The electrode surfaces are stainless steel or gold-plated; the latter are recommended for those with a nickel allergy. Electrodes vary in weight, shape and width to offer options for different vaginal hiatus dimensions. A solid “middle” is suggested for vaginal wall prolapse in order to avoid pulling on protruding tissues during removal. Most electrodes face side-to-side so as to make contact with the lateral muscle belly, which requires careful orientation. With a circular electrode, the directional placement of the electrode is less important, but this style could potentially cause uncomfortable stimulation of the anterior urethral area. The type of electrode desired could influence the choice of device ordered. If a clinic is bulk-buying electrodes separately, or a patient already has one or plans to use skin electrodes, it would be

cost-effective to purchase a device supplied without any.

Neuromodulation has been shown to work by direct stimulation of the sacral nerves, i.e. sacral nerve stimulation (SNS), with surgically implanted units. Physiotherapists prescribed neuromodulation via vaginal or skin electrodes for decades prior to the development of surgical SNS, but the present author suspects that our lack of skill in promoting our successful outcomes allowed this area of expertise, and the usefulness of this clinical tool, to be overlooked. Direct application of neuromodulation using a vaginal electrode is common clinical practice.

More recently, there has been a resurgence of interest in delivering neuromodulation over the sacral nerve routes or posterior tibial nerve using surface electrodes on the skin, or direct stimulation of the tibial nerve percutaneously (i.e. via a needle), commonly termed percutaneous tibial nerve stimulation. Such units are not addressed in this review.

The dexterity and personal preferences of the patient are likely to be the guiding factor until further research can demonstrate that one mode of application is more beneficial than another.

Neuromuscular electrical stimulation for pain relief

Many of the units in listed in Table 1 have the range to deliver frequencies suitable for pain relief, and can be used with skin electrodes (although these may not be supplied). However, if a patient needs a device solely for pain relief via skin electrodes, many TENS machines are available that are far cheaper than these units, which have functionality for pelvic floor rehabilitation.

It should be noted that the Kegel8 Mother Nurture unit (Savantini Ltd) doubles as both a traditional obstetric TENS machine (with a boost button and skin electrodes) and a comprehensive NMES device (via a vaginal electrode). This could be an economical choice for an expectant mother, or a woman planning a future pregnancy who does not already own a TENS machine, but anticipates using one.

Design and customer support

Attention to gender sensitivities in the packaging of the NMES units has been discussed above, and a gender-neutral product may be desirable.

The present author highly recommends taking time to explore the ease of use of different units. Clinicians should study the display screens, buttons and instruction booklets, and also aftersales

services, such as warranties, online resources, videos guides and helplines. Practical consideration can be given to the usefulness of things like belt clips, and hard or soft cases.

The type of battery required varies. In the present author's experience, units that operate using lower-voltage batteries (AA) need the current intensity to be turned up considerably higher than those operated with 9-V ones. One device operates with a rechargeable battery.

It is also important to note the monetary value of items included with the unit; for example, conduction gel, cleaning fluid, spare lead wires, surface electrodes and internal electrodes.

The present author would personally recommend establishing a relationship with one or more medical distributors because these companies provide superior support to both patients and clinicians.

Handheld combined neuromuscular electrical stimulation/biofeedback units

The few devices that are able to offer both NMES and a biofeedback function are also included in a subcategory of Table 1. This kind of unit may be a good choice to comprehensively equip a clinic, especially if it can be linked to a large-format computer monitor for easier viewing, and for saving patient data. For an individual patient who wants access to both NMES and biofeedback, it may be a more-economical option to purchase two separate units (with compatible lead wires to an internal electrode) if the slight inconvenience of swapping units to switch functionality is an acceptable compromise.

INNOVO

The INNOVO unit is listed in a separate category for the purposes of the present review. This is because, although it is, in effect, also a portable handheld device, it is only compatible with the supplied INNOVO garment, which is embedded anteriorly and posteriorly with eight large skin electrodes.

This product was reviewed in the present journal 5 years ago, when it was marketed under the name of Neurotech Vital (O'Toole 2014). It was subsequently rebranded as INNOVO, and then as INNOVO Generation One, which consists of two neoprene leg wraps. INNOVO Shorts, a single-piece unisex garment available in a range of sizes, was launched recently.

The unique selling points of these products are the suitability of the INNOVO Generation One

and Shorts for a patient who: cannot or does not want to use an internal electrode; and as a result of clumsiness or misunderstanding, has difficulty applying or keeping individual electrodes in the right place. A certain degree of dexterity is required to prepare the shorts with conductive gel and put these on in an optimum position. However, once on, moving around would then be trouble-free, since there would be no reason to worry about dislodging the electrodes and only a minimal number of wires to navigate.

The handheld device is simple to use with a choice of only two settings: one for the parameters for neurostimulation, and a second for those of neuromodulation. There is no pain-relief functionality and no customizable option. The user controls the current intensity with single up/down buttons.

Although the garments can be handwashed carefully, these are single-user devices, which limits the use of INNOVO products in a clinical setting.

A comprehensive website provides easy-to-follow instruction videos and a frequently asked questions section (www.myinnovo.com). An accompanying app allows users to monitor adherence and symptomatic changes.

INNOVO retails at a considerably higher price point (£249) than other hand-held NMES units with skin electrodes. The marketing claim that the product is the "only non-invasive solution" that "treats the root cause of leaks" (INNOVO 2019a), as compared to pads, may irritate pelvic physiotherapists. Similarly, there are regular references to the product being "clinically proven" that are questionable. As far as the present author can ascertain, the current literature provided to clinicians (INNOVO 2019b) references a pilot study of a cohort of 24 women (Soeder & Tunn 2012). However, as mentioned in O'Toole's (2014) product review, only 19 of the participants completed this trial. Also of note is that all the women who took part in this study were tested for pelvic floor contraction with a vaginal examination. The citation of the results from Soeder & Tunn's (2012) trial by the manufacturer could be considered to be an overly extrapolated claim. A trial of the Neurotech Vital Compact versus the iTouch Sure Pelvic Floor Exerciser has been registered (USNLM 2018).

Pelviva pelvic floor muscle re-trainer

The Pelviva PFM re-trainer is also listed here in a separate category because it is a unique

product that does not require a handheld unit to operate. It was developed by POGP member and workshop tutor Julia Herbert in collaboration with the University of Manchester, Manchester, UK.

Pelviva is a disposable, single-use item that does not need to be washed and stored. No handheld unit is required. It is a self-contained automated device made of foam that is activated by removing a pull tab. The foam electrode is compressed to allow easy insertion into the vagina. It then expands to accommodate the shape and size of each individual to ensure optimum contact with the mucosal membranes of the vaginal walls. The foam electrode theoretically allows greater movement of the PFMs during a contraction than a plastic one would.

Once activated, 30-min of NMES are delivered by the internal microprocessor. The pre-set protocol delivers a patented pattern of stimulation of both the fast- and slow-twitch PFM fibres, and therefore, Pelviva is of clinical relevance to all incontinence diagnoses. The reaction of the muscle to the impulse is monitored by an inbuilt feedback system, which means that the device automatically adjusts the intensity (i.e. amplitude) of the electrical pulses until a satisfactory muscle contraction is initiated. Therefore, the user does not have to interact further with the device at all. The NMES treatment automatically stops after 30 min. Pelviva does not run a discreet neuromodulation or pain relief programme, or offer any customizable options.

This product would be well suited to patients who: are happy to use a vaginal electrode, but do not want to interact with a hand-held unit (or cannot do so); want a completely discreet wire-free experience; or want a completely disposable item (although this may seem counter-intuitive in terms of sustainability).

The use of Pelviva is supported by the results of a 12-week, single-blind randomized controlled trial by Oldham *et al.* (2013). The authors compared use of the device and unsupervised PFMT with unsupervised PFMT alone in the treatment of urinary incontinence in women. Their methodology pragmatically reflected the manufacturer's intention that this product should be an independent, user-led option for home treatment. Therefore, although a vaginal examination was conducted to exclude contraindications to use (e.g. vaginal atrophy), there was no attempt to digitally assess the PFMs or teach a correct PFM contraction. Ninety-five women completed the trial. Although the conclusions were limited

because the sample size of 64 was not reached, there was a statistical difference between treatment groups, which supports the clinical efficacy of the Pelviva device.

Neuromuscular electrical stimulation: other clinical considerations

The physiological effects of NMES are only partially understood, and further research is needed to optimize the use of this form of treatment for patients with pelvic health issues. It is likely that some of this research is already taking place in other fields of medicine and science, but perhaps such work has not yet been linked with existing pelvic physiotherapy practice. There was an era when women's health physiotherapists were prominent in research in this area, particularly the exploration of the clinical benefits of modalities. We should support colleagues who are taking up leadership in this field again.

Physiotherapists are urged to take an interest in new products whenever these are mentioned by colleagues, patients or the media. Individually, we should keep abreast of new research, even if only to remind ourselves that there is nothing truly new under the sun; at times, perhaps only the packaging has been improved. Manufacturers and distributors are keen to work with physiotherapists in order to improve products and the patient experience.

The present author suggests that readers take the time to sit with any units that they already have, old or new. Re-read the instruction booklets (if lost, nearly all are available online) until you have an in-depth knowledge of how each device works, including the options on offer, and the parameters you can and cannot change. Try units on yourself. Experiment with different settings, electrode types and placements. Remember that physiotherapists have the training and skills to offer unbiased, clinically reasoned opinions that can and should include a "member's own experience of the effectiveness of the product" (CSP 2013, p. 29). They should not be afraid to recommend products if they believe that these will aid their patient's recovery (Savage 2018).

There are ways of further broadening your awareness of the available NMES options. You could: trade units with a colleague or another department; ask for samples and demonstrations from distributors; and attend the POGP Annual Conference, where you can handle and explore

equipment that you are unfamiliar with, and meet with customer and clinical support teams.

You may deliberately choose to keep a range of units in your clinic, both to get to know these all well and/or to show patients the breadth of choice that is available. Alternatively, your department may choose to stock just one type of simple, low-cost unit for a patient to “try before they buy” or borrow for the short term, but it would still be useful to have a clear understanding of the incremental differences that other price points may offer.

Adding value to the patient experience

Most units are now supplied with adequate (albeit not great) instruction booklets and online support, which will enable individuals to independently commence a home NMES programme. Thanks to these easily purchased devices, many men and women who might have previously attended a physiotherapy clinic may be able to resolve their continence issues without the help of a professional. We might well wonder what our role is as specialist physiotherapists in these cases.

I would urge you to remember that we need to show those clients that do visit our clinics and/or seek our advice, in person or remotely, our value to them. A specialist physiotherapist has a range of training, education and clinical experience that can augment their independent purchase or their use of a borrowed unit.

Most importantly, we can offer a comprehensive assessment of the underlying pathology and dysfunction. We can then guide patients towards the most appropriate programme to use in order to change physiological function, rather than leaving them to rely on the manufacturer’s programme titles, which reflect ubiquitous “conditions” such as “postnatal”, “stress”, and the present author’s personal favourite, “sensitivity”! In particular, we can assess where NMES is not an appropriate or necessary treatment option; for example, in cases of hypertonic pelvic floor, or PFMs that are already well activated. Perhaps our marketing to the public should concentrate on suggesting that, before they spend £100 or more on a machine, they should consider the value of an individual one-to-one assessment with a specialist physiotherapist.

In the present author’s opinion, the value added by an appointment with a knowledgeable physiotherapist includes:

- reassurance about programme choices;

- teaching a “quick start” process to enable ease of navigation of the controls of a specific device;
- the choice of the most-appropriate mode of application (i.e. anal, vaginal or surface electrodes), and then the best-suited internal electrode in terms of size and placement;
- testing equipment, ensuring that an actual contraction is felt (if the intent is muscle strengthening), and/or that a comfortable stimulation pattern is achieved (for neuromodulation) to improve compliance and effectiveness;
- modification of parameters to achieve optimum effect, comfort and compliance
- enabling progression of NMES itself (e.g. by coaching a reduction in accessory muscle activity, improving breath control, adding movement and bringing the patient into an antigravity position);
- enabling progression from NMES to active PFMT, perhaps by utilizing biofeedback, and integrated functional and core work; and
- ensuring that NMES is part of a package of care that includes PFMT, lifestyle changes, fluid management, offloading of the pelvis and integration of functional activities.

In short, we should not feel threatened by the easy accessibility of these devices, which are directly available to the public, nor overwhelmed by the range available. We can be ready and willing to help patients to make informed choices, optimize their functionality, and where appropriate, use these devices effectively to expedite recovery from their condition.

Declaration of interest

This article was written in good faith, at the request of the Journal Subcommittee, to help physiotherapists better understand, choose and operate electrical stimulation devices within clinical practice. The present author was recently employed by the manufacturer of the Kegel8 series, Savantini Ltd, to create patient education videos about the general mechanisms of action of NMES, and how to optimally use such a device. However, she has no other commercial link to any of the equipment manufacturers or distribution companies, and had no intention of endorsing one device over another.

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Amanda Savage is a former editor of this journal and POGP’s current public relations officer. She works in private practice in Cambridge as both a specialist physiotherapist and a Pilates instructor. Amanda recently launched Supported Mums (<https://supportedmums.com>), a website that provides new mothers with advice about improving pelvic floor and abdominal support.