Salisbury FES Newsletter
Summer 2006

Editorial

The FES (Functional Electrical Stimulation) Newsletter is a biannual (approximately) publication with the purpose of promoting the clinical use of FES. It is distributed chiefly to clinicians who have attended the Salisbury introductory FES course but also those who have an interest in the field or those we hope may be interested. FES is a means of producing functional movement in paralysed muscles by the application of electrical impulses to the nerves of those muscles. FES is increasingly used in neurological rehabilitation to improve mobility and upper limb function. The most common use is for the correction of dropped foot in hemiplegic gait, an intervention now recommended by the Royal College of Physicians in their publication "National clinical guidelines on stroke".

The 1st of April saw the launch of Odstock Medical Limited (OML). OML is an NHS owned spin off company set up to develop, manage and exploit the treatments and technology developed by the Salisbury FES team. At present there are no major changes with the same staff doing the same jobs. However, if you buy equipment, you will receive an invoice from OML, not Salisbury Health Care NHS Trust. OML will allow us to spread the word of FES more effectively and help us reach more people who may benefit from FES.

On 1st December 2006 we will be holding our annual FES user day. This year the event is being hosted by Mosely Hall Hospital, Birmingham and is open to anyone who has an interest in clinical FES. As usual there will be reports on the latest developments in clinical FES, case studies and a problem solving workshop. These meetings are a good opportunity to swap experience and meet up with others working in the field. We welcome presentations on any aspect of clinical FES. You do not have to offer a presentation to come. We particularly welcome case studies and reports of clinical experience with FES from all practitioners in the field. Please return the form at the end of this newsletter.

Increasingly we are contacted by people seeking FES treatment and asking if they can obtain it in their area. The Data Protection Act does not allow us to give out details of the clinicians on our database who have done the FES course and in any case many clinicians may not be in a position to offer treatment. While we have attempted to keep a list of all clinicians active in FES, our list has become out of date and inaccurate. For this reason we are asking that anyone active in clinical FES (either NHS or private) complete and return the form at the end of this newsletter. Please do this even if you have sent in the old form before as we need to know our information is up to date. Thanks for you time.

This is the last FES Newsletter that will be sent out to everyone in paper form. However you can choose to receive the FES Newsletter still in either paper form or electronic form via the web. Please fill in the form at the end of the newsletter to make your choice. If you already have told us your choice in following previous newsletters, there is no need to tell us again. However, if you did not tell us last time and you do not reply this time, we will assume you no longer want the news letter and remove your details from the distribution list.

Thanks to all who have contributed to this newsletter and apologies for its late arrival. As always we welcome your feedback and we are pleased to hand on any "good ideas", reports, meeting reviews or adverts that you have through this newsletter.

Next edition will be put together in the New Year (ish) so please send copy by then. This and all back issues of the Salisbury FES Newsletter are on our web page www.salisburyfes.com

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Odstock Medical Limited - FES goes commercial

On the 1st of April 2006 stimulator manufacture, sales and FES clinical services at Salisbury District Hospital were transferred to an NHS owned spin off company called Odstock Medical Limited. The move was made to allow greater freedom to expand the FES work, taking FES to as many potential users as possible. Initially the same staff who made up the FES team prior to OML remain, seconded from the NHS to set up the company and are still based in The Department of Medical Physics. Research projects will stay under the umbrella of the National Clinical FES Centre at Salisbury District Hospital. OML plans to expand services to clinicians, improving training and support. We will offer new services, providing clinical services at new locations. Plans are already underway to improve the design of the stimulators, and we hope to have a prototype ODFS IV this summer with a new 4 channel exercise stimulator following a little later.

For the time being contact details for staff remain the same:

General / clinical	tel: 01722 429065	fax: 01722 425263
Technical / orders	tel: 01722 429118	fax: 01722 417611

All old e-mail addresses remain active as well as the www.salisburyfes.com web site but additionally you can use the new OML addresses:

E-mail:	enquiries@odstockmedical.com
Web:	www.odstockmedical.com

The Odstock Medical web site has a new improve style and contains details of equipment and services. The SalisburyFES web site retains information about research and back issues of the newsletter. Both sites will evolve as we get time to update them.

Referrals for FES treatment are still made to Prof. Ian Swain but should now be addressed to:

Odstock Medical Limited,
The National Clinical FES Centre,
Salisbury District Hospital,
Salisbury,
Wiltshire, SP2 8BJ.

As before, we want to hear form you if you have any ideas to improve our services or equipment. Please let us know if you would like a rental service or would like to split payment for stimulators over year for example. Despite greater commercial freedom, OML as an NHS company will maintain the same ethos as before, putting the interests of patients and clinicians first. Our aim remains the same; to develop, exploit and support FES to benefit as many people as possible.

I'd like to take this opportunity to thank all the clinicians who have worked hard to establish FES as a practical clinical option for neurological patients. Thanks also for all the feedback we have had over the years that has enabled us to improve our services. We look forward to continuing this work as OML.

Paul Taylor

Implantable Drop Foot Devices are here!
STIMuSTEP arrives at Salisbury.

On June 19th 2006 the first NHS funded patient received a STIMuSTEP implanted dropped foot stimulator. The operation went smoothly and we are now waiting for the operative site to fully heel before testing the device. A further two ops are already planned and we hope that a regular clinical service will develop.

The STIMuSTEP is a 2 channel device, used to stimulate the 2 branches of the common peroneal nerve. The deep branch controls muscles that produce dorsiflexion and inversion while the superficial branch controls the muscles that produce eversion of the foot. By controlling the relative proportion of the stimulation to the two nerves, the correct movement of dorsiflexion with about 5 degrees of eversion can be reliably and repeatabley produced. Power and control signals for stimulation are transmitted through the skin using radio telemetry from a transmitter unit worn externally over the implant, held in place by an elastic strap. Like the ODFS the device is controlled using a foot switch placed in the users' shoe. When weight is taken off the switch at the end of the stance phase of gait, the stimulation begins, causing the foot to lift. Stimulation is ended when the heel strikes the ground. Experience with the device to date indicates that the device is well accepted by the users and that walking speed is increased with a reduction of effort of walking. No adverse incidents have been reported, indicating that the technique is safe. Following pilot studies in Salisbury and at Enschede in the Netherlands, the device was awarded the CE mark in 2005 demonstrating that it can be used in clinical practice within the EU.

While the proposed clinical service is not a research project, it is intended to use a robust protocol and relevant outcome measures to allow recording and future publishing of case series data. This will allow auditing of the service in the future.

We have a list of patients using FES who have expressed an interest in having STIMuSTEP. We are working our way through assessing these patients for their

suitability for an implant. Those who are suitable are approaching their local PCTs via their GP or Consultant for funding. The cost of the operation for existing FES users is £6422 with follow up appointments yearly at a cost of £351. For patients who have not used surface FES the cost includes 6 months surface use and is £7187.

Selection criteria

1. A single dropped foot resulting from an upper motor neurone lesion
2. Able to walk at least 50m with appropriate walking aid
3. Medically stable or at least 1 year post injury
4. No other significant medical complications
5. Autonomic dysreflexia, induced by electrical stimulation, is a contraindication.
6. Insulin dependent diabetes, poorly controlled epilepsy and cardiac demand pacemakers are contraindications.
7. Dorsiflexion and eversion will be produced by electrical stimulation of the common peroneal nerve, using skin surface electrodes.

Candidates must not have significant mental impairment, understand the purpose of the intervention and be able to give signed informed consent.

After implant assessment appointment when baseline outcome measures are taken the appropriate patient will be booked in for day case surgery and implantation of the device. Two weeks after the operation they return to the clinic to have the operative site checked and to start the use of the stimulator. At first only short distances will be walked with the device but this will be gradually increased over 2 or 3 weeks at which point it is expected that the device can be used all day.

Implant patients will be asked to return to the clinic 2, 8 and 18 weeks (4 months) later to check progress and repeat some or all of the assessments. They attend the clinic 6 months after that and then yearly for as long as the device is used.

So there it is… implants have arrived and the first 3 patients have been funded by their PCT. If you have a patient you think would be interested in the procedure please get in contact with me to arrange assessment here. We are looking for other centres to become involved and are putting together a training course. If you work alongside suitable plastic or neurosurgeons and have the potential to have the relevant rehabilitation team to support these patients then you may be interested in offering an implant service yourself, if so please get in touch.

Ingrid Wilkinson
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FES Web User Group;
"A way to share ideas and experiences"

The FES User Group "**Odstock_stim"** is a web-based discussion forum available to all potential or current FES users. It was established following several requests from Salisbury patients for a means of communicating with each other.

Potential members must join "Yahoo" and then either apply via email or be invited to join the group. Steve and Catherine are "administrators" and have control over membership. They regularly "police" the site to ensure there are no contentious emails. They intervene only if there is a specific request to us for information about

FES or to correct any inaccurate information being circulated. Essentially the group is "patient owned" and input from Salisbury staff should be minimal.

Currently there are nearly 110 members including 4 –5 staff at Salisbury. Discussion points have included methods of carrying stimulators, fatigue, and MS medication. Topics will be monitored to gather feedback on specific issues.

Please encourage your patients join if they would like to do so. Clinicians are also welcome to join the group to share ideas and experiences or simply to view discussions taking place. The easiest way to access the group is to click the link on our web site www.salisburyfes.com. Any contributions will be much appreciated!

Now this group has been running a while we thought that there might be some topics that would not be appropriate for a patient forum. Therefore we have set up a second forum called Odstock Clinicians. This is on Yahoo as well and the thought is that more technical or service related issues can be brought up here. However, the patient/clinician split is not rigorously policed. Once again it should run itself with the guiding hand of Salisbury whenever needed. Email someone at Salisbury to be invited on or apply from the group web site.
http://health.groups.yahoo.com/group/Odstock_Clinicians/

Catherine Jolley
Research Physiotherapist
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South East FES Interest Group

I have been working with FES since 1998 and we recently hosted a single channel course. There seem to be a few people in the region using FES or trying to start using it and we think it would be useful to support each other via face to face meetings. The proposed meetings would be a chance to problem solve difficult patients together and discuss FES funding/clinical issues.

If you are interested in joining us please contact me by phone or at the address below and we will organise a date and a venue in due course.

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FES successfully facilitates gait re-education post hip replacement

FES is becoming increasingly well known and used within the field of neurology to assist, maintain or restore movement, but it is less well known or used in the field of orthopaedics. Below is an account of two patients who each underwent hip replacement surgery and how FES dramatically improved their walking ability.

Evidence shows that there will be substantial dysfunction following hip arthroplasty in 15-20 % of patients, despite physiotherapy intervention. In a recent study by Anil Bhave 47% of 76 patients continued with abductor weakness following surgery.

Detailed below is a brief account of two patients who were referred to the department for electrical stimulation following hip replacement surgery. Both ladies act as their own control as their surgery had taken place in 2003, and 2004. Both had similar characteristics in that they required a stick for out door walking, walked with a trendelenberg gait, and on examination presented with weakness of the hip abductors.

Rather than introducing an exercise regime it was decided to set up both patients with a Single Channel foot drop stimulator. The electrodes were placed in a standard position for hip abduction stimulation and the stimulator was set up to trigger on stance. Each patient was instructed to increase the use of the FES over a few days after which the FES could be used all day.

It was decided to follow both ladies up 2 weeks post set up, to check on skin, and to check electrode placement and stimulation usage. We did not anticipate any significant functional gains to occur within this two week period. However both patients reported the following:

- Decreased use of walking stick.
- One lady reported that she had been able to walk into town without her stick .
- The other lady reported that she no longer required the use of her stick when in the garden.
- Both ladies reported an increase in confidence as their walking was faster and felt freer.
- On visual gait analysis there was an observable improvement, with an increase of hip extension during the stance phase and a reduction in the lateral trunk sway.

The first patient, who was 78 found peeling off the electrodes painful, did not like the wires showing. The second patient was extremely delighted with the initial gains and could not describe any negative aspects.

The original intention was both patients would have a 3month followed up. However due to the rapid improvement one patient will now be followed up after one month. It is also intended to stop the stimulation at this stage. To assess whether any improvements achieved are maintained each patient will have a final review six weeks after stopping the stimulation.

The initial results are extremely positive and highlight a group of patients who would possibly to benefit from a period of electrical stimulation post surgery.

Carol McFadden
Salisbury District Hospital

Skin Irritation

The use of FES to assist walking has very few medical complications. However, the one problem experienced by some users is a skin reaction under the electrodes. Rarely are reactions immediate but sometimes can occur after using FES for several months or even years. It's the Salisbury FES clinic experience that reactions are rarely, if ever seen, in patients using electrical stimulation for upper limb exercises. These exercises are normally performed for a relatively short time each day and treatment is often limited to a few months. In contrast, ODFS users frequently put on the system when they get up in the morning and use it till they go to bed at night, using it daily for many years. This presents a challenging situation for the skin to endure.

Several studies have reported the incidence of skin reaction when using FES. A questionnaire sent out to 160 ODFS users from the Salisbury clinic asked if users of the ODFS had ever experienced skin irritation. 22% reported that they had experienced skin reactions and 3 people had discontinued use of the ODFS for this reason. The average time the device had been used was 19 months overall[1]. In 2004 a second questionnaire sent out to all ODFS users who started treatment in Salisbury between 2000 and 2002 asked the same question. 33% reported problems although only one person had stopped using the device due to skin reactions[2]. Again in 2004 a clinical audit from 230 medical notes from the FES clinic at City Hospital Birmingham showed that 9% of the ODFS users had reported skin problems. The average usage was 23 months and there were no reports of patients discontinuing treatment because of skin iritation[3]. Finally, a report of the randomised controlled trial of the ODFS in MS in which 24 research volunteers used the ODFS for three months reported that there were no cases of skin iritation[4]. In this last case, 50x50 mm Platinum Blue Pals electrodes (Nidd Valley Medical tel. 01423 799113) had been exclusively used. While it would appear that these electrodes give fewer problems than others, it is also apparent that the length of time the electrodes are used for is a significant factor. These electrodes have become the standard electrodes used in our clinic.

As part of our clinical governance procedure it was decided to review the occurrences of skin irritation in the Salisbury FES clinic and take advice from a dermatologist, Dr Merick-Thomas. Following a half day workshop the following guidelines were drawn up.

Cause

- It is more likely as there is no systemic effect that the reaction is not an allergic reaction but due to local skin irritation. Itchiness is a first sign of irritation.

Prevention.

To maintain skin integrity and therefore the ability of the skin to act as a defence barrier.

- Do not place electrodes over broken skin (cuts, rashes, grazes etc.)
- Do not shave the skin using a razor, use scissors to cut hairs if required.
- Avoid long hot soaks in bath
- Wash using soap free cleansers such as Dermol wash or E45
- Moisturise over night using mild fragrance free moisturisers or dermal doublebase moisturiser
- Wipe area under the electrode to remove any traces of moisturiser (avoid wet wipes)

Treatment

- Discontinue stimulation at that electrode site until the skin has healed
- Use Eumovate cream for one week.
- If problem continues seek medical advice, as may require a cream with a stronger steroid content.

Stimulation changes

Avoid placing electrodes over area of skin breakdown, if unavoidable stop stimulation until skin is healed.

- Change to blue pals, if not already using them.
- Change to bi-phasic symmetrical waveform.
- Check the usage time of electrodes ie 30 applications and electrode care.
- Check the current v pulse width.

To better understand the occurrence of skin irritation, a report form was devised to record all incidences of skin irritation as they occurred in the Salisbury FES clinic. The report forms were collected for a six month period from June 2005. In that time 585 individual patients were seen in the clinic. 18 cases were reported of which 13 were from ODFS users and 5 from O2CHSII users. An appeal for honesty to the clinicians working in the clinic indicated some under reporting, estimated to be about 25%. This therefore results in prevalence in the clinic of between 3 and 4 %. However, in the case of the ODFS users, 8 cases were reoccurrence and 5 first time cases, 3 of whom developing skin reaction in the first 6 months and the other 2 between 12 and 18 months of ODFS use. This means the prevalence of new cases was around 1 to 1.5%. There were no cases of discontinued treatment due to skin irruption in this period.

Overall, while no incidences of skin irritation are desirable, the present clinical methods have reduced the occurrence to clinically acceptable levels. In most cases the irritation can be managed, usually resulting in only a limited period without use of the device. We will continue to monitor skin irritation occurrence.

Be involved – Would you like to use the forms that we currently use in our clinics? If so email cmf@salisbury fes.com

Paul Taylor
Carol McFadden
FES User day 2005

1. Taylor PN, Burridge JH, Dunkerley AL, Lamb A, Wood DE, Norton JA, Swain ID. (1999) Patient's Perceptions of the Odstock Dropped Foot Stimulator (ODFS). *Clin. Rehabil* 13: 333-340.

2. Taylor P, Johnson M, Mann G, Swain I. Patterns of use and users' perceptions of the Odstock Dropped Foot Stimulator following stroke and multiple sclerosis. *9th Annual Conference of the International FES Society and 2nd FESnet Conference*, (ISBN 1-85899-191-9), pp. 296-298, Bournemouth, UK, September 2004.

3. Singleton CMB Functional Electrical Stimulation (FES) Service Audit from April 1996 to August 2003 (Birmingham, UK) *9th Annual Conference of the International FES Society and 2nd FESnet Conference*, (ISBN 1-85899-191-9), pp 290-292 Bournemouth, UK, September 2004.

4. Mann GE, Jolley CL, Taylor PN. An investigation into the effect of functional electrical stimulation on mobility and quality of life in patients with multiple

sclerosis – preliminary results. *9th Annual Conference of the International FES Society and 2nd FESnet Conference*, (ISBN 1-85899-191-9), pp. 276-278, Bournemouth, UK, September 2004.

Healthy AIMS
(Ambient Intelligent Micro-Systems for Health)

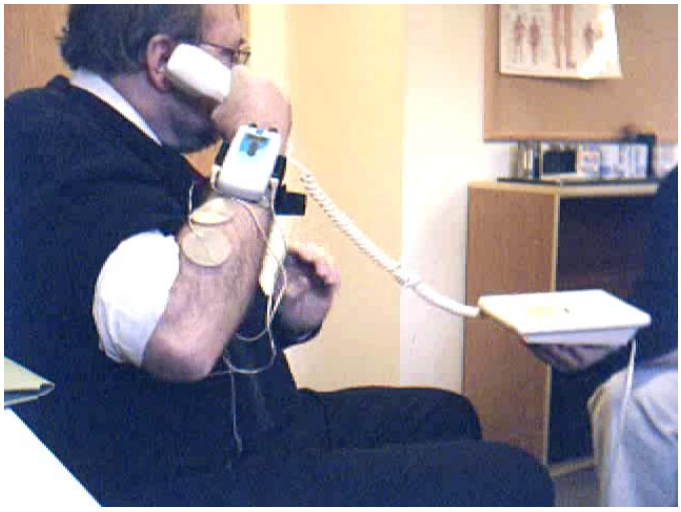
The Healthy Aims project has been running now for a little over two and a half years, and the difficulty with describing it resides with finding the best place to start. The project involves twenty-six partners form nine European countries and has a budget of 16M Euro to be spent over the four year life of the project. The interests of these partners is somewhat diverse, including as it does;

- Cochlear implants – an enhancement of the already successful auditory device,
- Retina implants – a system using a camera and electrode array to restore vision,
- Ambulatory glaucoma sensors – to be used for twenty-four hour condition monitoring,
- Sphincter sensor for esophageal and urological applications – two distinctly different devices it should be emphasized,
- Implantable intracranial pressure sensors - for monitoring SCF pressure,
- Inertial Measurement Unit (IMU) - for measuring human body motion,
- Several other smaller groups are looking at various emerging technologies
- Functional electrical stimulation applications for the upper limb – new external and implanted systems.

The original theme of the project was to develop a personal or body area radio network, somewhat akin to the Bluetooth on mobile phones but for linking together medical devices. A radio communication standard that was developed for implanted pacemakers was chosen to connect all of these systems together, it is known as the medical implants communications service (MICS). As is usual with a project of this scale, the final destination becomes far less important than the discoveries that are made along the way. This happened with Healthy Aims when it was soon realised that the need for a cochlea implant to communicate with an FES system, for instance, may be small. As a result the shared technology has tended to centre on material selection and production methods, with the radio solutions tailored to each application.

The Medical Physics Department at Salisbury has been working closely with a number of partners to develop the FES applications. Finetech Medical is a company that has successfully produced implanted FES systems for over twenty years, and they will be manufacturing the implanted systems. The University of Salford are developing ways to classify human movement using motion sensors, with the aim to develop a system for controlling upper limb stimulation that is intuitive for the user. Two other companies, Zarlink Semiconductors and ETB are providing radio communications and sensor technology. The FES programme of work is quite complex and should be broken down to be explained. The requirement was to produce an implanted upper limb stimulator that uses motion sensors to detect body movement. This body movement would be used to control the sequencing of the stimulation so that the user would be able to perform reach and grasp movements at will. A significant amount of testing of this technique was required before it could be considered ready for use with an implanted device, so we produced a new surface electrode stimulator at Salisbury for the purpose. We are calling the new device the O2PS – Odstock 2 channel Programmable Stimulator. It is slightly smaller that the existing drop foot stimulator and designed to be worn on the affected arm. The

stimulator incorporates a motion sensor that detects the limb angle and voluntary movements. The sensor signals are used to produce triggers for sequencing the pattern of stimulation. As the name implies the stimulator is programmable, meaning that the movement triggers and stimulation sequences can be customised to each patient's ability. The system is being tested in Salford and Salisbury. The team at Salford are using gait lab motion capture systems to assess the effectiveness of the device with stroke patients. In Salisbury we started in October of last year, again with stroke patients. The patient selection criteria for the device are that they have reasonable shoulder and elbow movement and the ability to grip, the stimulation is used to provide wrist support and hand opening. Currently we have eight patients using the device, and success with the system seems to be related to the time since stroke and the degree of cognitive impairment. The patient pictured had three work related activities he wanted to achieve and using the system this patient is able to open his hand to hold a telephone – triggered by raising his arm.



The indications are that for the correct patient group the stimulator can have significant benefits. In fact one of the users was so pleased with the stimulator that unbeknownst to us she contacted a journalist friend who ran the story in her local paper. This was subsequently picked up by the local independent television news programme which led to a very brief appearance on the telly, followed by four weeks of phone calls from hopeful volunteers for the trial.

Of the patients on the Salford and Salisbury trials, up to five will go forward to receive the implanted version being produced by Finetech. It is planned that this will happen from later on this year. The new O2PS will have been an important part of the pre-implant programme for these and future patients, but it is envisaged that the stimulator will eventually become available as an orthotic aid in its own right.

The final part of the Healthy Aims work that Salisbury is involved with, is the design of a fully implantable multi-channel stimulator. This will contain an onboard battery and use radio communication to the outside world. The design of this system will set the course for the continuing work beyond Healthy Aims.

Rod Lane
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STOP PRESS!!! STOP PRESS!!! STOP PRESS!!!

Last week we heard the good news that our application to the Stroke Association for funding had been successful. They will fund a pilot study to investigate the effectiveness of combining physiotherapy and electrical stimulation to improve mobility in recently discharged stroke patients.

The Stroke Association are also funding a feasibility study into accelerometer triggered electrical stimulation on recovery of upper limb function in chronic stroke patients, which has started. The MS Trust has funded a RCT to investigate the effects of combined FES and exercise on quality of waking which has also started.

Thank you to the Stroke Association and the MS Trust.

Ingrid Wilkinson
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1st International FES Sports Day

Reinhardt Vetter winning the 1000m

On the 22nd of June this year the 1st International FES Sports Day took place at the University of Wales in Cardiff. The event, initiated by Prof. Nick Donaldson from University College London brought competitors from Australia, Germany, Scotland and England together to compete. Over recent years, the focus of FES research in spinal cord injuries has moved away from attempts to restore basic functions such as walking and standing and instead increasingly looks at trying to solve some of the other health problems associated with long term spinal cord injury. Lack of physical mobility means it is very hard for people who have a SCI to exercise and so their risk of heart disease, osteoporosis and diabetes is significantly increased. They are also at risk from pressure sores because of reduced peripheral blood circulation and reduced muscle bulk. While of course many people with SCI exercise using the upper body, because this does not involve the large muscles in the lower part of the body, the demand placed on the cardiovascular system is significantly less than when the able bodied exercise. FES can be used to activate these muscles and increase the "work out" potential of exercise.

There has of course been a long tradition of sport activities in rehabilitation following SCI since Guttmann's pioneering work at Stoke Mandeville in the 40's and 50's. It is therefore a natural extension of this tradition to use FES for sporting activities. Two sports were demonstrated at Cardiff. The first was FES cycling using recumbent tricycles. Using standard skin electrodes, the quadriceps, hamstrings, lateral gastrocs and gluteal muscles are stimulated. To time the stimulation sequence, a sensor on the pedal crank keeps track of the position of the legs so that the correct muscle action is produced. The intensity of the stimulation is controlled by the user using a twist grip control. The second sport shown was rowing using a modified Concept 2 indoor rowing machine. Rowing is known to be one of the best activities to exercise almost all the muscles in the body and for this reason is an effective exercise to improve fitness levels in SCI. Again, using standard self adhesive electrodes, the quadriceps and hamstrings are stimulated. Commonly the stimulator used is the Odstock 4 Channel Exercise Stimulator. The stimulation sequence is controlled using a push button, fixed to the pull bar. The user presses the button to activate the quadriceps as the bar is drawn back, and releases the button to cause the hamstrings to bring the body forward, ready for the next stroke.

One purpose of the event was to set the standards for others to beat. The first event of the day was the 100m Cycle sprint. This event was won by Carmen Bruck from Germany in a time of 28.72s. The 1000m race was also won by a German, Reinhardt Vetter, in a time of 5m04.43s. The English did better in the rowing and a new record for 2000m was set by Robin Gibbons of 11.02m. The final event was called "the Cushion game". This is a little like wheel chair rugby but with FES power tricycles. The aim is to touch down the cushion over the opponent's line with the main rule being that the cushion must be passed a minimum of 3 times on the way. While no records were at stake, the game was no less competitive and was plainly a lot of fun for those taking part.

A long time ago when we were working on FES standing for paraplegics, a colleague who will remain nameless cracked a joke that there was no F*** in FES. While trying to be funny he was making the point that while we were able to produce functional standing, it was not truly functional because it was of limited use in daily life.

Arguably, FES cycling and rowing is not real function either as it is unlikely that many people will use FES cycling as a means of getting to work. However, we now have to other possible meanings for the F of FES. F for Fitness and F for Fun. And frankly, FES cycling looks cool!

For more information:
Rowing: www.fesrowing.org
Cycling: Professor Nick Donaldson UCL Implanted Devices Group, Department of Medical Physics & Bioengineering, Malet Place Engineering Building (Room 3.06), University College London, Gower Street, London WC1E 6BT

Paul Taylor
Salisbury

FES COURSES

Before clinicians can prescribe the ODFS or 02CHS for their patients, they must attend a course. This is mandatory. Three courses are offered. The introductory course gives an introduction to FES and its application in neuro-rehabilitation. The course, which has a large practical content, is intended to enable clinicians to select candidates for the ODFS and use the device. The second course, intended for clinicians who have some experience of the ODFS, introduces the O2CHS, used for more complicated gait applications. The upper limb course expands on the introduction to exercises used in upper limb hemiplegia, given in the introductory course. For further information, course programmes, and booking form can be found on the web (www.odstockmedical.com). Please contact course secretary Sophie Pearce for all bookings and course enquiries Tel: 01722 429065 sophie@salisburyfes.com.

INTRODUCTORY SINGLE CHANNEL FES COURSE

2006

September 8th - 9th single channel Abergavenny

September 21st - 22nd - 23rd single channel and upper limb - Aldenbrooks Hospital, Cambridge

October 7th - 8th single channel - Salisbury District Hospital, Wiltshire

November 4th - 5th single channel - Salisbury District Hospital, Wiltshire

2007

Date to be confirmed - Newcastle

UPPER LIMB One Day FES COURSE

Open to participants who have not completed the single channel course or wish to cover more in depth the upper limb stimulation, principally in hemiplegia. Some participants may find some of the physiology hard going and it is preferred that they have attended the single channel course first.

2006

July 8th - Salisbury District Hospital, Wiltshire

TWO CHANNEL COURSES

Participants must have completed the single channel course.

2006

October 13th - 14th - Mayday Hospital, Croydon

ODFS Refresher course

Previously we have advertised the possibility of running a refresher course. However, we have not received many requests. We therefore suggest that if you feel that your FES skills need refreshing, please contact the Salisbury FES clinic and ask if you can visit the clinic to observe the treatment sessions and discuss the technique with experienced clinicians.
If you would like to host a FES course at your centre please contact course secretary Sophie Pearce Tel: 01722 429065 sophie@salisburyfes.com.

Service provision

The Clinic in Salisbury receives enquiries every day from people who want to receive FES treatment in their home area. We therefore wish to produce a directory of clinicians who are using FES so we can pass on their details. The information will be used for the sole purpose of connecting potential clients with FES trained clinicians. We can also add the information to our web page (www.odstockmedical.com/clinics.htm). Please fill out and return the form below.

If you have previously sent us information, please still fill in and return this form so we can ensure our information is up to date.

Name: _____

Work Address:
_____

_____

_____Post code_____

Tel: _____Fax: _____

E-mail: _____

Web page: _____

I / We provide a clinical FES service Y / N

Type of conditions treated: All CVA MS SCI CP TBI F/HSP
(Please ring)
Other_____

Treatment is provided for: Upper limb exercise Lower limb exercise
(Please ring)
Dropped foot More complex gait problems
Other_____

Treatment: We use FES for treatment as part of physiotherapy
(Please ring)
We provide FES equipment for short term use at home
How long_____
We provide FES equipment for long term use at home

Referrals: We take referrals from within our hospital
(Please ring)
We take referrals from GP's in our own PCT
We take referrals from any GP or Medical Consultant
We take self referred patients

PTO

To whom should referrals be made?_____

Address_____

_____

Any restrictions from where / how referrals can be made? _____

_____

_____

Funding: (Please ring) Internal hospital funding Contract with PCT Cost per case

Charity Private Research grant Other_____

Funding covers: (Please ring) Therapy staff time Equipment Consumables

How many FES patients do you see each year? New_____ Follow up_____

How many Patients use FES at home? New_____ Follow up_____

Do you have a waiting list? Y / N How long?_____

Please add my details to the directory Y / N

Please add my details to the web page Y / N

Please add any additional details about your service / funding / referral procedure etc.

Signed _____

Date _____

Thanks for completing this form.

Please send to: Phil Carley, Odstock Medical Limited, Salisbury District Hospital, Salisbury, Wiltshire, SP2 8BJ, UK . Fax: 01722 425 263 Tel: 01722 429118

E-mail: phil@salisburyfes.com

FES Newsletter

Help us save trees by receiving the FES newsletter by e-mail!

Please fill in the form bellow to tell us how you would like to receive the Salisbury FES Newsletter. If you have told us this information previously, there is no need to tell us again. However, if have not all ready told us and we do not hear from you now, we will assume you do not want to receive the newsletter.

Name_____

Address_____

_____

_____

E-mail_____

Tel._____

Fax_____

I would like to receive the Salisbury FES Newsletter in paper form by post

YES / NO

I would like to receive the Salisbury FES Newsletter by E-mail

YES / NO

Please post, fax or e-mail to:
Phil Carley, Odstock Medical Limited, Salisbury District Hospital, Salisbury, Wiltshire, SP2 8BJ, UK
Fax: 01722 425 263
Tel: 01722 429118
E-mail: phil@salisburyfes.com

FES User Day 2006
Moseley Hall Hospital, Alcester road, Birmingham,
Friday 1st December 2006
10am - 5pm

Please fill in the form below to reserve your place. We also invite 15 minute presentations on any aspect of the clinical application of electrical stimulation. Presentations may be of original research, clinical experience or of case studies. The aim of the meeting is to promote discussion and the exchange of ideas in an informal setting.

It is hoped to have sessions on the following areas:

- Use of FES to improve mobility in stroke, MS, PD and spinal cord injury
- FES in Cerebral palsy
- FES in stroke upper limb
- Electrical stimulation in conjunction with Botulinum toxin.
- Facial palsy
- Stimulator technology update

Please provide a 300-500 approx. abstract, which we will be made available on the day and will also be included in the winter addition of the FES Newsletter. Power point, slides, OHP and video will be available for your use. If using power point, please bring your talk on disk, CDROM or memory stick so a single computer can be used. This saves time between presentations.

The cost of the meeting is £40. Please make cheques payable to the Medical Physics Trust Fund.

++

Name _____

Address _____

_____

_____

Phone number_____

I will attend the FES User Day Meeting Y / N

I wish to present a presentation Y / N

Tittle _____

_____

Please return this form to Sophie Pearce, Odstock Medical Limited, Salisbury District Hospital, Salisbury, Wiltshire, SP2 8BJ

Abstracts may be e-mailed (p.taylor@salisburyfes.com) or sent on a disk to Paul Taylor at the above address.