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**Neuromodulation  
Media Toolkit**

**Feinstein Kean Healthcare**  
An **Ogilvy PR Worldwide** Company



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## Introduction

Media coverage can be quite advantageous: it can drive new patients to your practice or clinical trial, notify the public at large about the importance of neuromodulation therapies, and open doors to relationships with potential partners. With a little time and effort, along with the materials in this communications kit, you can nurture lasting relationships with journalists.

The tips, advice and materials presented here are your guidebook to conducting communications programs built upon a greater understanding of how the media works and how to work with journalists. We have included guidelines to help you build your capacity for working with the press to promote the importance of your work and foster greater understanding of neuromodulation within your community.

Your efforts to spread the word are an important part of the North American and International Neuromodulation Societies' *campaign to educate and promote the field* which seeks to elevate the profile of neuromodulation treatments, practitioners and patients through a national communications effort. If you have news that may work well within this larger outreach landscape, or if you would like more information on implementing any of the techniques detailed in this toolkit, please send us an e-mail at [ins@neuromodulation.com](mailto:ins@neuromodulation.com).

## Media Relations Process

There are numerous opportunities to engage with your local media. The most successful outreach efforts are:

- *Highly targeted* to the publication's audience and reporter's field of interest
- *Localized* to the immediate reader/viewership yet part of a larger, national trend or story
- *Newsworthy and timely*, driving interest to your story now rather than next week

You may be interested in reaching out to your audience by way of the media in order to promote a new treatment offering, a clinical trial or research project, a special community outreach event or an upcoming scientific session.

A general approach to media relations follows a few key steps, explained in greater detail below:

1. Develop core message points – the basics of what you are trying to communicate, why it is important and what you are hoping to accomplish
2. Customize materials, including media outreach list, press release / media advisory, and Frequently Asked Questions relating to the news
3. Contact the media with a tailored story pitch
4. Follow-up with the media
5. Be available as a resource for the media as you build long-term relationships and seek future coverage

## Developing Message Points

A message point is a particular piece of information that you want to get across to your audience. It should be clear, concise and easy to understand. To make a lasting impression on the audience, it is important to use every opportunity to repeat your key messages.

As you prepare for an interview, take some time to think about what messages you want to proactively communicate to the reporter and his/her audience.

The messages you communicate in interviews about the field of neuromodulation, your contributions and what patients need to know should convey four main pieces of information:

1. Capture the news that has generated the interview
2. Define potentially unfamiliar terms, such as neuromodulation, and make them relevant to the outlet's audience
3. Explain the specific medical and patient needs addressed by the news
4. Provide information that will enable patients to contact your office

As an example, we have developed message points for a hypothetical interview with a pain physician who has participated in a multi-center study to assess the effects of spinal cord stimulation in patients with Failed Back Surgery Syndrome who have failed to respond to analgesics. Our doctor wishes to make more people in her region aware of this therapy and has caught the interest of a local reporter who wants to learn more about the study.

#### **Convey the news:**

Recently at the Tri-State Pain Institute we participated in a multi-center study to evaluate the effectiveness of a therapy called spinal cord stimulation for patients suffering from Failed Back Surgery Syndrome. We found that for many patients – in this case, among those who do not respond to drug therapy – spinal cord stimulation can provide significant relief from persistent pain and improve their quality of life.

#### **Define terms:**

*Spinal Cord Stimulation (SCS)* is a type of neuromodulation therapy in which a small implantable medical device generates electrical impulses near a targeted area of the spinal cord in order to alter a patient's perception of pain.

*Neuromodulation* refers to the field of medical technology that uses advanced therapeutic devices to deliver highly targeted electrical, chemical or other agents to reversibly modify brain and nerve cell activity.

*Failed Back Surgery Syndrome (FBSS)* is a condition in which patients experience persistent back or leg pain following back surgery.

#### **Explain the specific needs addressed:**

More than 10% of all patients who undergo back surgery experience Failed Back Surgery Syndrome. Sometimes drug therapy is not desired or fails to provide sufficient relief from the persistent pain and disability. It's important that patients ask questions and learn about their options – sometimes even their doctors may not be aware of new or emerging treatment options available. Many of the patients who come to the Tri-State Pain Institute for FBSS were told by previous doctors that they were “out of options” and they'd need to just learn to “live with the pain.” Fortunately techniques like SCS can offer alternatives to such a future.

#### **Enable audience contact:**

Patients and their caregivers who want to learn more about this study or other therapies like SCS that provide promising relief of debilitating pain are invited to explore our website at (URL)

These types of proactive messages will form the basis of your discussion with a reporter. When participating in a media interview, you should always strive to:

- Address the reporter's question, then
- Build a "bridge" to one or more of your message points.

### **"Bridging" Techniques and Phrases**

"Bridging" is a basic technique to help you control an interview. There are several phrases that can help you bridge from a reporter's question to your key message points.

Helpful bridging phrases include:

- "Before I forget, I want to tell your audience "
- "Let me put it in perspective "
- "What is important to remember is "
- "What I really want to stress/talk about is "
- "What is most important "
- "Don't forget that "
- "That's an interesting question. It reminds me of "

A bridge is frequently the shortest route between a reporter's questions and your message. Useful phrases include:

- "What I am really here to talk to you about is "
- "Before we get off the subject, I'd like to add "
- "That reminds me "
- "Let me just add "
- "What that means is "
- "That's a good point, your audience may also be interested in knowing that "
- "Let me answer you by saying that "
- "That's not my area of expertise, but I can tell you that "

A bridge can also be used to help take control during an interview. Some useful phrases include:

- "Let me give you some background on "
- "Let's take a closer look at "
- "What that means is "
- "Another thing to remember is "
- "Now that we have covered [REPORTER'S TOPIC] let's move on to [YOUR TOPIC]"
- "You may be asking why [YOUR TOPIC] is true "
- "As I said "
- "While [REPORTER'S TOPIC] is important, we should remember that [YOUR TOPIC] "

## **Customizing Materials**

The materials enclosed in this packet have been developed so you can customize them for your practice, institution or center. Please review each item carefully to ensure that all of your information is added into the appropriate sections before they are released.

As a reminder, any clinical study recruitment and publicity materials may need to be approved prior to use by your center's Institutional Review Board (IRB).

## Contacting the Media

An accurate and up-to-date media list is critical for the success of the activities outlined in this manual. The following points will help you refine your list – or create a new one suited to your needs and market:

### Do your media homework.

- When developing lists of media contacts, think as broadly as possible about your local media.

Local media you might consider, include:

- Daily & weekly newspapers
  - Television
  - Radio
  - Local professional journals
- Determine which media, including professional journals and consumer news outlets, are important to you. Make certain that you consider local professional and trade media and general medical news publications. Also include the consumer media that reach patients, their families and the general public.
  - Identify and call those reporters you believe would be most interested in your information:
    - At local newspapers, ask for the medical/health reporter or the news editor
    - For TV, ask for the medical/health reporter, the news producer and/or the assignment editor
    - For radio, ask for the medical health producer, the news director, the public affairs producer and/or the producer of listener call-in shows

When calling, state that you are updating your media list and wish to verify contact information. This is also a good time to ask if there are any new shows or reporters that may be relevant to your list.

- Build your media lists. Classifying your list by media type may simplify its use. Within each category, list:
  - The specific publication or show
  - Contact name(s)
  - The address and telephone number
  - Fax number and e-mail address
  - Publication/broadcast frequency and deadlines
  - Audience size or circulation
- In addition, you should note the following for each individual reporter:
  - Daily deadlines
  - Issue closing day (don't call on this day)
  - Best/worst days and times to call
  - Preferences for receiving information: phone, fax, e-mail
  - Interest level in news about depression

### Promote your story.

Once your list is completed and your news materials are finalized, you need to determine how best to deliver the information to your target reporters. The news materials can be emailed to the attention of the health reporter at local newspapers, television and radio stations. You may also find it helpful to fax and/or email the press release to reporters as the press release is a great way to get the attention of reporters and television and radio producers.

When you are ready to send the news materials to a reporter you may wish to call first to determine interest and to make sure you have the correct contact information. As a helpful tip, you should try to call before noon, as most reporters will be on deadlines in the afternoon for the next day's paper or the nightly news.

Once you have called, include the name of the reporter in your correspondence rather than just the reporter's title. It is also helpful to follow up with the reporter to help cultivate a local story. When you make your follow-up calls, use them as an opportunity to reiterate the importance of the story.

## Handling the Interview: General Tips

Here are some tips that will help you handle interviews with the media. Later on in this guide, you will find specific tips for working with radio and television producers, as well as print reporters.

- Speak in a conversational tone, rather than in a doctor-at-the-podium manner. For example, use simple terminology that you would use with most of your patients.
- Direct your comments to the “end user” of the information – the reader, viewer or the listener – and don't be misled by sophisticated questions from an interviewer who may have done his or her homework.
- Try to avoid using professional jargon or statistics that your audience may not understand. In place of using those terms, you can use personal anecdotes or examples about your patients. Statistics can be helpful, just make sure that they are easy for a consumer audience to understand (for example, approximately 19 million American adults will suffer from a depressive illness in a given year).
- Don't wait for a reporter to ask you a question that invites you to communicate the messages you want to convey. You can use any question as an opportunity to get your message across. Just be sure to bridge from what you are asked to what you say. It may be helpful to think of the reporter's questions as invitations to deliver your messages.
- Remember to mention the name of your center, and any phone numbers or important contact details.
- Know your message and deliver it more than once.
- Nothing is “off the record.” The reporter may use anything that you say after “hello” and before “goodbye” in his/her article.
- If you do not know the answer to a question, just say so. Then find out the answer and get back to the reporter before his or her deadline.
- Don't take it personally if a reporter challenges you; just be sure to answer the question and bridge to your key messages.
- You don't have to answer a question you do not understand. Ask the interviewer to rephrase it.

- You don't have to participate immediately if a reporter calls to interview you without an appointment. Ask him or her to call back at a time that is mutually convenient. Don't be pressured to talk if you are caught off guard or do not feel prepared.

## The Newspaper Interview

The following tips may be useful when meeting with a newspaper reporter:

- Familiarize yourself with the publication and the reporter before the interview. For instance: is the reporter a medical/science reporter? A medical/science reporter may be more interested in the epidemiology and scientific aspects of a disease and its treatment.
- A reporter may follow up with a phone call a day or two later to ask additional questions or to ask for clarification on a point you mentioned. These discussions are an opportunity to re-emphasize your key messages.
- Be sure to choose your words carefully, even before you think the reporter has begun and after you think the interview has ended. You are always "on the record."
- Don't ask to see the article before it is published. This is not customary and could indicate that you were not comfortable with the information you provided.
- You can, however, ask to approve the statements attributed to you, but most reporters are reluctant to do so. This is a key reason to manage the interview as much as possible by choosing three key messages and repeating them.
- Offer to follow up with any relevant materials if the reporter needs them to understand your messages.

## The Television Newscast

You may be asked to participate in a television interview – whether taped or live. Below please find some additional tips that apply to these situations.

### Taped interview for a newscast

In this type of media interview, a taped segment of your remarks is used as one part of the journalist's report. Often the reporter comes to your office or another agreed upon location, with a one or two person crew. The crew is typically made up of a cameraman and a sound technician. The reporter usually sits or stands next to you with a microphone and asks you questions.

Be sure cameras are not used in areas where confidential patient information is available. It is also important to secure the appropriate clearance with your center's communications department and security group as they are usually instructed not to allow access to camera crews.

The reporter will then go back to his or her station with the videotape and cut out most of what you have said. The result is often a 10- or 20-second "sound bite" inserted into the story.

Here are some tips for helping to ensure that the sound bite you want to present is the one aired, as well as other tools of the trade to help make the interview go smoothly.



- Be sure to repeat your key messages. Played back as a whole, the tape might not sound cohesive, but that's not what you are looking for with a taped interview. You want to make sure that when the reporter edits the tape to select a sound bite, your key messages are mentioned repeatedly on the videotape.
- Look at the interviewer, not the camera.
- Make your point first. Then explain it, if necessary.
- Do not nod your head in anticipation of a question. It could be perceived as a "yes" answer, when in fact your answer could be "no."

### **Live interview for a newscast**

All of the above tips apply, except that the live interview is short and everything you say will be "on air." In this setting, it is important to be prepared and get your key messages out immediately. Don't wait for the right opportunity or specific question, as it may never arrive.

### **Talk Show Format: Live or Taped**

A television talk show can be live or taped. The primary way in which it differs from the taped news segment is that your remarks will be aired in their entirety. You still have to repeat your messages – but in a more polished way than you would in a taped interview. Additional tips for a talk show format include:

- Meet with the host before the show begins to talk informally, and reconfirm the topic and length of the interview. Ask a few questions to gauge the interviewer's knowledge. You may even suggest a few possible angles the host can ask you about. Please remember, whatever you say during this time may be used by the host to begin the on-air discussion.
- Take advantage of commercial breaks to ask your host what questions may be coming up next.
- Assume you are always on camera, even if you are not talking.
- Avoid looking at the TV monitor. Again, look at the interviewer, not the camera.

## **The Radio Interview**

Radio offers an effective vehicle for your message. As with television, radio interviews can either be taped or live. Some live radio talk programs may provide you with the opportunity to answer questions from call-in listeners. This type of interview can be conducted over the telephone, in person from your office or in person at the studio. Please find below some helpful tips when preparing for a radio interview.

General tips for all radio interviews:

- Your voice says everything. Try to radiate warmth and enthusiasm for your work.
- Avoid the tendency to relax. Energy disappears somewhere between the microphone and the listeners' ears, so try to increase the usual amount of energy in your speaking voice.
- Avoid clearing your throat or using "filler" words like "um" and "ah."

- Keep your notes in front of you, but be careful not to shuffle papers loudly.
- If you are conducting the interview via telephone, close your door and remove any distractions.
- Where possible, stand up for better voice and energy control.
- Keep a glass of water nearby, and use lip balm to keep your lips from drying out.
- Turn off your cell phone or pager.

A helpful tip for a taped radio news interview:

- Be sure to repeat your messages again and again. Your remarks will be edited, and you want to make sure that your main message is still conveyed to the listeners.

### Radio Talk Shows

- Listen to the show a few days before you are scheduled to be a guest. If you are unable to do this, ask a friend or family member to tape the show for you or simply request a copy from the studio. Often popular radio programs archive past shows on the station's website for the public to access.
- On a listener call-in show, remember that the calls are being screened by a producer to reduce the likelihood of an offbeat caller. Be sure to answer the questions in a straightforward manner.

## Sample Materials

The following pages present sample materials for you to customize during your media outreach efforts, including:

- Press release – a communication to the media that provides details on a newsworthy announcement
- Media advisory – a particular type of press release that invites the media to cover a special event hosted by your organization
- Frequently Asked Questions or FAQ – Also called a Q&A document, presents common questions related to the news / announcement. FAQs can be developed for internal use only (to bring others within your organization up to date on the news and impact of the announcement) or for external use (provided to members of the press, patients, partners, etc.)

## Sample Press Release

### Contact for more information:

Name  
Phone  
Email

### **First Study to Reduce Depression with Cortical Neuromodulation Implant Announced at International Neuromodulation Society World Congress**

*Implant Designed to Deliver Electrical Pulses to Dorsolateral Prefrontal Cortex Shows  
Promise in Major Depression Disorder*


ACAPULCO, MEXICO (December 11, 2007) – A study presented today at the International Neuromodulation Society’s (INS) eighth world congress demonstrated promising results for the use of cortical stimulation to treat major depressive disorder (MDD). These results were presented for the first time during the year’s largest conference on neuromodulation, technologies that alter or modify nerve activity by delivering electrical or pharmaceutical agents directly to a target area.

Brian Harris Kopell, MD with the department of neurosurgery, Medical College of Wisconsin shared the outcomes from this multi-center feasibility study, which is the first to use an epidural cortical stimulation (CS) system on the dorsolateral prefrontal cortex (DLPFC). Epidural cortical stimulation delivers electrical pulses to the cortex using an electrode implanted over the protective outer layer of the brain.

“Nearly 10 percent of the U.S. population lives with major depression and it affects people of nearly all age groups and demographic backgrounds,” said Dr. Kopell. “This novel use of a Cortical Stimulation system takes advantage of our growing understanding of the role of brain metabolism in depression. These results are promising for MDD patients whose depression is resistant to other antidepressant treatment options.”

In this multi-center study, 12 patients with treatment-resistant MDD received investigational implantable Cortical Stimulation systems (*Renova*<sup>™</sup>, Northstar Neuroscience, Seattle, WA) after an initial observation period. For eight weeks, patients were randomly assigned to active or sham stimulation; following this period, all patients received active stimulation. The CS system targets the left DLPFC, an area of the brain that is hypometabolic in patients with MDD, and increases glucose metabolism in this region to antidepressive effects. Using the Hamilton Depression Rating Scale (HDRS) and the Global Assessment of Function (GAF) as assessment tools, Dr. Kopell and colleagues measured the patients’ baseline and post-treatment levels of depression.

The data showed that active cortical stimulation lowered patients’ levels of depression and also indicated that CS may have a treatment effect that increases over time. The study was conducted at the Medical College of Wisconsin (Milwaukee, WI), Massachusetts General Hospital (Boston, MA) and the University of Pittsburgh (Pittsburgh, PA).



According to the National Institute of Mental Health (NIMH), major depression is a serious medical illness affecting more than 20 million American adults, or approximately 9.5 percent of the adult population in a given year. Antidepressant medications and psychotherapies are commonly used to treat depressive disorders. While some patients do respond to these traditional therapies, about 10 to 20 percent of all depressed patients do not have satisfactory sustained responses. New therapies, such as cortical stimulation, offer hope for these patients.

**About the International Neuromodulation Society**

The International Neuromodulation Society (INS) is a non-profit group of clinicians, scientists and engineers dedicated to the scientific development and awareness of neuromodulation – the alteration of nerve activity through the delivery of electrical stimulation or chemical agents to targeted sites of the body. Founded in 1989 and based in San Francisco, CA, the INS educates and promotes the field through meetings, its journal *Neuromodulation: Technology at the Neural Interface* and chapter websites.

For more information, please visit [www.neuromodulation.com](http://www.neuromodulation.com).

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## Sample Media Advisory

### -- Tri-State Pain Institute Hosts Community Workshop on New Technologies and Techniques for Managing Chronic Pain --

Corner City, IA, January 23, 2009 – Pain can account for 80% of all doctor visits, yet it remains difficult to diagnose and treat. Untreated pain can spark a cascade of problems including poor interpersonal relationships, low self-esteem, depression, anger and mood disorders and sleep problems.

#### **OPPORTUNITY TO COVER**

Area media outlets are invited to attend the Tri-State Pain Institute's (TSPI) upcoming community workshop on new techniques for managing chronic pain. This interactive event will feature TSPI staff and patients discussing topics that include:

- The hidden costs of prescription drug abuse
- New neuromodulation technologies that can offer relief
- New research into alternative and complementary therapies

Organizers, facilitators and participants will be available for onsite interviews. Pre-briefings with program leadership can also be arranged.

**WHO:** Tri-State Pain Institute

**WHAT:** Community Workshop: New Technologies and Techniques for Managing Chronic Pain

**WHEN:** February 1, 2009, 4:00 p.m.

**WHERE:** Tri-State Pain Institute, 1234 N. Broad Street, Corner City, IA

**CONTACTS:** Name: Phone

**VISUALS:** Doctors displaying new implantable devices and models for how they work; Physical therapist demonstrating massage and acupressure techniques; Patients discussing their experiences with neuromodulation therapies

# Sample FAQ's

## FAQ's for Referring Physicians

### **What conditions are neuromodulation techniques used to treat?**

Neuromodulation is used to treat and enhance quality of life in individuals who suffer severe chronic illness due to persistent pain, spasticity, movement disorders, epilepsy, ischaemia, cardiac, bowel and bladder dysfunction, spinal injury, visual, auditory and specific psychiatric disorders.

The most common treatment is spinal cord stimulation; and the most common indication is the persistent severe neuropathic pain found in those who have had technically successful spinal decompression surgery, but who have had recurrence or persistence of symptoms.

### **Where is the evidence base to support neuromodulation?**

Scientists who are involved with neuromodulation have recognized the need to produce high quality evidence of clinical efficacy. Considering the difficulties in performing randomized controlled trials with surgical techniques, several neuromodulation therapies have been strongly validated, such as SCS for Angina pectoris, critical limb ischemia, complex regional pain syndrome and neuropathic failed back surgery syndrome. Similar quality has been achieved with sacral nerve stimulation for urinary incontinence, intrathecal baclofen in spasticity, intrathecal opioids in cancer pain and vagal nerve stimulation in epilepsy, and cochlear implantations.

### **What is the procedure for patient assessment prior to implant?**

The decision to provide a neuromodulation therapy is taken after careful consideration with the patient, the physician and the neuromodulation team. It is neither a treatment of first nor last resort. If symptoms can be managed effectively and simply using other methods then these are considered first.

### **What is involved in the neuromodulation implant procedure?**

Clearly the implant procedure is different depending upon the actual procedure done and by whom. Quite often the electrodes or catheters are placed under local anesthetic. Other parts of the procedures can be more satisfactorily done under general anesthesia. Certain neuromodulation technologies do not require implants at all.

### **How do I decide if neuromodulation is the best treatment for my patient?**

There are many different indications for neuromodulation. All are agreed that these therapies fulfill the needs of patients for which the disease impact is substantial. However as good quality research trials accrue it becomes more likely that these therapies will be introduced earlier in traditional chronic disease management. Neuromodulation should be considered as part of a portfolio of management strategies and selected after multidisciplinary consideration.

### **What complications are associated with neuromodulation techniques?**

There are complications that are general to any implant into the body and complications that are specific to the technique, therapy and disease. Each implanting centre will be monitoring these and should be able to quote their current rates of complication.

The weaker parts of the systems used tend to be the electrodes, catheters and connections. INS members are working hard with industry to improve design, and system durability.

Complications specific to the devices, technique and therapy can be found from the manufacturers' own websites.

### **What are the costs and cost-effectiveness of neuromodulation?**

There are several costs of the procedures to be considered. These are implant components, professional fees, operating room and hospitalization costs. Cost effectiveness of the procedure is a method by which the total costs of the procedure as well as the change in healthcare costs following the procedure are compared with the costs of not providing the treatment. Various cost analyses have been done for some of the neuromodulation procedures for some of the indications. For example, SCS appears to become cost effective between 2 and 2.5 years after treatment in patients with angina pectoris, failed back surgery syndrome and complex regional pain syndrome.

### **Where is my nearest INS member's clinic?**

Those members that have indicated that they wish their clinic contact details to be made available can be contacted via the INS website or national chapter website.

### **I need to do further research in this area before I recommend a patient for neuromodulation. Where do you suggest I look?**

There is a useful bibliography on the INS website at [www.neuromodulation.com](http://www.neuromodulation.com) which although not exhaustive, is a list of some of the more influential and well-received publications.

## **FAQ's for Patients**

### **What conditions are neuromodulation techniques used to treat?**

Neuromodulation is used to treat and enhance quality of life in individuals who suffer severe chronic illness due to persistent pain, spasticity, movement disorders, epilepsy, ischemia, cardiac, bowel and bladder dysfunction, spinal injury, visual, auditory and specific psychiatric disorders. The most common treatment is spinal cord stimulation and the most common indication is the persistent severe neuropathic pain found in those who have had technically successful spinal decompression surgery, but who have had recurrence or persistence of symptoms.

### **What is the procedure for patient assessment prior to implant?**

The decision to provide a neuromodulation therapy is taken after careful consideration with you, your physician and the neuromodulation team. It is neither a treatment of first nor last resort. If symptoms can be managed effectively and simply using other methods then these are considered first.

Often your physician will recommend that you see several other professionals in the multidisciplinary team before agreeing to do a neuromodulation treatment, in order to be really sure that this is the best treatment at the best time for you, and to decide if any additional therapy is required.

### **What is involved in the neuromodulation implant procedure?**

Clearly the implant procedure is different depending upon the actual procedure done and by whom. Quite often the electrodes or catheters are placed under local anesthetic. Certain neuromodulation technologies do not require implants at all.

### **What questions does the INS suggest I ask my implanting doctor?**

You should ask your doctor about the neuromodulation treatment selected and whether there are any simpler alternatives or solutions to your problem. There will be advantages and disadvantages to any treatment, but it is important you should know as much as possible. You should ask about their track record with the treatment and what their rate of common complications is. You should ask who will be your long term contact in the neuromodulation team.

### **What are the side effects of these treatments?**

There are complications that are general to any implant into the body and complications that are specific to the technique, therapy and disease. You should ask your doctor and the implanting team all about any common or dangerous possible side effects before embarking on this or any treatment. Further information on complications specific to the device, technique and therapy can be found from the manufacturers' own websites.

### **If I undergo treatment, how long will it take me to recover and how long will I be off work?**

The amount of time required off work following these treatments will depend upon several factors, and it would be best to check with the neuromodulation team.

### **Will my body reject the device after it is implanted?**

The devices are made of materials that are usually well tolerated by the body. True rejection is extremely rare.

### **How long will the device need to be in me?**

Due to the nature of your symptoms it is more than likely that you have a permanent condition. Thus, neuromodulation is usually embarked upon with the expectation that the system will be required long term. The simplest answer is to say for as long as you need it. However, the device can be removed.

### **What happens if the device breaks down?**

Your implant team would need to be contacted. The problem can usually be diagnosed after asking you some questions and analyzing the device. Further action can then be advised.

### **How often will the device need to be replaced?**

There are several components to the neuromodulation device. Because these are mechanical devices, there is a requirement for maintenance and occasional replacement which varies with the individual device.

### **How is the device regulated once it has been implanted?**

The fully implanted stimulator systems can be programmed using telemetry by your doctor's programmer. Most of the newer devices will be issued with a patient programmer so that you will be able to not only turn it on and off but also make your own adjustments to the stimulation. The drug delivery systems will be adjusted if required by your doctor.

### **How long does the battery last?**

Please also refer to the individual manufacturers' websites.

There are now three ways that the stimulating devices are powered.

1. The first systems are those powered by radiofrequency coupling, whereby power is transmitted continuously through the skin to the device from an external transmitter stuck to the surface of the skin.
2. The second system uses an internal battery which comes in various sizes. Once this is exhausted the whole implantable pulse generator which includes the battery (IPG) is replaced. The longevity is variable. Typically we would expect an IPG to last between two and seven years.
3. The third systems are the new rechargeable systems. Longevity has yet to be determined.
4. Some drug delivery pumps are powered electrically with an internal battery and may last up to seven years.