

A person wearing a white lab coat is pointing with their right index finger at a white anatomical model of the human spine. The model is mounted on a metal stand and shows the vertebrae and intervertebral discs. The person's left hand is also visible, resting near the model. The background is a bright, out-of-focus clinical setting.

Spinal Cord Stimulation Handbook

A learning resource on SCS therapy for patients with chronic pain.



“Spinal cord stimulation is one of the procedures where it’s probably the least intrusive and most effective in managing a chronic debilitating condition.

CHIRAG PATEL

Consultant Neurosurgeon,
University Hospital of Wales, UK.

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SCS HANDBOOK

Seven steps to referring



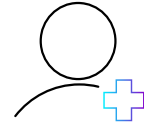
1 PATIENT PRESENTS WITH CONDITION



SCS is a safe, minimally invasive therapeutic option for numerous chronic pain conditions, which can **reduce pain** and **improve patient outcomes**.^{1,2} It has been used for more than 40 years to effectively treat chronic neuropathic pain, with a favourable benefit/risk ratio.³

25-35%

Estimates show that approximately **25%–35%** of adults in European countries experience chronic pain,⁴ which reduces patient quality of life more than almost any other condition.



If you have a patient with chronic neuropathic pain, which is limiting their **quality of day-to-day life**, they may be a candidate for SCS. While it is not a cure for pain, it can provide effective and long-lasting relief, in addition to medications or other treatments.

2 UNDERSTANDING SCS AND ITS BENEFITS

Once you have **identified a patient** who may be a suitable candidate for SCS, it is important to understand what undergoing the treatment will involve and what kind of results they can expect, such as reductions in their chronic pain and **overall improvements in their day-to-day quality of life**.



Pain travels along nerve fibres through the spinal cord to the brain.

SCS therapy starts with a simple, basic premise: since pain is carried by electrical nerve impulses along the spinal cord to the brain, intervening in the nervous system's impulse flow is **key to managing pain**.

A small pulse generator and insulated wires are implanted into the body, near the spinal column. Directed by an **external remote control**, electrical impulses from the pulse generator interrupt pain signals as they travel to the brain.

With older SCS models, patients experienced these electrical impulses as a gentle, tingling feeling called paraesthesia. With the **latest SCS technology** from Boston Scientific, you have more choice over how your patients experience these electrical impulses.

The intended result is a **soothing, smoothing sensation**. Pain signals are interrupted while the therapy is active and, with some settings, patients will **feel pain relief** without any additional sensations.

3 PATIENT SCREENING

Once you have assessed the potential benefits of SCS, weighed up against any potential risks or side-effects, we are here to help support you throughout the treatment journey: from the selection and referral of an appropriate SCS candidate to ongoing follow-up sessions.

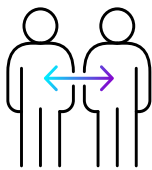
The e-health tool is designed to:



➤ Access the [e-health tool](#)

4 SUPPORTING YOUR PATIENT'S DECISION

After you have identified and screened a potential candidate for SCS, it is important to fully support your patient in their decision-making process, whether they decide to choose SCS or not.



Our Patient Support materials are designed to guide your conversations with patients, so that they can make a well-informed decision about whether or not to undergo treatment. Every patient should make an individual decision, based on their unique symptoms, feelings and situation.

➤ Access the [Patient Support materials](#)

5 FINDING AN APPROPRIATE PHYSICIAN FOR REFERRAL

Once a patient has decided to undergo SCS as a treatment for pain, we understand how important it is for you to feel confident that they will remain in a safe pair of hands throughout the treatment journey.



Our Physician Locator tool enables you to find a suitable surgeon to refer your patient for SCS. You can also use the Patient Screening and Referral form to refer to a SCS expert.

➤ Access the [Physician Locator tool](#)

➤ Access the [e-health tool](#)

6 PATIENT UNDERGOES SCS SURGERY

Once you have referred your patient for SCS, their surgery will be carried out by an experienced surgeon, as part of a wider interdisciplinary team.



During the procedure, the small pulse generator and insulated wires will be planted into the body, near the spinal column.

Patients will be given an external remote control and charging belt to give them control over managing the electrical impulses from the generator to interrupt pain signals as they travel to the brain.

Following surgery, patients should avoid strenuous activity, like heavy lifting, for the first few weeks. They should also wait several weeks to return to normal activities and may experience some pain or discomfort at the incision site.

7 WHAT LIFE LOOKS LIKE FOR YOUR PATIENT AFTER SURGERY

Once you have referred your patient for surgery, you should remain a part of their interdisciplinary healthcare team and should be updated on progress and success of the treatment.

Depending on their condition and pain severity, your patient may experience pain reduction that is targeted and tailored to them. Successful SCS will provide an alternative to medication by helping patients take back control of their life by managing their pain relief.



- ▶ While battery life is dependent on each patient's unique situation, Boston Scientific's WaveWriter Alpha™ SCS System is designed to last a minimum of 12 years.*

Our Patient Support material section is packed full of resources to help you best support your patients on their SCS journey.

▶ Access the [Patient Support materials](#)

You can also direct your patients to association groups, such as **Pain Alliance Europe (PAE)**, where patients and their families can join a supportive community of people who share similar experiences and come together to champion the voice of the patient.



SCS HANDBOOK

Referrer frequently asked questions



A portrait of Simon Thomson, a middle-aged man with grey hair and glasses, wearing a dark blue button-down shirt. He is looking slightly to the left of the camera with a neutral expression. The background is a textured, light-colored wall.

“Spinal cord stimulation is one of the few interventional treatments that actually has an impact in chronic pain.”

SIMON THOMSON

Consultant in Pain Medicine and Neuromodulation,
Mid and South Essex University Hospitals, UK.

SCS HANDBOOK

Referrer frequently asked questions

Our handy FAQs document supports your understanding of SCS, in bite-size sections, so you can explore the areas that are most pertinent to you: from the process of identifying and referring a candidate, to understanding the level of pain and medication relief your patient can expect in their day-to-day life.

IS SCS SAFE FOR MY PATIENTS? WHAT ARE THE POSSIBLE RISKS?

After several decades of use, SCS treatment has been shown to be a safe and effective treatment, with over 350,000 people⁶ successfully treated worldwide. The SCS procedure should be carried out by an experienced interdisciplinary team.



As with any surgical procedure, there are risks involved with SCS, which should be considered and discussed with your patient before a decision is reached on whether to proceed with SCS.

WHAT ARE THE POSSIBLE BENEFITS OF SCS?

Every patient is an individual. This means that the amount of pain relief experienced differs depending on the person.



The SCS Trial Procedure helps your patient decide if the level of pain reduction from SCS is right for them. A pain reduction of at **least 50%** is considered a standard benchmark.

WILL MY PATIENT STILL NEED TO TAKE MEDICATION?

While some patients find they no longer need pain medication, others may simply reduce their medication.



Your patients should be reminded to always ask you before making any changes to their dosage.

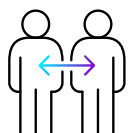
HOW DO I KNOW IF MY PATIENT IS A CANDIDATE FOR SCS?

Our patient e-tool makes it simple for you to determine whether your patient is a suitable candidate for SCS and understand how and when to refer.



► To access the [e-tool](#)

HOW DO I GO ABOUT REFERRING A PATIENT FOR SCS?



Once you have assessed that your patient is a suitable candidate for SCS, you can use our **physician locator tool** to find a SCS expert to refer your patient to. You can feel reassured that your patient will remain in a safe pair of hands, with a SCS expert.

► Click here to access the [Physician Locator tool](#)

WHEN WILL MY PATIENT'S SCS SYSTEM NEED REPLACING?



While battery life is dependent on each patient's unique situation, Boston Scientific's WaveWriter Alpha™ SCS System is designed to last a minimum of 12 years.*

CAN PATIENTS TRAVEL WITH A SCS SYSTEM?



Yes, patients can still travel with a SCS system. Metal detectors, X-ray machines, security scanners and other security devices will not damage the implant but may cause unintentional stimulation. The implant may also activate metal detector alarms.

Remind your patients that it is recommended that they carry their **patient ID card** at all times.

CAN PATIENTS STILL HAVE AN MRI?



While it may be possible for patients to have an MRI scan after undergoing SCS, it is best to consider each patient's unique case before determining their individual MRI eligibility.

*End of Programmed Service is applicable to the WaveWriter Alpha™ Prime System only when battery longevity is greater than 12 years.



SCS HANDBOOK

Patient resources

By addressing some common concerns and sharing other patient experiences, as well as answering FAQs in patient-friendly language, our resources support your conversations with patients and help you to equip them with all the information they need to make a decision about undergoing SCS.



SPINAL CORD STIMULATION WITH BOSTON SCIENTIFIC

Turn your back on chronic pain



When making the decision on whether or not to undergo Spinal Cord Stimulation (SCS), it is important that you have all of the necessary knowledge of the process and an understanding of what your life might look like on SCS. This brochure is designed to inform your decision, so that you can make the best choice for you and your unique situation.

UNDERSTANDING CHRONIC PAIN

Estimates show that approximately **25%–35% of adults** in Europe experience chronic pain.⁴ In fact, chronic pain reduces quality of life more than almost any other condition. The journey to pinpointing and easing the source of the pain can be a long and difficult one.



The European Painful Truth Survey found that:

On average people live with **chronic pain for up to 7 years**,⁷ and over a fifth of people with chronic pain will endure the pain for 20 years or more.⁷

A third of people with chronic pain are in constant pain,⁷ and 68% of respondents are still in pain for more than 12 hours a day despite treatment.⁷

Conventional treatments include physical therapy, drug therapy or surgery.

Only **36%** are satisfied with pharmacological treatment, such as non-steroidal anti-inflammatory drugs (NSAIDs), anti-neuropathic agents and opioids.⁷

If your chronic pain denies you daily tasks and pleasures, and takes a toll on you emotionally, it can have a significant impact on your quality of life. Whilst SCS does not cure chronic pain, it can **provide effective and long-lasting relief**, in addition to medications or other treatments.

UNDERSTANDING THE BENEFITS OF SCS

Take control of your pain



SCS could help you return to some of the activities that chronic pain has made difficult, or even allow you to discover new passions.

Turning to SCS from the onset of chronic pain symptoms could lead to **improved health outcomes**.⁷

SCS could also be a **more effective alternative** to repeat operations or increased opioid use.⁷

OPENING UP OPPORTUNITIES

Turn your back on chronic pain



SCS could provide you with an alternative to medication or surgery and may help you experience adequate pain relief. Most importantly, it could **support you in taking back control over your life** and enjoying some of life's pleasures that were difficult to enjoy before.

SCS can treat **pain in more than one area**, such as both your upper and lower back, or both your neck and shoulder. It can be given alongside pain medications and is designed for maximum control and freedom: you set the frequency and duration of stimulation.

The treatment can be trialled for a few weeks prior to the full implant, so you can discover if SCS works well for you.

HOW SCS WORKS

Pain travels along nerve fibres through the spinal cord to the brain. SCS therapy starts with this simple, basic premise: since pain is carried by electrical nerve impulses along the spinal cord to the brain, intervening in the nervous system's impulse flow is **key to managing pain**. A small pulse generator and insulated wires are implanted into the body, near the spinal column. Directed by an external remote control, electrical impulses from the pulse generator interrupt pain signals as they travel to the brain.

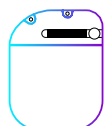


With older SCS models, patients experienced these electrical impulses as a gentle, tingling feeling called paraesthesia. Thanks to the latest **SCS technology** from Boston Scientific, you have more choice over how you experience these electrical impulses. With some settings, patients can experience a gentle tingling sensation known as paraesthesia.

The intended result is a soothing, smoothing sensation. Pain signals are interrupted while the therapy is active and, with some settings, patients will feel pain relief without any additional sensations.

THE WAVEWRIter ALPHA™ SCS SYSTEMS

Making life smoother



Our ultra-lightweight, thin battery was designed with smooth and gently rounded edges to maximise your comfort and reduce visibility after implantation.

The SCS implant can be positioned at the ideal depth to locate the source of your pain, so your therapy can be best **targeted and tailored for you**. The basic components of your WaveWriter Alpha™ System include the SCS device and a wireless remote control, as well as a charging belt. The system was designed for your **maximum mobility and freedom** to fit SCS into your lifestyle.

The WaveWriter Alpha™ SCS System

The WaveWriter Alpha™ SCS System offers extended coverage of the spinal cord and covers both simple unilateral pain and more complex bilateral pain – all through a small, comfortable implant.

The System is available as a rechargeable option or a non-rechargeable option. Please ask your healthcare professional to discuss which option might be the best for your needs.

A portrait of Philippe Rigoard, a man with a beard and glasses, wearing a dark suit, white shirt, and a patterned tie. He is looking slightly to the right with a thoughtful expression.

“Spinal cord stimulation is like a dialogue between the patient’s central nervous system and the technology in the electronic device implanted in [their] body.”

PHILLIPE RIGOARD

Professor of Neurosurgery and Head of Dept. Spinal Neurosurgery and Neuromodulation, Poitiers University Hospital, France.

GIVING YOU TIME TO MAKE YOUR DECISION

Making the decision to have an SCS implant is an important step on your journey to fighting chronic pain. That’s why we offer you a specially designed SCS Trial System so you can see for yourself if SCS could be right for you.



With the SCS Trial System, you have the chance to test out stimulation with your own cordless remote, record your experiences in a special SCS Notebook and, most importantly, see what stimulation feels like for you and to what extent your chronic pain is relieved.

Recording your experiences will help you and your doctor decide whether your trial SCS experience has been a success for you. Every individual is different but the key success criteria are a minimal 50% reduction in pain and a reduced need for medication, as well as being able to return to some daily activities that you weren’t able to do before.

Talk through what is right for you.

SCS is designed to help you potentially return to doing some of your favourite things in life; however, make sure to always talk to your doctor about what activities are right for you, as well as any precautions you should take with your SCS device.



SCS HANDBOOK

Patient frequently asked questions



SCS HANDBOOK

Patient frequently asked questions

Designed to guide your conversations with patients around the decision on whether or not to undergo SCS.

WHAT IS SCS?

SCS therapy starts with this simple, basic premise: since pain is carried by electrical nerve impulses along the spinal cord to the brain, intervening in the nervous system's impulse flow is key to managing pain.

A small pulse generator and insulated wires are implanted into the body, near the spinal column. Directed by an external remote control, electrical impulses from the pulse generator interrupt pain signals as they travel to the brain.



With older SCS models, patients experienced these electrical impulses as a gentle, tingling feeling called paraesthesia. Thanks to the latest SCS technology from Boston Scientific, you have more choice over how you experience these electrical impulses.

With some settings, patients can experience paraesthesia. With other settings patients will simply feel pain relief without any additional sensations.

IS SCS SAFE?

After several decades of use, SCS treatment has been shown to be a safe and effective treatment, with over **350,000 people** successfully treated worldwide. The SCS procedure should be carried out by an experienced specialist physician working as part of an interdisciplinary team.

As with any surgical procedure, there are risks involved and potential side effects vary from patient to patient. However, these are often temporary and stimulation can be adjusted to reduce or reverse these. You should discuss potential risks and side effects with your physician.

WHAT DOES THE SCS TRIAL SYSTEM INVOLVE?



With the SCS Trial System, you can experience what SCS feels like for you before deciding with your physician if this could be an option for you. You should receive a special SCS Notebook to record your experiences and this comes with a helpful pain diagram. After a recommendation from your physician, you will have a procedure (usually lasting 1– 2 hours) to have a temporary implant inserted.

The test drive with the temporary system then lasts on average between 3 days and 3 weeks. If the therapy proves to be the right one for you, a full implant will follow. Otherwise, the trial implant can be removed. During the test period, you should be careful to avoid too many activities that could risk pulling the external leads out of place. You should also stick to sponge baths so as to keep the system dry.

"SCS is a method, a technology, [that is] very useful to modulate the pain pathway. We have a sort of network of referring physicians... these specialists know what we do."

LAURA DEMARTINI

Head of the Pain Therapy Unit of the Maugeri Foundation, Pavia, Italy.



WHAT ARE THE POSSIBLE BENEFITS OF SCS? WILL I BE PAIN FREE AFTER SCS?



Every patient is an individual. This means that the amount of pain relief experienced differs depending on the person. The SCS Trial Procedure helps you decide if the level of pain reduction from SCS is right for you. A pain reduction of at least **50% is considered** a standard benchmark.

WILL I STILL NEED TO TAKE PAIN MEDICATION?



While some patients find they no longer need pain medication, others may simply reduce their medication. You **should always ask your doctor** before making any changes to your dosage.

HOW LONG WILL MY SCS SYSTEM LAST?



While battery life is dependent on each patient's unique situation, Boston Scientific's WaveWriter Alpha™ SCS System is designed to last a minimum of 12 years.*

*End of Programmed Service is applicable to the WaveWriter Alpha™ Prime System only when battery longevity is greater than 12 years.

SCS Handbook | Patient frequently asked questions

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HOW QUICKLY WILL I RECOVER AFTER SURGERY?



Patients are advised to **avoid any strenuous activity**, such as heavy lifting, for the first few weeks. It can take **several weeks** for you to return to normal activities and you may also feel some initial pain or discomfort at the incision sites.

Your physician can give you **detailed information about managing your medication** and daily activities during this time. SCS treatment is designed to help you lead a healthy and active lifestyle and potentially even manage activities that weren't possible before, as far as your unique condition and treatment success allows.

CAN I CONTROL THE STIMULATION THERAPY?

SCS is designed precisely to help you regain control of your pain so as to lead a better quality of life. Thanks to a cordless remote control and programme settings designed specifically for you, you can:



- Turn your stimulation on and off
- Increase or decrease the level of stimulation
- Target different individual areas of pain at the same time, each with a different amount of stimulation
- Give a rating of the therapy

DO I NEED TO USE MY SCS SYSTEM 24 HOURS A DAY?



Boston Scientific's SCS systems are designed for 24-hour use, leaving you the option to decide when and how much you turn your stimulation on. There are a few limitations you should bear in mind and discuss with your physician though. For example, you should not charge your SCS system while sleeping or use the system at the same time as driving.

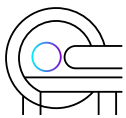
HOW DO I CHARGE MY SCS SYSTEM?



Thanks to a lightweight cordless charger that fits into a waistbelt, recharging your SCS device is designed to be as simple and convenient as possible. The charger itself can easily be recharged through a base station plugged into a power socket.

You will receive a **SCS Quick Start Guide Charging System booklet with all the necessary information**. Your wireless remote will remind you when your implant battery is low and needs charging. However, if the battery runs down, the system is designed to prevent any permanent damage, allowing the battery to function normally again once charged.

CAN I STILL GET AN MRI?



You may be eligible for an MRI scan depending on the SCS system you have received.

You will receive a **Patient Trial Handbook** to find out more about what other diagnostic and medical procedures are possible with an SCS implant.

WILL OTHER PEOPLE NOTICE MY SCS SYSTEM?



All Boston Scientific SCS systems are designed for **maximum comfort**. Your doctor can also position the device in the most comfortable and convenient location for you. Since the SCS stimulator and the wires are placed under the skin, they are often hardly noticeable from the outside.

CAN I STILL TRAVEL WITH SCS SYSTEM?



Yes, you can travel with your SCS system. Metal detectors, X-ray machines, security scanners and other security devices will not damage the implant but may cause unintentional stimulation.

The implant may also activate metal detector alarms. It is recommended that you carry your patient ID card at all times.

HOW DO I KNOW IF I AM A CANDIDATE FOR SCS?



SCS surgery should be carried out by an experienced surgeon working as part of an interdisciplinary team. As your referral physician can determine if SCS is a suitable therapy for you and your symptoms.



SCS HANDBOOK

Patients' stories



SCS HANDBOOK

Patients' stories

To support your decision around SCS, explore a story from a patient who has undergone SCS therapy to see the potential benefits of the treatment and consider what your life could be like after experiencing stable pain relief.



SABRINA BASSI'S STORY

"I'm really happy because I have gone back to doing what I could not do before. Now I leave for work without a care in the world. I come home, I tidy everything up, I put everything in order, I go out, I go to the gym until the evening. I don't stop for a second and this is thanks to my neurostimulator."

Sabrina Bassi Chronic Pain Patient*

After a car accident in 2004, Sabrina was diagnosed with incomplete paraplegia. After several years, the burning sensations in her legs became worse and worse, until her medication could no longer keep the pain under control. However, finding out that she was a candidate for SCS gave Sabrina a new lease of life – and a taste for a new challenge. After having long dreamed of trying out water skiing, she finally took to the water and began participating in competitions. Soon after receiving her SCS implant, Sabrina travelled to international competitions in Norway and won a silver medal in the sport she had become so passionate about.

Sabrina's SCS implant gives her the comfort to enjoy daily life with her boyfriend and the confidence to pursue new goals. Her next challenge is the world championships in Australia.

*The patient quotes in this material describe real personal experiences. Individual results may vary. Consult with your physician to determine if you are a candidate for this procedure and what you may gain from the therapy.

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