

From the Deputy Chief Medical Officer  
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Department of  
**Health**

An Roinn Sláinte  
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[www.health-ni.gov.uk](http://www.health-ni.gov.uk)

**Circular HSC (SQSD) (NICE IPG621) 20/18**

**Subject: NICE Interventional Procedures Guideline – IPG621 - Low-intensity pulsed ultrasound to promote healing of fresh fractures at low risk of non-healing (updates & replaces IPG374)**

**Circular Reference: HSC (SQSD) (NICE IPG621) 20/18**

**Date of Issue: 01 August 2018**

**For action by:**

Chief Executive of HSC Board – **for distribution to:**  
Director of Performance Management & Service Improvement  
Director of Commissioning  
Assistant Directors of Commissioning  
Director of Integrated Care to also cascade to:  
Family Practitioner Services Leads – for cascade to relevant Family Practitioner groups

**Related documents:**

HSC (SQSD) 4/14

Chief Executive of Public Health Agency – **for distribution to:**  
Director of Public Health and Medical Director – for cascade to relevant staff  
Director of Nursing and AHPs – for cascade to relevant staff

Chief Executives of HSC Trusts – **for distribution to:**  
Medical Directors – for cascade to relevant staff  
Directors of Acute Services – for cascade to relevant staff  
HSC Clinical and Social Governance Leads

Chief Executive of Regulation & Quality Improvement Authority - for distribution to relevant independent healthcare establishments

**Superseded documents**

None

**For Information to:**

Chair of HSC Board  
Chairs of HSC Trusts  
Chief Executive of NIAS  
Chief Executive of PCC  
Chief Executive of NIBTS  
Chief Executive of NIPEC  
Chief Executive/Postgraduate Dean, NIMDTA  
Clinical Education Centre, BSO  
NI NICE Implementation Facilitator  
Members of NI NICE Managers' Forum

**Summary of Contents:**

This guidance provides evidence-based recommendations on low-intensity pulsed ultrasound to promote healing of fresh fractures at low risk of non-healing in adults. This involves using an ultrasound probe on the skin at the site of the fracture.

**Status of Contents:**

For action

**Enquiries:**

Any enquiries about the content of this Circular should be addressed to:  
Quality Regulation and Improvement Unit  
Department of Health  
Room D1.4  
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Stormont Estate  
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**Implementation:**

Immediate

[SGU-NICEGuidance@health-ni.gov.uk](mailto:SGU-NICEGuidance@health-ni.gov.uk)

**Additional copies:**

Available to download from  
<https://www.health-ni.gov.uk/topics/safety-and-quality-standards/national-institute-health-and-care-excellence-nice>

Dear Colleague

**NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE):  
INTERVENTIONAL PROCEDURES GUIDELINE – IPG621 - LOW-INTENSITY PULSED  
ULTRASOUND TO PROMOTE HEALING OF FRESH FRACTURES AT LOW RISK OF  
NON-HEALING (UPDATES & REPLACES IPG374)**

The National Institute for Health and Care Excellence (NICE) produces guidance as part of the Interventional Procedure Programme. Clinicians who have developed new procedures send these to NICE to evaluate their effectiveness. Cost is not considered as part of this evaluation. Solely for this programme, NICE communicates directly with the HSC in Northern Ireland and consequently Departmental bi-monthly circulars are normally only required. An exception has been made for this as current evidence does not show efficacy.

**The advice in the NICE guideline states:**

**The evidence for low-intensity pulsed ultrasound to promote healing of fresh fractures at low risk of non-healing raises no major safety concerns. However, current evidence does not show efficacy. Therefore, this procedure should not be used for this indication.**

**The HSC sector also should note that the Department expects the HSC sector to comply with this guidance in their delivery of services to patients with fresh fractures at low risk of non-healing.**

### **Indications and current treatments**

Fractures are a common result of trauma, and are usually described as either closed (skin over the fracture site is intact) or open (involves an open wound). They may vary in complexity from a single break (transverse or oblique) to comminuted, in which the bone has broken into several pieces.

Fractures usually heal within a few weeks after treatment by closed or open reduction, and immobilisation using a cast or internal fixation. Sometimes, healing may be delayed or not happen at all (non-union). There is no agreed precise definition of a fracture non-union but, typically, it is considered to be when bony union has failed 6 to 9 months after the fracture. Risk factors for non-union of fractures include: systemic medical conditions (for example, diabetes, malnutrition, osteoporosis); smoking; use of non-steroidal anti-inflammatory drugs; local factors such as infection; vascular problems; magnitude of injury (for example, fracture location and gap, traumatic fractures); advanced age; and other iatrogenic factors. Treatment of non-union may need complex and prolonged management with implications for the patient's quality of life and functional capacity.

### **Outline of the procedure**

The aim of low-intensity pulsed ultrasound is to reduce fracture healing time and avoid non-union by delivering micro-mechanical stress to the bone to stimulate bone healing.

An ultrasound probe is positioned on the skin over the fracture and patients self-administer low-intensity pulsed ultrasound daily, usually for 20 minutes. If a patient's limb is immobilised in a cast, a hole is cut into the cast for the ultrasound probe. The probe delivers acoustic radiation and coupling gel is used on the skin to aid conduction of the ultrasound signal. An operating frequency of 1.5 MHz, pulse width of 200 microseconds, repetition rate of 1 kHz,

and a temporal average power of 30 milliwatts/cm<sup>2</sup> is typically used. The exact treatment protocol and duration of treatment may vary.

Progress towards fracture healing is usually assessed radiographically. Treatment duration ranges from a few weeks to several months.

The full NICE intervention procedure guideline is available for download at:

<https://www.nice.org.uk/guidance/ipg621>

A handwritten signature in cursive script, appearing to read 'Paddy Woods'.

**DR PADDY WOODS**