

Arthrodesis

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Arthrodesis, also known as artificial ankylosis or syndesis, is the artificial induction of joint ossification between two bones via surgery. This is done to relieve intractable pain in a joint which cannot be managed by pain medication, splints, or other normally-indicated treatments. The typical causes of such pain are fractures which disrupt the joint, and arthritis. It is most commonly performed on joints in the spine, hand, ankle, and foot. Historically, knee and hip arthrodeses were also performed as pain relieving procedures, however with the great successes achieved in hip and knee arthroplasty, arthrodesis of these large joints has fallen out of favour as a primary procedure, and now are only used as procedures of last-resort in some failed arthroplasties. It can be done in several ways: *A bone graft can be created between the two bones using a bone from elsewhere in the person's body or using donor bone from a bone bank. **Bone autograft is generally preferred by surgeons because, as well as eliminating the risks associated with allografts, bone autograft contains native bone-forming cells, so the graft actually forms new bone itself, as well as acting as a matrix or scaffold to new bone growing from the bones being bridged. The main drawback of bone autograft is the limited supply available for harvest. **Bone allograft has the advantage of being available in far larger quantities than autograft; however, the treatment process the bone goes through following harvest, which usually involves irradiation and deep-freezing, kills the bone forming cells. This significantly reduces the immunogenicity such that no anti rejection drugs are needed. The process also makes the allograft function only as an osteoconductive matrix. *A variety of synthetic bone substitutes are commercially available. These are usually hydroxyapatite based granules formed into a coralline or trabecular structure to mimic the structure of cancellous bone. They act solely as an osteoconductive matrix. Some manufacturers have recently begun supplying these products with soluble bone-forming factors such as bone morphogenetic protein to attempt to create a synthetic product with osteoinductive properties. *Metal implants can be attached to the two bones to hold them together in a position which favors bone growth. *A combination of the above methods is also commonly employed to facilitate bony fusion. At the completion of surgery and healing, which takes place over a period of several months to over a year, the two adjoining bones are fused and no motion takes place between them. This can have the effect of actually strengthening the bones, as in anterior cervical fusion. ([From the Wikipedia article Arthrodesis](#).)

Recent Publications on Arthrodesis:



- [Transfer of the tendon of tibialis anterior in relapsed congenital clubfoot: LONG-TERM RESULTS IN 38 FEET.](#)
A total of 38 relapsed congenital clubfeet (16 stiff, 22 partially... 5th February, 2010
Department of Pediatric Orthopaedics and Traumatology, Rizzoli Orthopaedic- J Bone Joint Surg Br. 2010 Feb;92(2):277-83. ([DOI Direct Link](#))
- [Three-dimensional stereoradiographic modeling of rib cage before and after spinal growing rod procedures in early-onset scoliosis.](#)

- BACKGROUND: Early-onset scoliosis frequently leads to major thoracic...* 5th February, 2010
Arts et Metiers Paristech, CNRS, LBM, 151 Boulevard de l'hopital, 75013- Clin Biomech (Bristol, Avon).
2010 Feb 1. ([DOI Direct Link](#))
- [Effect of a single dose of pamidronate administered at the time of surgery in a rabbit posterolateral spinal fusion model.](#)
Spinal fusion is usually performed on patients who receive bisphosphonates... 4th February, 2010
Department of Orthopaedic Surgery, Pontificia Universidad Catolica de- Eur Spine J. 2010 Feb 3. ([DOI Direct Link](#))
 - [\[External fixation osteosynthesis.\]](#)
External fixation is one of the mainstays of surgical fracture treatment... 4th February, 2010
BG Unfallklinik, Schnarrenbergstr. 95, 72076, Tübingen, Deutschland,- Orthopade. 2010 Feb 3. ([DOI Direct Link](#))
 - [Moje First Metatarsophalangeal Replacement-A Case Series with Functional Outcomes Using the AOFAS-HMI Score.](#)
We report the functional results of a case series of Moje first... 4th February, 2010
Orthopaedic Specialist Registrar, Heart of England NHS Trust, West- J Foot Ankle Surg. 2010 January - February;49(1):37-42. ([DOI Direct Link](#))
 - [Percutaneous Drilling for the Treatment of Atraumatic Osteonecrosis of the Ankle.](#)
Atraumatic osteonecrosis of the ankle can be severely debilitating and can... 4th February, 2010
Research Fellow, Department of Orthopaedics and Sports Medicine,- J Foot Ankle Surg. 2010 January - February;49(1):20-24. ([DOI Direct Link](#))
 - [Comparative fixation methods of cervical disc arthroplasty versus conventional methods of anterior cervical arthrodesis: serration, teeth, keels, or screws?](#)
Object Using a synthetic vertebral model, the authors quantified the... 4th February, 2010
Orthopaedic Spinal Research Laboratory and.- J Neurosurg Spine. 2010 Feb;12(2):214-20. ([DOI Direct Link](#))
 - [Radioscapholunate arthrodesis - a prospective study.](#)
The purpose of this prospective study was to evaluate pain levels, range... 2nd February, 2010
Department of Orthopaedic Surgery, Modbury Public Hospital, Modbury, South- Hand Surg. 2009;14(2-3):73-82.
 - [Mid-Term Results after Scaphoid Excision and Four-Corner Wrist Arthrodesis using K-Wires for Advanced Carpal Collapse.](#)
AIM: Successful four-corner fusion after scaphoid excision provides pain... 2nd February, 2010
Orthopadische Klinik der Universität Regensburg, Asklepios Klinikum, Bad- Z Orthop Unfall. 2010 Feb 1. ([DOI Direct Link](#))
 - [Predictors of outcome after decompressive lumbar surgery and instrumented posterolateral fusion.](#)
There has been no agreement among different authors on guidelines to... 2nd February, 2010
Servicio de Cirugia de la Columna Vertebral, Departamento de Cirugia- Eur Spine J. 2010 Feb 5. ([DOI Direct Link](#))
 - [Biomechanical comparison of blade plate and intramedullary nail fixation for tibiocalcaneal arthrodesis.](#)
BACKGROUND: Tibiocalcaneal arthrodesis is an uncommon salvage procedure... 2nd February, 2010
Stanford, CA.- Foot Ankle Int. 2010 Feb;31(2):164-71. ([DOI Direct Link](#))
 - [Stability of medial locking plate and compression screw versus two crossed screws for lapidus arthrodesis.](#)
BACKGROUND: Lapidus (first metatarsocuneiform joint) arthrodesis is an... 2nd February, 2010
AO Foundation, Clavadelerstrasse 8, 7270 Davos Platz, Switzerland.- Foot Ankle Int. 2010 Feb;31(2):158-63. ([DOI Direct Link](#))
 - [Study of the Anatomical Variations of Vertebral Artery in C2 Vertebra With Magnetic Resonance Imaging and Its Application in the C1-C2 Transarticular Screw Fixation.](#)
STUDY DESIGN.: Use of magnetic resonance imaging (MRI) with Constructive... 2nd February, 2010
From the Division of Spine Surgery, Department of Orthopaedics and- Spine (Phila Pa 1976). 2010 Jan 28. ([DOI Direct Link](#))
 - [\[Minimally invasive spine arthrodesis in degenerative spinal disorders.\]](#)

BACKGROUND AND PURPOSE: As in many other surgical fields, new minimally...2nd February, 2010
Service de neurochirurgie, hopital Erasme, universite libre de Bruxelles,- Neurochirurgie. 2010 Jan 27.
([DOI Direct Link](#))

- [Use of bone morphogenetic proteins in arthrodesis: clinical results.](#)
Bone grafting is not routinely required in primary arthrodesis in the...30th January, 2010
Department of Trauma and Orthopaedics, Leeds Teaching Hospitals NHS Trust,- Injury. 2009 Dec;40
Suppl 3:S62-6. ([DOI Direct Link](#))

BioNews Results for Arthrodesis

- [Atlantoaxial and Craniocervical Arthrodesis in Children: A Tomographic Study Comparing Suitability of C2 Pedicles and C2 Laminae for Screw Fixation](#)
MDLinx: Feb 4 2010 10:28AM Matching: arthrodesis
- [Arthroscopic Subtalar Arthrodesis Using a Posterior 2-Portal Approach in the Prone Position](#)
MDLinx: Feb 2 2010 10:13AM Matching: arthrodesis
- [Stability of Medial Locking Plate and Compression Screw Versus Two Crossed Screws for Lapidus Arthrodesis](#)
MDLinx: Jan 28 2010 10:19AM Matching: arthrodesis
- [Biomechanical Comparison of Blade Plate and Intramedullary Nail Fixation for Tibiocalcaneal Arthrodesis](#)
MDLinx: Jan 27 2010 10:18AM Matching: arthrodesis

Arthrodesis Clinical Trials:



- [Follow-up of Patients After Knee Arthrodesis With an Intramedullary Nail](#)

Arthrodesis Patents:



- 7563275- [Bone fixation implant system and method](#)
- 7588574- [Kits for enabling axial access and procedures in the spine](#)
- 7588578- [Surgical measurement systems and methods](#)
- 7588590- [Spinal facet implant with spherical implant apposition surface and bone bed and methods of use](#)
- 7588592- [System and method for immobilizing adjacent spinous processes](#)

- 7588603- [Implantable orthosis and surgical kit for knee arthrodesis](#)
- 7594888- [Expandable ports and methods for minimally invasive surgery](#)
- 7594924- [Spinal stabilization using bone anchor seat and cross coupling with improved locking feature](#)
- 7594931- [Vertebral cage device with modular fixation](#)
- 7595043- [Method for processing and using adipose-derived stem cells](#)
- 7597695- [Posterior oblique lumbar arthrodesis](#)
- 7585316- [Interspinous spacer](#)
- 7575743- [Compositions and methods for the treatment and repair of defects or lesions in articular cartilage using synovial-derived tissue or cells](#)
- 7563284- [Intervertebral disc implant](#)
- 7563286- [Controlled artificial intervertebral disc implant](#)
- 7563455- [Highly-mineralized osteogenic sponge compositions, and uses thereof](#)
- 7566345- [Prosthesis for the replacement of a posterior element of a vertebra](#)
- 7569054- [Tubular member having a passage and opposed bone contacting extensions](#)
- 7569068- [Spinal osteosynthesis system](#)
- 7569074- [Expandable intervertebral implant](#)
- 7572258- [Mitre instrument, as an example for hallux surgery](#)
- 7572260- [Orthopedic surgical device for simultaneous bone removal on both sides of a fixation pin](#)
- 7572782- [Use of targeted oxidative therapeutic formulation in bone regeneration](#)
- 7608105- [Methods of inserting conically-shaped fusion cages](#)
- 7608106- [Facet arthroplasty devices and methods](#)
- 7618440- [Temporary spinal fixation apparatuses and methods](#)
- 7637954- [Apparatus for inserting nested interbody spinal fusion implants](#)
- 7637955- [Constrained artificial spinal disc](#)
- 7641673- [Flexible linking piece for stabilising the spine](#)
- 7641692- [Implantable joint prosthesis](#)
- 7645301- [Devices and methods for disc replacement](#)
- 7648509- [Sacroiliac joint immobilization](#)
- 7648523- [Method and apparatus for spinal stabilization](#)
- 7655009- [Humeral nail](#)
- 7655043- [Expandable spinal implant and associated instrumentation](#)
- 7655044- [Artificial facet joint device having a compression spring](#)
- 7637951- [Nested interbody spinal fusion implants](#)
- 7635680- [Attenuation of reperfusion injury](#)
- 7618451- [Patient selectable joint arthroplasty devices and surgical tools facilitating increased accuracy, speed and simplicity in performing total and partial joint arthroplasty](#)
- 7618453- [Facet joint replacement](#)
- 7618455- [Multiple facet joint replacement](#)
- 7619009- [Systems and methods for controlling and forming polymer gels](#)
- 7621955- [Facet joint replacement](#)
- 7621958- [Methods and instruments for interbody fusion](#)
- 7625409- [Ankle prosthesis](#)
- 7632312- [Artificial lumbar disc](#)
- 7635377- [Spine distraction implant and method](#)
- 7635378- [Spine distraction implant and method](#)
- 7655046- [Expandable spinal fusion cage and associated instrumentation](#)

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Send comments and feedback to:

Peter Barfoot Managing Director, BioPortfolio Ltd.

UK Tel: (+44) 1300 321501

USA Voicemail and Fax: (+1) 415 680 2472

[Peter Barfoot peter.barfoot@bioportfolio.com](mailto:peter.barfoot@bioportfolio.com)

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