

## 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:



- [\[Preserving foot surgery for diabetics.\]](#)

*The reconstruction of a diabetic foot is still a challenge for the...* 13th November, 2009

Stiftung Orthopädische Universitätsklinik, Schlierbacher Landstrasse 200a,- Orthopäde. 2009 Nov 13. ([DOI Direct Link](#))

- [\[Staged Lengthening Arthroplasty for Pediatric Osteosarcoma around the Knee.\]](#)

*BACKGROUND: Orthopaedic oncologists often must address leg-length...* 4th November, 2009

Department of Orthopedic Surgery, Korea Cancer Center Hospital, 215-4,- Clin Orthop Relat Res. 2009

- Nov 3. ([DOI Direct Link](#))
- [Proximal Femoral Allograft: Prognostic Indicators.](#)  
*Between 1972 and 1999, the Orthopedic Oncology Service treated 150...*3rd November, 2009  
 Oliver Wendell Holmes Society Mentee Program, Harvard Medical School,- J Arthroplasty. 2009 Oct 29. ([DOI Direct Link](#))
  - [Carpal arthrodesis in cats.](#)  
*Pancarpal and partial carpal arthrodesis were performed in 22 carpi (20...*31st October, 2009  
 Ignacio Calvo, Ldo Vet, CertSAS, MRCVS, University of Glasgow Veterinary- Vet Comp Orthop Traumatol. 2009 Oct 29;22(6). ([DOI Direct Link](#))
  - [Knee arthrodesis using a modular customized intramedullary nail.](#)  
*INTRODUCTION: Arthrodesis of the knee, particularly in infectious...*31st October, 2009  
 Department of Orthopaedic Surgery D, Roger Salengro Hospital, Lille- Orthop Traumatol Surg Res. 2009 Nov;95(7):520-8. Epub 2009 Oct 28. ([DOI Direct Link](#))
  - [\[Posterior fusion versus posterior interbody fusion in segmental spinal fixation for aged spondylolisthesis\]](#)  
*OBJECTIVE: Clinical and radiographic results in 30 consecutive patients...*30th October, 2009  
 Department of Orthopedics, Affiliated First Hospital of Shanghai Jiaotong- Zhonghua Yi Xue Za Zhi. 2009 Jul 7;89(25):1779-82.
  - [Complications associated with autogenous bone marrow aspirate harvest from the lower extremity: an observational cohort study.](#)  
*The purpose of this article is to report the complications associated with...*28th October, 2009  
 Limb Preservation Service, Vascular/Endovascular Surgery Service,- J Foot Ankle Surg. 2009 Nov-Dec;48(6):668-71. Epub 2009 Aug 26. ([DOI Direct Link](#))
  - [Arthrodesis of the first metatarsophalangeal joint using a single screw: retrospective analysis of 109 feet.](#)  
*Arthrodesis of the first metatarsophalangeal joint is a recommended...*28th October, 2009  
 Orthopaedic Surgery, Spaarne Hospital, Bloemhofstraat 9 zwart, Haarlem,- J Foot Ankle Surg. 2009 Nov-Dec;48(6):653-61. Epub 2009 Jul 2. ([DOI Direct Link](#))
  - [50 Years Ago in CORR: Arthrodesis of the Knee Joint F. H. Moore and I. S. Smillie CORR;13:215-221.](#)  
*Arthrodesis of the first metatarsophalangeal joint is a recommended...*22nd October, 2009  
 Clinical Orthopaedics and Related Research, 1600 Spruce Street,- Clin Orthop Relat Res. 2009 Oct 21. ([DOI Direct Link](#))
  - [Four corner arthrodesis limited to the centre using a scaphoid one piece graft and a dorsal circular plate.](#)  
*We present 20 patients, who had a four corner arthrodesis, from July 2006...*22nd October, 2009  
 Faculdade de Medicina do ABC, Orthopaedic Department, Hand Surgery Group,- J Hand Surg Eur Vol. 2009 Oct 20. ([DOI Direct Link](#))
  - [Re: "Talonavicular joint arthrodesis for the treatment of pes planus valgus in older children and adolescents with cerebral palsy"](#)  
*We present 20 patients, who had a four corner arthrodesis, from July 2006...*21st October, 2009  
 Shriners Hospitals for Children, 2825, Bellefontaine Street, Houston, TX,- J Child Orthop. 2009 Oct 16. ([DOI Direct Link](#))
  - [Is intraoperative pedography helpful in clinical use--preliminary results of 100 cases from a consecutive, prospective, randomized, controlled clinical study.](#)  
*BACKGROUND: The purpose of this study was to assess the clinical use, and...*21st October, 2009  
 Department for Trauma, Orthopaedic and Foot Surgery, Coburg Clinical- Foot Ankle Surg. 2009;15(4):198-204. Epub 2009 May 1. ([DOI Direct Link](#))
  - [Response to Dr. Belthur's letter to the editor on the article: "Talonavicular joint arthrodesis for the treatment of pes planus valgus in older children and adolescents with cerebral palsy"](#)  
*BACKGROUND: The purpose of this study was to assess the clinical use, and...*20th October, 2009  
 Gait Analysis Laboratory, Instituto de Ortopedia Infantil Roosevelt, Cra.- J Child Orthop. 2009 Oct 17. ([DOI Direct Link](#))
  - [High Fusion Rates with Circular Plate Fixation for Four-corner Arthrodesis of the Wrist.](#)

*BACKGROUND: Scaphoid excision and four-corner fusion is commonly performed...20th October, 2009*

Department of Orthopedic Surgery, Division of Hand and Upper Extremity- Clin Orthop Relat Res. 2009 Oct 17. ([DOI Direct Link](#))

- [Evaluation of arthrodesis and cervical alignment in the surgical results of cervical discectomy using polymethylmetacrylate.](#)

*BACKGROUND AND OBJECTIVES: Surgical treatment of cervical radiculopathy...20th October, 2009*  
Department of Neurology and Neurosurgery, Federal University of Sao Paulo,- Arq Neuropsiquiatr. 2009 Sep;67(3B):871-5.

## BioNews Results for Arthrodesis

- [Limb Salvage in Charcot Foot and Ankle Osteomyelitis: Combined Use Single Stage/Double Stage of Arthrodesis and External Fixation](#)

*MDLinx: Oct 29 2009 12:32PM Matching: arthrodesis*

- [High Fusion Rates with Circular Plate Fixation for Four-corner Arthrodesis of the Wrist](#)

*MDLinx: Oct 26 2009 11:13AM Matching: arthrodesis*

- [The Correction of Pelvic Obliquity in Patients With Cerebral Palsy and Neuromuscular Scoliosis: Is There a Benefit of Anterior Release Prior to Posterior Spinal Arthrodesis](#)

*MDLinx: Oct 9 2009 1:29PM Matching: arthrodesis*

- [Clinical Outcomes of Scaphoid and Triquetral Excision With Capitulum Arthrodesis Versus Scaphoid Excision and Four-Corner Arthrodesis](#)

*MDLinx: Oct 6 2009 11:51AM Matching: arthrodesis*

## Arthrodesis Clinical Trials:



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

## Arthrodesis Patents:



- 7491236- [Dual anchor prosthetic nucleus apparatus](#)
- 7534263- [Surgical tools facilitating increased accuracy, speed and simplicity in performing joint arthroplasty](#)
- 7534265- [Intervertebral spacers with side wall accessible interior cavity](#)

- 7534268- [Devices and methods for disc replacement](#)
- 7540874- [Method and device for use in osteotomy](#)
- 7547324- [Spinal mobility preservation apparatus having an expandable membrane](#)
- 7550010- [Spinal arthroplasty device and method](#)
- 7553307- [Devices and methods for tissue modification](#)
- 7553313- [Apparatus and method for preparing a spinal implant surgical site for receiving a spinal fusion implant](#)
- 7555343- [Devices and methods for selective surgical removal of tissue](#)
- 7556629- [Method and apparatus for bone fixation with secondary compression](#)
- 7534254- [Threaded frusto-conical interbody spinal fusion implants](#)
- 7534246- [Ankle replacement system](#)
- 7533672- [Methods and apparatus for vascular protection in spinal surgery](#)
- 7494489- [Systems and methods that facilitate minimally invasive spine surgery](#)
- 7500977- [Method and apparatus for manipulating material in the spine](#)
- 7507242- [Surgical measurement and resection framework](#)
- 7507253- [Implantable brace for a fracture and methods](#)
- 7507257- [Injectable resorbable bone graft material, powder for forming same and methods relating thereto for treating bone defects](#)
- 7509183- [Integrated global layout and local microstructure topology optimization approach for spinal cage design and fabrication](#)
- 7517866- [LIM mineralization protein splice variants](#)
- 7530993- [Method of spinal fixation](#)
- 7531003- [Wrist implant apparatus and method](#)
- 7531190- [Porous ceramic structure containing biologics](#)
- 7556651- [Posterior spinal device and method](#)
- 7563275- [Bone fixation implant system and method](#)
- 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](#)
- 7608105- [Methods of inserting conically-shaped fusion cages](#)
- 7588574- [Kits for enabling axial access and procedures in the spine](#)
- 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](#)
- 7608106- [Facet arthroplasty devices and methods](#)

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