

C.V. ABREVIADO

ENRIQUE GOMEZ BARRENA

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Formación y titulaciones

1981-87, Licenciatura en Medicina y Cirugía, Facultad de Medicina, Universidad de Zaragoza, España
1988-92, Doctorado en Medicina y Cirugía, Facultad de Medicina, Universidad Autónoma de Madrid, España
1988-92, Residencia en Cirugía Ortopédica y Traumatología, Hospital “La Paz”, Madrid, España
1993, E.C.F.M.G. (*Educational Commission for Foreign Medical Graduates*)
1994, Orthopaedic Research Fellowship, Hospital for Special Surgery, New York, NY, USA

Actividad asistencial

1993-96, Hospital “La Paz”, Madrid.
1996-2000, Hospital Provincial “Ntra. Sra. De Gracia”, Zaragoza.
2000-2010, Fundación “Jiménez Díaz”, Madrid.
2010-actual, Hospital “La Paz”, Madrid.

Actividad académica

1996, Prof Asociado, Universidad Autónoma de Madrid
2000-2010, Profesor Titular de Cirugía Ortopédica y Traumatología en plaza vinculada, UAM
2010- actual, Catedrático de Cirugía Ortopédica y Traumatología en plaza vinculada, UAM
2005-2011, Vicedecano, Facultad de Medicina, UAM.

Actividad investigadora

Sexenios 3 (1994-1999, 2000-2005, 2006-2011)

15 proyectos de investigación competitivos nacionales e internacionales (7 como IP), 3 redes nacionales e internacionales (2 como miembro Comité ejecutivo: 537-EU COST action, REMEDIC EU network -European Science Foundation-). Working Package leader and EC member, Collaborative Project FP7-HEALTH-2009-1.4-2 “REBORNE: Regenerating Bone defects using New biomedical Engineering approaches”.

Publicaciones

3 libros, 36 capítulos de libro, 95 artículos publicados (58 indexados), 13 cartas o resúmenes en revistas indexadas, 250 participaciones en Congresos y reuniones nacionales e internacionales (comunicaciones, ponencias, conferencias invitadas)

Artículos publicados en los últimos 6 años:

- Puértolas JA, Medel FJ, Cegoñino J, Gomez-Barrena E, Ríos R: Influence of the remelting process on the fatigue behavior of electron beam irradiated UHMWPE. *J Biomed Mater Res B Appl Biomater.* 2006 Feb;76(2):346-53. Kontinen Y, Wright TM, Trebse R, Takagi M, Silbermann M, Salo J, Rieker C, Pioletti DP, Ogino T,
- Kontinen YT, Tiainen V-M, Gomez-Barrena E, Hukkanen M, Salo J. Innervation of the joint and role of neuropeptides. *Ann. N.Y. Acad. Sci.* 2006; 1069: 149–154.
- Gómez-Barrena E, Lindroos L, Čeponis A, López-Franco M, Sanchez-Pernaute O, Mönkkönen J, Herrero-Beaumont G, Kontinen YT. Cartilage oligomeric matrix protein (COMP) is modified by intra-articular liposomal clodronate in an experimental model of arthritis. *Clin Exp Rheumatol.* 2006 Nov-Dec;24(6):622-628. Bonsfills N, Raygoza JJ, Boemo E, Garrido J Nuñez A, Gómez-Barrena E: Time-dependent strain variations are detected in soft-tissues around unstable knees after anterior cruciate ligament injury. An in vivo experimental study on the cat's knee. *The Knee.* 2007 Jan;14(1):39-45.
- Medel FJ, Peña P, Cegoñino J, Gómez-Barrena E, Puértolas JA. Comparative fatigue behavior and toughness of remelted and annealed highly crosslinked polyethylenes. *J Biomed Mater Res B Appl Biomater* 2007; 83(2): 380-90.
- Lacoste F, Granizo JJ, Gómez-Barrena E: Reliability of a simple fluoroscopic method to study sagittal plane femorotibial contact changes during total knee arthroplasty flexion. *The Knee* 2007; 14: 289-294.
- Gómez-Barrena E, Bonsfills N, Martin G, Ballesteros-Massó R, Foruria A, Nuñez-Molina A: Insufficient recovery of neuromuscular activity around the knee after experimental anterior cruciate ligament reconstruction. *Acta Orthop* 2008 Feb;79(1):39-47.
- Esteban J, Gomez-Barrena E, Cordero J, Zamora N, Kinnari TJ, Fernandez-Roblas R. Evaluation of semiquantitative cultures from sonicated retrieved orthopaedic implants in the diagnosis of orthopaedic infection. *J Clin Microbiol.* 2008 Feb;46(2):488-92.

- Kinnari T, Soininen A, Esteban J, Zamora N, Alakoski E, Kouri VP, Anttila A, Lappalainen R, Konttinen YT, Gomez-Barrena E, Tiainen VM. Adhesion of Staphylococcal and caco-2 cells on diamond-like carbon polymer hybrid coating. *J Biomed Mater Res A*. 2008 Sep;86(3):760-8.
- Virtanen S, Milošev I, Gomez-Barrena E, Trebše R, Salo J, Konttinen YT. Special modes of corrosion under physiological and simulated physiological conditions. *Acta Biomater*. 2008 May;4(3):468-76.
- Garcia-Alvarez F, Castiella T, Guallar E, Grasa JM, Gomez-Barrena E, Lacleriga A. Influence of platelet time activation on articular cartilage growth in the rabbit knee. Preliminary study. *The Knee*. 2008 Aug;15(4):314-7.
- Bonsfills N, Gomez-Barrena E, Nuñez A. Loss of neuromuscular control related to motion in the acutely ACL-injured knee. An experimental study. *Eur J Appl Physiol* 2008 Oct;104(3):567-77.
- Gomez-Barrena E, Puertolas JÁ, Munuera L, Konttinen YT. UHMWPE research update: From the bench to the bedside. *Acta Orthop* 2008 Dec;79(6):832-40.
- Kinnari TJ, Esteban J, Martin-de-Hijas NZ, Sánchez-Muñoz O, Sánchez-Salcedo S, Colilla M, Vallet-Regí M, Gomez-Barrena E. The influence of surface porosity and pH on bacterial adherence to hydroxyapatite and biphasic calcium phosphate bioceramics. *J Med Microbiol*. 2009 Jan;58(Pt 1):132-7.
- Kinnari TJ, Esteban J, Gomez-Barrena E, Zamora N, Fernandez-Roblas R, Nieto A, Doadrio JC, López-Noriega A, Ruiz-Hernández E, Arcos D, Vallet-Regí M. Bacterial Adherence to SiO₂ based multifunctional bioceramics. *J Biomed Mater Res A*. 2009; 89(1): 215-23.
- Pascau A, Guardia B, Puértolas JA, Gómez-Barrena E: A knee model of hydrodynamic lubrication during the gait cycle and the influence of prosthetic joint conformity. *J Orthop Sci* 2009; 14(1): 68-75
- Lozano D, F de Castro L, Dapia S, Andrade-Zapata I, Manzarbeitia F, Alvarez-Arroyo MV, Gomez-Barrena E, Esbrit P. Role of Parathyroid Hormone-Related Protein in the decreased osteoblast function in diabetes-related osteopenia. *Endocrinology* 2009; 150 (5): 2027-35.
- Goodman SB, Konttinen YT, Takagi M, Gomez-Barrena E. Biocompatibility of joint replacements. *J Biomed Mater Res A*. 2009 Aug;90(2):603-18.
- Bonsfills N, Nuñez A, Gomez-Barrena E. Muscle stimulation controls anterior knee laxity after experimental ACL section. *Arch Orthop Trauma Surg*. 2009 Aug;129(8):1053-61.
- Martín-de-Hijas N, García-Almeida D, Ayala G, Fernandez-Roblas R, Gadea I, Gómez-Barrena E, Esteban J. Biofilm development by clinical strains of non-pigmented rapidly growing mycobacteria. *Clin Microbiol Infect*. 2009 Oct;15(10):931-6.
- Gómez-Barrena E, Medel FJ, Puértolas JA. Polyethylene Oxidation in Total Hip Arthroplasty: Evolution and New Advances. *Open Orthop J*. 2009 Dec 24;3:115-20
- Lozano D, Manzano M, Doadrio JC, Salinas A, Valler-Regi M, Gómez-Barrena E, Esbrit P. Osteostatin-loaded bioceramics stimulate osteoblastic growth and differentiation. *Acta Biomater*. 2010 Mar;6(3):797-803.
- Fernandez de Castro L, Lozano D, Dapia S, Portal-Nuñez S, Caeiro JR, Gomez-Barrena E, Esbrit P. Both N- and C-terminal fragments of parathyroid hormone-related protein can counteract the glucocorticoid-induced delay of bone regeneration after marrow ablation in mice. *Tissue Eng Part A*. 2010 Apr;16(4):1157-68.
- Gómez-Barrena E, Fernandez-García C, Fernandez-Bravo A, Cutillas-Ruiz R, Bermejo-Fernandez G. Functional performance with a single radius femoral design total knee replacement. *Clin Orthop Relat Res*. 2010 May;468(5):1214-20.
- Pajarinen J, Cenni E, Savarino L, Gomez-Barrena E, Tamaki Y, Takagi M, Salo J, Konttinen YT. Profile of toll-like receptor-positive cells in septic and aseptic loosening of total hip arthroplasty implants. *J Biomed Mater Res A*. 2010 Jul;94(1):84-92.
- Calzado A, Saldaña L, Korhonen H, Soininen A, Kinnari TJ, Gomez-Barrena E, Tiainen VM, Lappalainen R, Munuera L, Konttinen YT, Vilaboa N: In vitro biocompatibility of diamond-like carbon polymer hybrid coatings. *Acta Biomater*. 2010 Aug;6(8):3325-38.
- Kinnari TJ, Esteban J, Zamora N, Fernandez R, López-Santos C, Yubero F, Mariscal D, Puertolas JA, Gomez-Barrena E. Effect of surface roughness and sterilisation on the adherence of *s. Aureus* and *s. Epidermidis* to ultra-high molecular weight polyethylene (UHMWPE). *Clin Microbiol Infect*. 2010 Jul;16(7):1036-41.
- Trejo CG, Lozano D, Manzano M, Doadrio JC, Salinas AJ, Dapia S, Gómez-Barrena E, Vallet-Regí M, García-Honduvilla N, Buján J, Esbrit P. The osteoinductive properties of mesoporous silicate coated with parathyroid hormone related protein in a rabbit femur cavity defect model. *Biomaterials*. 2010 Nov;31(33):8564-73.
- Esteban J, Molina-Manso D, Spiliopoulou I, Cordero J, Fernandez-Roblas R, Foka A, Gómez-Barrena E. Biofilm development by clinical isolates of *Staphylococcus* spp. from retrieved orthopaedic prosthesis. *Acta Orthop*. 2010; 81 (6): 674–679.

- Puértolas JA, Vadillo JL, Sanchez-Salcedo S, Nieto A, Gómez-Barrena E, Vallet-Regi M. Compression behaviour of biphasic calcium phosphate and biphasic calcium phosphate/agarose scaffolds for bone regeneration. *Acta Biomater.* 2011; 7(2): 841-847.
- Lozano D, F. de Castro L, Portal-Nuñez S, Lopez-Herradon A, Dapia S, Gómez-Barrena E, Esbrit P. The C-terminal fragment of parathyroid hormone-related protein promotes bone formation in diabetic mice with low turnover osteopenia *Br J Pharmacol.* 2011 Mar;162(6):1424-38.
- Arvidson K, Abdallah BM, Applegate LA, Nicola Baldini N, Cenni E, Gomez-Barrena E, Granchi D, Kassem M, Konttinen T, Mustafa K, Pioletti DP, Sillat T, Wistrand AF. Bone regeneration and stem cells. *J Cell Mol Med.* 2011 Apr;15(4):718-746.
- Eriksson BI, Dahl OE, Huo MH, Kurth AA, Hantel S, Hermansson K, Schnee JM, Friedman RJ; RE-NOVATE II Study Group (Minar E, Bergqvist D, Tijssen J, Prins MH, Büller HR, Brandjes D, Otten JM, Prins MH, Büller HR, Robben S, Seger A, Scott M, Schiller M, Yamamura N, Baker R, Blombery P, Gallus A, Salem H, Hochreiter J, Jakubek M, Windhager R, Wuring C, Putz P, Pyls R, Vandermeersch E, Verstreken F, Abuzgaya F, Bredo L, Chris A, Dessouki E, Jasey G, Kawam M, Leone J, MacKinlay D, Pototschnik R, Woods A, Kofránek I, Koudela K, Šedivý J, Staňo O, Vinš O, Borgwardt A, Mejdahl S, Lassen MR, Mikkelsen S, Huhtala J, Leppilähti J, Pesola M, Birkner W, Fink B, Fritsche HM, Kurth AA, Bucsi L, Fierpasz F, Lénárt E, Tóth K, Babhulkar S, Dadi A, Iyer R, Kamath S, Behera SK, Malhotra R, Mody B, Reddy G, Shah V, Shah V, Shetty N, Tapasvi S, Wadhwa M, Allegri M, Burbi L, Borghi B, Bosco M, Danelli GF, Ghirarduzzi A, Albers G, van Dijk CN, Nolte P, van Royen BJ, Schuller HM, Verburg AD, Verheyen CC, Chunilal S, Bjerneld H, Franke TP, Hemstad L, Punsvik V, Rønning R, Klosiński P, Kmiecik M, Kwiatkowski K, Majewski J, Niedźwiedzki T, Adler D, Engelbrecht J, Miller D, Ballesteros Massó R, Cordero Ampuero J, Gómez-Barrena E, Gomar-Sancho F, León García A, Montejo Sancho J, Edshage B, Eriksson BI, Horn B, Kragh A, Laestander H, Petersson LG, Milbrink J, Överli P, Paulsson B, Ponzer S, Allmacher D, Bryan W, Colwell C, Cotrell W, D'Angelo G, Friedman RJ, Kruse R, Schwappach J, Scott D, Yates J). Oral dabigatran versus enoxaparin for thromboprophylaxis after primary total hip arthroplasty (RE-NOVATE II*). A randomised, double-blind, non-inferiority trial. *Thromb Haemost.* 2011 Apr;105(4):721-9.
- Gómez-Barrena E, Rosset P, Muller I, Giordano R, Bunu C, Laroylle P, Konttinen YT, Luyten FT. Bone regeneration: stem cell therapies and clinical studies in orthopaedics and traumatology. *J Cell Mol Med.* 2011 Jun;15(6):1266-1286.
- Ortega-Andreu M, Pérez-Chrzanowska H, Figueredo R, Gómez-Barrena E. Blood loss control with two doses of tranexamic acid in a multimodal protocol for total knee arthroplasty. *Open Orthop J* 2011; 5, 52-56.
- López-Franco M, López-Franco O, Murciano-Antón MA, Gómez-Barrena E. Early point of significantly higher lesions in insufficient anterior cruciate ligament knees. *Span J Surg Res* 2011; XIV (1): 9-14.
- Gomez-Barrena E, Esteban J, Molina-Manso D, Adames H, Martínez MJ, Terriza A, Yubero F, Puertolas JA. Bacterial adherence on UHMWPE with Vitamin E: an in vitro study. *J Mater Sci Mater Med.* 2011 Jul;22(7):1701-6.
- López-Franco M, López-Franco O, Murciano-Antón MA, Cañamero-Vaquero M, Herrero-Beaumont G, Fernández-Aceñero MJ, Gómez-Barrena E. Cartilage Oligomeric Matrix Protein, Menisci and Osteoarthritis. *Arch Orthop Trauma Surg.* 2011 Aug;131(8):1167-76.
- Kurtz SM, Röder C, Ong KL, Lau E, Widmer M, Maravic M, Gómez-Barrena E, Pina MF, Manno V, Torre M, Walter WL, Steiger R, Geesink R. International Survey of Primary and Revision Total Knee Replacement. *Int Orthop.* 2011 Dec;35(12):1783-9. Epub 2011 Mar 15. PMID:21404023
- Ballesteros R, Bonsfills N, Chacón M, García-Lázaro J, Gómez-Barrena E. Histomorphometry of the Ligaments Using a Generic-Purpose Image Processing Software, a New Strategy for Semi-Automatized Measurements. *J Digit Imaging* DOI 10.1007/s10278-011-9440-8. Dec 6. [Epub ahead of print] PMID:22143412
- Puértolas JA; Vadillo JL; Sánchez-Salcedo S; Nieto A; Gómez-Barrena E , Vallet-Regi M. Mullins effect behavior under compression in micelle-templated silica and micelle-templated silica/agarose systems. Aceptado. *J Mater Sci Mater Med.* 2012 Feb;23(2):229-38. PMID:22076528.
- Esteban J, Molina-Manso D, Gómez-Barrena E. Bacterial adherence to vitamin E UHMWPE: Considerations about in vitro studies. *J Orthop Res.* 2011 Dec 14. doi: 10.1002/jor.22024. [Epub ahead of print] PMID:22170101
- Pérez-Tanoira R, Pérez-Jorge C, Endrino JL, Gómez-Barrena E, Horwat D, Pierson JF, Esteban J. Bacterial adhesion on biomedical surfaces covered by micrometric silver islands. *J Biomed Mater Res A.* 2012 Mar 7. doi: 10.1002/jbm.a.34090. [Epub ahead of print]. PMID: 22396150
- Lozano D, Trejo CG, Gómez-Barrena E, Manzano M, Doadrio JC, Salinas AJ, Vallet-Regi M, García-Honduvilla N, Esbrit P, Buján J. Osteostatin loaded onto a mesoporous ceramics improves bone healing in a rabbit osteopenia model. *Acta Biomater Acta Biomater.* 2012 Mar 10. [Epub ahead of print] PMID:22414621

- Pérez-Jorge Peremarch C, Arenas MA, Conde A, Pérez Tanoira R, Matykina E, de Damborenea JJ, Gómez Barrena E, Esteban J. In vitro assessment of Staphylococcus epidermidis and Staphylococcus aureus adhesion and viability on TiO₂ nanotubes on Ti-6Al-4V alloy. J Biomed Mat Res-A-. 2012 Mar 23. doi: 10.1002/jbm.a.34118. [Epub ahead of print] PMID:22447745
- Gómez-Barrena E, Esteban J, Medel F, Molina-Manso D, Cordero-Ampuero J, Ortiz-Pérez A, Puértolas JA. Bacterial adherence to separated modular components in joint prosthesis. A clinical study. J Orthop Res. 2012 Mar 30. doi: 10.1002/jor.22114. [Epub ahead of print] PMID:22467526

Sociedades

SECOT (Sociedad Española de Cirugía Ortopédica y Traumatología) desde 1988.
 EORS (European Orthopaedic Research Society), desde 1991. Presidente (2011-13).
 AAOS (American Academy of Orthopaedic Surgeons), desde 1997.
 ORS (Orthopaedic Research Society), desde 2000.

Revisión de publicaciones

Más de 800 artículos revisados.
 Rev Ortop Traum
 Acta Orthop Scand (Acta Orthop)
 J Bone Joint Surg (Br)
 J Biomed Mater Res –A-
 Chemical Engineering Journal
 Clinical Orthopaedics and Related Research
 Clinical Anatomy
 Diamond and related materials
 Journal of Cellular and Molecular Medicine
 Journal of Orthopaedic Research
 Journal of Rheumatology
 Libertas Academica
 Seminars in Arthritis and Rheumatism
 The Knee
 The Open Orthopaedic Journal.

Comité editorial

Techniques in Knee Surgery, Lippincott Williams and Wilkins, Hagerstown MD, USA, desde 2002 hasta 2011;
 The Open Orthopaedic Journal, Bentham, UK, desde 2007.
 La Chirurgia Degli Organi Di Movimento-Musculoskeletal Surgery”, Springer-Verlag, Italy, desde 2009.
 European Orthopaedics and Traumatology (Section Editor), Springer, Germany, desde 2009.

Organización de cursos, congresos y seminarios

Comité Científico:

XXI Congreso SEROD (Sociedad Española de Rodilla), Madrid 2002
 13rd Annual Meeting EORS, Helsinki (Finland), 2003
 41 Congress of SECOT, Madrid, 2004
 16th Annual Meeting EORS, Bologna (Italy), 2006
 International Congress on External Fixation & Bone Reconstruction: 6th Meeting of the A.S.A.M.I International
 y 3rd World Congress on External Fixation, Barcelona, 2010
 5th International UHMWPE Meeting, Drexel University, Philadelphia PA (USA), 2011

Comité Organizador:

Presidente, 3rd UHMWPE International Meeting, Madrid, 2007
 Presidente, 17th Annual Meeting EORS, Madrid, 2008.