



Research Annual Report 2012



Musculoskeletal Science Center (MUSC)

Immunological mechanisms and clinical epidemiology of early inflammatory arthritis and osteoarthritis

Consequences of chronic conditions and effects of interventions

Efficiency and efficacy of trauma care

Efficiency and Efficacy of Emergency medicine and Trauma Care

EMC MUSC-01-31-01 - Immunological mechanisms and clinical epidemiology of early inflammatory arthritis and osteoarthritis

Programme (brief description)

The programme investigates immunological mechanisms and the clinical epidemiology regarding onset, course and outcomes of early (rheumatoid) arthritis and inflammatory osteoarthritis (OA). It aims to find determinants for disease onset and severity and subsequently to develop predictive algorithms for diagnosis and prognosis. In the scope of the disease course the effect of various medical and non-medical interventions are studied.

The molecular immunopathobiological mechanisms of onset, severity and modulation of chronic inflammatory destructive arthritis are studied with focus on the role of the IL-23/Th17 immune pathway, aging, osteoimmunology and hormones.

Key Figures

<i>Department</i>	<i>Sp1</i>	<i>Sp2</i>	<i>Sp3</i>	<i>Sp4</i>	<i>SpTot</i>	<i>T1</i>	<i>T2</i>	<i>T3</i>	<i>Ttot</i>	<i>IS</i>	<i>FS</i>	<i>OP</i>	<i>Ptot</i>
rheumatology	2,8	0,8	6,4	7,97	17,97								
Total	2,8	0,8	6,4	7,97	17,97	0	0	0	0	9	4	0	13

Article/Letter to the editor

Bultink, I.E., Vis, M., Horst-Bruinsma, I.E. & Lems, W.F. (2012). Inflammatory rheumatic disorders and bone. *Current Rheumatology Reports*, 14(3), 224-230.

Gerlag, DM, Raza, K, Baarsen, LGM van, Brouwer, E., Buckley, CD, Burmester, GR, Gabay, C, Catrina, AI, Cope, AP, Cornelis, F, Dahlqvist, SR, Emery, P, Eyre, S, Finckh, A, Gay, S, Hazes, J.M.W., Mil, A. van, Huizinga, T.W.J., Klareskog, L, Kvien, TK, Lewis, C., Machold, KP, Ronnelid, J, Schaardenburg, D. van, Schett, G, Smolen, JS, Thomas, S, Worthington, J & Tak, P.P. (2012). EULAR recommendations for terminology and research in individuals at risk of rheumatoid arthritis: report from the Study Group for Risk Factors for Rheumatoid Arthritis. *Annals of the Rheumatic Diseases*, 71(5), 638-641.

Gonzalez, ND, Cate, D.F. ten, Swett, WAA, Varela, AM, Vilarino, SAI, Perez-Pampin, E, Gomez-Reino, JJ & Luime, J.J. (2012). The most reliable probe position in the ultrasonographic examination of the wrist in rheumatoid arthritis. *Clinical & Experimental Rheumatology*, 30(4), 566-569.

Hamburg, J.P. van, Asmawidjaja, P.S., Davelaar, N., Mus, A.M.C., Cornelissen, F.H.J., Leeuwen, J.P.T.M. van, Hazes, J.M.W., Dolhain, R.J.E.M., Bakx, PAGM, Colin, E.M. & Lubberts, E. (2012). TNF blockade requires 1,25(OH)(2)D-3 to control human Th17-mediated synovial inflammation. *Annals of the Rheumatic Diseases*, 71(4), 606-612.

Jong, P.H.P. de, Weel, AE, Man, Y.A. de, Huisman, A.M., Gerards, AH, Krugten, MV van, Luime, J.J. & Hazes, J.M.W. (2012). Brief Report: To squeeze or not to squeeze, that is the question! Optimizing the disease activity score in 28 joints by adding the squeeze test of metatarsophalangeal joints in early rheumatoid arthritis. *Arthritis & Rheumatism*, 64(10), 3095-3101.

Jong, P.H.P. de, Hazes, J.M.W., Zeven, D van, Lubbe, PA van der, Jager, MH de, Sonnaville, PB de, Luime, J.J. & Weel, A.E.A.M. (2012). Treatment decisions and related costs differ significantly depending on the choice of a disease activity index in RA, according to 1987 and 2010 classification criteria. *Rheumatology*, 51(7), 1269-1277.

Leijts, M.J., Buul, G.M. van, Lubberts, E., Bos, P.K., Verhaar, J.A.N., Hoogduijn, M.J. & Osch, G.J.V.M. van (2012). Effect of arthritic synovial fluids on the expression of immunomodulatory factors by mesenchymal stem cells: an explorative in vitro study. *Frontiers in Immunology*, 3.

Quax, R.A.M., Man, Y.A. de, Koper, F.J.W., Rossum, E.F.C. van, Willemsen, S.P., Lamberts, S.W.J., Hazes, J.M.W., Dolhain, R.J.E.M. & Felders, R.A. (2012). Glucocorticoid receptor gene polymorphisms

and disease activity during pregnancy and the postpartum period in rheumatoid arthritis. *Arthritis Research & Therapy*, 14(4).

Quax, R.A.M., Koper, F.J.W., Jong, P.H.P. de, Heerebeek, R.E.A. van, Weel, AE, Huisman, A.M., Zeben, D van, Jong, F.H. de, Lamberts, S.W.J., Hazes, J.M.W. & Feelders, R.A. (2012). In vitro glucocorticoid sensitivity is associated with clinical glucocorticoid therapy outcome in rheumatoid arthritis. *Arthritis Research & Therapy*, 14(4).

Rockova, V., Lesaffre, E., Luime, J.J. & Lowenberg, B. (2012). Hierarchical Bayesian formulations for selecting variables in regression models. *Statistics in Medicine*, 31(11-12), 1221-1237.

Selman, MHJ, Derks, RJE, Bondt, A., Palmblad, M, Schoenmaker, B, Koeleman, CAM, Geijn, F.E. van de, Dolhain, R.J.E.M., Deelder, A.M. & Wuhrer, M (2012). Fc specific IgG glycosylation profiling by robust nano-reverse phase HPLC-MS using a sheath-flow ESI sprayer interface. *JOURNAL OF PROTEOMICS*, 75(4), 1318-1329.

Vermeire, S, Carbonnel, F, Coulie, PG, Geenen, V, Hazes, J.M.W., Masson, PL, Keyser, F De & Louis, E. (2012). Management of inflammatory bowel disease in pregnancy. *Journal of Crohn's and Colitis*, 6(8), 811-823.

Versteegh, M.M., Leunis, A., Luime, J.J., Boggild, M, Uyl - de Groot, C.A. & Stolk, E.A. (2012). Mapping QLQ-C30, HAQ, and MSIS-29 on EQ-5D. *Medical Decision Making*, 32, 554-568.

EMC MUSC-01-46-01 - Consequences of chronic conditions and effects of interventions

Programme (brief description)

Our research focuses on the consequences of complex and chronic conditions on functioning, health, and quality of life and on interventions to improve these.

Our research is performed in interdisciplinary collaboration. The research usually has a direct link to clinical practice and often has a translational character. The studies are designed from a clinical epidemiological perspective and include prospective cohort studies, diagnostic studies and effectiveness research.

The research group participates in the Musculoskeletal Science Centre (MUSC) of Erasmus MC and the Netherlands Institute for Health Sciences (NIHES; candidate member).

Key Figures

Department	Sp1	Sp2	Sp3	Sp4	SpTot	T1	T2	T3	Ttot	IS	FS	OP	Ptot
rehabilitation	1,78	2,15	2,25	2,55	8,73								
Total	1,78	2,15	2,25	2,55	8,73	1	0	0	1	26	3	0	30

Thesis

Michielsen, M.E. (2012, juni 18). *Reflections on mirror therapy in stroke; mechanisms and effectiveness for improving hand function*. EUR (128 pag.). Prom./coprom.: Prof. Dr. H.J. Stam, Dr. J.B.J. Bussmann & Dr. R.W. Selles.

Article/Letter to the editor

Ardon, M.S., Janssen, W.G.M., Hovius, S.E.R., Stam, H.J. & Selles, R.W. (2012). Low Impact of Congenital Hand Differences on Health-Related Quality of Life. *Archives of Physical Medicine and Rehabilitation*, 93(2), 351-357.

Ardon, M.S., Selles, R.W., Roebroek, M.E., Hovius, S.E.R., Stam, H.J. & Janssen, W.G.M. (2012). Poor Agreement on Health-Related Quality of Life Between Children With Congenital Hand Differences and Their Parents. *Archives of Physical Medicine and Rehabilitation*, 93(4), 641-646.

Bagheri, J., Berg-Emons, H.J.G. van den, Pel, J.J.M., Horemans, H.L.D. & Stam, H.J. (2012). ACUTE EFFECTS OF WHOLE-BODY VIBRATION ON JUMP FORCE AND JUMP RATE OF FORCE DEVELOPMENT: A COMPARATIVE STUDY OF DIFFERENT DEVICES. *Journal of Strength and Conditioning Research*, 26(3), 691-696.

Favejee, M.M., Huisstede, B.M.A., Bussmann, J.B.J., Kruijshaar, M.E. & Ploeg, A.T. van der (2012). Physiotherapy management in late-onset Pompe disease: clinical practice in 88 patients. *Molecular Genetics and Metabolism*, 107, 111-115.

Grauwmeijer, E., Heijenbrok-Kal, M.H., Haitsma, I.K. & Ribbers, G.M. (2012). A Prospective Study on Employment Outcome 3 Years After Moderate to Severe Traumatic Brain Injury. *Archives of Physical Medicine and Rehabilitation*, 93(6), 993-999.

Hachioui, H. El, Sandt-Koenderman, W.M.E., Dippel, D.W.J., Koudstaal, P.J. & Visch-Brink, E.G. (2012). THE SCREELING: OCCURRENCE OF LINGUISTIC DEFICITS IN ACUTE APHASIA POST-STROKE. *Journal of Rehabilitation Medicine*, 44(5), 429-435.

Hombergen, SP, Huisstede, B.M.A., Streur, MF, Stam, H.J., Slaman, J., Bussmann, J.B.J. & Berg-Emons, RJ van den (2012). Impact of Cerebral Palsy on Health-Related Physical Fitness in Adults: Systematic Review. *Archives of Physical Medicine and Rehabilitation*, 93(5), 871-881.

Hurkmans, H.L.P., Bussmann, J.B.J., Benda, E., Verhaar, J.A. & Stam, H.J. (2012). Effectiveness of Audio Feedback for Partial Weight-Bearing in and Outside the Hospital: A Randomized Controlled Trial. *Archives of Physical Medicine and Rehabilitation*, 93(4), 565-570.

Jong, IGM de, Reinders-Messelink, HA, Bates, K., Janssen, W.G.M., Poelma, MJ, Wijk, I van & Sluis, C.K. van der (2012). ACTIVITY AND PARTICIPATION OF CHILDREN AND ADOLESCENTS WITH UNILATERAL CONGENITAL BELOW ELBOW DEFICIENCY: AN ONLINE FOCUS GROUP STUDY. *Journal of Rehabilitation Medicine*, 44(10), 885-892.

Jong, IGM de, Reinders-Messelink, HA, Janssen, W.G.M., Poelma, MJ, Wijk, I van & Sluis, C.K. van der (2012). Mixed Feelings of Children and Adolescents with Unilateral Congenital Below Elbow Deficiency: An Online Focus Group Study. *PLoS One*, 7(6).

Korstanje, J.H., Soeters, J.N.M., Schreuders, A.R., Amadio, PC, Hovius, S.E.R., Stam, H.J. & Selles, R.W. (2012). Ultrasonographic Assessment of Flexor Tendon Mobilization: Effect of Different Protocols on Tendon Excursion. *Journal of Bone and Joint Surgery-American Volume*, 94A(5), 394-402.

Korstanje, J.H., Boer, MF de, Blok, J.H., Amadio, PC, Hovius, S.E.R., Stam, H.J. & Selles, R.W. (2012). Ultrasonographic assessment of longitudinal median nerve and hand flexor tendon dynamics in carpal tunnel syndrome. *Muscle & Nerve*, 45(5), 721-729.

Korstanje, J.H., Boer, MF de, Blok, J.H., Amadio, PC, Hovius, S.E.R., Stam, H.J. & Selles, R.W. (2012). ULTRASONOGRAPHIC ASSESSMENT OF LONGITUDINAL MEDIAN NERVE AND HAND FLEXOR TENDON DYNAMICS IN CARPAL TUNNEL SYNDROME REPLY. *Muscle & Nerve*, 46(6), 982-982.

Mens, J.M.A., Veld, YHHI 't & Pool-Goudzwaard, A.L. (2012). Severity of signs and symptoms in lumbopelvic pain during pregnancy. *Manual Therapy*, 17(2), 175-179.

Mens, J.M.A., Veld, YHH in 't & Pool-Goudzwaard, A.L. (2012). The Active Straight Leg Raise test in lumbopelvic pain during pregnancy. *Manual Therapy*, 17(4), 364-368.

Meulen, I van der, Sandt-Koenderman, W.M.E. & Ribbers, G.M. (2012). Melodic Intonation Therapy: Present Controversies and Future Opportunities. *Archives of Physical Medicine and Rehabilitation*, 93(1), S46-S52.

Michielsen, M.E., Selles, R.W., Stam, H.J., Ribbers, G.M. & Bussmann, J.B.J. (2012). Quantifying Nonuse in Chronic Stroke Patients: A Study Into Paretic, Nonparetic, and Bimanual Upper-Limb Use in Daily Life. *Archives of Physical Medicine and Rehabilitation*, 93(11), 1975-1981.

Nooijen, C.F.J., Groot, S. de, Postma, K., Bergen, M.P., Stam, H.J., Bussmann, J.B.J. & Berg-Emons, H.J.G. van den (2012). A more active lifestyle in persons with a recent spinal cord injury benefits physical fitness and health. *Spinal Cord*, 50(4), 320-323.

Pangalila, R.F., van den Bos, G.A.M., Stam, H.J., Exel, N.J.A. van, Brouwer, W.B.F. & Roebroek, M.E. (2012). Subjective caregiver burden of parents of adults with Duchenne. *Disability & Rehabilitation*, 34(12), 988-996.

Putter, C.E. de, Selles, R.W., Polinder, S., Panneman, MJM, Hovius, S.E.R. & Beeck, E.F. van (2012). Economic impact of hand and wrist injuries: Health-care costs and productivity costs in a population-based study. *Journal of Bone and Joint Surgery-American Volume*, 94(9).

Sandt-Koenderman, W.M.E., Meulen, I van der & Ribbers, G.M. (2012). Aphasia Rehabilitation: More Than Treating the Language Disorder INTRODUCTION. *Archives of Physical Medicine and Rehabilitation*, 93(1), S1-S3.

Slot, W.M.A. van der, Nieuwenhuisen, C., Berg-Emons, H.J.G. van den, Bergen, M.P., Hilberink, S.R., Stam, H.J. & Roebroek, M.E. (2012). Chronic pain, fatigue, and depressive symptoms in adults with spastic bilateral cerebral palsy. *Developmental Medicine & Child Neurology*, 54(9), 836-842.

Smits, M., Visch-Brink, E.G., Sandt-Koenderman, W.M.E. & Lugt, A. van der (2012). Advanced Magnetic Resonance Neuroimaging of Language Function Recovery After Aphasic Stroke: A Technical Review. *Archives of Physical Medicine and Rehabilitation*, 93(1), S4-S14.

Tienen, FHJ van, Praet, S.F.E., Feyter, HM de, Broek, NM van den, Lindsey, PJ, Schoonderwoerd, KGC, Coo, I.F.M. de, Nicolay, K., Prompers, JJ, Smeets, H.J.M. & Loon, LJC van (2012). Physical Activity Is the Key Determinant of Skeletal Muscle Mitochondrial Function in Type 2 Diabetes. *Journal of Clinical Endocrinology and Metabolism*, 97(9), 3261-3269.

Vissers, M.M., Bussmann, J.B.J., Verhaar, J.A.N., Busschbach, J.J. van, Bierma-Zeinstra, S.M.A. & Reijman, M. (2012). Psychological Factors Affecting the Outcome of Total Hip and Knee Arthroplasty: A Systematic Review. *Seminars in Arthritis and Rheumatism*, 41(4), 576-588.

Wiegerink, D.J.H.G., Stam, H.J., Ketelaar, M, Cohen-Kettenis, P.T. & Roebroek, M.E. (2012). Personal and environmental factors contributing to participation in romantic relationships and sexual activity of young adults with cerebral palsy. *Disability & Rehabilitation*, 34(17), 1481-1487.

Book - Monograph - Book Editorship

Stam, H.J., Buyruk, H.M., Melvin, J.L. & Stucki, G. (2012). *Acute medical rehabilitation, textbook*. Turkije: VitalMed Medical Book Publishing.

Part of book - Abstract

Meeteren, J. van (2012). Pressure ulcers. In HJ Stam, HM Buyruk, JL Melvin & G Stucki (Eds.), *Textbook of acute medical rehabilitation*.

Stam, H.J. & Ward, A. (2012). Introduction to acute medical rehabilitation. In HJ Stam, HM Buyruk, JL Melvin & G Stucki (Eds.), *Textbook of acute medical rehabilitation*.

EMC MUSC-01-47-01 - Efficiency and efficacy of trauma care***Programme (brief description)*****Objectives:**

The main objective of this programme is to investigate the efficiency and efficacy of management and treatment approaches for trauma patients.

The basic research projects aim at getting insight into fracture healing.

Fractures that do not heal uncomplicated often require bone grafting. Literature data of bone substitute materials available in the Netherlands will be collected. The biomechanical and biological characteristics in vivo will be determined to support a clinical guideline. New titanium MESH material will be evaluated in a biomechanical and in vivo setting.

Advanced trauma life support (ATLS) propagates the use of pelvic circumferential compression devices (PCCDs) for reducing and stabilizing pelvic fractures, however their clinical benefits and risks are largely unknown. The mechanical effects, the quality of pelvic reduction and the decubitus risk of PCCDs will be determined.

The aim of the clinical research projects is to compare management approaches for several fracture and injury types using prospective multi-centre randomized and cohort studies.

Multicenter RCTs: (1) Clinical- and cost-effectiveness of internal fixation (cancellous screws versus sliding hip screw) of femoral neck fractures; (2) Clinical- and cost-effectiveness of hemi-arthroplasty (HA) versus total hip arthroplasty of femoral neck fractures; (3) Clinical- and cost-effectiveness of HA versus conservative treatment of comminuted proximal humeral fractures; (4) Clinical- and cost-effectiveness of early mobilization versus immobilization of simple elbow dislocations.

Multicenter cohort study: outcome of treatment of persistently unstable complex elbow dislocations after fracture fixation using a hinged elbow fixator will be studied.

Multicenter comparative observational study: Clinical- and cost-effectiveness of operative versus non-operative treatment of humeral shaft fractures.

Three projects aim at identifying patients at risk for complications:

-Patients with low single nucleotide polymorphisms in immune response genes are at risk of developing serious infectious complication after transplantation or ICU admission. This association will be investigated in polytraumatized patients.

-The second project deals with elderly patients reporting to the ED after they fell. The effects of withdrawal of fall-inducing drugs on recurrent falls will be investigated.

-Topic of the third study is to evaluate biomarkers for timely indication of intra-abdominal hypertension; this syndrome that can lead to multiorgan failure if left untreated.

An international research collaboration and exchange program with the Ruijin Hospital (Shanghai, China, Emergency Department (ED) and Burn Center) has been established.

In preclinical research projects the added value of assistance by Helicopter Emergency Medical Services (HEMS) on outcome and quality of life will be studied in polytraumatized patients.

Effects, costs and benefits will be investigated and the dispatch and cancel protocols will be evaluated.

Key Figures

<i>Department</i>	<i>Sp1</i>	<i>Sp2</i>	<i>Sp3</i>	<i>Sp4</i>	<i>SpTot</i>	<i>T1</i>	<i>T2</i>	<i>T3</i>	<i>Ttot</i>	<i>IS</i>	<i>FS</i>	<i>OP</i>	<i>Ptot</i>
internal medicine		1			1								
surgery	2,95	0,3	1,2	0,5	4,95								
<i>Total</i>	<i>2,95</i>	<i>1,3</i>	<i>1,2</i>	<i>0,5</i>	<i>5,95</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>29</i>	<i>4</i>	<i>4</i>	<i>37</i>

Article/Letter to the editor

Bakker, B., Halm, J.A., Lieshout, E.M.M. van & Schepers, T. (2012). The fate of Bohler's angle in conservatively-treated displaced intra-articular calcaneal fractures. *International Orthopaedics*, 36(12), 2495-2499.

- Broker, M.E.E., Lieshout, E.M.M. van, Elst, M van der, Stassen, LPS & Schepers, T. (2012). Discriminating Between Simple and Perforated Appendicitis. *Journal of Surgical Research*, 176(1), 79-83.
- Bruijn, K De, Hartog, D. den, Tuinebreijer, W.E. & Roukema, G (2012). Reliability of Predictors for Screw Cutout in Intertrochanteric Hip Fractures. *Journal of Bone and Joint Surgery-American Volume*, 94A(14), 1266-1272.
- Buijsman, R., Tenhagen, M., Hunfeld, M.A.J.M., Tuinebreijer, W.E. & Cense, H.A. (2012). Bariatrische chirurgie met een variabele maagband; langetermijn follow-up van eerste 30 patienten in Nederland. *Nederlands Tijdschrift voor Geneeskunde*, 156(13).
- Burgers, P.T.P.W., Geene, AR Van, Bekerom, MPJ Van den, Lieshout, E.M.M. van, Blom, B., Aleem, IS, Bhandari, M & Poolman, RW (2012). Total hip arthroplasty versus hemiarthroplasty for displaced femoral neck fractures in the healthy elderly: a meta-analysis and systematic review of randomized trials. *International Orthopaedics*, 36(8), 1549-1560.
- Burgers, P.T.P.W., Poolman, RW, Culgin, S., Einhorn, T.A., Bhandari, M, Patka, P. & Lieshout, E.M.M. van (2012). Centrale coördinatie van een multicenter studie als alternatief voor betaling per patient: de ervaring bij de HEALTH-trial. *Nederlands Tijdschrift voor Traumatologie*, 20(1), 2-8.
- Elskamp, A.B.M., Hartholt, K.A., Patka, P., Beeck, E.F. van & Cammen, T.J.M. van der (2012). Why older people refuse to participate in falls prevention trials: A qualitative study. *Experimental Gerontology*, 47(4), 342-345.
- Haagsma, J.A., Ringburg, A.N., Lieshout, E.M.M. van, Beeck, E.F. van, Patka, P., Schipper, I.B. & Polinder, S. (2012). Prevalence rate, predictors and long-term course of probable posttraumatic stress disorder after major trauma: a prospective cohort study. *BMC Psychiatry*, 12(1).
- Halm, J.A. & Schepers, T. (2012). Damage to the Superficial Peroneal Nerve in Operative Treatment of Fibula Fractures: Straight to the Bone? Case Report and Review of the Literature. *Journal of Foot & Ankle Surgery*, 51(5), 684-686.
- Hartholt, K.A., Polinder, S., Cammen, T.J.M. van der, Panneman, MJM, Velde, N. van der, Lieshout, E.M.M. van, Patka, P. & Beeck, E.F. van (2012). Costs of falls in an ageing population: A nationwide study from the Netherlands (2007-2009). *Injury-International Journal of the Care of the Injured*, 43(7), 1199-1203.
- Hartholt, K.A., Polinder, S., Beeck, E.F. van, Velde, N. van der, Lieshout, E.M.M. van, Patka, P. & Cammen, T.J.M. van der (2012). End of the Spectacular Decrease in Fall-Related Mortality Rate: Men Are Catching Up. *American Journal of Public Health*, 102, S207-S211.
- Hartholt, K.A., Velde, N. van der, Looman, C.W.N., Lieshout, E.M.M. van, Beeck, E.F. van, Patka, P. & Cammen, T.J.M. van der (2012). Valgerelateerde ziekenhuisopnamen bij ouderen in Nederland. *Nederlands Tijdschrift voor Heelkunde*, 21(1), 9-11.
- Huis in 't Veld, M.A., Halm, J.A. & Waes, O.J.F. van (2012). Een late pericardiale tamponade na penetrerend thoraxletsel: Shaved and saved by the cold blue steel. *Nederlands Tijdschrift voor Traumatologie*, 5, 149-152.
- Iordens, G.I.T., Klaassen, RA, Lieshout, E.M.M. van, Cleffken, BI & Harst, E. van der (2012). How to Train Surgical Residents to Perform Laparoscopic Roux-en-Y Gastric Bypass Safely. *World Journal of Surgery*, 36(9), 2003-2010.
- Moerman, S., Tuinebreijer, W.E., Boo, M. de, Pilot, P, Nelissen, RGHH & Vochteloo, AJH (2012). Validation of the Risk Model for Delirium in hip fracture patients. *General Hospital Psychiatry*, 34(2), 153-159.

Oudshoorn, C., Hartholt, K.A., Zillikens, M.C., Panneman, MJM, Velde, N. van der, Colin, E.M., Patka, P. & Cammen, T.J.M. van der (2012). Emergency department visits due to vertebral fractures in the Netherlands, 1986-2008: Steep increase in the oldest old, strong association with falls. *Injury-International Journal of the Care of the Injured*, 43(4), 458-461.

Plasmans, D.T.M., Lieshout, E.M.M. van & Schepers, T. (2012). Talusfracturen, een overzicht van ongeval tot resultaat. *Nederlands Tijdschrift voor Traumatologie*, 20(4), 108-114.

Sant, H.P. van t, Sliker, J.C., Hop, W.C.J., Weidema, W.F., Lange, J.F., Vermeulen, J. & Contant, CME (2012). The influence of mechanical bowel preparation in elective colorectal surgery for diverticulitis. *Techniques in Coloproctology*, 16(4), 309-314.

Schepers, T. (2012). Acute distal tibiofibular syndesmosis injury: a systematic review of suture-button versus syndesmotic screw repair. *International Orthopaedics*, 36(6), 1199-1206.

Schepers, T., Hagenaars, T. & Hartog, D. den (2012). An Irreducible Ankle Fracture Dislocation: The Bosworth Injury. *Journal of Foot & Ankle Surgery*, 51(4), 501-503.

Schepers, T. & Vogels, L.M.M. (2012). Closing the medullary canal after retrograde nail removal using a bioabsorbable bone plug: technical tip. *Archives of Orthopaedic and Trauma Surgery*, 132(6), 801-803.

Schepers, T., Zuuren, WJ van, Bekerom, MPJ Van den, Vogels, L.M.M. & Lieshout, E.M.M. van (2012). The management of acute distal tibio-fibular syndesmotic injuries: Results of a nationwide survey. *Injury-International Journal of the Care of the Injured*, 43(10), 1718-1723.

Schepers, T. (2012). The primary arthrodesis for severely comminuted intra-articular fractures of the calcaneus: a systematic review. *Foot & Ankle International*, 18(2), 84-88.

Sierink, JC, Saltzherr, TP, Beenen, L.F.M., Luitse, JSK, Hollmann, M.W., Reitsma, J.B., Edwards, M.J.R., Hohmann, J, Beuker, BJA, Patka, P., Suliburk, JW, Dijkgraaf, MGW & Goslings, JC (2012). A multicenter, randomized controlled trial of immediate total-body CT scanning in trauma patients(React-2). *BMC Emerging Medicine*, 12(1).

Sierink, JC, Saltzherr, TP, Edwards, M.J.R., Beuker, BJA, Patka, P. & Goslings, JC (2012). Directe 'total body'- scan bij multitraumapatiënten. *Nederlands Tijdschrift voor Geneeskunde*, 156(30).

Sierink, JC, Saltzherr, TP, Beenen, L.F.M., Luitse, JSK, Hollmann, M.W., Johannes, B, Edwards, M.J.R., Patka, P., Beuker, BJA, Suliburk, JW, Hohmann, J, Dijkgraaf, MGW & Goslings, JC (2012). Randomised, controlled trial of immediate total-body computed tomography scanning in trauma patients. *EMERGENCY MEDICINE AUSTRALASIA*, 24(3), 350-351.

Smith, T., Hartog, D. den, Moerman, T.H., Patka, P., Lieshout, E.M.M. van & Schep, N.W.L. (2012). Early recognition of vitally threatened patients: evaluation of the performance of a new early warning score. *British Journal of Surgery*, 99(2), 192-197.

Vermeulen, J., Hout, N. van & Klaasen, R. (2012). Fistula formation to the bladder and to a corpus alienum as a rare complication of diverticulitis: a case report. *Journal of Emergency Medicine*, 43(2), e87-e88.

Vochteloo, AJH, Burg, BLSB van der, Roling, MA, Leeuwen, DH van, Berg, P van den, Niggebrugge, AHP, Vries, M.R. de, Tuinebreijer, W.E., Bloem, RM, Nelissen, RGHH & Pilot, P (2012). Contralateral hip fractures and other osteoporosis-related fractures in hip fracture patients: incidence and risk factors. An observational cohort study of 1,229 patients. *Archives of Orthopaedic and Trauma Surgery*, 132(8), 1191-1197.

Vochteloo, AJH, Tuinebreijer, W.E., Maier, AB, Nelissen, RGHH, Bloem, RM & Pilot, P (2012). Predicting discharge location of hip fracture patients; the new discharge of hip fracture patients score. *International Orthopaedics*, 36(8), 1709-1714.

Vochteloo, AJH, Vliet-Koppert, ST Van, Maier, AB, Tuinebreijer, W.E., Roling, ML, Vries, M.R. de, Bloem, RM, Nelissen, RGHH & Pilot, P (2012). Risk factors for failure to return to the pre-fracture place of residence after hip fracture: a prospective longitudinal study of 444 patients. *Archives of Orthopaedic and Trauma Surgery*, 132(6), 823-830.

Waes, O.J.F. van, Riet, P.A. van, Lieshout, E.M.M. van & Hartog, D. den (2012). Immediate thoracotomy for penetrating injuries: ten years' experience at a Dutch level I trauma center. *European Journal of Trauma and Emergency Surgery*, 38(5), 543-551.

Waes, O.J.F. van, Cheriex, K.C.A.L., Navsaria, PH, Riet, P.A. van, Nicol, AJ & Vermeulen, J. (2012). Management of penetrating neck injuries. *British Journal of Surgery*, 99(S1), 149-154.

Weert - van Schie, E.M. van de, Lieshout, E.M.M. van, Vries, M.R. de, Elst, M van der & Schepers, T. (2012). Determinants of outcome in operatively and non-operatively treated Weber-B ankle fractures. *Archives of Orthopaedic and Trauma Surgery*, 132(2), 257-263.

Zielinski, S.M., Viveiros, H, Heetveld, M.J., Swiontkowski, MF, Bhandari, M, Patka, P. & Lieshout, E.M.M. van (2012). Central coordination as an alternative for local coordination in a multicenter randomized controlled trial: the FAITH trial experience. *Trials*, 13(1).

Part of book - Abstract

Lieshout, E.M.M. van (2012). Bone substitute materials in trauma and orthopedic surgery - properties and use in clinic. In A Tiwari, M Ramalingham & H Kobayashi (Eds.), *Biomedical materials and diagnostic devices* (pp. 157-189). New Jersey: Hohn Wiley & Sons.

EMC MUSC-01-48-01 - Efficiency and Efficacy of Emergency medicine and Trauma Care***Programme (brief description)***

The main objective of this programme is to investigate the efficiency and efficacy of management and treatment approaches for trauma and emergency medicine patients.

The basic research projects aim at getting insight into wound and fracture healing.

Both, wounds and fractures that do not heal uncomplicated often require special treatment and grafting. Literature data on both subjects available in the Netherlands will be collected. The biomechanical and biological characteristics in vivo will be determined to support a clinical guideline. New titanium MESH material will be evaluated in a biomechanical and in vivo setting. Advanced trauma life support (ATLS) propagates the use of pelvic circumferential compression devices (PCCDs) for reducing and stabilizing pelvic fractures with improvement of vital parameters and reduction of pain as results, however their clinical benefits and risks are largely unknown. The mechanical effects, the quality of pelvic reduction and the decubitus risk and the influence on pain relieve of PCCDs will be determined.

The aim of the clinical research projects is to compare management approaches for several acute disorders and injury types using prospective multi-centre randomized and cohort studies.

Multicenter RCTs: (1) Barriers and facilitators for early treatment of pain in trauma patients; (2) Clinical- an cost-effectiveness of hemi-arthroplasty versus total hip arthroplasty of femoral neck fractures; (3) Clinical- and cost-effectiveness of hemiarthroplasty versus conservative treatment of comminuted humeral fractures (4) Sterile versus clean treatment of traumatic wounds.

Three projects aim at identifying patients at risk for complications:

- Literature data indicate that patients which are at risk of developing serious infectious complication after ED admission. Early recognition and treatment of pneumonia and sepsis in the ED is an important task in saving lives and prevention of serious acute complications. This association will be investigated in infectious ED patients where also screening protocols will be validated for the situation in the Netherlands.

- The second project deals with elderly patients reporting to the emergency department for medical assessment after they fell. As these patients may be at risk for falling again, the effects of withdrawal of fall-inducing drugs will be investigated.

- Alcohol and drug intoxication among trauma patients. This is a serious problem in young but also in older- and old population. Focus on intoxication in relation to injuries will result in more specific prevention programs.

- Prevalence and characteristics of patients who frequently visit the ED. This study aims at detecting predictors for high healthcare costs involved with frequent ED visits.

In preclinical research projects the added value of intervention on outcome and quality of life will be studied in old patients. Effects, costs and benefits will be investigated and the prevention and treatment protocols will be evaluated.

Key Figures

<i>Department</i>	<i>Sp1</i>	<i>Sp2</i>	<i>Sp3</i>	<i>Sp4</i>	<i>SpTot</i>	<i>T1</i>	<i>T2</i>	<i>T3</i>	<i>Ttot</i>	<i>IS</i>	<i>FS</i>	<i>OP</i>	<i>Ptot</i>
Accident and Emergency surgery	0,56	0,6		0,9	2,06								
<i>Total</i>	<i>0,56</i>	<i>0,6</i>	<i>0</i>	<i>1</i>	<i>2,16</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>3</i>	<i>3</i>	<i>14</i>

Article/Letter to the editor

Burgers, P.T.P.W., Poolman, RW, Culgin, S., Einhorn, T.A., Bhandari, M, Patka, P. & Lieshout, E.M.M. van (2012). Centrale coordinatie van een multicenter studie als alternatief voor betaling per patient: de ervaring bij de HEALTH-trial. *Nederlands Tijdschrift voor Traumatologie*, 20(1), 2-8.

Elskamp, A.B.M., Hartholt, K.A., Patka, P., Beeck, E.F. van & Cammen, T.J.M. van der (2012). Why older people refuse to participate in falls prevention trials: A qualitative study. *Experimental Gerontology*, 47(4), 342-345.

Gaakeer, M.I., Brand, CL van den & Patka, P. (2012). Emergency medicine in the Netherlands: a short history provides a solid basis for future challenges. *European Journal of Emergency Medicine*, 19(3), 131-135.

Hartholt, K.A., Polinder, S., Cammen, T.J.M. van der, Panneman, MJM, Velde, N. van der, Lieshout, E.M.M. van, Patka, P. & Beeck, E.F. van (2012). Costs of falls in an ageing population: A nationwide study from the Netherlands (2007-2009). *Injury-International Journal of the Care of the Injured*, 43(7), 1199-1203.

Hartholt, K.A., Polinder, S., Beeck, E.F. van, Velde, N. van der, Lieshout, E.M.M. van, Patka, P. & Cammen, T.J.M. van der (2012). End of the Spectacular Decrease in Fall-Related Mortality Rate: Men Are Catching Up. *American Journal of Public Health*, 102, S207-S211.

Hengel, L.C. van den, Dedic, A. & Rood, P.P.M. (2012). Thoracic pain after lifting weights. *Netherlands Journal of Critical Care*, 16(4), 145.

Huis in 't Veld, M.A., Halm, J.A. & Waes, O.J.F. van (2012). Een late pericardiale tamponade na penetrerend thoraxletsel: Shaved and saved by the cold blue steel. *Nederlands Tijdschrift voor Traumatologie*, 5, 149-152.

Oudshoorn, C., Hartholt, K.A., Zillikens, M.C., Panneman, MJM, Velde, N. van der, Colin, E.M., Patka, P. & Cammen, T.J.M. van der (2012). Emergency department visits due to vertebral fractures in the Netherlands, 1986-2008: Steep increase in the oldest old, strong association with falls. *Injury-International Journal of the Care of the Injured*, 43(4), 458-461.

Sierink, JC, Saltzherr, TP, Beenen, L.F.M., Luitse, JSK, Hollmann, M.W., Reitsma, J.B., Edwards, M.J.R., Hohmann, J, Beuker, BJA, Patka, P., Suliburk, JW, Dijkgraaf, MGW & Goslings, JC (2012). A multicenter, randomized controlled trial of immediate total-body CT scanning in trauma patients(React-2). *BMC Emerging Medicine*, 12(1).

Sierink, JC, Saltzherr, TP, Edwards, M.J.R., Beuker, BJA, Patka, P. & Goslings, JC (2012). Directe 'total body'- scan bij multitraumapatiënten. *Nederlands Tijdschrift voor Geneeskunde*, 156(30).

Sierink, JC, Saltzherr, TP, Beenen, L.F.M., Luitse, JSK, Hollmann, M.W., Johannes, B, Edwards, M.J.R., Patka, P., Beuker, BJA, Suliburk, JW, Hohmann, J, Dijkgraaf, MGW & Goslings, JC (2012). Randomised, controlled trial of immediate total-body computed tomography scanning in trauma patients. *EMERGENCY MEDICINE AUSTRALASIA*, 24(3), 350-351.

Smith, T., Hartog, D. den, Moerman, T., Patka, P., Lieshout, E.M.M. van & Schep, N.W.L. (2012). Accuracy of an expanded early warning score for patients in general and trauma surgery wards. *British Journal of Surgery*, 99(2), 192-197.

Zielinski, S.M., Viveiros, H, Heetveld, M.J., Swiontkowski, MF, Bhandari, M, Patka, P. & Lieshout, E.M.M. van (2012). Central coordination as an alternative for local coordination in a multicenter randomized controlled trial: the FAITH trial experience. *Trials*, 13(1).

Part of book - Abstract

Patka, P. (2012). Wervelkolom. In H.G. Gooszen (Ed.), *Leerboek chirurgie* (pp. 641-646). Houten: Bohn Stafleu van Loghum.