

CV Orthopedisch Chirurg t.b.v. visitatie NOV

Paul Willems

Man

14-10-1965

BIG 49035923701

ROGO Zuid

Ingeschreven als Orthopeed in BIG register per 01-08-2002

Laatste herregistratie 01-08-2022

"Decision making in surgical treatment of chronic low back pain"- PhD thesis UM 16-12-2011

Aandachtsgebied Wervelkolom; Professor of Integrated Spinal Care per 01-01-2020

Lid van Nederlandse Orthopedische Vereniging (NOV)

Lid van Dutch spine Society (DSS), Eurospine, AO Spine, North-American Spine Society (NASS) + Scoliosis Research Society (SRS)

Aanstelling als orthopedisch chirurg Maastricht UMC per 01-09-2007

Fulltime werkzaam op MUMC

Functies Intern (medische staf / ziekenhuis commissies):

- Hoogleraar Integrated Spinal Care
- Lid Wetenschapscommissie Maastricht UMC
- Lid Stafconvent MUMC
- Lid multidisciplinair expertise-team "22q11-deletion syndrome", Maastricht UMC
- Lid Center of Expertise Rett Syndroom, Maastricht UMC
- Voorzitter DSMB first-in-man trial WISE (wrist implant safety evaluation), Maastricht UMC
- Verantwoordelijke "Interdisciplinaire Zorglijn Scoliose kind MUMC"
- Organisator Scoliose zorg netwerk Zuid-Oost Nederland, ism oefentherapeuten
- Organisator FyNet/MUMC Rugnetwerk Maastricht-Heuvelland, ism fysiotherapeuten

Functies Extern:

- Voorzitter Werkgroep landelijke Richtlijnmodules "Osteoporotische wervelfracturen: behandelopties en organisatie van zorg" – NOV ism Federatie Medische Specialist
- Lid Werkgroep Richtlijn Osteoporose en Fractuurpreventie - KNGF
- Lid Raad van Advies Nederlandse Vereniging van Rugpatiënten (NVvR)
- Adviseur Osteoporose Patiëntenvereniging NL
- Adviseur Scoliose Patiëntenvereniging Nederland

Wetenschappelijke publicaties 2020-2024

Marloes JM Peters, Boudewijn T Brans, Wouter AM Broos, Elisabeth MC Jütten, Felix M Mottaghy, Olaf Schijns, René E Weijers, **Paul C Willems**

"The use of 18F-Fluoride Positron Emission Tomography/Computed Tomography to identify sources of pain after lumbar interbody fusion - An analysis in patients with and without symptoms"
Diagnostics 2024, 14(13), 1327; <https://doi.org/10.3390/diagnostics14131327>

Pieter C Dagnelie, **Paul C Willems** and Niklas R Jørgensen

"Nutritional status as independent prognostic factor of outcome and mortality until five years after hip fracture: a comprehensive prospective study"
Osteoporosis International 2024; DOI:10.1007/s00198-024-07088-3

Henk van Mameren, Toon FM Boselie, Jan T Wilmlink, **Paul CPH Willems**, Henk van Santbrink, Glenn HC Dams, Rob A de Bie

"Volume-regulating veins in the cervical vertebral canal and neuroforamina prevent radiculopathy during head and cervical spine movements; the mechanism"
International Journal of Morphology 2024;issue 3,vol.42

Thomay Claire A. Hoelen, **Paul C. Willems**, Arjan C.Y. Loenen, Hans-Jorg Meisel, Jeffrey Wang, Amit Jain, Zorica Buser, Jacobus J. Arts. AO Knowledge Forum

"The evidence for the use of osteobiologics in hybrid constructs (Anterior Cervical Discectomy and Fusion (ACDF) and total disc replacement (TDR)) in multilevel cervical degenerative disc disease: a systematic review"
Global Spine J Febr 2024;Vol. 14 (2):120S-128S

Esther R.C. Janssen, Ilona M. Punt, Johan van Soest, Yvonne F. Heerkens, Hillegonda A. Stallinga, Huib ten Napel, Lodewijk W. van Rhijn, Barend Mons, Andre Dekker, **Paul C. Willems**, Nico L.U. van Meeteren

"Operationalizing and digitizing person-centered daily functioning: a case for functionomics"
BMC Medical Informatics and Decision Making (2024) 24:184

Stephanie M.D.H. Huysmans, Rachel Senden, Eva Jacobs, Paul J.B. Willems, Mark v.d. Boogaart, Rick G.J. Marcellis, Kenneth Meijer, **Paul C. Willems**

"Gait and balance in patients with adult spinal deformity"
NASSJ; <https://doi.org/10.1016/j.xnsj.2023.100306>

Thomay Claire Ayala Hoelen, **Paul C. Willems**, J.J. Chris Arts, Rob A. Debie

"Methodology and application of three-dimensional technology for brace design and production for treatment in patients with adolescent idiopathic scoliosis: a scoping review protocol"
BMJ Open 2023;13:e079673

Marloes Peters, Arjan Loenen, Liesbeth Jutten, Daan Loeffen, Chris Arts, Roel Wierts, Toon Boselie, **Paul Willems**

"Comparison of bone ingrowth and clinical outcome of a collagen-hydroxyapatite bone graft substitute with autologous bone graft in Posterior Lumbar Interbody Fusion"
Quant Imaging in Med Surg 2025;15(2):1621-1631

Thomay-Claire Hoelen, Silvia Evers, **Paul Willems**, Jacobus J. Arts, Ghislaine van Mastrigt

"The Economic and Societal Burden associated with Adolescent Idiopathic Scoliosis: A burden-of-disease study protocol"
NASSJ DOI.org/10.1016/j.xnsj.2023.100231

Thomay-Claire Ayála Hoelen, Silvia Evers, **Paul Willems**, Jacobus J. Arts, Ghislaine van Mastrigt

"The Societal Burden associated with Adolescent Idiopathic Scoliosis: a cross-sectional burden-of-disease study"
In press, BMC Public Health

Roxanne AW Ploumen, Martin R van Wezenbeek, **Paul CPH Willems**, Suzanne C Gerretsen, Jan A ten Bosch

"How a broken vertebra can lead to a fatal hemorrhage, a case report"
In press, Journal of Emergency Medicine

Baetsen, J.T.F., Hooff, M.L., Bisseling, P., van Dongen, J.M., van de Fliert, D.G., Hoebink, E., Kempen, D.H.R., Rutges, J.P.H.J., Schlösser, T.P.C., van West, H.M., van der Wees, P.J., **Willems, P.C.**, de Kleuver, M., on behalf of Dutch AIS consortium
-"The effectiveness of a protocol without routine radiographs for follow-up of adolescent idiopathic scoliosis patients (CURVE): a study protocol"
Acta Orthopaedica, 95, 298-306. <https://doi.org/10.2340/17453674.2024.40904>

Barend Spanninga, Thomay-Claire Hoelen, **Paul Willems**, Chris Arts
"Clinical efficacy and safety of P-15 peptide enhanced bone graft substitute in surgical bone regenerative procedures in adult maxillofacial, spine and trauma patients: a systematic literature review"
In press, Bone & Joint Research; BJR 2024-033

Katrin A. Muenzebrock, Fiona Y.W. Ho, Adriano P. Pontes, Carla Jorquera-Cordero, Lizette Utomo, Joao Pedro Garcia, **Paul C. Willems**, Tim J.M. Welting, Jaap Rip, Laura B. Creemers
"Polymeric nanoparticles enable mRNA transfection and its translation in intervertebral disc and human joint cells, except for M1 macrophages"
In press, Pharmaceutics-2903320

A Weber, T.F.G. Vercoulen, E. Jacobs, A.T. Buizer, S.P.G. Bours, J.P. van den Bergh, R.M. Jeuken, S.M.J. van Kuijk, S.M.A.A. Evers, **P.C. Willems**
"Disparities in Management of Osteoporotic Vertebral Compression Fractures: A Nationwide Multidisciplinary Survey"
Archives of Osteoporosis 2024, 19(1):101

Thomay-Claire Ayála Hoelen, **Paul C. Willems**, Jacobus J. Arts, Ghislaine van Mastrigt, Silvia Evers
"The Economic and Societal Burden associated with Adolescent Idiopathic Scoliosis: A burden-of-disease study protocol"
N Am Spine Soc J 2023 May 18:14:100231

Thomay Claire Hoelen, **Paul Willems**, Chris Arts, Rob Debie
"The methodology and application of three-dimensional technology for brace design and production for treatment in patients with adolescent idiopathic scoliosis: a scoping review protocol"
BMJ Open 2023;13:e079673

Julia L. van Agtmaal, Remco Doodkorte, Alex K. Roth, Keita Ito, **Paul C. Willems**, Bert van Rietbergen
"Biomechanical evaluation of different semi-rigid junctional fixation techniques using finite element analysis"
Clin Biomech 2023 Aug; 108:106071

Vincent J. Bulthuis, Valérie N.E. Schuermans, **Paul C. Willems**, Inez Curfs, Arlette A. Ramos González, Sander M.J. van Kuijk and Henk van Santbrink
"Predicting survival in patients presenting with spinal epidural metastases: The Limburg Spinal Metastasis Score"
Int J Spine Surg 2023 Aug;17(4):547-556

Karin Kee, Reinie Gerrits, Petronella de Meij, Lieke Boonen, **Paul Willems**
""What you suggest is not what I expected': How preconsultation expectations affect shared decision-making in patients with low back pain"
Patient Educ Couns. 2023 Jan:106:85-91

Esther R.C. Janssen, Ilona M. Punt, Camille F.M. Biemans, Lodewijk van Rhijn, **Paul C. Willems**, Nico L.U. van Meeteren
"Preoperative community based functional high intensity interval training (f-HIIT) with high-risk patients opting for lumbar spinal fusion: a pilot study"
Disabil Rehabil. 2023 Mar;45(5):805-813

Alison B Rushton, Feroz Jadhakhan, Martin L Verra, Andrew Emms, Nicola R Heneghan, Deborah Falla, Michael Reddington, Ashley A Cole, **Paul C Willems**, Lorin Benneker, David Selvey, Michael Hutton, Martijn W Heymans, J Bart Staal

"Predictors of poor outcome following lumbar spinal fusion surgery: a prospective observational study to derive two clinical prediction rules using British Spine Registry data"
Eur Spine J 2023 Jul;32(7):2303-2318

Daniël MC Janssen, **Paul Willems**, Jan Geurts, Chris JJ Arts
"Antibiotic release from PMMA spacers and PMMA beads measured with ELISA: Assessment of in vitro samples and drain fluid samples of patients"
J Orthop Res 2023;Vol 41(8):1831-39

I. Sanli, B. Osong, A. Dekker, K. Ter Haag, S.M.J. van Kuijk, J. van Soest, L. Wee, **P.C. Willems**
"Radiomics biopsy signature for predicting survival in patients with spinal bone metastases"
Clinical and Translational Radiation Oncology, March 2022;Vol.33:57-65

Loenen ACY, Peters MJM, Bevers RTJ, Schaffrath C, van Haver E, Cuijpers VMJI, Rademakers T, van Rietbergen B, **Willems PC**, Arts JJ
"Early bone ingrowth and segmental stability of a trussed titanium cage versus a polyether ether ketone cage in an ovine lumbar interbody fusion model"
The Spine J 2022 Jan;22(1):174-182

Arjan C.Y. Loenen, Jérôme Noailly, Keita Ito, **Paul C. Willems**, Jacobus J. Arts, Bert van Rietbergen
"Patient-Specific Variations in Local Strain Patterns on the Surface of a Trussed Titanium Interbody Cage"
Frontiers in Bioengineering and Biotechnology, January 2022;Vol 9, Art 750246:1-10

Loenen ACY, Peters MJM, Wiert R, Bevers RTJ, van Rhijn LW, Arts JJ, **Willems PC**
"Local bone metabolism during the consolidation process of spinal interbody fusion"
Journal of Bone and Mineral Metabolism (2022); 40:220-228

Annemarijn Weber, Stephanie Huysmans, Eva Jacobs, ..., Liesbeth Jütten, Sander van Kuijk, Silvia Evers, **Paul Willems**
"The effectiveness and cost-effectiveness of dynamic bracing versus standard care alone in patients suffering from osteoporotic vertebral compression fractures: protocol for a multi-center, two armed, parallel-group, randomized controlled trial with 12 months follow-up"
BMJ Open 2022;12:e054315. doi: 10.1136/bmjopen-2021-054315

D.S. Post, A. van der Veer, F. Moenen-Heubel, S. Klinkenberg, O. Schijns, **P.C. Willems**, Y.M.C. Henskens
"Assessment of need for hemostatic evaluation in patients taking valproic acid: A retrospective cross-sectional study"
PLoS One 2022 Feb 25; 17(2):e0264351

Alison Rushton; Elena Bini; Feroz Jadhakhan; Annabel Masson; J. Bart Staal; Martin L Verra; Andrew Emms; Michael Reddington; Ashley Cole; **Paul C Willems**; Lorin Benneker; Nicola R Heneghan; Andrew Soundy
"Immediate patient perceptions following lumbar spinal fusion surgery: semi-structured multi-centre interviews exploring the patient journey and experiences of lumbar fusion surgery (FuJourn)"
Eur Spine J (2022) 31:3590–3602

Lotte D.E.D.M. Smals, Marcus H.H.M. Hulsbosch, Sjoerd I.P.J. de Faber, Jacobus J.C. Arts, Lodewijk W. van Rhijn, **Paul C. Willems**
"Post-marketing surveillance on safety and efficacy of posterior spinal correction and fusion with the CD Horizon Solera instrumentation for adolescent idiopathic scoliosis: a retrospective cohort study"
NASSJ Vol.8 (Dec 2021), 100085 (doi.org/10.1016/j.xnsj.2021.100085)

Heyer, Frans; de Jong, Joost; **Willems, Paul**; Arts, J.; Bours, Sandrine; van Kuijk, Sander; Bons, Judith; Poeze, Martijn; Geusens, Piet; van Rietbergen, Bert; van de Bergh, Joop
"The Effect of Bolus Vitamin D₃ Supplementation on Distal Radius Fracture Healing: A Randomized Controlled Trial using HR-pQCT"
JBMR 2021;36(8):1492-1501

Remco JP Doodkorte, Alex K Roth, Eva Jacobs, **Paul C Willems**

"Biomechanical comparison of semi-rigid junctional fixation techniques to prevent proximal junctional failure after thoracolumbar adult spinal deformity correction"

Spine (Phila Pa 1976). 2021 Sep 24: online ahead of print

Timon Vercoulen, Remco JP Doodkorte, Alex Roth, Rob A Debie, **Paul C Willems**

"Instrumentation techniques to prevent proximal junctional kyphosis and proximal junctional failure in adult spinal deformity correction - a systematic review of clinical studies"

Global Spine J 2021;Jul 30: epub ahead of print

Esther R.C. Janssen, Ilona M. Punt, Camille F.M. Biemans, Lodewijk van Rhijn, **Paul C. Willems**, Nico L.U. van Meeteren

"Preoperative community based functional high intensity interval training (f-HIIT) with high-risk patients opting for lumbar spinal fusion: a pilot study"

isability and Rehabilitation. DOI: 10.1080/09638288.2022.2040618

Remco JP Doodkorte, Alex K Roth, Bert van Rietbergen, Jacobus J Arts, LM Arno Lataster, Lodewijk W van Rhijn, **Paul C Willems**

"Biomechanical comparison of semi-rigid junctional fixation techniques to prevent proximal junctional failure after thoracolumbar adult spinal deformity correction"

The Spine J 2021 Jan 19;21(5):855-864

Remco JP Doodkorte, Timon Vercoulen, Alex Roth, Rob A Debie, **Paul C Willems**

"Instrumentation techniques to prevent proximal junctional kyphosis and proximal junctional failure in adult spinal deformity correction - a systematic review of biomechanical studies"

The Spine J 2021 Jan 19;21(5):842-854

Alex K. Roth, Alireza Sh. Beheshtiha, Ronald van der Meer, **Paul C. Willems**, Jacobus J. Arts, Keita Ito, Bert van Rietbergen

"Validation of a Finite Element Model of the Thoracolumbar Spine to Study Instrumentation Level Variations in Early Onset Scoliosis Correction"

JMBBM 117 (2021) 104360

Ellen Coeckelberghs, Hilde Verbeke, Anja Desomer, Pascale Jonckheer, Daryl Fournay, **Paul Willems**, Maarten Coppes, Raja Rampersaud, Miranda Van Hooff, Els van den Eede, Gerit Kulik, Pierre de Goumoëns, Kris Vanhaecht, Bart Depreitere

"International comparative study of low back pain care pathways and analysis of key interventions"

Eur Spine J 2021;30:1043-52

Esther RC Janssen, Akuli Biche Osong, Johan van Soest, André Dekker, Nico LU van Meeteren, **Paul C Willems**, Ilona M Punt

"Exploring associations of preoperative physical performance with postoperative outcomes after lumbar spinal fusion: a machine learning approach"

Archives of Physical Medicine and Rehabilitation 2021;102:1324-30.e3

Biche Osong; Ilknur Sanli; **Paul C Willems**; Seok Ho Lee; Leonard Wee; Andre Dekker; Johan van Soest

"Overall survival nomogram for patients with spinal bone metastases (SBM)"

Clinical and Translational Radiation Oncology. DOI: 10.1016/j.radonc.2020.09.054

Inez Curfs, Rob de Bie, Wouter v. Hemert, **Paul Willems**

"Reliability and clinical usefulness of current classifications in traumatic thoracolumbar fractures: A systematic review of the literature"

Internat J Spine Surg Dec 2020

Alison Rushton; Feroz Jadhakhan; Annabel Masson; Victoria Athey; J. Bart Staal; Martin L. Verra; Andrew Emms; Michael Reddington; Ashley Cole; **Paul C. Willems**; Lorin Benneker; Nicola R Heneghan; Andrew Soundy

"Patient journey following lumbar spinal fusion surgery (FuJourn): a multicentre exploration of the immediate post-operative period using qualitative patient diaries"

PLOS ONE doi.org/10.1371/journal.pone.0241931 December 1, 2020

Alison Rushton; Annabel Masson; Feroz Jadhakhan; J. Bart Staal; Martin L. Verra; Andrew Emms; Michael Reddington; Ashley Cole; Andrew Soundy; **Paul C. Willems**; Lorin Benneker; Nicola R Heneghan

The early patient journey following lumbar spinal fusion surgery: a qualitative study using semi structured interviews and weekly patient diaries
Physiotherapy May 2020;107:e61-e62

Esther RC Janssen, Ilona M Punt, Michel J Clemens, J Bart Staal, Thomas J Hoogeboom, **Paul C Willems**

"Current prehabilitation programs do not improve postoperative outcomes of patients scheduled for lumbar spine surgery: a systematic review and meta-analysis"
JOSPT March 2021;51(3):103-114

Remco JP Doodkorte, Alex K Roth, Bert van Rietbergen, Jacobus J Arts, LM Arno Lataster, Lodewijk W van Rhijn, **Paul C Willems**

"UHMWPE sublaminar tape as semi-rigid fixation or pedicle screw augmentation to prevent failure in long-segment spinal surgery - an ex vivo biomechanical study"
J Neurosurg Spine 2020 Oct 30:1-9

Joep Kitzen, T.F.G. Vercoulen, M.G.M. Schotanus, S.M.J. van Kuijk, N.P. Kort, L.W. van Rhijn and **P.C.P.H. Willems**

"Long-term residual-mobility and adjacent segment disease after total lumbar disc replacement"
Global Spine J 2021;Vol.11(7):1032-39

Sanli I, Terhaag K, van Kuijk SMJ, van Baardwijk A, van Limbergen E and **Willems PC**

"Prognostication of patients with spinal bone metastases (SBM): External validation study comparing the utility of two current prediction models"
Clinical Oncology and Research 2020.02.05;10.31487

Bogie R, Arts JJ, Koole SN, van Rhijn LW, **Willems PC**

"The use of metal sublaminar wires in modern growth-guidance scoliosis surgery. A report of 4 cases and literature review"
Internat J of Spine Surg Apr 2020,7017; <https://doi.org/10.14444/7017>

Esther R.C. Janssen, Ilona M. Punt, Sander M.J. van Kuijk, Eric A. Hoebink, Nico L.U. van Meeteren, **Paul C. Willems**

"Development and validation of a prediction tool for pain reduction in adult patients undergoing elective lumbar spinal fusion: a multicentre cohort study"
Eur Spine J 2020;29:1909-1916

J. Kitzen, V. Verbiest, I. Buil, M.G.M. Schotanus, B. van Rietbergen, S.M.J. van Kuijk, L.W. van Rhijn, **P.C.P.H. Willems**

"Subsidence after total lumbar disc replacement is predictable and related to

Joep Kitzen, T.F.G. Vercoulen, S.M.J. van Kuijk, M.G.M. Schotanus, N.P. Kort, L.W. van Rhijn, **P.C.P.H. Willems**

"Long-term clinical outcome of two revision strategies for failed total disc replacements"
Eur Spine J 2020;29(7):1536-43

J Kitzen, MGM Schotanus, SMJ van Kuijk, EMC Jutten, NP Kort, LW van Rhijn, **PC Willems**

"Long-term clinical outcome of the Charité III total lumbar disc replacement"
Eur Spine J 2020;29(7):1527-35

I. Sanli, S.M.J. van Kuijk, R.A. de Bie, L.W. van Rhijn, **P.C. Willems**

"Percutaneous cement augmentation in the treatment of osteoporotic vertebral fractures (OVFs) in the elderly: a systematic review"
Eur Spine J 2020;29(7):1553-72

Eva Jacobs, Chris McCrum, Rachel Senden, Kenneth Meijer, Lodewijk van Rhijn, **Paul Willems**

"Gait in patients with symptomatic osteoporotic vertebral compression fractures over six months recovery"
Aging Clinical and Experimental Research 2020;32:239-46