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Venous thrombosis following lower-leg cast immobilization and knee arthroscopy: From a population-based approach to individualized therapy

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Cover Page



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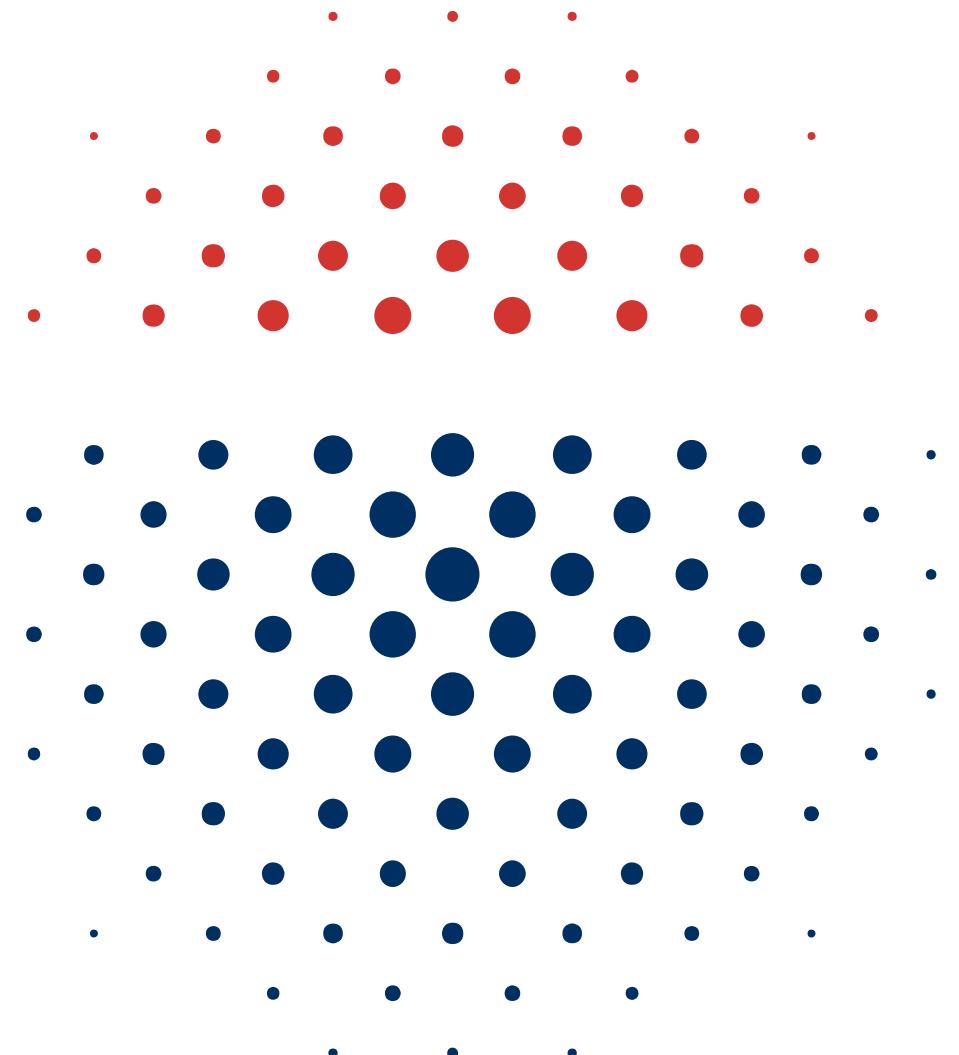


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APPENDICES

DANKWOORD

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Ten eerste bedank ik alle patiënten die vrijwillig hebben deelgenomen aan de POT-(K)CAST trial.

Prof. dr Cannegieter, beste Suzanne, in 2014 begon ik als student onder jouw supervisie. Ik wil je bedanken voor de onvoorstelbaar leerzame en leuke periode als promovendus. Je gaf me alle ruimte om nieuwsgierig te zijn en mezelf te ontwikkelen tot klinisch onderzoeker.

Prof. dr Nelissen, beste Rob, jouw enthousiasme voor de orthopedie en wetenschap werkt aanstekelijk. Waar ik aan het begin van mijn promotie nog dacht chirurg te worden, heb je me, bewust of onbewust, richting de orthopedie “gedreven”. Heel veel dank!

Prof. dr Rosendaal, beste Frits, wat begon als een idee tijdens de jaarlijkse ‘Schier’ cursus monde uit in een geweldig project; de Fear Factor trial. Dank.

Beste Raymond, bedankt voor het vertrouwen dat je me gaf om het POT-(K)CAST stokje over te nemen.

Beste POT-(K)CAST crew, zonder jullie geen proefschrift! Enorm bedankt voor de prettige samenwerking.

Dear Delphine and Pierre-Marie, thank you for a wonderful collaboration.

Dear Roopen, Lara and Martin, many thanks for the possibility you've given me to work in London for several months. I look forward to expand our collaboration.

Dear Anthony, many thanks for designing my thesis cover.

Paranimf, Dr. Scheres, beste Luuk, een fijnere collega op kamer 101 had ik me niet kunnen wensen. Ik ben trots op ons bloedstollende avontuur!

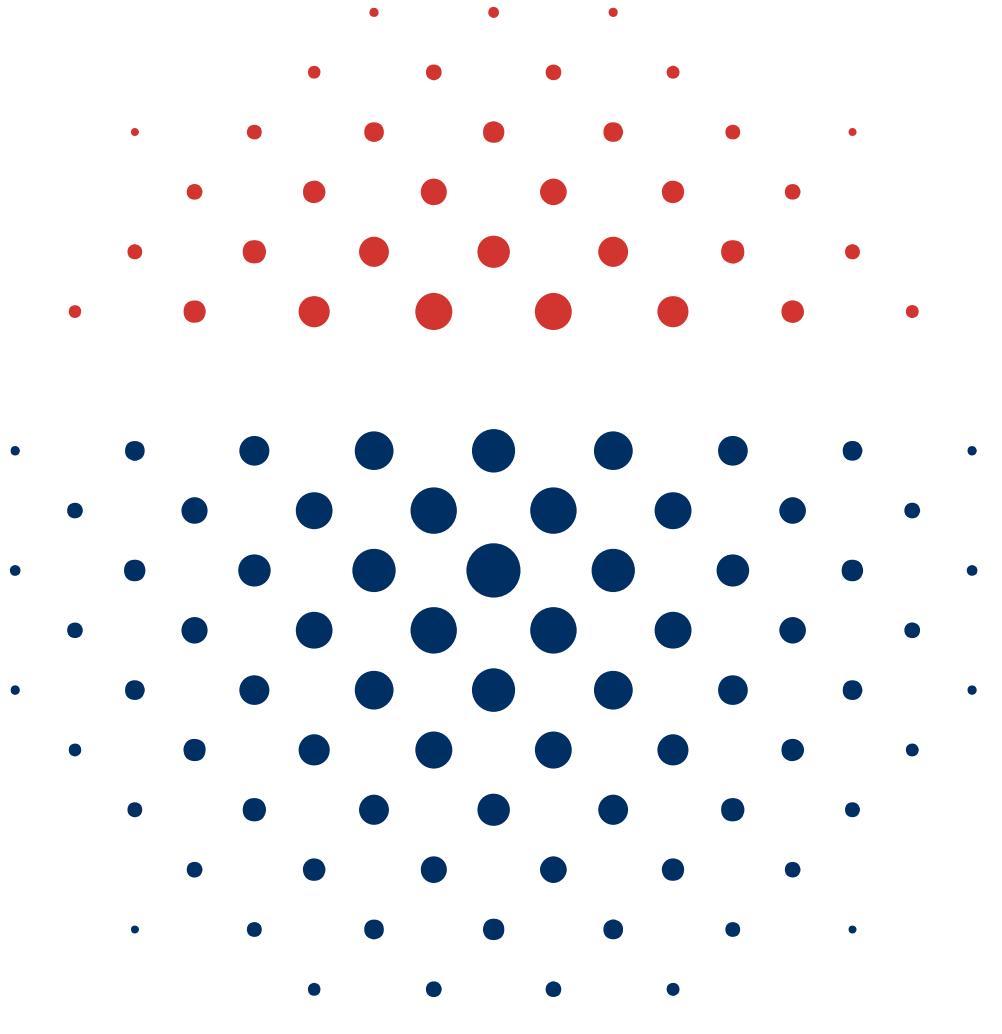
Paranimf, drs. Rijkeé, beste Mattie, de berg op fietsen is ons ding. Ik hoop dat we hier in de toekomst weer meer tijd voor kunnen vinden. Bedankt voor onze vriendschap!

Goudse mannen, Frank, Ron, René, Peer, Vincent, Pieter Stijn & Laurens, jullie lieten me kennismaken met de “echte orthopedie”. Daar ben ik jullie dankbaar voor, het was een top jaar.

Collega's van de Epi en Ortho, hartelijk dank voor de geweldige tijd. Beste Willem, bedankt voor je begeleiding en adviezen.

Lieve Pap, Eline, Mam en Jo, ik voel me bevoordecht met de steun en betrokkenheid van zoveel lieve ouders. Zusje, we delen een gezamenlijke passie voor de gezondheidszorg. Dank dat je er altijd voor me bent.

Lieve Maaike, het leven is niet half zo leuk zonder jou. Je humor en zorgzaamheid maken mij elke dag blij. Ons Londen avontuur was te gek, ik hoop dat er nog vele mogen volgen. Lieve Juul, wat zijn dochters toch gaaf! Je bent samen met mama, het beste wat me ooit is overkomen.



APPENDICES

LIST OF PUBLICATIONS

LIST OF PUBLICATIONS

Last update 21 July 2020

Publications in (intern)national journals

Medische zorg in vluchtelingenkamp Moria

Kooistra J, Vrielink F, Németh B

Huisarts Wet. 2020, 23 juni

Evidence-based guidelines for thromboprophylaxis in patients with lower limb trauma requiring immobilization: an urgent, unmet need.

Douillet D, Penaloza A, Horner D, Savary D, Hugli O, Németh B, Chocron R, Tazarourte K, Roy PM.

Eur J Emerg Med. 2020 Aug;27(4):245-246.

Development and validation of a clinical risk assessment model to predict venous thromboembolism risk after immobilization for lower-limb trauma: the TRIP(cast) score

*Németh B, *Douillet D, le Cessie S, Penaloza A, Moumneh T, Roy PM, Cannegieter SC. *The Lancet - EClinicalMedicine.* 2020 Feb 4;20:100270. *Authors contributed equally.

Thromboprophylaxis in temporary lower limb immobilization: Extrapolate with care.

Czuprynska J, Németh B, Roberts LN, Cannegieter SC, Arya R. *J Thromb Haemost.* 2020 Feb;18(2):518-519.

No Evidence for Effective Prevention of Venous Thromboembolism With Low-Molecular-Weight Heparin After Anterior Cruciate Ligament Reconstruction: Letter to the Editor.

van Adrichem RA, Németh B, Nelissen RGHH, Cannegieter SC. *Am J Sports Med.* 2020 Jan;48(1):NP1-NP2.

Individualized Thromboprophylaxis in Patients with Lower-Leg Cast Immobilization-A Validation and Subgroup Analysis in the POT-CAST Trial.

Németh B, van Adrichem R, Nelissen R, le Cessie S, Cannegieter SC.

Thromb Haemost. 2019 Sep;119(9):1508-1516.

Clinical outcomes of postcarotid endarterectomy hypertension.

Ngo HTN, Németh B, Wever JJ, Veger HTC, Mairuhu ATA, de Laat KF, Statisus van Eps RG.
J Vasc Surg. 2019 Jul 4; pii: S0741-5214(19)31226-1.

Venous thromboembolism risk stratification for patients with lower limb trauma and cast or brace immobilization.

Douillet D, Németh B, Penalosa A, Le Gal G, Moumneh T, Cannegieter SC, Roy PM.
PLoS One. 2019 Jun 20;14(6):e0217748.

Space Medicine in the Era of Civilian Spaceflight.

Roberts LN, Németh B, Arya R.
N Engl J Med. 2019 Jun 20;380(25):e50.

Risk and Risk Factors Associated With Recurrent Venous Thromboembolism Following Surgery in Patients With History of Venous Thromboembolism.

Németh B, Lijfering WM, Nelissen RGHH, Schipper IB, Rosendaal FR, le Cessie S, Cannegieter SC.
 Pending revisions
JAMA Netw Open. 2019 May 3;2(5):e193690.

Venous thrombosis following lower-leg cast immobilization and knee arthroscopy: From a population-based approach to individualized therapy.

Németh B, Cannegieter SC.
Thromb Res. 2019 Feb;174:62-75.

Validation of risk assessment models for venous thrombosis in hospitalized medical patients.

Cobben MRR, Németh B, Lijfering WM, Cannegieter SC
Res Pract Thromb Haemost. 2019;3:217–225.

High risk of recurrent venous thrombosis in patients with lower-leg cast immobilization.

Németh B, Timp JF, van Hylckama Vlieg A, Rosendaal FR, Cannegieter SC.
J Thromb Haemost. 2018 Nov;16(11):2218-2222.

Venous Thrombosis Risk after Arthroscopy of the Knee: Derivation and Validation of the L-TriP(ascopy) Score.

Németh B, van Adrichem RA, van Hylckama Vlieg A, Baglin T, Rosendaal FR, Nelissen RGHH, le Cessie S, Cannegieter SC.
Thromb Haemost. 2018 Oct;118(10):1823-1831.

Severe infrarenal atheroma load in open aortic aneurysm repair is not a risk factor for postoperative Acute Kidney Injury.

Ooms S, Németh B, Wever JJ, Knippenberg B, van Overhagen H, Statisus van Eps RG.
Ann Vasc Surg. 2018 2018 Nov;53:70-77.

Cast immobilization of the lower-leg: No indication for thromboprophylactic therapy.

Németh B, Cannegieter SC.
Injury. 2017 Dec;48(12):2887-2888.

Determinants of Acute Kidney Injury and Renal Function Decline After Endovascular Abdominal Aortic Aneurysm Repair.

Statisus van Eps RG, Németh B, Mairuhu RTA, Wever JJ, Veger HTC, van Overhagen H, van Dijk LC, Knippenberg B.
Eur J Vasc Endovasc Surg. 2017 Dec;54(6):712-720.

Higher incidence rates than previously known in tenosynovial giant cell tumors.

Mastboom MJL, Verspoor FGM, Verschoor AJ, Uittenbogaard D, Németh B, Mastboom WJB, Bovée JVMG, Dijkstra PDS, Schreuder HWB, Gelderblom H, Van de Sande MAJ; TGCT study group.
Acta Orthop. 2017 Aug 8:1-7.

Healthcare and disease burden among refugees in long-stay refugee camps at Lesbos, Greece.

Hermans MPJ, Kooistra J, Cannegieter SC, Rosendaal FR, Mook-Kanamori DO, Németh B.
Eur J Epidemiol. 32, 851–854 (2017)

Thromboprophylaxis after hospital discharge in acutely ill medical patients: need for trials in patients who are at high risk of venous thrombosis.

Németh B, Lijfering WM, Cannegieter SC.
J Thorac Dis. 2017 Apr;9(4):950-952.

Risk of Cerebral Venous Thrombosis in Obese Women.

Zuurbier SM, Arnold M, Middeldorp S, Broeg-Morvay A, Silvis SM, Heldner MR, Meisterernst J, Németh B, Meulendijks ER, Stam J, Cannegieter SC, Coutinho JM. *JAMA Neurol.* 2016 May 1;73(5):579-84.

Thromboprophylaxis after Knee Arthroscopy and Lower-Leg Casting.

van Adrichem RA*, Németh B*, Algra A, le Cessie S, Rosendaal FR, Schipper IB, Nelissen RGHH, Cannegieter SC; POT-KAST and POT-CAST Group. *N Engl J Med.* 2017 Feb 9;376(6):515-525. *Authors contributed equally.

The ERIKA trial: still limited evidence on the efficacy of thromboprophylaxis after knee arthroscopy.

Németh B, van Adrichem RA, Cannegieter SC. *Thromb Haemost.* 2016 Oct 28;116(5):1001.

Confounding by Indication: Letter to the Editor.

Németh B, Cannegieter SC. *Am J Sports Med.* 2016 Apr;44(4):NP12.

Bloodcurdling movies and measures of coagulation: Fear Factor crossover trial.

Németh B*, Scheres LJ*, Lijfering WM, Rosendaal FR. *BMJ.* 2015 Dec 16;351:h6367. *Authors contributed equally.

Venous Thrombosis Risk after Cast Immobilization of the Lower Extremity: Derivation and Validation of a Clinical Prediction Score, L-TRIP(cast), in Three Population-Based Case-Control Studies.

Németh B, van Adrichem RA, van Hylckama Vlieg A, Bucciarelli P, Martinelli I, Baglin T, Rosendaal FR, le Cessie S, Cannegieter SC. *PLoS Med.* 2015 Nov 10;12(11):e1001899

Publications submitted to international journals**Preventing VTE following total hip and knee arthroplasty: is prediction the future?**

Banne Németh, Rob Nelissen, Roopen Arya, Suzanne Cannegieter. Pending revisions at *J Thromb Haemost.*

DO'S and DON'TS in prediction research: a practical guide

Banne Németh, Suzanne Cannegieter, Maarten van Smeden. Pending revisions at *Res Pract Thromb Haemost.*

Presentations**INVITED**

Best evidence for current thromboprophylaxis strategies following total hip and knee arthroplasty.

EFFORT (European Federation of National Associations of Orthopaedics and Traumatology), Lisbon, 7 June 2019, Lisbon, Portugal

Anticoagulation following Total Hip Arthroplasty, is prediction the Future?

European Hip Society, 20-09-2018, The Hague, The Netherlands

Keynote lecture: Anticoagulation in orthopaedic surgery, is prediction the future?

NOV annual congress, 03-02-2017, 's-Hertogenbosch, The Netherlands

Venous thrombosis in patients following knee arthroscopy or lower-leg cast immobilization, results from the POT-(K)CAST trial

LUMC TOP Research seminar: 16 May 2017, Leiden, The Netherlands

Invited lecture: Prediction of Venous Thrombosis Risk after Lower Leg Cast Immobilization and Arthroscopic Knee Surgery

ISTH SSC congress, 26 May 2016, Montpellier, France

OTHER

Poster, High risk of recurrent venous thrombosis in patients with lower-leg cast immobilization.

ISTH SSC Dublin, Ireland, 2018

Poster, Validation of risk assessment models for venous thrombosis in hospitalized medical patients.

ISTH Berlin, Germany, 2017

Presentation, Prevention Of Venous Thromboembolism After Knee Arthroscopy: A Randomised Clinical Trial

EFFORT Vienna, Austria, 31-05-2017

Presentation, Prevention Of Venous Thromboembolism After Lower Leg Cast Immobilisation: A Randomised Clinical Trial

EFFORT Vienna, Austria, 31-05-2017

Poster, Venous Thrombosis Risk after Cast Immobilization of the Lower Extremity: Derivation and Validation of a Clinical Prediction Score, L-TriP(cast), in Three Population-Based Case-Control Studies.

ISTH, Toronto, Canada, 2015

Presentation, Thromboprophylaxis for below-knee cast immobilization: A survey study

ECTES, Amsterdam, The Netherlands, 11-05-2015

Presentation, Prediction models for venous thrombosis risk after cast immobilization of the lower extremity.

ECTES, Amsterdam, The Netherlands, 12-05-2015

Guidelines contributions

Dutch guideline on thromboprophylaxis following lower-leg cast immobilisation and knee arthroscopy

Leading author, responsible for update of the following guidelines:

Available at:

https://richtlijnendatabase.nl/richtlijn/antitrombotisch_beleid/preventie_vte/tromboseprofylaxe_bij_gipsimmobilisatie Been.html

https://richtlijnendatabase.nl/richtlijn/antitrombotisch_beleid/preventie_vte/tromboseprofylaxe_bij_artroscopie_van_de_knie.html

Public (news)items

POT-(K)CAST studie: Prevention of Thrombosis after Knee arthroscopy or CAST immobilization

Tijdschrift voor Trombose en Antistolling, 45^e jaargang, Nummer 1, 2017

(Dutch magazine for patients on thrombosis and anticoagulation)

Leiden University Medical Center press release

Bloedverdunners niet effectief tegen trombose bij onderbeengips of na kijkoperatie knie

5 December 2016, <https://www.lumc.nl/over-het-lumc/nieuws/2016/december/publicatie-nejm-bloedverdunners/?setlanguage=English&setcountry=en>

Leiden University Medical Center press release

Nieuw model voorspelt tromboserisico gipsbeen

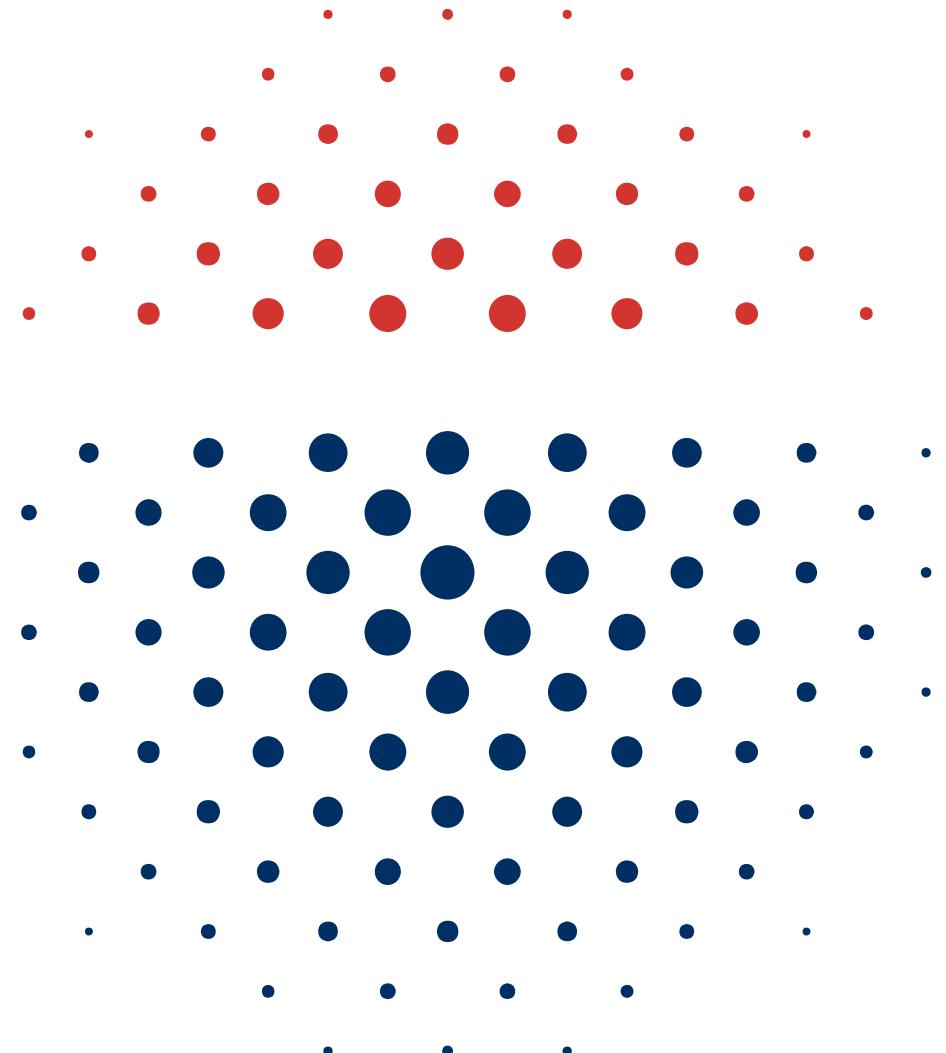
13 November 2015, <https://www.lumc.nl/over-het-lumc/nieuws/2015/november/Nieuw-model-voorspelt-tromboserisico-bij-gipsbeen/>

International newspapers, news items on study in BMJ 2015 (Bloodcurdling movies and measures of coagulation: Fear Factor crossover trial. Németh B et al. BMJ. 2015 Dec 16;351:h6367)

Several news items and interviews for newspapers; *The Guardian* (UK), *The Wall Street Journal* (US), *The Telegraaf* (NL), *De Standaard* (BE), *Metro* (INT), *Trouw* (NL), *FOX news* (US), *RTL Nieuws* (NL).

Nominee for the VGZ zinnige zorg award 2018

Including informative film on our research project <https://www.youtube.com/watch?v=GjtERFGpcrQ>



APPENDICES

CURRICULUM VITAE

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Banne Németh was born on December 6th, 1987 in Alphen aan den Rijn, the Netherlands. He completed higher education (HAVO) in 2004 and pre-university education (VWO) in 2006 at the Scala College. Thereafter, he studied Aerospace Engineering for one year at the Technical University in Delft. In 2007, Banne started medical school at the Leiden University Medical Center. During his studies, he was active in various student boards and in 2009-2010 he was full-time chairman of the Medical Student Faculty Board. During this period, he developed a great interest in epidemiological research, and after his third year in medical school, Banne started a research project at the department of Clinical Epidemiology under the supervision of Prof. dr Suzanne Cannegieter.

After obtaining his MD in 2014, Banne was appointed as a PhD student at the departments of Clinical Epidemiology and Orthopaedic Surgery, under the supervision of Prof. dr Suzanne Cannegieter and Prof. dr Rob Nelissen. During his PhD, he focused on prevention and prediction of venous thrombosis following lower-leg cast immobilization and knee arthroscopy. Banne presented his research at several (inter)national meetings. He was invited to give a keynote lecture on prediction of venous thrombosis following orthopaedic surgery at the annual Netherlands Orthopaedic Society and at the European Hip Society meetings.

In 2017, Banne started as a resident in Orthopaedic Surgery at the Groene Hart Hospital in Gouda, under the supervision of dr. Ron Onstenk. After one year, he worked as a visiting researcher in the United Kingdom at King's College London and the University of Surrey under the supervision of Prof. dr. Roopen Arya and dr. Martin Whyte, studying the prediction of venous thrombosis following total hip and knee arthroplasty.

In 2019 Banne started his residency in Orthopaedic Surgery at the Leiden University Medical Center, HAGA Hospital and Haaglanden Medical Center. At the same time, he will continue to work as a clinical epidemiologist, focusing on prevention and prediction of complications (venous thrombosis in particular) following orthopaedic surgery.

Banne lives happily together with Maaike and their daughter Juul in The Hague, The Netherlands.

