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Outcome of osteoarthritis and arthroplasty from patient perspective to molecular profiling.

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Curriculum Vitae

Jennifer Marie Theresia Anna Meessen was born on July 26th 1989 in Heerlen, Limburg, the Netherlands. She grew up with her parents Peter and Marie-Paule, sister Valerie and brother Max in Amstenrade and graduated from the Athenaeum of the Sint Janscollege in Hoensbroek, Heerlen in the summer of 2007.

In the same year, she moved to Amsterdam to study “Biomedical Sciences” at the Vrije Universiteit of Amsterdam. During her internship at the Institute for Cardiovascular Research at the VUMC she wrote her bachelor thesis on hypertrophied heart.

After obtaining her degree in 2010, she spent the summer volunteering in Perm, Russia, with the Memorial Organization (Международный Мемориал) to promote civil rights and preserve the Gulag Museum “Perm-36” in Kuchino, Russia.

Upon her return, Jennifer started the Research Master “Lifestyle and Chronic Disorders” at the Vrije Universiteit. By the end of the first year, she was invited to join the board of the Amsterdam section of the Erasmus Student Network as Treasurer. In that role she was voted to be the National Dutch Delegate to the European department of Erasmus Student Network.

In 2012, Jennifer resumed her Master studies and performed her internships at the “Azienda Sanitaria Locale – Osservatorio Epidemiologico” in Varese, Italy, studying mortality after proximal femoral fracture and the efficacy of the Italian colorectal cancer screening program.

After graduating in 2013, she moved back to the Netherlands and started her PhD at the Leiden Universitair Medisch Centrum under the supervision of Prof. P. E. Slagboom and Prof. R.G.H.H. Nelissen. The results of this PhD are presented in this thesis.

In 2018, Jennifer emigrated to Italy and started her work as a post-doc at the department of Cardiovascular Research at the Mario Negri Institute for Pharmacological Research, a non-profit organization dedicated to clinical and biomedical research. In addition to her job as post-doc, as of 2019 she works as epidemiologic and statistical consultant for the Fondazione per il tuo Cuore and the department of neonatal care at the Del Ponte Hospital in Varese.

In her free time she works as a member of the local political party “Malnate Sostenibile”, for which she participated in the local municipal elections of 2019 as candidate.

List of Publications

A Aimo, JL Januzzi, G Vergaro, A Clerico, R Latini, **JMTA Meessen**, IS Anand, JN Cohn, J Gravning, T Ueland, SH Nymo, HP Brunner-La Rocca, A Bayes-Genis, J Lupón, RA de Boer, A Yoshihisa, Y Takeishi, M Egstrup, I Gustafsson, HK Gaggin, KM Eggers, K Huber, I Tentzeris, C Passino, M Emdin. Revisiting the Obesity Paradox in Heart Failure: Percent Body Fat as Predictor of Biomarkers and Outcome. Accepted for publication in *European Journal of Preventive Cardiology*.

L Gattinoni, F Vasquez, L Camporota, **JMTA Meessen**, F Romitti, I Pasticci, E Duscio, F Vassalli, LG Forni, D Payen, M Cressoni, A Zanella, R Latini, M Quintel, JJ Marini. Understanding lactatemia in human sepsis: potential impact for initial management. Accepted for publication in *American Journal of Respiratory and Critical Care Medicine*.

BG Pijls, **JMTA Meessen**, K Tucker, S Stea, L Steenberge, AM Fenstad, K Makela, IC Stoica, M Goncharov, J Arias de la Torre, RGHH Nelissen. (2019). MoM total hip replacements in Europe: a NORE report. *EFORT Open Reviews* 4 (6): 423-430.

A Aimo, JL Januzzi, G Vergaro, A Ripoli, R Latini, **JMTA Meessen**, IS Anand, JN Cohn, J Gravning, T Ueland, SH Nymo, HP Brunner-La Rocca, A Bayes-Genis, J Lupon, RA de Boer, A Yoshihisa, Y Takeishi, M Engstrup, I Gustafsson, HK Gaggin, KM Eggers, K Huber, I Tentzeris, C Passino, M Emdin. (2019). Sex differences in plasma concentrations and prognostic value of NT-proBNP in chronic heart failure. *Journal of the American College of Cardiology* 73 (9):1.

JMTA Meessen, M Fiocco, CS Leichtenberg, TPM Vliet Vlieland, PE Slagboom, RGHH Nelissen. (2019). Frailty questionnaire is not a strong prognostic factor for functional outcomes in hip or knee arthroplasty patients. *Geriatric Orthopaedic Surgery and Rehabilitation* 10: 1-7.

F Vasquez, E Duscio, F Romitti, F Cipulli, I Pasticci, P Caironi, **JMTA Meessen**, R Latini, M Cressoni, L Camporota, A Pesenti, R Fumagalli, M Quintel, L Gattinoni. (2018). Septic Shock-3 vs 2: an analysis of the ALBIOS study. *Critical Care* 22 (1): 237.

M Emdin, A Aimo, G Vergaro, A Bayes-Genis, J Lupon, R Latini, **JMTA Meessen**, I Anand, J Cohn, J Gravning, L Gullesstad, K Broch, T Ueland, S Nymo, HP Brunner-La Rocca, RA de Boer, HK Gaggin, A Ripoli, C Passino, JL Januzzi. (2018). sST2 predicts outcome in chronic heart failure beyond NT-proBNP and high sensitivity troponin T. *Journal of American College of Cardiology* 72 (6): 2309-2320.

YF Ramos, T Sentner, R Coutinho de Almeida, W den Hollander, **JMTA Meessen**, E Houtman, K Heutink, N Lakenberg, P Slagboom, RGHH Nelissen, I Meulenbelt. (2018). Osteoarthritis subtypes show distinguished transcriptomic landscapes. *Osteoarthritis and Cartilage* 26 (1): S155-S156.

JMTA Meessen, CS Leichtenberg, C Tilbury, BL Kaptein, LA Koster, PE Slagboom, SHM Verdegaal, R Onstenk, HMJ van der Linden, H Kaptijn, SBW Vehmeijer, WJC Marijnissen, PJ Damen, RGHH Nelissen, TPM Vliet Vlieland. (2018). Frailty in end-stage hip or knee osteoarthritis: validation of the Groningen Frailty Indicator (GFI) questionnaire. *Rheumatology International* 38 (5): 917-924.

SIE Liem, **JMTA Meessen**, R Wolterbeek, N Ajmone-Marsan, MK Ninaber, TPM Vliet Vlieland, JK de Vries-Bouwstra (2018). Physical activity in patients with systemic sclerosis. *Rheumatology International* 38 (3): 443-453.

K Panoutsopoulou, S Thiagarajah, E Zengini, AG Day-Williams, YF Ramos, **JMTA Meessen**, K Huetink, RGHH Nelissen, L Southam, NQ Rayner, M Doherty, I Meulenbelt, E Zeggini, JM Wilkinson (2017). Radiographic endophenotyping in hip osteoarthritis improves the precision of genetic association analysis. *Annals of Rheumatic Diseases* 76 (7): 1199-1206.

JMTA Meessen, WF Peter, R Wolterbeek, SC Cannegieter, C Tilbury, MR Benard, HMJ van der Linden, R Onstenk, R Tordoir, SBW Vehmeijer, SHM Verdegaal, HM Vermeulen, RGHH Nelissen, TPM Vliet Vlieland (2017). Patients who underwent total hip or knee arthroplasty are more physically active than the general Dutch population. *Rheumatology International* 37 (2): 219-227.

BG Pijls, **JMTA Meessen**, JW Schoones, M Fiocco, HJL van der Heide, A Sedrakyan, RGHH Nelissen (2017). Verhoogde mortaliteit bij patiënten met een metaal-op-metaal heupprothese: Een systematische review en meta-analyse. *Nederlands Tijdschrift voor de Geneeskunde* 161 (22): D1213.

BG Pijls, **JMTA Meessen**, JW Schoones, M Fiocco, HJL van der Heide, A Sedrakyan, RGHH Nelissen (2016). Increased mortality in metal-on-metal versus non-metal-on-metal primary total hip arthroplasty at 10 years and longer follow-up: A systematic review and meta-analysis. *PlosOne* 11 (6).

JMTA Meessen, S Pisani, ML Gambino, D Bonarrigo, NM van Schoor, S Fozzato, P Cherubino, MF Surace (2014). Assessment of mortality risk in elderly patients after proximal femoral fracture. *Orthopedics* 37 (2): 194-200.

Submitted work

JMTA Meessen, D Cardinale, F Ciceri, MT Sandri, M Civelli, B Bottazzi, GF Cucchi, E Menatti, M Mangiavacchi, GL Condorelli, E Barbieri, S Gori, A Colombo, G Curigliano, M Salvatici, P Pastori, F Ghisoni, A Bianchi, C Falci, M Aquilina, A Farolfi, A Monopoli, C Milandri, M Bregni, M Sicuro, A Malossi, D Nassiacos, C Verusio, LI Staszewsky, R Leone, D Novelli, G Balconi, EB Nicolis, S Masson, C Garlanda, A Mantovani, CM Cipolla, R Latini. *Circulating biomarkers and cardiac function in patients undergoing cancer chemotherapy with anthracyclines; the ICOS-ONE trial*.

S Lanfranconi, E Scola, G Bertani, B Zarino, R Pallini, G D'Alessandris, E Mazzon, S Marino, MR Carriero, E Scelzo, G Faragò, M Castori, C Fusco, A Petracca, L Dagruma, L Tassi, P D'Orio, MG Lampugnani, EB Nicolis, A Vasami, D Novelli, V Torri, **JMTA Meessen**, R Al-Shahi Salman, E Dejana, R Latini. *TREAT-CCM: A multicentre randomized clinical trial on propranolol in familial Cerebral Cavernous Malformation*.

S Gandolfi, A Luciani, **JMTA Meessen**, G Ristagno, F Semeraro, A Scapigliati, N Grieco. *A cross-sectional study to evaluate the high-quality of cardiopulmonary resuscitation manoeuvres: a new era in education is calling*.

JMTA Meessen F Saberi-Hosnijeh, N Bomer, W den Hollander, JG van der Bom, JA van Hiltten, WE van Spil, C So-Osman, AG Uitterlinden, M Kloppenburg, RGHH Nelissen, CM van Duijn, PE Slagboom, JBJ van Meurs, I Meulenbelt. *Serum fatty acid make-up and energy cycle associated metabolites associate with prevalent and progressive osteoarthritis independent of BMI*.

T Pelle, AAOM Claassen, **JMTA Meessen**, WF Peter, TPM Vliet Vlieland, K Bevers, J van der Palen, FHJ van den Hoogen, CHM van den Ende. *Comparison of physical activity between patients with different stages of hip or knee osteoarthritis and the general population: a cross-sectional study*.

L de Luca, F Colivicchi, **JMTA Meessen**, M Uggioni, F Piscione, P Bernabò, G Lardieri, A Granatelli, D Gabrielli MM Gulizia. *How do Cardiologists Select Patients for Dual Antiplatelet Therapy Continuation Beyond 1 Year after a Myocardial Infarction? Insights from the EYESHOT Post-MI Study*.

JMTA Meessen, M Fiocco, RL Tordoir, A Sjer, SHM Verdegaal, PE Slagboom, TPM Vliet Vlieland, RGHH Nelissen. *Association of hand grip strength with patient reported outcome measures after total hip and knee arthroplasty*.

F Carbone, A Bonaventura, A Vecchiè, **JMTA Meessen**, S Minetti, E Elia, D Ferrara, AM Ansaldi, G Tulli, V Mangani, N Rossi, M Ferrari, F Bona, P Caironi, R Latini, F Montecucco. *Early osteopontin levels predict mortality in patients with septic shock: a sub-study of the ALBIOS trial*.

R Coutinho de Alameida, A Mahfouz, H Mei, E Houtman, W den Hollander, J Soul, TE Hardingham, E Suchiman, N Lakenberg, **JMTA Meessen**, K Huentink, YFM Ramos, M Reinders, I Meulenbelt. *Identification and characterization of two consistent osteoarthritis subtypes by transcriptome and clinical data integration*.

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