**Wesselius Oncke (Wes) Zimmermann MD, PhD, FECSM\***

***Curriculum Vitae***

\*Fellow European College of Sports Medicine



**Address** Street: Vogelkersstraat 88

City: Den Haag

Postal Code: 2565 CM

Country: The Netherlands, Europe

**Phone** +31651163409

**Email** wesselzimmermann@hotmail.com or wesselzimmermann@gmail.com

**Education**

2018-2019 PhD, University of Utrecht Utrecht, The Netherlands

 Compilation of thematic articles published 2015-2019

1987-1995 MD, University of Leiden Leiden, The Netherlands

 Medical school, internships and thesis (equivalent masters)

1983-1987 BA, University of Nebraska, with distinction Lincoln, Nebraska, USA

 Independent thematic studies: children in sports

1976-1983 Diploma, Gymnasium Haganum (High school) The Hague, The Netherlands

**Postgraduate Training**

2013 Aero Medical Examiner (AME) Soesterberg, The Netherlands

2001-2005 Specialist in Occupational Medicine Nijmegen, The Netherlands

 Four year program, one day per week

1996-2000 Specialist in Primary Care Sports Medicine Utrecht, The Netherlands

 Four year program, full-time

**Current Position**

2008-present Senior Primary Care Sports Medicine Specialist Utrecht, The Netherlands

 & Researcher (lieutenant colonel, LTC)

 Royal Netherlands Army, Personnel Command

**Professional Experience**

2009-present Sports Medicine Physician, The Hague, The Netherlands

 Private practice (part-time)

2000-2008 Occupational Medicine Specialist Harderwijk, The Netherlands

 Royal Netherlands Army (civilian)

**Academic appointments**

2020-present Adjunct Professor Bethesda, MD, USA

 Department of Military & Emergency Medicine

 Uniformed Services University of the Health Sciences

 Primary department of affiliation

2016-2020 Adjunct Associate Professor Bethesda, MD, USA

 Department of Military & Emergency Medicine

 Uniformed Services University of the Health Sciences

 Primary department of affiliation

2015-2020 Adjunct Associate Professor Bethesda, MD, USA

 Department of Family Medicine

 Uniformed Services University of the Health Sciences

 Secondary department of affiliation

2012-2015 Adjunct Assistant Professor Bethesda, MD, USA

 Department of Family Medicine

 Uniformed Services University of the Health Sciences

**Licensure**

2005-2028 Registered specialist in Occupational Medicine (The Netherlands)

 License number BIG 090 451 899 01 (www.bigregister.nl)

2000-2030 Registered specialist in Primary Care Sports Medicine (The Netherlands)

 License number BIG 090 451 899 01 (www.bigregister.nl)

**Other Positions and Employment (part-time)**

2020-present Physician for lifestyle Medicine Nijmegen, The Netherlands

 Ergatis Occupational Medicine

2012-2018 Physician for Occupational Medicine Amersfoort, The Netherlands

 MBO Amersfoort, Junior College

2010-2018 Physician for Sports Medicine Amersfoort, The Netherlands

 MBO Amersfoort, Junior College

2004-2018 TV commentator for Olympic Diving Amsterdam, The Netherlands

 Eurosport, Olympics 2004, 2008, 2012

1998-2000 High Performance Manager Diving Utrecht, The Netherlands

 Royal Netherlands Swimming Federation

1988-2009 Diving Coach, self-employed Amersfoort, The Netherlands

**Professional Memberships and activities**

2025-present Chair, Medical Advisory Board Nieuwegein, The Netherlands

 Netherlands Swimming Federation (KNZB)

2024-present Chair, Sports medicine continuing education Bilthoven, The Netherlands

 Netherlands Society of Sports Medicine (VSG)

2024-present Chair, Sports medicine recertification program Bilthoven, The Netherlands Netherlands Society of Sports Medicine (VSG)

2023-present Digital librarian, diving literature Nyon, Switzerland

 European Aquatics (LEN)

2022-present Member, High Diving Technical Committee Lausanne, Switzerland World Aquatics (FINA)

2022-present Member, International Testing Agency (ITA) Lausanne, Switzerland

 Medical advisor, anti-doping (TUE ascription)

2021-present Member, Editorial Board Utrecht, The Netherlands

 Netherlands Journal of Military Medicine (NMGT)

2020-present Member, Medical Committee Nyon, Switzerland

 European Aquatics (LEN)

2020-2022 Chair, Working Group, Exercise-Related Leg Pain Utrecht, The Netherlands

 Society of Sports Medicine (VSG)

2017-2024 Digital librarian, USA Diving Inc. Indianapolis, IN, USA

2017-2022 Member, Doping Control Review Board Lausanne, Switzerland

World Swimming Federation (FINA)

2016-2021 Member, NATO Research Task Group 238 Paris, France

 Reducing musculoskeletal injuries

2014 Co-author, Consensus Statement on Nutrition Lausanne, Switzerland

 for the Aquatic Sports,

World Swimming Federation (FINA)

2009-2025 Member, American College of Sports Medicine Indianapolis, IN, USA

**Team (sports medicine) Physician assigned to a Dutch National Team**

1996 Water Polo boys, European Junior Championships Istanbul, Turkey

1998 Swimming, European Senior Championships Sheffield, England

1999 Soccer boys, NL vs Scotland and Ireland Den Helder, The Netherlands

1999 Soccer women, NL vs USA Milwaukee and Chicago, USA

1999 Soccer girls, 6 nations tournament The Netherlands

1999 Soccer women, NL vs Norway Hamar, Norway

1999 Soccer women, NL vs Germany Cologn, Germany

1999 Water Polo women, NL vs USA Los Angeles, USA

2000 Diving, European Junior Championships Istanbul, Turkey

2000 Short track speed skating, World Cup ChanChung, China

2001 Universiad, physician for the Dutch delegation Beijing, China

2002 Water Polo women, NL vs Russia Kirishi, Russia

2003 Water Polo women, NL vs Russia Kirishi, Russia

2004 Diving, World Junior Championships Belem, Brazil

2005 Judo, European Championships Rotterdam, The Netherlands

2019 World Military Games (CISM), Team Physician Wuhan City, China

**Medical Delegate (doping control supervisor until 2022), World Aquatics**

2018 Ultramarathon Swim Series Ohrid, Macedonia

2018 World Swimming Championships (25 m) Hangzhou, China

2019 Diving World Series Kazan, Russia

2019 World Championships Gwangju, South Korea

2019 World Junior Swimming Championships Budapest, Hungary

2021 World Junior Diving Championships Kiev, Ukraine

2021 World Swimming Champs. (25m) Abu Dhabi, United Arab Emirates

2023 World High Diving Championships Fukuoka, Japan

2024 World High Diving Championships Doha, Qatar

2025 World High Diving Championships Singapore, Malaysia

2025 World Cup High Diving Porto Flavia, Sardinia

**Medical Delegate, European Swimming Federation (European Aquatics)**

2021 European Championships (diving) Budapest, Hungary

2021 European junior qualification (water polo boys) Korcula, Croatia

2022 European junior Championships (water polo girls) Netanya, Israel

2022 European junior Championships (diving) Bucharest, Romania

2022 European Championships (diving) Rome, Italy

2022 Open Water Cup 2022 (open water swimming) Kiel, Germany

2023 European Championships (diving) Rzeszow, Poland

2023 World Championships (High Diving) Fukuoka, Japan

2023 European junior Championships (diving) Rijeka, Croatia

2024 European junior Championships (diving) Rzeszow, Poland

2024 European Championships (diving) Belgrade, Serbia

2025 European Championships (diving) Antalya, Turkey

2025 European junior Championships (diving) Athens, Greece

**Honors and Awards**

1986 NCAA, Honorable Mention All American Indianapolis, IN, USA

 Division I, Swimming and Diving Team

1987 NCAA, Honorable Mention All American Indianapolis, IN, USA

 Division I, Swimming and Diving Team

1987 Big 8 Student Athlete of the Year Lincoln, NE, USA

 Big 8 Post Graduate Scholarship

1996 Uut Armbrust Trofee Utrecht, The Netherlands

 Royal Netherlands Swimming Federation

 Best National four year Performance Plan in Aquatic Sports

2002 Recognition and financial award for excellence as a physician in the

Department of Occupational Medicine, Royal Netherlands Army

2003 Recognition for excellence as a primary care sports medicine physician

Basic Military Training Camp Ermelo, The Netherlands

2004 Recognition and financial award for excellence as a physician in the Department of Occupational Medicine, Royal Netherlands Army

2006 Recognition and financial award for excellence as a physician in the Department of Occupational Medicine, Royal Netherlands Army

2009 Life time honorable member Amersfoort, The Netherlands

 Amersfoort Swimming and Diving Club

 Most successful diving coach in the history of the club

2014 Recognition from the department of Sports Medicine for remarkable contributions to soldier readiness, Royal Netherlands Army

2015-2024 Fellow, European College of Sports Medicine (FECSM)

 Certificate number 26 in recognition of excellence in sports medicine

2023 NATO Panel Excellence Award Paris, France

 Research Task Group musculoskeletal injuries in the military

2023 Recognition and financial award for excellence as a physician in the Department of Sports Medicine, Royal Netherlands Army

**Research Focus**

* Treatment and prevention of overuse injuries in young service members;
* Medical aspects of Olympic springboard and platform diving and High Diving;
* Bridging the gap between science and practice.

**Grants**

I work for the department of Training Medicine and Training Physiology (civilian equivalent: Sports Medicine) of the Royal Netherlands Army. Grants are not awarded to a person, but to the department. Since my appointment as Senior Physician/researcher in 2008, the department has grown from 11 persons staff to 20 persons and from 2020 onward a newly established research budget has been assigned of euro 750,000 each year (in 2008 this amount was zero). My role has been to raise the level of publication of the research of our department from internal reports (military only) to international peer reviewed journals (military and civilian).

**Educational Activities**

Royal Netherlands Swimming Federation

1990-2008 Instructor of the Diving Coaches Training Course (60 hours),

1990, 1991, 1993, 1995, 1997, 2002, 2004, 2008

University of Utrecht, The Netherlands

2007-2012 Visiting teacher for medical students, topic: analysis of human gait. Four hour workshop, 3-4 times per year, 8-10 students per group

2024 Member, PhD Evaluation Committee; Candidate M.A. Paantjens. Thesis title: Improving clinical evaluation and decision-making in military personnel with mid-portion Achilles tendinopathy

2025 Member, PhD Evaluation Committee; Candidate T. Franke. Thesis title:

Running related injuries and the effects of compression garments in marathon runners

USUHS

2012-2019 Six articles in peer-reviewed journals in collaboration with Dr. A.I. Beutler, see the list of peer refereed publications below

2012-present Teaching the Sports Medicine Fellows on Exercise-Related Leg Pain, once per year, at USUHS or at Fort Belvoir Community Hospital, Fort Belvoir, VA; Power Point presentations, Demonstration of physical examination, Demonstration of invasive diagnostic procedures, Supervising and commenting on physician/patient interactions

2017 Operation Bushmaster, observer/controller (O/C) for surgeon role

2021-present Two articles in peer-reviewed journals in collaboration with Dr. F.G. O’Connor, see the list of peer refereed publications below (nr 50, 55)

Royal Netherlands Army

Please note: The Royal Netherlands Armed forces do not have a medical school. All physicians are trained at civilian medical schools. When contracted by the Royal Netherlands Armed Forces all physicians receive a one week course “Introduction to Military Sports Medicine”. As Senior Sports Medicine Physician I contribute directly to curriculum design (Level Two teaching). From 2018 onward I am involved in mentoring and supporting PhD candidates (Level Three teaching).

2000-present Supervisor of medical students, individual electives in Military Sports Medicine

2008-present Teaching the course “Introduction to Military Sports Medicine” to physicians

2018-present Adviser and significant reviewer of chapters, PhD candidate Iris Dijksma MSc, University of Amsterdam: Musculoskeletal injuries in the Royal Netherlands Armed forces, Incidence, Treatments and Costs

USA Diving, Indianapolis IN, USA

2017-present Digital librarian, collector and custodian of worldwide written diving education materials

University of Maastricht, The Netherlands

2020 Member, PhD Evaluation Committee; Candidate Johan A. de Bruijn

Thesis title: Anterior chronic exertional compartment syndrome of the leg: improving recognition and surgical treatment

2021 Member, PhD Evaluation Committee; Candidate Aniek P.M. van Zantvoort Thesis title: Exercise induced anterolateral lower leg pathologies: chronic exertional compartment syndrome and nerve entrapment

University of Canberra, Australia

2020 Member, Honors thesis Evaluation Committee; Candidate Angus Shaw

Thesis title: Development and evaluation of a machine learning algorithm for predicting individual risk of medial tibial stress syndrome in Australian Defence Force recruits: a prospective cohort study

 2022 Member, Honors thesis Evaluation Committee; Candidate Josh Silk-Jones

Thesis title: Understanding Tibial Bone Loading Profiles in a Military Pre-Training Program to Generate a Bone Loading Nomogram

 2024 Member, PhD thesis Evaluation Committee; Candidate Ben Currie
 Thesis title: Performance health of Australian diving athletes

University of Rotterdam, The Netherlands

2022-present Supervisor and significant reviewer of chapters, PhD candidate Mats van der Wee. Thesis title: New diagnostic procedures for chronic exertional compartment syndrome of the leg

2019-2023 Supervisor and significant reviewer of chapters, PhD candidate Sanne Vogels.
 Thesis title: Diagnosis and management of chronic exertional compartment
 syndrome of the leg. An evidence based approach

**Organization and Management**

2008 Meet director, 6-nation International Amersfoort, The Netherlands

Youth Diving Tournament

1998-2000 High Performance Manager for Diving Utrecht, The Netherlands

 Royal Netherlands Swimming Federation

**Peer-reviewed Published Articles**

1. **Zimmermann WO.** Evaluation of the rehabilitation of soldiers in basic military training. *Nederl Mil Geneesk T* 2005; March: 47-56. Dutch.
2. **Zimmermann WO**. The remedial platoon of basic infantry training*. Nederl Mil Geneesk T* 2008; January: 21-24. Dutch.
3. **Zimmermann WO**. The Dutch Diving fitness test; defining the normal ranges of a test battery. *Sport & Geneesk* 2009; 2: 36-46.
4. **Zimmermann WO**, Paantjens MA. Compression stockings, part 1: experiences of 50 military users. *Nederl Mil Geneesk T* 2009; November: 209-213. Dutch.
5. **Zimmermann WO**. A yearly fitness test for service members with medical limitations. *Nederl Mil Geneesk T* 2009; November: 209-213. Dutch.
6. Moen MH, Bongers T, Bakker EW, Weir A, **Zimmermann WO,** van der Werve M, et al. [The additional value of a pneumatic leg brace in the treatment of recruits with medial tibial stress syndrome; a randomized study.](http://www.ncbi.nlm.nih.gov/pubmed/21275357) *J R Army Med Corps* 2010; 156(4): 236-240.
7. Moen MH, Bongers T, Bakker EW, **Zimmermann WO**, Weir A, Tol JL, Backx FJG. [Risk factors and prognostic indicators for medial tibial stress syndrome.](http://www.ncbi.nlm.nih.gov/pubmed/20561280) *Scand J Med Sci Sports* 2010; 22(1): 34-39.
8. Godefrooij DA, **Zimmermann WO**. Developments in the treatment of chronic exertional compartment syndrome. *Nederl Mil Geneesk T* 2012; September: 160-162. Dutch.
9. **Zimmermann WO**. Compression stockings, part 2: the effect on running performance in 100 soldiers with Exercise Related Leg Pain. *Nederl Mil Geneesk T* 2013; January: 11-17. Dutch.
10. **Zimmermann WO**, Willeboordse E. Chronic Exercise Related Leg Pain in soldiers: new findings in the soft tissues? *Nederl Mil Geneesk T* 2013; July: 92-99. Dutch.
11. **Zimmermann WO**, Harts CC, Helmhout PH. The treatment of soldiers with MTSS and CECS. *Nederl Mil Geneesk T* 2014; May: 72-82. Dutch.
12. Benardot D, **Zimmermann WO**, Cox GR, Marks S. Nutritional recommendations for divers. *Int J Sport Nutr Exerc Metab* 2014; 24: 392-403.
13. **Zimmermann WO**, Harts CC, Helmhout PH. The treatment of soldiers with MTSS and CECS. *Sport & Geneesk* 2015; 1: 6-19. Dutch.
14. Helmhout PH, Diebal AR, van der Kaaden L, Harts CC, Beutler A, **Zimmermann WO**. The effectiveness of a 6-week intervention program aimed at modifying running style in patients with chronic exertional compartment syndrome. *The Orthop J Sports Med* 2015; 3(3).
15. **Zimmermann WO**, Helmhout PH, Noest R. The ankle-brachial index before and after exercise in normals and soldiers with exercise-related leg pain. *Nederl Mil Geneesk T* 2015; May: 44-49. Dutch.
16. Winters M, Moen MH, **Zimmermann WO**, Lindeboom R, Weir A, Backx FJG, Bakker EWP. The medial tibial stress syndrome score: a new patient-reported outcome measure*. BJSM* 2016; 50(19): 1192-1199.
17. Winters M, Moen M, **Zimmermann WO**, Lindeboom R, Weir A, Backx F, Bakker E. The medial tibial stress syndrome score: a new patient-reported outcome measure. *Sport & Geneeskunde* 2016; 3: 28-30. Dutch.
18. Helmhout PJ, Diebal A, Poelsma L, Harts CC, **Zimmermann WO**. Modifying marching technique in military service members with chronic exertional compartment syndrome: a case series. *Int J Sports Phys Ther* 2016; 11(7): 1106-1124.
19. **Zimmermann WO**, Helmhout PH, Beutler A. Prevention and treatment of exercise related leg pain in young soldiers; a review of the literature and current practice in the Dutch armed forces. *J R Army Med Corps* 2017; 163: 94-103.
20. **Zimmermann WO**. Vitamin D in service members with medial tibial stress syndrome. *Nederl Mil Geneesk T* 2017; March: 32-36. Dutch.
21. Ligthert E, Helmhout PH, Wurff van der P, **Zimmermann WO**. A specialty clinic for exercise related leg pain in the central military hospital, part 1. *Nederl Mil Geneesk T* 2017; July: 90-98. Dutch.
22. **Zimmermann WO**, Linschoten CW, Beutler A. Gait retraining as part of the treatment program for soldiers with exercise related leg pain: preliminary clinical experiences and retention. *S Afr J Sports Med* 2017; 29(1).
23. Ligthert E, Onnouw EGJ, Helmhout PH, **Zimmermann WO**. The application of PROMs and PREMs in military health care: an essay. *Nederl Mil Geneesk T* 2017, November:143-145. Dutch.
24. Ligthert E, Helmhout PH, Wurff van der P, Onnouw EGJ, **Zimmermann WO**. A specialty clinic for exercise related leg pain in the central military hospital, part 2. *Nederl Mil Geneesk T* 2017; November: 138-142. Dutch.
25. **Zimmermann WO**, Sahetapij CJ. Prevention of exercise related leg pain: the pre-employment medical exam. *Nederl Mil Geneesk T* 2017; November: 146-148. Dutch.
26. **Zimmermann WO**, van Valderen N, Beutler AI. Gait retraining for young soldiers with resistant exercise related leg pain: a short communication on recent findings. *J of Yoga & Phys Ther* 2017; 7(4).
27. **Zimmermann WO**, Ligthert E, Helmhout PH, Beutler A, Hoencamp R, Backx FJG, Bakker EWP. Intracompartmental pressure measurements in 501 service members with exercise-related leg pain. *Transl J of ACSM* 2018; 3(14): 107-112.
28. **Zimmermann WO**, van Valderen NRI, Linschoten CW, Beutler AI, Hoencamp R, Bakker EWP. Gait retraining reduces vertical ground reaction forces in running shoes and military boots. *Transl Sports Med* 2019; 2: 90-97.
29. Dijksma I, **Zimmermann WO**, Lucas C, Stuiver MM. A pre-training conditioning program to increase physical fitness and reduce attrition in Dutch Airmobile recruits: study protocol for a randomised controlled trial. *Contemp Clin Trials Comm* 2019; 14: 100342.
30. **Zimmermann WO**, Hutchinson MR, Van den Berg RH, Hoencamp R, Backx FJG, Bakker EWP. Conservative treatment of anterior chronic exertional compartment syndrome in the military, with a mid-term follow-up. *BMJ Open Sport Exerc Med* 2019; 5, e000532.
31. **Zimmermann WO**, Linschoten CW, Beutler AI, Bakker EWP. The immediate effect of Extracorporeal shockwave therapy for chronic medial tibial stress syndrome. *Arch Phys Health Sports Med* 2019; 2(1): 20-28.
32. **Zimmermann WO**, Duijvesteijn NM. The effects of increasing cadence on vertical ground reaction forces when walking in military boots. *Nederl Mil Geneesk T* 2019; May: 57-63. Dutch.
33. Dijksma I, Perry S, **Zimmermann WO**, Lucas C, Stuiver MM. Effects of agility training on body control, change of direction speed and injury attrition rates in Dutch recruits: a pilot study. *J Mil Vet Health* 2019; 27(2): 28-40.
34. **Zimmermann WO**, Bakker EWP. Reducing vertical ground reaction forces: the relative importance of three gait retraining cues. *Clin Biom* 2019; 69: 16-20.
35. **Zimmermann WO.** Exercise-related leg pain: the importance of gait analysis for diagnosis. *Sportgericht* 2019; 73(5): 20-24. Dutch.
36. **Zimmermann WO**. Exercise-related leg pain: the importance of gait retraining for treatment. *Sportgericht* 2019; 73(6): 10-15. Dutch.
37. Winters M, Moen MH, **Zimmermann WO**, Lindeboom R, Weir A, Backx FJG, Bakker EWP. Correction: The medial tibial stress syndrome score, a new patient reported outcome measure*. BJSM* 2020; 54(4).
38. Maksymiak R, Ritchie E, **Zimmermann W,** Maliko N, van der Werve M, Verschure M, Hoencamp R. Historic cohort: outcome of chronic exertional compartment syndrome-suspected patients. *BMJ Mil* Health 2020; Feb 3.
39. **Zimmermann WO**, Piepers R. Treatment of chronic medical tibial stress syndrome in a military sports medicine clinic: a 2019 sample. *Nederl Mil Geneesk T* 2020; March: 33-39. Dutch.
40. Dijksma I, **Zimmermann WO,** Hertenberg EJ, Lucas C, Stuiver MM. One out of four recruits drops out from elite military training due to musculoskeletal injuries in the Netherlands Armed Forces. *BMJ Mil Health* 2020; 001420.
41. Vogels S, Ritchie ED, van Dongen TCF, Scheltinga MRM, **Zimmermann WO,** Hoencamp R. Systematic review of outcome parameters following treatment of chronic exertional compartment syndrome in the lower leg. Scand J Med Sci Sports 2020; 30(10): 1827-1845.
42. Nwakibu U, Schwarzmann G, **Zimmermann WO,** Hutchinson MR. Chronic exertional compartment syndrome of the leg management: where are we and where are we going? *Current Sports Med Reports* 2020; 19(10): 438-444.
43. Valderen van NRI, **Zimmermann WO.** Gait retraining as therapy: “automatic switchers”*. Nederl Mil Geneesk T* 2020; November: 183-189. Dutch.
44. Dijksma I, **Zimmermann WO**, Bovens D, Lucas C, Stuiver MM. Despite an improved aerobic endurance, still high attrition rates in initially low-fit recruits – results of a randomised coltrolled trial. *Cont Clin Trials Comm* 2020; 100679.
45. **Zimmermann WO**, Valderen van NRI. The automatic strike-change phenomenon: when running barefoot patients change from a heel strike to a forefoot strike without any instruction. *Int J Sports Science Phys Ed* 2021; 6 (1): 1-7.
46. Valderen van NRI, **Zimmermann WO.** Gait retraining as therapy: the automatic strike-change phenomenon*. Physios* 2021; 1, 21-29*.* Dutch.
47. Lever EM, **Zimmermann WO.** Marching in boots, determination of the walk to run transition speed. *Nederl Mil Geneesk T* 2021; November: 251-257. Dutch.
48. Vogels S, Ritchie ED, Hundscheid HPH, Janssen L, Hoogeveen AR, **Zimmermann WO,** Hoencamp R, Scheltinga MRM. Chronic recalcitrant medial tibial stress syndrome: is surgery an option? *Transl Sports Med* 2021; 4 (4): 508-517.
49. Risk factors for musculoskeletal injuries in the military. Sammito S, Hadzoc V, Karakolis T, Kelly KR, Proctor SP, Stepens A, White G, **Zimmermann WO.** *Mil Med Res* 2021; 8: 66.
50. Vogels S, Bakker EWP, O’Connor FG, Hoencamp R, **Zimmermann WO.** The association between intracompartmental pressures in the anterior compartment of the leg and conservative treatment outcome for exercise-related leg pain in military service members. *Arch Rehab Res Clin Transl* 2022;4,100171.
51. **Zimmermann WO,** Lever EM.Speed marching in military boots: the walk-to-run transition speed and vertical ground reaction forces. *Int J Sports Exerc Med* 2022; 8, 1.
52. Vogels S, Ritchie ED, Bakker EWP, Vogels MAJM, **Zimmermann WO**, Verhofstad J, Hoencamp R. Measuring intracompartmental pressures for the chronic exertional compartment syndrome: Challenging commercially available devices and their respective accuracy. *J Biomech* 2022; 135, 111026.
53. Ritchie ED, Vogels S, van Dongen TTCF, Borger van der Burg B, Scheltinga MR, **Zimmermann WO**, Hoencamp R. Systematic review of innovative diagnostic tests for chronic exertional compartment syndrome. *Int J Sports Med*. 2022 online.
54. Vogels S, Ritchie ED, Borger van der Burg BLS, Scheltinga MRM, **Zimmermann WO**, Hoencamp R. Clinical consensus on diagnosis and treatment of patients with chronic exertional compartment syndrome of the leg: a Delphy analysis. *Sports Med.* 2022 online.
55. Wee van der MJL, Vogels S, Bakker EWP, O’Connor FG, Hoencamp R, **Zimmermann WO.** The association between intracompartmental pressures in the deep posterior compartment of the leg and conservative treatment outcome for exercise-related leg pain in military service members. *Arch Rehab Res Clin Transl* 2022;000:100232.
56. Vogels S, de Vries D, Bakker EWK, Miller TL, Hoencamp R, **Zimmermann WO.** Measuring intracompartmental pressures in the lower leg. Assessing the use of unilateral measurements in patients with bilateral symptoms. *J Bone Joint Surg Open Access* 2022;e22.00041.
57. **Zimmermann WO**, Bakker EWP. Letter to the editor: Emerging evidence: gait retraining can reduce dropout from basic military training. *Mil Med* 2022; November.
58. **Zimmermann WO**, Heskamp H, Bakker EWP. Doctor what running shoes should I buy? *Nederl Mil Geneesk T* 2023; January: 4-12. Dutch.
59. Hartgens F, **Zimmermann WO.** Sports medicine in The Netherlands: joining forces with military medicine. Br J Sports Med 2023; November: 57,24, 1531-1532.
60. **Zimmermann WO.** NATO report on overuse injuries, a summary. *Nederl Mil Geneesk T* 2024; January: 8-11. Dutch.
61. **Zimmermann WO,** Amelsfort K, Heskamp H, Bakker EWP. The biomechanical effects of an insole in military boots**.** *Nederl Mil Geneesk T* 2024; July: 127-134. Dutch.
62. Wee van der MJL, Bakker EWP, Blommaert RM, Sluijs van der H, Hoencamp R, **Zimmermann WO.** Analysis of symptoms of exercise-related leg pain in primary care settings. *Nederl Mil Geneesk T* 2024; September; 169-178. Dutch.
63. **Zimmermann WO,** Lobue S, Colturi D, Mitrione K, Gerrard D. The rate of water safety team interventions in high diving, a survey of elite athletes performing between 2009 and 2021. *Curr Sports Med Rep* 2024; October: 352-357.
64. **Zimmermann WO,** Hartgens F. Sports medicine in The Netherlands: focus and collaboration bring success. Br J Sports Med 2024; November: 58,21, 1235-1236.

**Books**

1. Zimmermann WO. *Diving: the Zimmermann System.* Published by the author, 1995.
2. Zimmermann WO. *Rules and Regulations for Diving in The Netherlands* 1996 (first edition); 1997, 1998, 1999, 2005, 2006, 2007, 2008.
3. Zimmermann WO, Braamzeel JB, Faber J. *Coaching Diving, level A (beginners).* Royal Netherlands Swimming Federation 1997. In Dutch.

**Book Chapters** (Level Two teaching)

1. Zimmermann WO. Medical aspects of competitive diving. In: *Diving Research Worldwide.* Thomas Köthe, Oliver Stoll ed. 2013: 66-72.
2. Zimmermann WO, Seidenberg PH, Kolwadkar YV. Lower Leg Injuries. In: *Radiologic Imaging in Sports Injuries.* Glaudemans WJM, ed. 2015; 689-709.

**Scholarly Works**

1. Zimmermann WO. *Injuries in springboard diving in The Netherlands.* Medical School Thesis (Master’s thesis), University of Leiden, The Netherlands. 1993.
2. Zimmermann WO. *Exercise-related leg pain: diagnosis and treatment in the armed forces.* PhD thesis, University of Utrecht, The Netherlands. 2019.

**Other Publications**

20+ articles on technical aspects of the sport Springboard and Platform Diving, in non-refereed Swimming Magazines. Dutch.

Zimmermann WO. Diving a safe, but demanding sport. *FINA Aquatics World* 2007; November: 28-30.

**Posters**

2008 The Diving Fitness Test Manchester, England

 World Swimming Federation (FINA), Medical Congress

**Invited International Presentations**

European Swimming Federation (European Aquatics)

1996 Medical aspects of springboard and platform diving London, England

1998 Medical aspects of springboard and platform diving Praque, Czech Republic

2025 Current science projects in aquatic medicine Tbilisi, georgia

World Swimming Federation (World Aquatics)

2006 Medical aspects of springboard and platform diving Athens, Greece

2008 Medical aspects of springboard and platform diving Manchester, England

2013 Medical aspects of springboard and platform diving Leipzig, Germany

2018 Medical aspects of springboard and platform diving ChongQing, China

2025 Medical aspects of High Diving Singapore, Singapore

Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA

2012 Bethesda, Prevention and Treatment of Exercise Related Leg Pain (ERLP) in the Royal Netherlands Army; 2013, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022,

 2023

# American College of Sports Medicine (ACSM)

# 2011 Denver, Evidence based diagnosis of CECS

# 2013 Indianapolis, Overuse injuries of the legs in the Royal Netherlands Armed Forces

2019 Orlando, Conservative vs Surgical treatment of CECS; a duo-presentation with Dr. M. Hutchinson, orthopaedic surgeon from Chicago, Illinois

2021 Virtual meeting (covid-19), Diagnostic testing for CECS, the rise and fall of intracompartmental pressure testing

NATO

2016 Paris, Exploratory Task Group HFM-ET-150: Overuse injuries in the Royal Netherlands Armed Forces

2017 Paris, Research Task Group, HFM-RTG-283: Reducing musculoskeletal injuries in the Royal Netherlands Armed Forces

International Institute for Race Medicine (IIRM)

2017 Washington DC, Developments in the treatment of Exercise-Related Leg Pain

George Town University, Washington DC

2018 Developments in the conservative treatment of Exercise-Related Leg Pain

Lithuanian Armed Forces

2019 Gait Retraining for Exercise-Related Leg Pain Druskininkai, Lithuania

2024 Gait Retraining in the military, an update Druskininkai, Lithuania

International Congress on Soldiers Physical Performance (ICSPP)

2020 Treatment and Prevention of Exercise-Related Leg Quebec City, Canada

Pain in young soldiers

2023 Preventing overuse injuries in the military: London, England examples of failure and success

Webinar: Warrior Care in the 21st Century

2021 An introduction to the contribution Utrecht, The Netherlands

 of Sports Medicine to Military Medicine

International Committee on Military Medicine (ICMM), Centennial Talks

2021 From Rehab to Prehab,

 The role of Sports Medicine in Military Medicine Antwerp, Belgium

2022 From Rehab to prehab,

 Exercise-Related Leg Pain, treatment and prevention Brussels, Belgium

Intermountain Healthcare / BYU

2022 Treatment and prevention of Exercise-Related Leg Pain; Medical aspects of

 Competitive diving; The challenges of Sports Medicine Provo, UT, USA

2023 Treatment and prevention of Exercise-Related Leg Pain; Medical aspects of

 Competitive diving; The challenges of Sports Medicine Provo, UT, USA

2024 Treatment and prevention of Exercise-Related Leg Pain; Medical aspects of

 Competitive diving; The challenges of Sports Medicine Provo, UT, USA

2025 Treatment and prevention of Exercise-Related Leg Pain; Medical aspects of

 Competitive diving; The challenges of Sports Medicine Provo, UT, USA

University of Canberra, Australia

2024 The clinical use of a running laboratory Canberra, Australia

2024 Sports Medicine in the military Canberra, Australia

**Invited National Presentations (The Netherlands)**

Year Audience: Title number of learners

2002 Royal Netherlands Army, Department of Occupational Medicine:

 Overuse injuries in the Armed Forces 50-75

2003 Royal Netherlands Army, Department of Family Medicine:

 Cooperation between family medicine and occupational medicine 8-10

2003 Royal Netherlands Army, Department of Occupational Medicine:

 Reporting work-related disease 20

2003 Occupational medicine physicians: Overuse injuries

In the Armed Forces 20-30

2004 Royal Netherlands Army, physical therapists:

 Exercise-related leg pain in the Army 15-20

2005 Occupational medicine physicians: Sports medicine

 In the Armed Forces 20-30

2007 Military leadership, Army: lessons from a remedial platoon 10-15

2007 Sports Medicine Fellows: the position of the sports medicine

physician in a professional sports team 20-30

2009 Military Leadership, Navy:

 Preventing drop out in basic military training 10-15

2010 Royal Netherlands Army:

 Exercise testing for occupational medicine physicians 8

2010 Dutch Society of Sports Medicine (VSG):

 the use of compression stockings for ERLP 40-50

2012 City Council of Amersfoort: the importance of medical care

 for junior college students in physical education and

 pre-military training 25-30

2013 Royal Netherlands Army: Screening for ERLP,

 improving the entrance medical exam 30-40

2013 National congress for Anatomy The Netherlands:

 ERLP in the Royal Dutch Armed Forces 100+

2014 Central Military Hospital, Utrecht The Netherlands:

 Developments in the conservative treatment of ERLP 100+

2015 Family physicians:

 Prevention and treatment of ERLP for the family physician 40-50

2016 Special Forces Command, Royal Netherlands Army:

 How much running is necessary? 100+

2016 University of Utrecht Department of Sports Medicine:

 Developments in the conservative treatment of ERLP 10-15

2016 University of Utrecht Department of Orthopedic Surgery:

 Developments in the conservative treatment of CECS 15-20

2016 Dutch Society of Sports Medicine (VSG):

 The use of compression stockings for ERLP 30-40

2016 Participants Marathon Utrecht:

 The use of compressions stockings 80-100

2017 Dutch Society of Physicians in Dance:

 ERLP in soldiers and dancers, a comparison 80-100

2017 Physiotherapists: North of The Netherlands: Developments

 in the treatment of exercise related leg pain 100+

2017 Physiotherapists: East of The Netherlands: Developments

 in the treatment of exercise related leg pain 100+

2017 University of Utrecht Department of Sports Medicine:

 Developments in the conservative treatment of ERLP 10-15

2017 Royal Marines Medical Team: treatment of ERLP 8-10

2018 Post Olympics Sports Medicine Congress (surgeons):

 Developments in the conservative treatment of ERLP 100+

2018 Doctor’s assistants of family physicians: interaction between

 family physician and sports medicine physician 100+

2018 Regional symposium of family physicians:

Treating overuse injuries, the sports medicine approach 100+

2018 Navy physicians: cycle ergometrics 8

2018 Royal Dutch Korfbal association:

 Exercise-related leg pain, role of the therapist 80-100

2019 National symposium of physicians for non-operative orthopedics:

 Conservative treatment of ERLP 80-100

2019 Dutch Society of Sports Medicine (VSG):

 Conservative treatment of exercise-related leg pain 60-80

2019 Physiotherapists: Middle of The Netherlands:

 Developments in the treatment of MTSS 200+

 Example of learner evaluation: n = 148

 The speaker was well informed: 83%

 The speaker presented well: 77%

 The information was clinically relevant for physiotherapists: 66%

2020 Martini Hospital Groningen, Department of Sports Medicine:

 Developments in the treatment of MTSS 100+

2021 FBK international track and field competition, sports medicine webinar

 Conservative treatment of exercise-related leg pain 300

2021 Ergatis occupational medicine, The Netherlands, podcast

 Exercise is medicine for patients with long term work absence 400+

2022 Royal Netherlands Army:

 Conservative treatment of exercise-related leg pain 16

2022 Symposium on 75 years Military Rehabilitation 150

 Sports medicine contributions to Military Medicine

2023 Symposium on Running Related Injuries 60

 Developments in the treatment of MTSS

2023 Dutch Society of Sports Medicine (VSG): 80

 A national treatment guideline for exercise-related leg pain

2023 Maxima Medical Center (hospital), Veldhoven 10-15

 20 years of research on ERLP in the military

2023 Dutch Society of Sports Medicine (VSG): 150

 Return to sport after bone stress injuries

2024 Physiotherapists: Middle of The Netherlands:

 Developments in the treatment of ERLP 50

2024 Occupational Medicine continued education 200

 Can sports medicine contribute to occupational medicine?

2024 Physicians: Middle of The Netherlands:

 Developments in the treatment of ERLP 40

2025 Running related injuries, the use of wearable technology for

 Treatment and prevention 80

**Reviewer for Journals or Conferences**

2015 Scandinavian Journal of Medicine & Science in Sports (1x)

2016-2018 Dutch / Flamish Journal of Sports Medicine (Sport & Geneeskunde) (6x)

2016 Journal of the Royal Army Medical Corps (1x)

2016 Sports Medicine - Open (1x)

2017 Gait & Posture (2x)

2017 Current Sports Medicine Reports (1x)

2018 Medical Science Monitor (1x)

2018 Journal of Military and Veterans’ Health (1x)

2019 International Congress on Soldiers Physical Performance (ICSPP), Quebec City, Canada

2020 Journal of Ultrasonography (1x)

2020 Military Health System Research Symposium (MHSRS), 2020, digital, USA

2020 Life, an MPDI Open Access Journal (1x)

2020 Nutrients, an MDPI Open Access Journal (1x)

2021 Scandinavian Journal of Medicine & Science in Sports (3x)

2021 Sports Medicine – Open (1x)

2022 International Journal of Physical Education, Fitness and Sports (1x)

2022 44th ICMM World Congress on Military Medicine, Brussels, Belgium

2022 Scandinavian Journal of Medicine & Science in Sports (1x)

2022 PLOS One (1x)

2022 Medicine & Science in Sports & Exercise, ACSM (1x)

2023 BMJ Open Sport and Exercise Medicine (1x)

2023 PLOS One (1x)

2023 Scandinavian Journal of Medicine & Science in Sports (1x)

2023 The Physician and Sports medicine (1x)

2024 International Journal of Sports Medicine, Thieme (1x)

2024 Current Sports Medicine Reports (1x)

2024 Health Science Reports (1x)

2025 Current Sports Medicine Reports (1x)

2025 British Journal of Sports Medicine (1x)

**Other creative products**

1983-present Diving Literature: worldwide bibliography of written diving literature.

The largest annotated bibliography and literature collection of Olympic Diving

 in the world. Freely accessible: [www.sportartszimmermann.nl](http://www.sportartszimmermann.nl)

**Athletic career**

1976-1991 Member The Netherlands National Springboard and Platform Diving Team

 20 times national champion on springboard

 Participant in 60 international competitions, 5 European Cups, 3 World Cups

 Full athletic scholarship, University of Nebraska, Lincoln NE, 1983-1987

 Big-8 champion, 3-m springboard diving, 1986 (Lincoln, NE)

**Coaching diving career**

1988-2009 Amateur Springboard and Platform Diving Coach, self-employed

2003-2009 7x National Coach of the year, The Netherlands

1999-2009 50x Coach or Head Coach of the Dutch National Diving Team in international tournaments

**Volunteer activities**

1995-1998Member Technical Diving Committee (Volunteer), Royal Netherlands Swimming Federation

1995-2010 Diving Judge, Level A (highest level), European Aquatics (LEN)

2000-2010 Diving Judge, Level A (highest level), World Aquatics (FINA).