

Todd D. O'Brien, DPM

Curriculum Vitae

16 Winterhaven Drive
Orono, Maine 04473
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Bates College (1982-1986) Lewiston, Maine

B.S., Biology

Secondary concentration in Greek Civilization

Extracurricular Activities

Indoor Track (Current record holder 55m dash), Outdoor Track (Current record holder 100m Dash, captain 1986)

Scholl College of Podiatric Medicine (1986-1990) Chicago, Illinois

Graduated *Summa Cum Laude*

Bergmann Award for Proficiency in Orthopedics

American College of Foot Orthopedists Award for Outstanding Student in Orthopedics

Northlake Podiatry Department Educational Corporation Scholarship

Philip R. Brachman Alumni Scholarship

Post-Graduate Training (1990-1992) Palo Alto and Mountain View, California

Palo Alto VAMC - Podiatric Surgical Residency - 12 months

American Academy of Podiatric Sports Medicine Fellowship - 6 months

Post-Graduate Employment

Penobscot Community Health Center, Old Town, ME-Podiatrist (2015 to present)

Health Access Network, Lincoln, ME- Podiatrist (2003 to 2015)

Scottsbluff Foot Clinic, Scottsbluff, NE - Associate Podiatrist (1994-1997)

Associated Foot Surgeons Podiatry Group, San Jose, CA - Assistant Surgeon (1991-1992)

Private Practice

Penobscot Foot Clinic, Lincoln, ME (1997 to 2002)

100 O'Connor Dr., Suite 18, San Jose, CA (1992-1994)

Hospital Appointments

St. Joseph Hospital, Bangor, ME-active staff

Academic Appointments

Associate Faculty, University of Maine, Graduate School of Biomedical Science and Engineering (2019 to present)

Peer Review Activities

Peer Reviewer-Maine Medical Association, External Peer Review Program (2010 to present)

Manuscript Reviewer- Journal of the American Podiatric Medical Association (2019 to present)

Journal of Diabetes and Its Complications (2022 to present)

BMJ Open Diabetes Research & Care (2020 to present)

Patents

Digital Tuning Fork for Sensation Testing-#8,795,190

Digital Tuning Fork for Sensation Testing - #8,684,945

Self-Supporting Osteotomy Guide and Retraction Device and Method of Use- #7,972,338

Suture Needle Retention Device - #7,763,038

First Metatarsophalangeal Joint Gait Goniometer - #5,316,018

Stopwatch Precision Enhancement Device - #5,224,077

Patents Pending

Nociceptor Blockade-Patent Application No. 17/397,804

Professional Affiliations

American Podiatric Medical Association

American College of Foot and Ankle Surgeons, Fellow
Maine Podiatric Medical Association, President, 2006-2007

Board Certification

Diplomate, American Board of Podiatric Surgery
Certified in Foot Surgery, August 8, 1997
Certification #: 97-4644

Maine Board of Licensure in Podiatric Medicine

Board Member-2014 to present
Complaint Officer-2018 to present

Podiatry License

Maine (POD1016)

Academic Speaking Engagements

World Congress of Podiatry, Miami, FL, November 16, 2019. "Fracture Detection Via Smartphone: A Proof-of-Concept Study." Oral abstract presentation

Midwest Podiatry Conference, Chicago, IL, April 20, 2018. "Diabetic Peripheral Neuropathy: Update 2018".

American Podiatry Medical Association Region One Conference, Quincy, MA, October 20, 2017. "Diabetic Peripheral Neuropathy: Update 2017".

American Academy of Podiatric Sports Medicine/German Association for Foot & Ankle Surgery Joint Conference, Munich, Germany, December 2, 2016. "Diabetic Peripheral Neuropathy: Update 2016".

APMA Annual Scientific Meeting, Washington, D.C. August 16, 2012, "Evaluation of a Novel 128 Hz Electronic Tuning Fork in the Evaluation of Diabetic Peripheral Neuropathy" - 1st Place in Oral Abstract Competition

Research Activities

ResearchGate Statistics (September 2023)

Research Interest Score: 74.6, Citations:119, h-index: 5

NASA Grant SG-19-06 - July 2018-July 2019

Awarded NASA seed grant to develop a novel bone density testing device for spaceflight with the University of Maine, Department of Biomedical and Chemical Engineering

Member, interdisciplinary team affiliated with the Mason and Tilbury Labs at the University of Maine studying diabetic neuropathy/microvascular function through spatial frequency domain imaging (SFDI) and bone density focused on development of novel sound-based diagnostic instrumentation.

Collaborator, Hofstra University, Physical Therapy department studying fracture identification through application of novel diagnostic instrumentation.

Publications/Posters

1. O'Brien, T. Clinical and Time Efficacy of a Novel Plantar Fasciotomy Technique. *The Foot* (publication pending, 2023)
2. O'Brien, T, Karem, J. Combined Utility of the Semmes-Weinstein Monofilament and Timed Vibration Test in the Prediction of Diabetic Foot Ulcers. *Journal of the American Podiatric Medical Association* Vol. 112, No.1, 2022.
3. O'Brien, T. Impaired Dermal Microvascular Reactivity: Implications for Diabetic Wound Formation and Healing. *Journal of Wound Care* Supplement Vol. 29, No. 9, 2020.
4. O'Brien, T. Evidence-Based Assessment of Pediatric Diabetic Peripheral Neuropathy. *Curr Res Diabetes & Obes J.* 2019; 9(5): 555773. DOI: 10.19080/CRDOJ.2019.09.555774
5. O'Brien, T. A Novel Method of Fracture Detection via Smartphone poster abstract, 2016 World Congress of Podiatry, Montreal, QC
6. O'Brien, T, Karem, J. An Initial Evaluation of a Proof-of-Concept 128 Hz Electronic Tuning Fork in the Detection of Peripheral Neuropathy. *Journal of Podiatric Medical Association* Vol. 104, No. 2, 2014.
7. O'Brien T, Karem J. Relative Sensory Sparing in the Diabetic Foot Implied through Vibration Testing. *Diabet Foot Ankle.* 4: 10.3402/dfa.v4i0.21278, 2013.
8. O'Brien, T.: Current Techniques of Toenail Surgery. In International Advances in Foot and Ankle Surgery, Amol Saxena, Editor. New York: Springer-Verlag, 2012.
9. Validation of the Hallux as the Site of Choice in Vibration testing in the Diabetic Foot, poster abstract, 2012 APMA Annual Scientific Meeting, Washington, D.C.
10. O'Brien, T.: Caesar's Guide for Innovators. Available on Amazon, 2011.
11. Modified Partial Matricectomy Technique, poster abstract, 2007 APMA Annual Scientific Meeting, Philadelphia, PA.
12. O'Brien, T.: The Crescentic Inverted Scarf Osteotomy. *Journal of Foot and Ankle Surgery* Vol. 42, No.1, 2003.
13. Saxena, A., O'Brien, T.: Postoperative Physical Therapy for Podiatric Surgery. *Journal of American Podiatric Medical Association* Vol. 82, No. 8, 1992.
14. O'Brien, T.: Lower Extremity Cycling Biomechanics. *Journal of American Podiatric Medical Association* Vol. 81, No.11, 1991.
15. Gastwirth, B., O'Brien, T., Nelson, R., Manger, D., Kindig, S.: An Electrodynographic Study of Foot Function in Shoes of varying Heel Heights. *Journal of American Podiatric Medical Association* Vol. 81, No. 9, 1991.
16. Saxena, A., O'Brien, T., Bunce, D.: Anatomic Dissection of the Tibialis Posterior Muscle and Its Correlation to Medial Tibial Stress Syndrome. *Journal of Foot Surgery* Vol. 29, No. 2, 1990.

Medical Product Development Experience

O'Brien Medical Co., LLC (founder)

ETF¹²⁸: First medical-grade 128Hz Electronic Tuning Fork. *Podiatry Today's* Top Ten Innovations of 2014. Product Launch-April 2015

ETF^{Mx}: Three frequency Electronic Tuning Fork, product launch November 2017.

OrthoLucent O'Brien Bone Clamp: licensed to Innomed Inc. Savannah, GA—on market

O'Brien Bone Clamp with Drill Guide: licensed to Innomed Inc.-on market

O'Brien NailStat: Novel nail surgery instrument/technique licensed to Innomed Inc.-on market

Chevron Osteotomy Guide Clamp: Novel osteotomy guide for bunion correction licensed to Innomed Inc.-on market and patented.

O'Brien Release Sleeve: Novel instrumentation kit for minimally invasive plantar fasciotomy licensed to Innomed Inc.- on market

SutureSafe: Novel sharps injury prevention suturing accessory.

ScanDx, LLC (co-founder)

Developing novel smartphone-based diagnostic technique to diagnose bone fractures and abnormal bone density

Extremity Medical, LLC, Parsippany, NJ (2021 to present)

Consultant: Product development team member designing novel surgical instrumentation and techniques for foot surgery.

Bonbouton, New York, NY (2019 to 2020)

Medical Advisor/Consultant: Medical and product design guidance on a novel nanotechnology smart insole for the prevention of diabetic foot ulcers.

Sgarlato Laboratories Inc., Los Gatos, CA (1991-1994)

Responsibilities included: Project Manager, Inventor, Technical Writer, Assistant Regulatory Affairs Liaison
Medical Products Developed:

First Metatarsophalangeal Joint Continuous Passive Motion Machine

O'Brien Gait Goniometer (Pat. #5, 316, 018)

Research articles utilizing O'Brien Goniometer:

1. Kilmartin TE.: Phalangeal Osteotomy Versus First Metatarsal Decompression Osteotomy for the Surgical Treatment of Hallux Rigidus: A Prospective Study of Age-Matched and Condition-Matched Patients. *Journal of Foot & Ankle Surgery* 44(1):2-12, 2005.
2. Smith C, Spooner SK, Fletton JA.: The Effect of 5-Degree Valgus and Varus Rearfoot Wedging on Peak Hallux Dorsiflexion During Gait. *Journal of American Podiatric Medical Association* 94(6): 558-564, 2004.
3. Kilmartin TE.: Metatarsal osteotomy for hallux rigidus. An outcome study of three different osteotomy techniques compared with Keller's excisional arthroplasty. *British Journal of Podiatry* 3(4): 95-101, 2000.