Craig M. McDonald, M.D.

Philosophy of Care

I provide team-based multidisciplinary care for patients with complex health challenges throughout the lifespan due to neuromuscular diseases.
Our mission is to lead in collaborative, coordinated care and discovery of innovative therapeutics to improve health, function, and quality of life. Our overall long-term vision is to provide hope for a healthier, more functional world through compassionate care and bold innovation.

Clinical Interests

Dr. McDonald is a pediatric physical medicine & rehabilitation physician who is also board-certified in neuromuscular medicine and pediatric rehabilitation medicine. He is an internationally recognized expert in clinical management, rehabilitation, and precision therapeutics for children and adults with neuromuscular diseases.
Dr. McDonald has been a pioneer in the development of novel outcome measures for clinical trials focused on disabled populations. He is widely known for his expertise in the treatment and evaluation of children and young adults with Duchenne muscular dystrophy and other neuromuscular diseases.
Dr. McDonald serves as director and principal investigator of UC Davis' successfully renewed NINDS-funded site in the NeuroNEXT Neurosciences Clinical Trials National Consortium (one of two NeuroNEXT sites on the West Coast).
Dr. McDonald is also the director of rehabilitation services at Shriners Hospital for Children - Northern California.

Research/Academic Interests

Dr. McDonald's research has focused on novel clinical endpoint development in neuromuscular diseases, and he has conducted natural history studies in muscular dystrophies using novel outcomes measures developed for clinical trials. His work has led to the identification of genetic polymorphisms predictive of clinical disease progression.
He leads the international Cooperative International Neuromuscular Research Group (CINRG) Duchenne Natural History Study, which has made

- seminal contributions to the elucidation of the natural history of Duchenne muscular dystrophy (DMD);
- validation of the clinical endpoints now used in clinical trials of DMD throughout the world;
- the development of novel endpoints to assess more severely affected patients with DMD who are non-ambulatory;
- identification of genetic modifiers which affect DMD disease progression; and
- application of proteomics to identify novel candidate biomarkers for Duchenne clinical trials.

Most importantly, his work has contributed to the development of precision-based therapeutics for DMD and the first two approved therapies targeting the underlying cause of Duchenne muscular

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dystrophy – dystrophin gene abnormalities leading to absence of the sarcolemmal-associated muscle protein dystrophin. These therapies have been recently approved by the U.S. Food and Drug Administration (FDA) in the case of eteplirsen, and European Medicines Agency (EMA) in the case of ataluren.

Dr. McDonald serves as the national principal investigator for the Capricor multicenter HOPE-2 trial – the first clinical trial of a systemic stem cell therapeutic conducted in DMD. He has also served as an expert for Biomarin, Sarepta, and PTC Therapeutics at the first three FDA Advisory Committee meetings held for Duchenne muscular dystrophy therapeutics.

Title
Professor and Chair, Department of Physical Medicine & Rehabilitation
Director, Neuromuscular Disease Clinics
Director, Neuromuscular Disease Program
Director, MDA Clinics
Professor of Pediatrics

Specialty
Neuromuscular Medicine, Pediatric Rehabilitation Medicine, Physical Medicine and Rehabilitation

Department
Physical Medicine and Rehabilitation
Pediatrics

Division
Physical Medicine and Rehabilitation
Pediatric Orthopaedics

Center/Program Affiliation
Center for Healthcare Policy and Research
UC Davis Children's Hospital

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Education
M.D., University of Washington School of Medicine, Seattle, Washington, 1987
M.R.M., Rehabilitation Medicine, University of Washington, 1992
A.B., Human Biology, Stanford University, Palo Alto, California, 1982

Internships
Pediatrics, UCLA Medical Center, Los Angeles, California, 1987-1989

Residency
PM&R, University of Washington, 1989-1992
University of Washington Medical Center, Seattle, Washington, 1989-1992

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Fellowships

Pediatric Rehabilitation, University of Washington, 1991-1992

Board Certifications

American Board of Pediatrics, 1992
American Board of Physical Medicine and Rehabilitation, 1993
American Board of Physical Medicine and Rehabilitation-Neuromuscular Medicine, 2008
American Board of Physical Medicine and Rehabilitation-Pediatric Rehabilitation Medicine, 2003

Professional Memberships

American Academy of Physical Medicine and Rehabilitation
American Association of Neuromuscular and Electrodiagnostic Medicine
World Muscle Society

Honors and Awards

Association of Academic Physiatrists Carolyn Braddom Ritzler Research Award, 2019
Frequent inclusion in annual "Best Doctors in America" and "America's Best Doctors" peer-review survey lists
Frequent inclusion in annual "Best Doctors in Sacramento" peer-review survey lists
Ben L. Boynton Visiting Lecture in Physical Medicine and Rehabilitation Award, 2008
UC Davis university-wide Affirmative Action Award, 1999
Young Academician Award presented by the Association of Academic Physiatrists for outstanding performance in teaching, research and academic administration, 1997
Nominated as a finalist for Richmond Cerebral Palsy Center Award, 1988
Thesis Honors from the University of Washington School of Medicine, 1987
Alpha Omega Alpha National Honor Medical Society, 1987
Thesis Honors from the University of Washington School of Medicine, 1986
Herbert S. Ripley Research, University of Washington School of Medicine, 1986
Northwest Association of Physical Medicine and Rehabilitation Medical Student Award for outstanding work in the area of Rehabilitation Medicine, 1985

Select Recent Publications

McDonald CM, Gordish-Dressman H, Henricson EK, Duong T, Joyce NC, Jhawar S, Leinonen M, Hsu F, Connolly AM, Cnaan A, Abresch RT, on behalf of the CINRG investigators. Longitudinal Pulmonary Function Testing Outcome Measures in Duchenne Muscular Dystrophy: Long-term Natural History with and without Glucocorticoids. Neuromuscular Disorders 2018 Nov; 28(11): 897-909. https://doi.org/10.1016/j.nmd.2018.07.004

Conklin LS, Damsker JM, Hoffman EP, Jusko WJ, Mavroudis PD, Schwartz BD, Mengle-Gaw LJ, Smith EC, Mah JK, Guglieri M, Nevo, Y, Kuntz N, McDonald CM, Tulinius M, Ryan MM, Webster R, Castro D, Finkel RS, Smith AL, Morgenroth LP, Arrieta A, Shimony M, Jarosr M, Shaler P,

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McCall JM, Hathout Y, Nagaraju K,, van den Anker J, Ward LM, Ahmets A, Cornish MR, Clemens PR. Phase IIa trial in Duchenne muscular dystrophy shows vamorolone is a first-in-class dissociative steroidal anti-inflammatory drug. Pharmacol Res. 2018 Oct;136:140-150. doi: 10.1016/j.phrs.2018.09.007. Epub 2018 Sep 13.

McDonald CM, Wong B, Flanigan KM, Wilson R, de Kimpe S, Lourbakos A, Lin Z, Campion G, for the DEMAND V study group. Placebo-controlled Phase 2 Trial of Drisapersen for Duchenne Muscular Dystrophy. Ann Clin Transl Neurol. 2018; Jul 11; 5(8):913-926. doi: 10.1002/acn3.579. eCollection 2018 Aug.

Bartlett A, Kolb SJ, Kingsley A, Swoboda KJ, Reyna SP, Sakonju A, Darras BT, Shell R, Kuntz N, Castro D, Iannaccone ST, Parsons J, Connolly AM, Chiriboga CA, McDonald C, Burnette WB, Werner K, Thangarajh M, Shieh PB, Finanger E, Coffey CS, Yankey JW, Cudkowicz ME, McGovern MM, McNeil DE, Arnold WD, Kissel JT; NeuroNEXT Clinical Trial Network and on behalf of the NN101 SMA Biomarker Investigators. Recruitment %26amp%3B retention program for the NeuroNEXT SMA Biomarker Study: Super Babies for SMA! Contemp Clin Trials Commun. 2018; 11:113-119. doi: 10.1016/j.conctc.2018.07.002. eCollection 2018 Sep.

Shieh PB, McIntosh J, Jin F, Souza M, Elfring G, Narayanan S, Trifillis P, Peltz SW, McDonald CM, Darras BT; ACT DMD study group. Deflazacort vs prednisone/prednisolone for maintaining motor function and delaying loss of ambulation: A post hoc analysis from the ACT DMD trial. Muscle Nerve. 2018 Jul 20. doi: 10.1002/mus.26191. [Epub ahead of print]

McDonald CM, Henricson EK, Abresch RT, Duong T, Joyce NC, Hu F, Clemens PR, Hoffman EP, Cnaan A, Gordish-Dressman H; CINRG Investigators. Long-term effects of glucocorticoids on function, quality of life, and survival in patients with Duchenne muscular dystrophy: a prospective cohort study. Lancet. 2018; 391(10119):451-461. doi: 10.1016/S0140-6736(17)32160-8. Epub 2017 Nov 22.

Goemans N, Mercuri E, Belousova E, Komaki H, Dubrovsky A, McDonald CM, Kraus JE,

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Lourbakos A, Lin Z, Campion G, Wang SX, Campbell C; DEMAND III study group. A randomized placebo-controlled phase 3 trial of an antisense oligonucleotide, drisapersen, in Duchenne muscular dystrophy. Neuromuscul Disord. 2018; 28(1):4-15. doi: 10.1016/j.nmd.2017.10.004. Epub 2017 Dec 6.

Kolb SJ, Coffey CS, Yankey JW, Krosschell KP, Arnold WD, Rutkove SB, Swoboda KJ, Reyna SP, Sakonju A, Darras BT, Shell R, Kuntz N, Castro D, Parsons J, Connolly A, Chiriboga CA, McDonald C, Burnette B, Werner W, Thangarajh M, Shieh P, Finanger E, Cudkowicz M, McGovern MM, McNeil DE, Finkel R, Iannaccone ST, Kaye E, Kingsley A, Renusch SR, McGovern VL, Wang X, Zaworski PG, Prior TW, Burghes AHM, Bartlett A Kissel JT, the NeuroNEXT Clinical Trial Network and on behalf of the NN101 SMA Biomarker Investigators. Natural History of Infantile-Onset Spinal Muscular Atrophy. Ann Neurol. 2017; 82(6):883-891. doi: 10.1002/ana.25101. Epub 2017 Dec 8.

McDonald CM, Campbell C, Torricelli RE, Finkel RS, Flanigan KM, Goemans N, Heydemann P, Kaminska A, Kirschner J, Muntoni F, Osorio AN, Schara U, Sejersen T, Shieh PB, Sweeney HL, Topaloglu H, Tulinius M, Vilchez JJ, Voit T, Wong B, Elfring G, Kroger H, Luo X, McIntosh J, Ong T, Riebling P, Souza M, Spiegel RJ, Peltz SW, Mercuri E; Clinical Evaluator Training Group; ACT DMD Study Group. Ataluren in patients with nonsense mutation Duchenne muscular dystrophy (ACT DMD): a multicentre, randomised, double-blind, placebo-controlled, phase 3 trial. Lancet. 2017; 390(10101):1489-1498. doi: 10.1016/S0140-6736(17)31611-2. Epub 2017 Jul 17.

Buyse GM, Voit T, Schara U, Straathof CSM, D'Angelo MG, Bernert G, Cuisset JM, Finkel RS, Goemans N, McDonald CM, Rummey C, Meier T; DELOS Study Group. Efficacy of idebenone on respiratory function in patients with Duchenne muscular dystrophy not using glucocorticoids (DELOS): a double-blind randomised placebo-controlled phase 3 trial. Lancet. 2015 May 2;385 (9979):1748-1757. doi: 10.1016/S0140-6736(15)60025-3. Epub 2015 Apr 20.

To view more of Dr. McDonald's publications, please visit his PubMed link here.

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