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Exercise as an Essential Component of Comprehensive Treatment: Historic and Future
Considerations of The Consortium of Multiple Sclerosis Centers (CMSC)

The perturbation of exercise has had an association with MS long before the disease was described. Jock Murray, MD (2005) introduced "Lidwina the Virgin" of Schiedam, Holland as possibly the first known case on February 2, 1396. Her fall while ice-skating on a frozen canal initiated a sequence of painful and perplexing symptoms. Ultimately, she was canonized and is the patron saint of ice skaters. Jimmie Heuga, one of the first American men to win an Olympic alpine skiing medal (1964), was diagnosed in 1970. On the 30th anniversary of the CMSC, we have examined the history of exercise research in MS and explore the various factors/milestones of that research. As of this report, PubMed cites 1,191 "Exercise and MS" (EaMS) citations and 1,483 "Physical Activity and MS" (PAaMS).

EaMS n, (% of total)	PAaMS n, (% of total)
1953 to present 1,191	1963 to present 1,483
1964 Jimmie's medal 5 (0.4%)	1964 Jimmie's medal 1 (0.1%)
1970 Jimmie's diagnosis 13 (1.1%)	1970 Jimmie's diagnosis 7 (0.5%)
1984 Heuga Center founded 44 (3.7%)	1984 Heuga Center founded 27 (1.8%)
1986 CMSC founded 50 (4.2%)	1986 CMSC founded 32 (2.2%)
1996 Petajan, etal 106 (8.9%)	1996 Petajan, etal 95 (6.4%)
1997-2010 additional 463 (38.9%)	1997-2010 additional 650 (43.8%)
2011-present additional 622 (52.2%)	2011-present additional 738 (49.8%)

At Jimmie's diagnosis, less than 2% of the "exercise" body of knowledge regarding MS existed. At the founding of Jimmie's Center and the CMSC, less than 5% accumulated. Less than 10% existed when Jack Petajan and his colleagues first demonstrated that MS patients benefit from aerobic exercise training. Since its formation, CMSC championed (and continues to champion) a comprehensive care approach to MS treatment. CMSC's initial nurturing, acceptance of Jimmie's Center and its systematic examination and application of the role of exercise in MS care cannot be overstated. CMSC remains the primary and most influential forum for research presentations regarding EaMS and PAaMS. (Since 1997, more than 90% of exercise research has occurred.) We conclude and agree with Motl and Sandroff (2015) regarding the "promotion of exercise by healthcare providers, particularly neurologists as a central part of the clinical care and management of MS patients". CMSC's ongoing commitment to developing and advancing best practices in MS care and promoting the benefits of the comprehensive MS care model remains critical.