

Submitted by: Tatiana Sanchez  
Email: tatiana.sanchez@mail.mcgill.ca  
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## **10. The association of sociodemographic and disease variables with hand function: A Scleroderma Patient-centred Intervention Network (SPIN) Cohort study**

Primary Author: **Tatiana Sanchez**

Institution: Jewish General Hospital and McGill University, Montreal, Quebec, Canada

Status: Research Trainee

Eligible for André Lussier bursary: Oui / Yes

Supervisor's name: Brett Thombs

Supervisor's e-mail: brett.thombs@mcgill.ca

Additional Authors: Linda Kwakkenbos, Brett Thombs, and SPIN Investigators

**Objectives:** Impaired hand functioning in systemic sclerosis (SSc) is a primary cause of disability, and contributes to lower health-related quality of life, limitations in daily activities, and increased need for at-home help. Hand disability in scleroderma can be caused by abnormalities in the skin, subcutaneous tissues and the microvascular, musculoskeletal and peripheral nervous systems. Moreover, contractures and deformities of the hand that can lead to impaired hand functioning are present in 90% of scleroderma patients. Although some disease factors such as digital ulcers (DU) have been found to affect hand functioning, little is known about how co-occurring disease factors contribute to hand functioning. For example, while extensor surface DUs and digital-tip DUs both cause hand impairment and higher Cochin Hand Function Scale scores, it is unclear whether other common disease factors such as Raynaud's Phenomenon have a direct link to worsened hand function. The aim of the current project is to assess the factors associated with hand functioning in scleroderma.

**Method:** The sample will consist of patients enrolled in the Scleroderma Patient-centered Intervention Network (SPIN) Cohort who completed baseline questionnaires from March 2014 through January 2017, approximately 1,000 participants total. Patients in the SPIN Cohort are enrolled at > 35 centres in Canada, the USA, and the UK. SPIN Cohort patients complete outcome measures via the Internet upon enrolment and subsequently every 3 months. Patients who completed their questionnaires at baseline will be included in this study. A multiple linear regression analysis will be used to determine which factors most influence hand function, according to the CHFS. The following independent variables will be included: a) demographic characteristics including age, gender, marital status, education level; b) disease subset and duration; c) mRSS; d) the presence of puffy fingers; e) severity of Raynaud's phenomenon; f) presence of sclerodactyly; g) presence of fingertip pitting scars; h) presence of digital tip ulcers; i) presence of tendon friction rubs; j) presence of small joint contractures; k) SLE; l) Sjogren's syndrome; m) RA; n) Idiopathic Inflammatory Myositis; o) the presence of skin thickening proximal to the metacarpophalangeal joints; p) BMI; q) alcohol consumption; and r) smoking.

**Results:** Results will be available by May 2017.

**Conclusion:** The findings of this study will help inform therapeutic interventions, and self-care interventions that target the most pernicious factors affecting hand functioning.