

# Waiting time for multidisciplinary pain treatment: associations with improvement in pain outcomes for patients with rheumatic conditions

Simon Deslauriers<sup>1,2</sup>, Jean-Sébastien Roy<sup>1,2</sup>, Sasha Bernatsky<sup>3,4,5</sup>, Debbie E. Feldman<sup>6,7,8</sup>, Anne Marie Pinard<sup>1,2,9</sup>, François Desmeules<sup>6,10</sup>, Mary-Ann Fitzcharles<sup>3,4</sup>, Kadija Perreault<sup>1,2</sup>



**Affiliations:** <sup>1</sup>Center for Interdisciplinary Research in Rehabilitation and Social Integration (CIRRIS), Québec, Canada; <sup>2</sup>Faculty of medicine, Université Laval, Québec;

<sup>3</sup>McGill University Health Centre (MUHC), Montréal, Canada; <sup>4</sup>McGill University, Montréal; <sup>5</sup>Research Institute of the McGill University Health Centre, Montréal;

<sup>6</sup>Faculty of medicine, Université de Montréal, Montreal; <sup>7</sup>Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR), Montréal;

<sup>8</sup>Public Health Research Institute of Université de Montréal, Montréal. <sup>9</sup>Centre hospitalier universitaire (CHU) de Québec, Québec; <sup>10</sup>Maisonneuve-Rosemont Hospital Research Center, Montreal;

Contact: simon.deslauriers.1@ulaval.ca



## Background

- Over 25% of patients with rheumatic conditions report frequent and severe joint pain [1]
- Multidisciplinary pain treatment facilities (MPTF) may improve pain and quality of life for those patients [2,3]
- However, access to MPTF in Canada is limited by long waiting lists [4].
- There is a lack of knowledge about the potential impact of waiting time before accessing MPTF for patients with rheumatic conditions.

## Objectives

- Examine the association between waiting time to access MPTF and clinical outcomes in patients with rheumatic conditions

## Methods

- Retrospective study of the Quebec Pain Registry, a database of patients who received services within five MPTF between 2007 and 2014
- Patients were identified as having a rheumatic condition based on the National Arthritis Data Workgroup (NADW) definition [4]
- Waiting time: period between referral and initial visit
- Outcomes: changes in pain interference (Brief Pain Inventory [BPI]) and pain intensity (numeric pain rating scale [NPRS]) scores between the initial visit and 6 months later
- Analyses were conducted using generalized estimating equations (GEE)

## Results

- n = 3230 patients with a rheumatic condition; mean age = 55 ± 14 years; 66.2 % were women
- 29% of patients waited < 2 months, 32% waited between 2-6 months and 39% waited > 6 months

**Table 1.** Association between waiting time and change in pain interference (BPI) and pain intensity (NPRS) from baseline to the 6-month follow-up

	Baseline, Mean (SD)	6 months, Mean (SD)	Adj. p value <sup>a,b</sup>	Adj. change from baseline to 6 months, EMM <sup>b</sup> (95% CI)
	BPI (n=3228)	BPI (n=1946)		
Overall sample	5.97 (2.13)	5.20 (2.48)	<0.001	
< 2 months	5.77 (2.24)	4.61 (2.65)		-1.12 [-1.42, -0.81]
2-6 months	6.12 (2.10)	5.38 (2.39)		-0.70 [-0.93, -0.48]
> 6 months	6.00 (2.07)	5.49 (2.34)		-0.47 [-0.66, -0.28]
	NPRS (n=3227)	NPRSC (n=1948)	Adj. p value <sup>a,b</sup>	Adj. change from, EMM <sup>b</sup> (95% CI)
Overall sample	7.0 (1.9)	6.2 (2.3)	<0.001	
< 2 months	6.9 (2.0)	5.6 (2.5)		-1.3 [-1.6, -0.9]
2-6 months	7.0 (1.8)	6.4 (2.2)		-0.6 [-0.9, -0.4]
> 6 months	6.9 (1.9)	6.5 (2.1)		-0.4 [-0.6, -0.2]

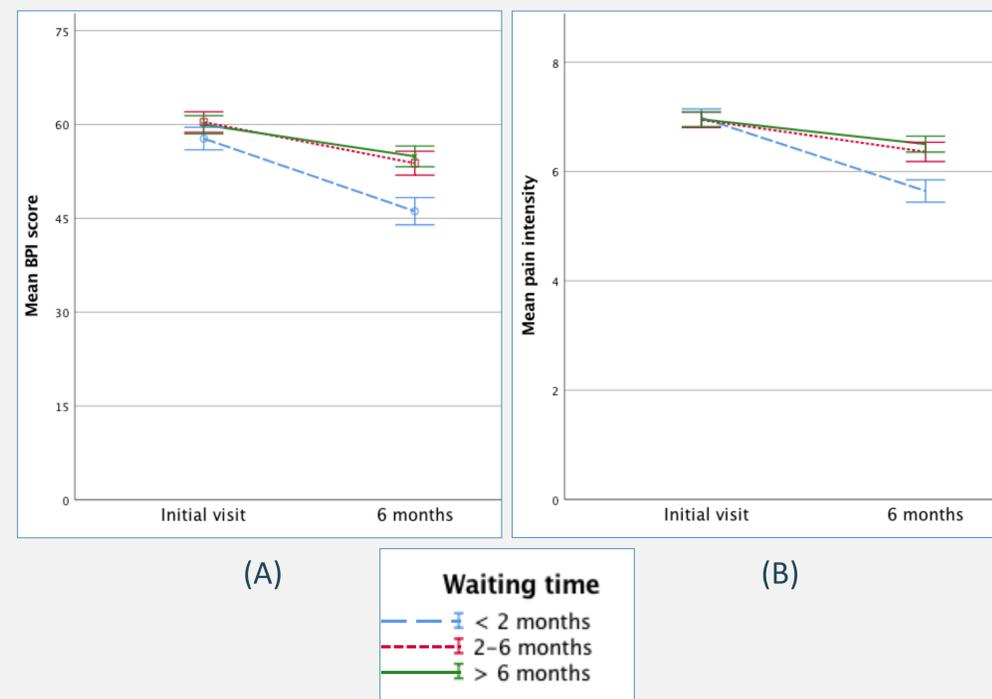
BPI = Brief pain inventory (average score on the 0-10 interference items); SD = standard deviation; EMM = estimated marginal means; 95% CI = 95% confidence interval

<sup>a</sup> Time X group effect p value (generalized estimating equations)

<sup>b</sup> Adjusted for age, sex, pain duration, number of comorbidities and income

**Table 2.** Proportion of patients achieving a decrease in pain interference (BPI) and pain intensity (NPRS) above the minimal clinically important difference (MCID) from baseline to the 6-month follow-up, per waiting time group

	% achieving MCID	
	BPI	NPRS
< 2 months	48.3	47.5
2-6 months	40.3	29.6
> 6 months	34.9	28.4
Chi-square p value	<0.001	<0.001



**Figure 1.** Change in pain interference (A) and pain intensity (B) scores from baseline to the 6-month follow-up, per waiting time group

## Discussion

- Most patients with rheumatic conditions face long delays before receiving services in MPTF.
- Longer delays were associated with less improvement in pain interference and pain intensity.
- There was a significantly higher proportion of patients achieving clinically significant improvements in the group of patients waiting less than 2 months compared to patients waiting longer.
- The findings suggest the need to evaluate strategies to reduce waiting times and improve outcomes, for example self-management interventions, prioritization of referrals and increased resource allocation.

