

# Can Rheumatoid Arthritis Patients Self-Monitor Their Disease Activity?

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# Disclosures

- No relevant disclosures



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# Background

- In rheumatoid arthritis (RA) the 'Treat to Target' approach<sup>1</sup> emphasizes the importance of regular assessment, and modifying therapy until the target (remission or low disease activity) is reached.
- Active involvement of patients in monitoring their own disease activity could enhance treatment by providing an early warning when targets are not met, indicating the need for a rheumatologist visit to evaluate treatment.



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<sup>1</sup> Smolen 2010

# Objective

- To determine if patients can self-monitor their RA disease activity and accurately identify whether they have reached the target of low disease activity or remission.



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# Methods

## ➤ Cross sectional study:

- All RA patients presenting for a follow-up visit to 7 participating rheumatology practices were invited to participate in the study.

## ➤ Inclusion criteria:

- 18 years of age or older.
- Have a diagnosis of rheumatoid arthritis.
- Under the ongoing care of a rheumatologist.
- Able to read and write English to fill out questionnaire without needing a translator.



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# Methods

- Participants filled out a questionnaire and performed a self-assessment of tender and/or swollen joints before seeing the rheumatologist.
- Rheumatologist joint counts and lab values (CRP) were obtained from rheumatologists' charts on the same visit.
- Rheumatologists and patients were blinded to each other's assessments
- RA disease activity states from patient self-reported data and rheumatologist evaluation were compared.
- RA disease activity indices were chosen based on their psychometric properties and because they have been endorsed by ACR as valid measure to monitor disease activity<sup>2</sup>

# Methods

## CDAI\*: Clinical Disease Activity Index

- Tender Joint Count, Swollen Joint Count, Rheumatologist global assessment, patient global assessment

## SDAI\*: Simplified Disease Activity Index

- Tender Joint Count, Swollen Joint Count, Rheumatologist global assessment, patient global assessment, C-Reactive Protein (CRP)

## RAPID-4: Routine Assessment of Patient Index Data with 4 measures

- Multi-Dimensional Health Assessment Questionnaire (MDHAQ), Pain Visual Analogue Scale, Patient global assessment, Rheumatoid Arthritis Disease Activity Index (RADAI) joint count.

## DAS-28: Disease Activity Scale with 28 joint count

- Tender Joint Count, Swollen Joint Count, C-Reactive Protein (CRP), Patient global assessment



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\*In patient versions of the CDAI and SDAI, physician global scores were replaced with patient global scores.

# Methods

- Disease activity states were categorized into remission, low, moderate and high disease activity, according to published cut points.
- Because change in treatment is recommended with moderate or high disease activity, we also created two categories: remission or low vs. moderate or high.
- We compared agreement across two categories and across four categories
- Patient-derived and rheumatologist-derived activity states were compared using:
  - Percent perfect agreement
  - Cohen's kappa for two category comparisons, which measures observed agreement beyond that expected by chance
  - Weighted kappa for four category comparisons, which weighs how close the agreement is to perfect agreement.

# Results – Sample (N=49)

**Table 1:** Demographic characteristics of study sample

<b>Demographic characteristic</b>	
<b>Gender, % females</b>	75.5%
<b>Ethnicity, % Caucasian</b>	67.3%
<b>Education</b>	
Less than high school	8.1%
High school	20.4%
Post-secondary	71.5%
<b>Mean (SD) age , years</b>	57.7 (15.4)
<b>Mean (SD) RA duration</b>	10 (12)
<b>Mean (SD) MDHAQ score</b>	0.68 (0.69)
<b>Disease activity state (MD CDAI)</b>	
Remission	10.2%
Low	36.7%
Moderate	38.7%
High	14.9%

# Results – two disease activity categories

Comparison	Percent perfect agreement	Cohen's Kappa (95% CI)
Patient vs. rheumatologist CDAI	75.5%	0.51* (0.27;0.75)
Patient vs. rheumatologist SDAI	79.6%	0.59* (0.36;0.82)
RAPID4 vs. rheumatologist CDAI	79.6%	0.59* (0.36;0.82)
RAPID4 vs. rheumatologist SDAI	79.6%	0.59* (0.36;0.82)
Patient DAS-28 vs. rheumatologist DAS-28	77.6%	0.54* (0.32;0.77)

\*values in 0.4-0.6 interval represent moderate agreement; all  $p < 0.001$  (Landis 1977)



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# Results – four disease activity categories

Comparison	Percent perfect agreement	Weighted Kappa (95% CI)
Patient vs. rheumatologist CDAI	51%	0.66* (0.51;0.81)
Patient vs. rheumatologist SDAI	61%	0.75* (0.64;0.87)
RAPID4 vs. rheumatologist CDAI	47%	0.69* (0.56;0.81)
RAPID4 vs. rheumatologist SDAI	49%	0.69* (0.56;0.82)
Patient DAS-28 vs. rheumatologist DAS-28	61%	0.66* (0.49;0.83)

\*values in 0.6-0.8 interval represent good agreement; all  $p < 0.001$  (Landis 1977)



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# Study Limitations

- Small sample size (49)
- Sample may not be representative of all RA patients
  - Mostly Caucasians;
  - Highly educated;
  - Only seven rheumatology practices included in the study.
- We evaluated patients' ability to classify their disease activity at one point in time, but not their ability to detect changes over time or response to treatment.



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# Conclusion

- In our study sample, there was moderate to good agreement between patient self-assessment and rheumatologist assessment of disease activity state, with little difference between instruments used.
- These results suggest that patients are able to assess their own disease activity, which may be helpful in guiding the need for physician visits and medication adjustments.



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# Thank you



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9. We would like to know how your joints are feeling **TODAY**. For each joint **marked with a circle**, please indicate the following:
- If the joint is **tender** when you squeeze it or if it **hurts** when you move it, please place an **"X"** on the joint
  - If the joint appears **swollen**, please fill in the circle that represents the joint
  - If the joint is both **tender** and **swollen**, please do both (i.e. place an **"X"** on the joint and fill in the circle that represents the joint). Please ensure both marks are visible.

RIGHT SIDE

LEFT SIDE



