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## Fibromyalgia Rapid Screening Tool (FRST)

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# Development and validation of the Fibromyalgia Rapid Screening Tool (FiRST)

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## ABSTRACT

The goal of this study was to develop and validate a self-completed questionnaire, the Fibromyalgia Rapid Screening Tool (FiRST), for the detection of fibromyalgia syndrome in patients with diffuse chronic pain. Items requiring “yes/no” responses and relating to the most relevant clinical characteristics of fibromyalgia were compiled by a group of rheumatologists and pain experts. The provisional questionnaire was tested in a prospective multicenter study of 162 patients with chronic pain due to fibromyalgia (according to ACR criteria) ( $n = 92$ ) compared with a group of patients with chronic diffuse pain due to other rheumatic conditions, including rheumatoid arthritis ( $n = 32$ ), ankylosing spondylitis ( $n = 25$ ) and osteoarthritis ( $n = 13$ ). Identification of the most discriminant combinations of items for fibromyalgia and the calculation of their sensitivity and specificity were based on both univariate and multivariate (stepwise logistic regression) analyses. The assessment of the psychometric properties of the questionnaire also dealt with face validity, content validity, test–retest reliability and convergent/divergent validity. Based on univariate and multivariate analyses, we retained only six items in the final version of FiRST. These items were used to calculate the sensitivity, specificity and predictive accuracy of the questionnaire. A cut-off score of 5 (corresponding to the number of positive items) gave the highest rate of correct identification of patients (87.9%), with a sensitivity of 90.5% and a specificity of 85.7%. In conclusion, FiRST is a brief, simple and straightforward self-administered questionnaire with excellent discriminative value, of potential value for the detection of fibromyalgia in both daily practice and clinical research.

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## 1. Introduction

Fibromyalgia syndrome (FMS) is a frequent chronic pain syndrome characterized by widespread pain and muscle tenderness, often accompanied by sleep disorders, fatigue and psychological/cognitive dysfunction. The etiology and mechanisms of FMS are unknown and, in the absence of biomarkers, its diagnosis is currently based on the ACR criteria published almost 20 years ago [58].

These criteria, which were developed by rheumatologists principally for research and classification purposes, are difficult to apply in daily practice because they require a specific examination of tender points that cannot be carried out without some training [25,59]. Thus, in clinical practice, FMS is often diagnosed late, after multiple investigations and consultations, generating major costs for the healthcare system [5]. In addition, the ACR criteria were not designed for use in epidemiological studies [59]. This has led

to the development of a questionnaire specifically for epidemiological studies of FMS: the London Fibromyalgia Epidemiology Study Screening Questionnaire (LFESSQ) [56]. Studies based on the LFESSQ have generated estimates of the prevalence of FMS in the general population as high as 2% in the United States [46] and Europe [14,15]. Other diagnostic criteria and tools have been developed to overcome the limitations associated with the application of the ACR criteria in practice. The “Survey Criteria” combine the Regional Pain Scale (RPS), a self-administered count of the number of painful regions, with a VAS score for fatigue [36,60]. These criteria correctly identified 73% of FMS patients diagnosed on the basis of the ACR criteria [59], but a higher proportion of patients diagnosed directly by the clinician [36]. The “Manchester Criteria” use a pain diagram to establish the diagnosis and the results obtained with these criteria are highly consistent with those for the ACR criteria, except that the Manchester Criteria tend to identify patients with more severe symptoms [39]. Like the LFESSQ, these tools include only items related to widespread pain and fatigue, with no items focusing on other major dimensions or symptoms of FMS. The inclusion of these other aspects might significantly increase the sensitivity and specificity of these tools. Furthermore,

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The Fibromyalgia Rapid Screening Tool is composed of six items investigating one domain.

## Domains and Clusters

### Domains

Unidirectional  
score

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## Scoring of Domains

Item scaling	Dichotomous (Yes/No) response options
Weighting of items	No
Range of scores	Total score ranges from 0 to 6
Scoring Procedure	
Interpretation and Analysis of missing data	

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## The Fibromyalgia Rapid Screening Tool (FIRST)

You have been suffering from joint, muscle or tendon pain for the past 3 months at least. Please answer this questionnaire in order to help your doctor evaluate your pain and symptoms more effectively.

Please fill in this questionnaire by answering either yes or no (only 1 answer: YES or NO) to each of the following statements. Put a tick in the box that corresponds to your answer.

	Yes	No
I have pain all over my body.		
My pain is accompanied by a continuous and very unpleasant general fatigue.		
My pain feels like burns, electric shocks or cramps.		
My pain is accompanied by other unusual sensations throughout my body such as pins and needles, tingling or numbness.		

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