

# What does the concept of “non-organic signs/symptoms” mean to chiropractic MSK specialists?

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### Introduction

Non-organic signs and symptoms (NOS) have been included in assessments of spine pain patients for decades, originating with Waddell et al.’s seminal 1980 study.<sup>1</sup> In that and other early work, high NOS scores were thought to indicate the need for further psychological assessment of the spine pain patient.<sup>2</sup> In a more recent work, Main

and Waddell have clarified that, all along, they considered NOSS to be associated with higher levels of distress and illness behaviour.<sup>3</sup> They noted that other interpretations of high NOS scores had entered the literature and the general discourse on spine pain patients, including considerations of malingering or insincere effort. They cautioned that these interpretations were not part of the original considerations for NOS.

Numerous studies have appeared since 1980 on the use of NOS in low back pain patients, many of which confirm the association of NOS with certain psychological variables and with poorer prognosis.<sup>4–15</sup> NOS have also been applied in the cervical spine.<sup>16–18</sup> However, critical reviews have emerged which challenge some popular assertions about NOS.<sup>19</sup> Most important among these critiques is the work of Fishbain et al.<sup>20,21</sup> whose systematic reviews of the literature find very little empirical support for many of the psychological associations with NOSS and almost no support for the correlation between NOSS and malingering.

In light of these controversies, it seemed appropriate to inquire as to the meaning of NOSS among some of those practitioners who specialize in spine pain assessments. Chiropractors in general, and chiropractic MSK specialists and third-party assessors in particular, may have implicit attitudes about NOSS which may not have been explicitly explored by themselves and which have never been explicitly examined or analyzed for their consistency with others in similar roles. As well, these implicit attitudes may be predicated on faulty justifications that are not evidenced-based. In order to identify if this is the case, a small survey of these attitudes was undertaken.

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## Methods

A sample of 70 chiropractic MSK specialists and those who conduct third-party assessments in Ontario was created on the basis of ease of electronic access. A small questionnaire was developed which inquired into the terms which chiropractic spine pain specialists associated with the concept of NOS. Respondents were sent the questionnaire by e-mail. The questionnaire consisted of a single prompting paragraph which asked respondents to consider the following questions: What are NOS all about? What do they really test? What interpretation do you give them?

Respondents were then asked to offer up to 5 words or phrases which they associated with NOS. All responses were tabulated for frequency amongst respondents. Qualitative review of the total word list was conducted to develop any synonyms and any related themes.

## Results

Questionnaires were sent to 70 chiropractic specialists. Sixteen responses were obtained (23%). Given the large number of terms generated and the degree of redundancy identified in the later responses, it was decided that this sample was sufficient.

The total number of distinct terms submitted by these respondents was 35 (see below: 4 themes contain all 35 words or phrases). Five (5) terms were endorsed by 3 or more respondents with scores as follows: “inconsistent” (endorsed by 6), “self-limiting” (endorsed by 3), “malingering” (endorsed by 4), “exaggerating” (endorsed by 8) and “somatization” (endorsed by 5).

Of these terms, 4 synonyms for “exaggeration” were noted: “symptom magnification,” “amplification,” “over-reaction” and “embellishing.” From the remaining 30 terms, 7 similar terms (not necessarily synonyms) were noted for the concept of “deliberate deception:” “misleading,” “falsify,” “faking,” “malingering,” “deceiving,” “artificial response” and “improper response.”

Taking these two sets of words into account, the frequency counts for response terms was as follows:

1. Exaggeration: 15
2. Deception: 12
3. Inconsistent: 6
4. Somatization: 5
5. Pain Focus: 4

## 6. Self-limiting: 3

## 7. All other terms: 1

Upon review of these terms, four themes emerged, as shown in Table 1 (# in bracket = # of respondents selecting this term):

## Discussion

This survey must be interpreted with caution due to the small sample size of respondents. However, even from this small sample, it appears that there is a strong endorsement of the nexus of concepts around “exaggeration”, “malingering” and “inconsistency” which would indicate that the chiropractic assessors take the attitude that NOS reflect consciously motivated behaviour. The respondents did endorse 8 terms that appear to provide a more psychological (non-deliberate / sub-conscious) interpretation of the motivational set of patients demonstrating high NOS (see Psychological Factors); however, no single one of these terms was endorsed by more than 2 respondents. Given that a maximum of 70 responses was possible with this sample, the total number included in the “psychological factors” theme was 11 (16%); this appears to be only a modest endorsement of these factors as critical to the interpretation of NOS.

The concept of “over-reaction” provides a test case for the problem: when a non-organic sign of “over-reaction” is observed, does this originate in the patient’s psychological or even “neurological” hypersensitivity?, or does it originate in a conscious motivation to mislead? Proponents of the former interpretation would likely justify it by appeals to the well-known manifestations of distress or anxiety (i.e., hypervigilance, fear avoidance attitudes, negative affect, negative response bias, etc.<sup>22-28</sup>) and/or to the increasingly accepted concept of chronic pain-induced central sensitization, with clinical manifestations of hyperalgesia or allodynia underlying the over-reactivity observed clinically.<sup>29,30</sup> Proponents of the latter interpretation appear to downplay these “psychological” interpretations and emphasize those that arise from deliberate attempts to obtain secondary gain.<sup>31-33</sup>

Perhaps these respondents were placing greater emphasis on the non-organic simulation signs (lumbar and cervical) as opposed to the non-organic symptoms. The former are distinguished from the latter as they clearly involve the patient’s verbal response to whether the “test”

Table 1 *Four themes arising from responses*

1. Deception:	2. Psychological factors:
<ul style="list-style-type: none"> <li>– malingering (4)</li> <li>– falsify (2)</li> <li>– faking (2)</li> <li>– deceiving (1)</li> <li>– misleading (1)</li> <li>– artificial response (1)</li> <li>– improper response (1)</li> </ul>	<ul style="list-style-type: none"> <li>– fear avoidance (2)</li> <li>– pain anxiety (2)</li> <li>– frustrated (2)</li> <li>– catastrophizing (1)</li> <li>– apprehension (1)</li> <li>– anxiety (1)</li> <li>– urgency (1)</li> <li>– hopelessness (1)</li> </ul>
3. Clinical Behaviours:	4. Miscellaneous / Clinician-focused concepts:
<ul style="list-style-type: none"> <li>– exaggerating (8: single highest item)</li> <li>– inconsistent (6)</li> <li>– pain-focus (4)</li> <li>– self-limiting (3)</li> <li>– symptom magnification (2)</li> <li>– amplification (1)</li> <li>– embellishment (2)</li> <li>– over-reaction (2)</li> <li>– attention-centred (1)</li> </ul>	<ul style="list-style-type: none"> <li>– somatization (5)</li> <li>– co-morbidity (1)</li> <li>– passive coping (1)</li> <li>– non-anatomical (1)</li> <li>– prolonged disability (1)</li> <li>– high pain level (1)</li> <li>– psychological factors (1)</li> <li>– biopsychosocial issues (1)</li> <li>– caution (1)</li> </ul>

provokes pain. These respondents may have taken the attitude that an examiner “knows” that these tests should not be painful, but, if the patient responds that they are, this can’t be due to anything other than a deliberate falsehood.

If the findings of an emphasis on the conscious motivation of the patient to deceive are at all generalizable to the larger chiropractic world, then this is somewhat at odds with current important reviews in the literature and may not be an evidence-based attitude. Ferrari<sup>27,28</sup> has consistently indicated that “symptom magnification” is likely due to psychological factors such as depression, negative response bias, distress and the like. Fishbein and colleagues<sup>20,21</sup> have consistently shown poor correlations between NOS and distress,<sup>20</sup> non-organicity,<sup>20</sup> secondary gain<sup>20</sup> and tests of malingering.<sup>21</sup> They have shown evidence that NOS do correlate with higher pain scores and with poorer prognosis, but the mechanism of this association is unclear.

One important consideration is that the issue of the distinction between non-organic symptoms, non-organic clinical signs and non-organic simulation signs has not been well-addressed in the literature. More work is needed to clarify the meanings and interpretations of NOS.

## Conclusion

This is only a brief report. Its findings should be viewed with caution as to the nature of the sample (only chiropractic MSK specialists) and of the small proportion of respondents from this sample. The findings reported here are not generalizable beyond these limitations; however, readers are challenged to consider their own attitudes to NOS in light of those expressed by the respondents in this study and those identified in the relevant literature.

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