



# Understanding Spasm: Uncover Misunderstanding among Physiotherapists



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## INTRODUCTION

Throughout interview with students, practitioners, and lecturers we found out that they usually use “spasm” as muscular problem, but can not explain how to measure spasm within assessment nor (re) evaluation procedures<sup>14</sup>.

## METHOD

We conduct a systematic review using inclusive criteria as below

1. “Spasm,” “Muscle,” and “Pain” as keywords on ProQuest and Google Scholar engine
2. “English” as a single language to be searched
3. “Article”, “Book” and “Proceeding” as document types to be searched
4. Search process conducted on a single time, 14<sup>th</sup> June 2018.
5. Only literature that referred to skeletal muscle included in this systematic review.

This way, we found out 18 articles and two books that relevant within our discussions. The results has read thoroughly to explore how the writers describing definition, measure and treat spasms.

## RESULTS:

- 1.Spasm is a mislead terminology. Spasm means for a local twitch respond which are physiological respond<sup>2,7</sup>. Spasm can only be measured by electromyography<sup>4,5</sup>.
2. Pain recognized came from Activated Trigger Point<sup>4,5</sup>, thus assessment and documentation may be based of palpable nodule, palpable taut band, jump sign (as seen on figure 1) and referred pain/tenderness (as seen on figure 2)<sup>8,11,12,13</sup>

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Clinical Phenomena	Likely Explanation	Recommended Measurement	Recommended Documentation
Palpable nodule	Continuous abnormal release of calcium from sarcoplasmic reticulum	Pain Recognition During Palpation	Figure 1 Figure 2
Palpable taut band			
Jump Sign	Severity of spot (trigger point) tenderness		
Local trigger point spot tenderness	Sensitization of nociceptors in the vicinity of the motor endplate		
Referred pain	Excitation of “sleeping” nociceptors input from Trigger Point	Electromyography	
Referred tenderness	Muscle guarding due to increased released of AcH in neuromuscular junction		
Increased muscle tension	A spinal reflex activation of motor units whose endplates have developed active loci and/or a mechanically-elicited axon reflex of those same motor units		
Local twitch response	Muscle guarding due to increased released of AcH in neuromuscular junction		
Shortened rest position	Increased release of AcH in neuromuscular junction of active oci due to mechanical stress with elated release of sensitizing substances focally	1. Postural test	2. Pain Recognition upon ROM Measurement 3. Muscle Length Test
Painful limitation of stretch ROM			

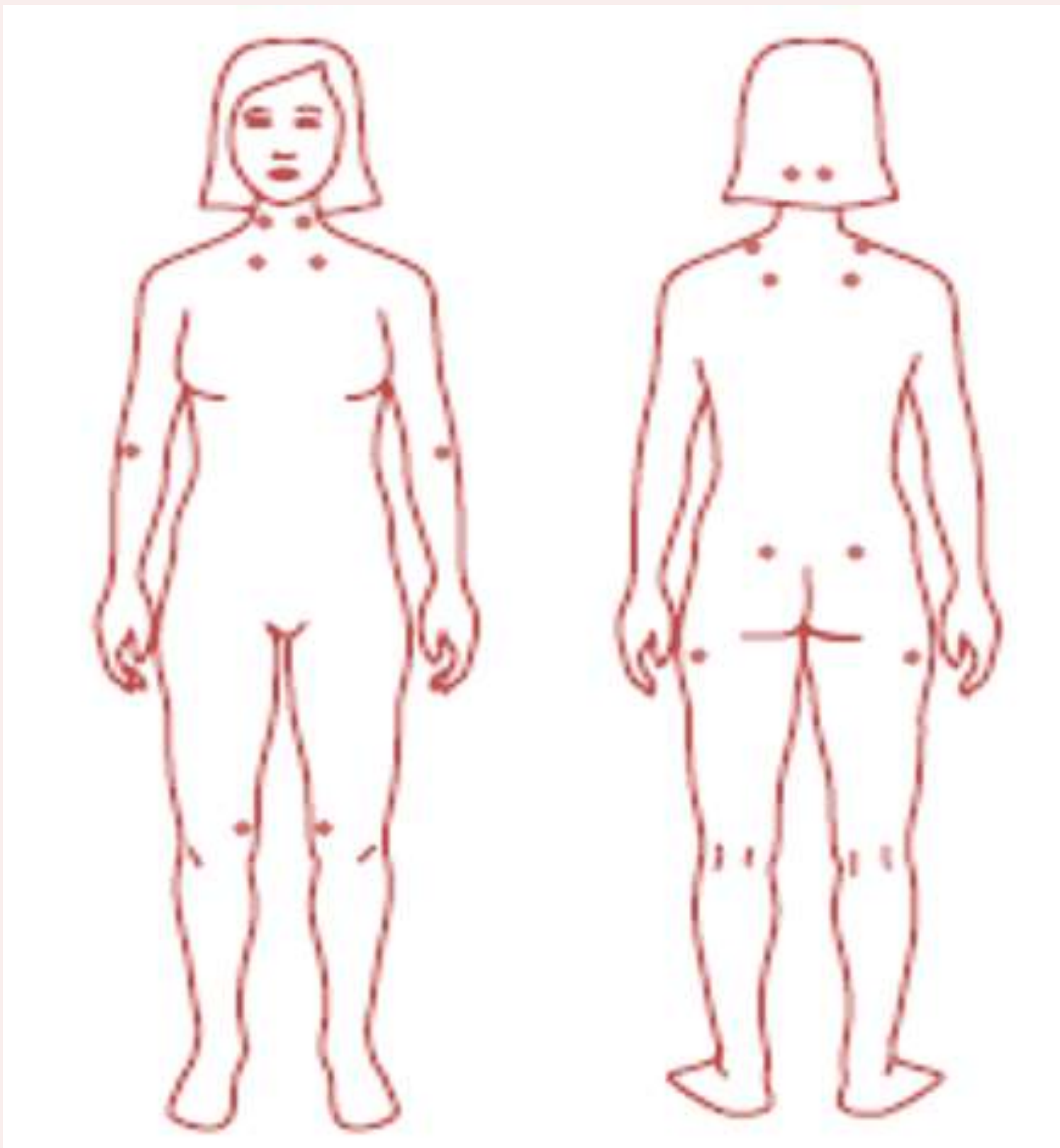


Figure 1. Most likely pattern of tender point (Kisner, 2016)

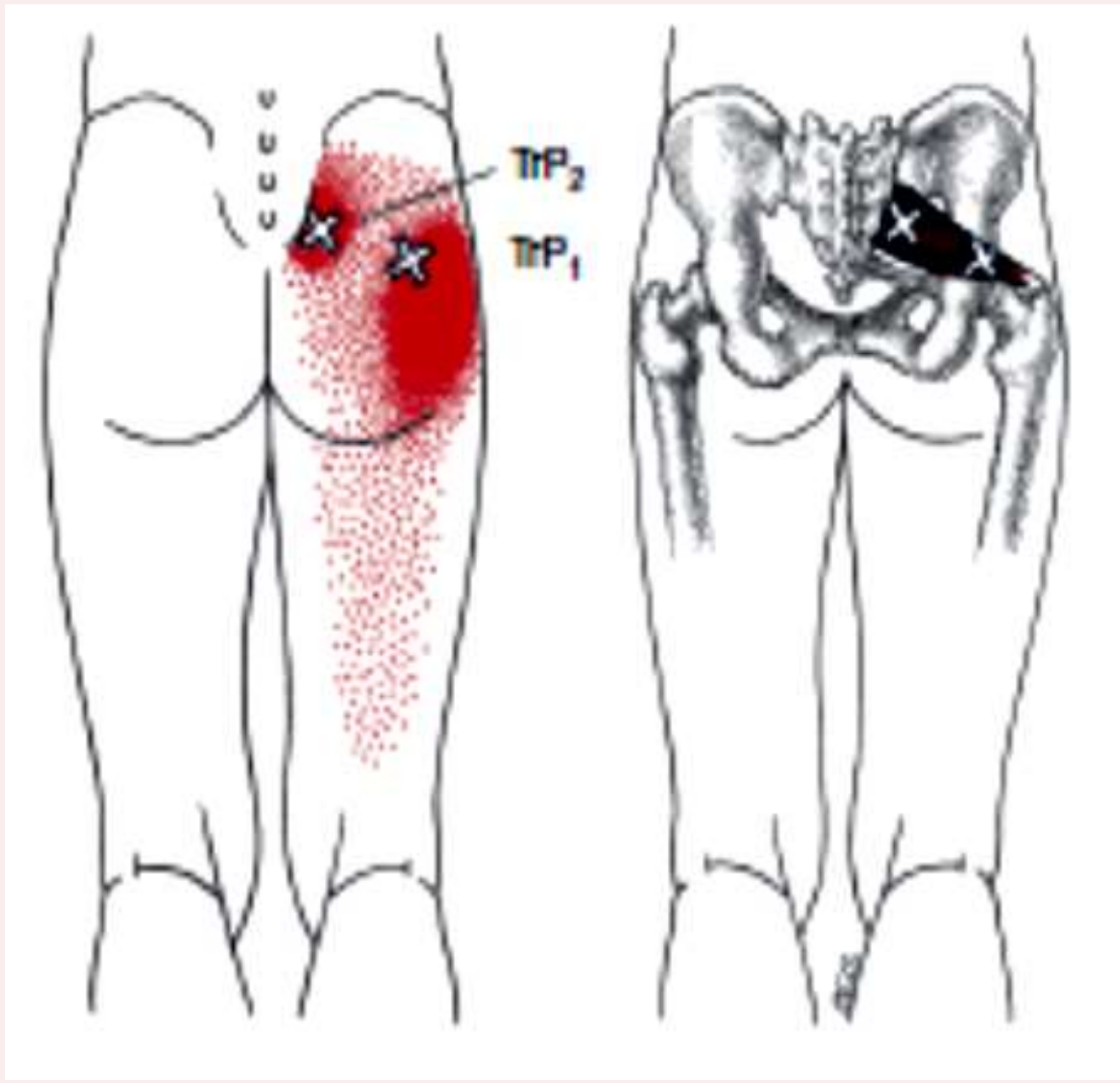


Figure 2. Referred pain and tenderness on trigger point (Kisner, 2016)



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