

A critical approach for learning the Operating Principles of Sacro Occipital Technique (SOT) Chiropractic

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Abstract: This paper presents a structured approach to understanding the principles of the Sacro Occipital Technique (SOT) and its contemporary application. The guidance is presented as narrative with key points to facilitate learning the technique.

The paper is presented as a Master Class in chiropractic technique.

Indexing Terms: Chiropractic; Sacro Occipital Technique; SOT; technique; DeJarnette.

Key Point 1: SOT Principles. The fundamental operating principles of the functional systems that govern the SOT methods (technique). The operating principles of these three functional systems (categories) are considered the core SOT principles. Also considered as a key SOT principle is that nothing in SOT is done without a reason and no action is complete until it is re-evaluated, all guided by indicators.

Key Point 2: SOT Categories. SOT categories consist of the operating principles of three primary functional systems of the body and methods of analysis and adjustment of those three systems. The three SOT categories are differentiated by SOT category defining indicators. DeJarnette wrote in his 1980 seminar notes '*To bring order out of chaos SOT offers the category system.*' (8)

Key Point 3: SOT Indicators. SOT indicators are functional tests and observations that indicate the state of function of each SOT category (category defining) and the adjustments needed to properly adjust the defined category. SOT indicators also monitor patient improvement.

Key Point 4: Guarding. The dictionary definition of guarding is '*To keep safe from harm or danger, protect and watch over.*' (35) This concept transfers to all that is known of the extensive neurological network of human systems that regulates posture, motion and function. In Category One we have the tendon guard reflex that reacts to a disturbance of the PCSRM. In Category Two the difference in function of the muscles surrounding the T1/first rib articulation acts as a unilateral guard reflex in the presence of unilateral weight-bearing instability. In Category three the lumbar spinal muscles along with the piriformis and psoas muscles react to the lumbar problem.

Introduction

This paper presents a pathway for learning Sacro Occipital Technique (SOT). SOT is a systems method of Chiropractic developed over seventy-five years by Major Bertrand DeJarnette DC.

The pathway presented in this paper for learning SOT is based on the understanding of answers to six relevant and challenging questions concerning the SOT systems method of chiropractic. (1) The goal is to create a critically thought-out process for learning the operating principles of the SOT Category system. This process concurs with the Socratic method of learning, which is based on asking and answering questions to stimulate critical thinking. (2, 3)

This paper does not teach methods of patient analysis and adjustment, but those methods should be easier to comprehend and perform when the answers to these questions are carefully thought through.

The overriding importance of this paper, in my opinion, is that appropriate questions when asked, processed and answered allow for a deeper and a more contextual understanding of the operating principles of the SOT Category system. As stated by Harrington Emerson 'The man who tries methods ignoring principles is sure to be lost.' (4) Regarding the use of questions for learning Warren Berger writes in his book *A More Beautiful Question* 'A question phrased a certain way produces an almost palpable feeling of discovery.' (5) The six questions are presented as two questions for each of the three SOT categories. (6, 7, 8)

Each of the three SOT categories represents the operating principles of a primary functional system of the body, a method of analysing the state of function of each system and a method of adjusting each functional system. (Key Points 2, 5) (6) It is my belief, as previously stated, that understanding the operating principles of the SOT categories in context 'knowledge is information in context' (9) will not only lead to greater understanding of the SOT patient analysis and adjusting methods but also to a greater ability to perform these methods.

Key Points are integrated within this paper to both serve both as an additional learning pathway and as a source of reference for the concepts expressed throughout this paper. The given words and terms express actions, the state of something or a relationship between two or more relative aspects of SOT. An example of this is the key term guarding. (# 4). Each SOT Category develops a specific guarding response to a disruption in its functional system. 'All the muscles of the body are continually being remodelled to match the function that is required of them.' (10)

- ▶ Category One has the *tendon guard reflex*
- ▶ Category Two has a *functional difference (left to right) of the muscles directly surrounding the Thoracic one /first rib articulation*
- ▶ Category Three has *spinal, piriformis and psoas muscle guarding responses*. The understanding of these guarding responses will lead to an understanding of the operating principles of the three SOT categories.

Question #1 Category One

What are crest and dollar signs and what are their meaning?

Crest and dollar signs are SOT procedural indicators. (Key Point 3) (7, 8, 11) Procedural indicators are tests and observations that are used when adjusting a specific category. (12) (Key Point 1) Crest and dollar are specific to Category One. Category One addresses the function of the *Primary Cranial Sacral Respiratory Mechanism* (PCSRM). (Key Point 5) (6, 7, 13)

... DeJarnette organised an approach to the assessment and care of a patient to 'bring order out of chaos'. The Sacro-Occipital remains a core technique for the conventional practice of chiropractic'



Key Point 5: Respiratory. Respiratory refers to the inherent motion of the cranial sacral portions of the PCSRM that allows for tension on the dura and the movement of cerebral spinal fluid throughout, protecting and nourishing the central nervous system.

The interacting components of the PCSRM are:

- ▶ the inherent respiratory motion of the sacrum
- ▶ the inherent respiratory motion of the cranial bones
- ▶ the tension of the dura's membranes and its attachments
- ▶ the pulsation of cerebral spinal fluid (CSF) on a cellular level
- ▶ the movement of CSF throughout the Central Nervous System (CNS)

Crest signs are found laterally in the lumbar musculature while dollar signs are found in the buttock musculature. (7, 8) The integrity of these muscles comparatively, left to right and one to another is the procedural indicator for the necessary category one cranial adjustment. Crest signs indicate the need for a temporal bone adjustment. Dollar signs indicate the need for an occipital bone adjustment. (7, 8, 14) Frontal bone adjustments are made in the absence of crest and dollar signs and in the presence of a head tilt. (14)

Question #2 Category One

What is heel tension and why is it both a procedural and a category defining indicator and also can be considered an adjustment? (Appendix 6) (12, 15)

Key Point 6: Heel Tension, Arm/Fosse, Step Out Toe Out. All three of these indicators are both category defining and procedural indicators that are primary to each category. They define the category most in need of adjustment and procedurally indicate when the blocks are needed and when they are no longer needed. 'As a system strives for equilibrium the precise placement of the blocks with careful controls results in a quick and meaningful response.' [6]

Key Point 7: SOT Blocks. The SOT blocks [36] are specifically designed to initiate necessary structural and functional changes in the pelvis and throughout the body that were found by SOT indicators. They are essential to each category adjustment. Retesting the indicator dictates the removal of the blocks.

Heel tension is a unilateral resistance of the *Achilles* tendon and its attached musculature, on the short leg side. Heel tension, also known as the *tendon guard reflex*, monitors the respiratory function of the sacrum (Key Point 5), the needed tension on the dura and most of all the role of the atlas in maintaining these processes. (14, 16)

If heel tension is present, it strongly defines the need for a Category One adjustment and when the Category One blocks (Key Point 7) are placed (an adjustment) and the PCSRM responds. The heel tension, procedurally monitored, will resolve, no longer needing the tendon guard reflex. DeJarnette writes in his 1980 manual that '*Releasing the tendon guard reflex is the most important step in the Category one procedure.*' (8)

Category One adjustments are designed to enhance PCSRM function.

Question #3 Category Two

Why does the Arm/Fossae test have to be done so precisely (exact)? (17) (Key Points 6, 8)

The arm/ fossae test must be done so precisely because it analyses the body's immediate ability to respond through the muscle system to multiple sensory stimuli, eyes watching, ears listening, the involved fossae (Key Point 8) for touch sensitivity, and to an arm pull for a muscle reaction. It is not a muscle test (7, 8) even though an isolated simple muscle response is part of the arm/fossae test.

Key Point 8: Fossae. The fossa is part of the arm/fossa test that refers to *Poupart's* (inguinal) ligament of the anterior pelvis. The fossae represent one of four areas of ligament tissue that becomes stimulated in the presence of a congruent ligamentous weight-bearing sacroiliac imbalance. (6) Stimulation of this area is part of the arm/fossa test.

Key Point 9: Sacroiliac Joint. Both a respiratory joint (Key Point 5), the synovial boot portion, (7, 8) Category One and the ligamentous weight-bearing portion, Category Two, are key factors in both categories.

Key Point 10: Function. SOT is functionally oriented. All indicators, both defined and procedural are judged on how they perform when they are functionally tested. SOTO is the one SOT indicator that also asks for patient symptomatic feedback along with its functional evaluation.

These sensory organs and structures that are challenged test the integrity of the central nervous system, calling on it to interpret the multiple sensory challenges, integrate and process the challenges and express those stimuli through the muscles. A sacroiliac ligamentous weight-bearing imbalance (Key Point 9) often present when the structural system is compromised will disrupt this process and can be disclosed by the arm/fossae test. Discerning the performance of the weight-bearing system is difficult but possible.

DeJarnette wrote in his *Philosophy, Science and Art of SOT* that '*The arm/fossae test is the most exacting neurological and myological test a doctor of chiropractic can make, and it requires a developing skill constantly renewed.*' (18) When sensory/motor integration is altered and defined by the arm/fossae test Category Two becomes the category of choice.

- ▶ Category Two is based on a primary neurological principle, the ability of the body to receive sensory input, the integration of this input and the capacity of the body to respond to that input through the muscles while in the presence of a ligamentous sacroiliac weight-bearing imbalance (Key Point 9). (6)
- ▶ The Category Two blocks restore the functional balance of the ligamentous weight-bearing structures of the sacroiliac joint allowing for improvement of weight-bearing balance, sensory/motor integration and the resultant arm/fossae test.
- ▶ Improvement can be maintained when spinal, cranial and other adjustments are made in conjunction with blocking (Appendix 10). The arm/fossae test, like heel tension, can be considered a category defining indicator and an adjustment.

Question #4 Category Two

Why does a unilateral functional difference of the muscles surrounding thoracic one/first rib articulations define a Category Two?

Category Two is a unilateral problem of the body to maintain weight-bearing function (Key Point 6) with the ligamentous weight-bearing portion of the sacroiliac joint primary. The unilateral T1/first

rib difference, a guarding affect (Key Point 4) indicates the body's struggle to promote weight-bearing stability (19) in the presence of a sacroiliac joint weight-bearing imbalance.

Question #5 Category Three

What is the role of muscle guarding in the understanding of Category three? (Key Point 4)

Muscle guarding occurs in Category Three as protection of the lumbar problem, which is primary to Category three. The muscle guarding effect, while limiting motion in the lumbar area and often creating an antalgic posture, (7, 8) can and usually does affect other structures. In Category Three the *piriformis* muscle and its attachments are most often affected. This is discovered through the Category Three defining *Step Out Toe Out* (SOTO) test. (Key Point 6) (7, 8, 20, 21, 22) At times the sciatic nerve can be entrapped in the sciatic notch (7, 8, 21) or a lumbar disc lesion could be further complicating and intensifying the muscle guarding response.

The SOTO test is both a defining and a procedural indicator for Category Three (11) and both useful and necessary in determining the degree of severity of the lumbar problem. It can also be adjusted by Category Three blocks. The *psoas* muscle often will have a guarding effect as well as the *piriformis* muscle and must be analysed and adjusted. (7, 8, 23)

- ▶ Category Three addresses lumbar subluxations, lumbar disc lesions and the condition of the sciatic nerve
- ▶ Category Three blocks (Key Point 7) and the SOTO procedural manoeuvre (unilateral pain or movement differences) reduces and/or removes the muscle guard reflex while at the same time further defining the sciatic nerve and its related disc tissue. (21)
- ▶ When the SOTO is completed, and the *psoas* muscle is adjusted the lumbar problem is prepped for adjustment. The preferred method of lumbar adjustment is the *SOT Sitting Disc Technique*. (20, 24)

Question #6 Category Three

What is the significance of the Straight Leg Raise (SLR) test in Category Three?

The straight leg raise test assesses the ability of the lumbar spine to move away from extension into a flexed position. This can be difficult to accomplish in the presence of a lumbar problem, primary to Category three. The SOT Sitting Disc Technique (SDT) enhances lumbar flexion while reducing lumbar extension and its compressive forces on lumbar disc tissue. (20, 24, 25)

When done effectively it also reduces the limitations of the SLR. I report this in my retrospective case series '*Clinically the SLR can be used as a pre and post assessment tool to assess the effectiveness of the SDT adjustment.*' (26)

Cervical and Thoracic findings are not category defining indicators, but they are procedural and need to be adjusted as indicated in each category protocol. The primary SOT cervical analytic and adjusting methods are the stair step and 'figure 8' procedures. (7, 8, 27, 28) The primary thoracic analytic and adjusting methods are the trapezius (29) and occipital fibres and palpatory methods focusing on inter spinous space compression. (30, 31, 32, 33)

Conclusion

I write this paper with an appreciation of the complexity of the SOT method and the valuable purpose it serves. SOT presents a vast amount of information regarding primary functional systems of the body (Categories), ways of analysing the state of these systems and a method of addressing their needs. (6, 7, 8, 11)

The books, articles and pages referenced in this paper (especially References 8, 12, 18, and 34) should be helpful in the learning of SOT analytical and adjusting methods.

Key Point 11: *Systems.* SOT Categories consist of three primary systems centred on the function of the Central Nervous System, its attachments and structural stability throughout the entire body. These systems like all 'systems are ever changing processes of self-organisation, growth and adaption.' (37)

Key Point 12: *Dr. DeJarnette DC.* DeJarnette understood that these systems were either in a process of growth or decay. He developed an indicator system to identify its state of operation and developed methods to stimulate in a way that the body would learn. (6)

As stated in the introduction, I believe that the format of this paper (questions/answers) along with the supplemental material provided in the appendix offers the reader a critically based process, with a reliance on context, for learning the essence (operating principles) of the SOT categories.

The questions asked in this paper, like all questions, are in an interrogative form in order to seek information in return. My hope is that this form of learning will enlighten the reader how '*the art of asking questions is at the heart of discovery.*' (5)

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DC

Private Practice

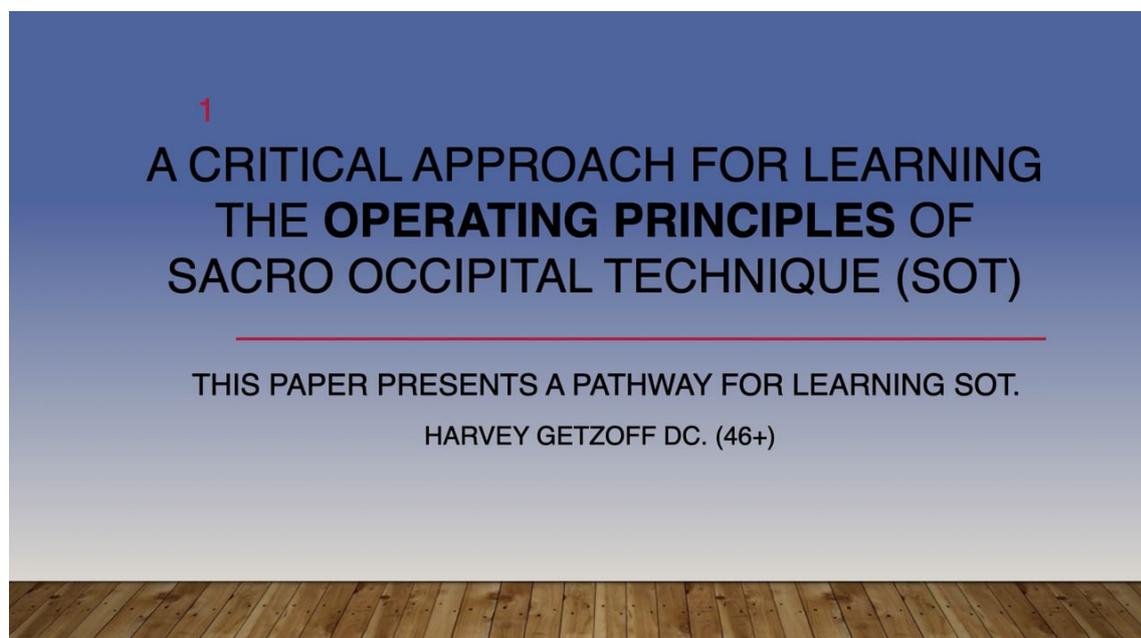
Marlton, NJ, USA

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Appendix: Key Points gathered

1. *SOT Principles*: The fundamental operating principles of the functional systems that govern the SOT methods (technique). The operating principles of these three functional systems (categories) are considered the core SOT principles. Also considered as a key SOT principle is that nothing in SOT is done without a reason and no action is complete until it is re-evaluated, all guided by indicators.
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