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Sacro Occipital Technique (SOT) Indicators: Accessing Problems and Developing Strategies

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Narrative: Here I discuss the complexity of the SOT primary indicators; Heel Tension, Arm/Fossae, and SOTO, but also for how they clearly illustrate the functional connection between the body's structural and neurological systems.

It is important to keep in mind when practicing SOT that the indicators discussed in this paper can at times overlap and vary. Nevertheless, verification (retesting the indicator post adjustment) can confirm the choices you have made.

All three plumb line scenarios on Chart #3 can greatly benefit from the Sitting Disc Technique (SDT) especially if indicated, 'Clinically the Straight Leg Raise (SLR) could be used as a pre and post assessment tool to judge the effectiveness of the SDT adjustment

Indexing Terms: Sacro Occipital Technique (SOT); Problem-Solving; MB DeJarnette; Primary Cranial Sacral Respiratory Mechanism.

Introduction

> '*To bring order out of chaos SOT offers the category system of analysis, finding that specific problems, communicate in uncomplicated manners*'
>
> MB. DeJarnette DC

This paper examines how a chiropractor can utilise a system of analysis and adjustment, in this case the SOT indicator system, to access the functional capacity of three systems (known as categories) that are essential components of the body's structural and neurological systems and their functional relationship.(8, 9) The three categories are referred to as category one, two and three. '*SOT indicators are functional test and observations that indicate the state of function of each SOT category*'. (5)

> *… The category most in need of adjustment is specified by category determining indicators …'*

The category most in need of adjustment is specified by category determining indicators (Chart#1) while category adjustments are specified by category procedural indicators (Chart #2). Some indicators (like Step Out Toe Out, SOTO) serve as both a category 'determining' indicator and a category 'procedural' indicator. (11)

Chart #1: Category defining indicators			
Indicator	Category #1	Category #2	Category #3
Symptoms:	Not applicable	Not applicable	Sciatic nerve pain
Plumb line analysis eyes closed 10 secs. (1,3):	A/P sway with bilateral T1/ first rib motion (head flex)	Lat. sway with unilateral T1/1st rib mot. (hd. Flex)	No sway with fixed bilateral T1/first rib motion (head flex)
Arm/Fossae test (16,8,19):	Not present	Positive, **takes precedence over all other category defining indicators*	Not present
Heel Tension (16,8,19):	Present, same side as leg deficiency	Not applicable	Not applicable
Leg deficiency (1,3):	Present prone	Present supine	Present prone
Step Out Toe Out manoeuvre (11,13,):	Not applicable	Not applicable	Present and applicable
Spinal lean (11, 16,5):	Not applicable	Not applicable	Present and applicable

Chart #2: Procedural defining indicators	
Procedural indicators	Action to be taken
Cervical range of motion (ROM) primarily limited rotation. (12)	When cervical rotation is limited, it specifies the need for cervical stair step and figure 8 adjustment in chosen category
Illio femoral motion, the side with diminished motion (11)	Indicator for illio femoral adjustment in category two and three
Psoas muscle test, side with diminished overhead arm pull (5)	Indicator for psoas adjustment in category two and three
Crest (temporal) and dollar (occipital) signs (5,19)	Utilize in category one to differentiate between the need for a temporal or occipital adjustment
Straight leg raise (SLR) limited motion and/or pain (5,19,13)	Indicator for sitting disc technique (SDT), primary to category three but can be used in category two
Cranial ranges of motion limited (9)	Along with head tilt and the lack of cranial growth and development unilaterally, it is an indicator of the need for a cranial adjustment
Occipital fiber (18,17)	Spinal adjustment coordinated with specified soft tissue reflexes if line #2, category one and two, primarily category one.
Sitting cervical flexion limited (4)	Anterior thoracic adjustment, palpating thoracic interspinous spaces for compression, primarily in category two.

> 'Nothing in SOT is done without a reason and no action is complete until it is re-evaluated, all guided by indicators'. (11,15)
>
> 'All three categories can be clinically defined with some potential overlaps and with some distinct functional interrelationships'. (11)

Categories Defined

Their Primary Indicators and Blocking Guidelines

SOT Categories = Model of Function + State of Dysfunction + Method of Adjustment (5)

Category One

Category One pertains to the Primary Cranial Sacral Respiratory Mechanism (PCSRM). The term 'respiratory' refers to the intrinsic motion of the cranial and sacral components of the PCSRM which facilitates tension on the dura and the subsequent circulation of Cerebral Spinal Fluid (CSF). This process is essential for the protection and the nourishment of the Central Nervous System (CNS).

Heel Tension serves as a marker for category One blocking, which enhances the sacrum's respiration while monitoring crest and dollar signs (5) to determine the resulting respiratory response of the cranium. Additionally, this process anticipates the involvement of the Atlas vertebra as it adapts to the needs of the PCSRM. Five to six minutes are needed on the blocks until the cranial needs are fully realised.

Test for heel tension by standing at the foot of the table and grasping each heel with your thumbs across the calcaneus/talus with your fingers encircling the patient's ankle. Test the tension in both heels simultaneously as you traction. Then test them separately by pulling each heel with both hands. Compare the relative tension left to right. This indicator is an indication of sacral respiratory function and the adaption of the atlas vertebra to help maintain tension on the dura. (1,3,16)

Category Two

Category Two refers to ligamentous sacroiliac weight-bearing instability, resulting from the accumulation of instability throughout the entire structural system Inclusive of the sutures of the cranium. (2,6,9)

> The basis for a category One cranial adjustment is to facilitate dural tension. The basis for a Category Two cranial adjustment is to facilitate sutural function. (2,6,9)

The arm/fossae test monitors the nervous system's sensory/motor response to the instability of the weight-bearing portion of the sacroiliac joint. (5, 8) The blocks are placed immediately after the arm/fossae test indicates the need for blocks (arm weakness) and most often can be removed, as indicated, after the cranial basic two adjustments. (8)

For further discussion of category Two and the arm fossae test please refer to my paper titled 'Sacro Occipital Technique (SOT): Systems Integration', published in this Journal; Asia Pacific Chiropractic Journal. 2024 5,1. Click here.

The two portions of the Sacroiliac Joint

Category	Description
One (1,3,8):	Synovial membrane (AKA Boot) respiratory movement part of the PCSRM.
Two (1,3,8):	Hyaline cartilage, limited movement, weight-bearing, and ligament supported.

Category Three

Category Three pertains to lumbar subluxations, lumbar disc lesions and condition of the sciatic nerve, along with functionally necessary adaptations of the piriformis muscle and possibly the psoas muscle and the upper cervical region. (1,3,11)

The primary indicator for category three is the Step Out Toe Out (SOTO) test, which assesses the piriformis muscle in relation to a lumbar disc lesion or potential entrapment of the sciatic nerve by exhibiting pain and or restriction unilaterally when applied. (1,3,11)

Chart #3: Category Three Algorithm: SOTO therapeutic response indicates the condition, the severity, and the likely outcomes of SOTO. (11)

Plumb line	Possible symptoms	SOTO no blocks	Initial diagnosis	SOTO on blocks	Repeat SOTO on blocks	Prognosis
1-Lean away from the side of pain	Possible pain low back, buttocks upper leg	Probable unilateral restriction	Bulging disc, (lateral disc)	Improvement of symptoms and movement	Further improvement	Favorable, should improve with care
2-Lean to the side of pain	Pain buttocks and leg	Probable unilateral restriction, increase in pain.	Herniated disc (medial disc)	Possibly no change	Still no change	Guarded, possibly some improvement
3-Lean most often away from the side of pain	Pain probable buttocks and upper leg	Probable unilateral restriction	Piriformis Syndrome	Improvement of symptoms and restriction	Further improvement	Favorable should improve with care

For further discussion of Category Three and the Step Out Toe Out (SOTO), please refer to my paper titled 'Category Three Predictability of Outcomes' published in this journal Asia Pacific Chiropractic Journal, 2024, 4,3. Click here. On occasion scenario #1 and #3 can be found in combination.

All three plumb line scenarios on Chart #3 can greatly benefit from the Sitting Disc Technique (SDT) especially if indicated, '*Clinically the Straight Leg Raise (SLR) could be used as a pre and post assessment tool to judge the effectiveness of the SDT adjustment.*' (pre- SLR, > SDT, > post-SLR). (11, 13)

Chart #4: A Timeline for Category Blocking:

Category	Indicator	Purpose of the Blocks	Blocking Times	Desired Outcome
One	Heel Tension (HT) + Place blocks, according to leg lengths. (19)	Respirate the sacrum, then monitor the cranial responses (crest, and dollar signs).	20 to 30 seconds for HT correction, an additional 5 to 6 minutes to monitor response in the cranium. OK to check and adjust occipital fibers while on blocks. End adj. with cervical and cranial adjustments as indicated (2,6)	Improved function of the PCSRM
Two (19)	Arm/Fossae (AF)+ place blocks, according to leg lengths. (19)	Position the weight-bearing portion of the sacroiliac	Proceed to the basic 2 cranial adj. (8) after placing the blocks. Retest A/F after Basic 2 for correction, remove blocks. The Iliofemoral and Psoas adj. If indicated are done prior to blocks. Cervical/cranial adj.after blocks. (8)	Improved weight-bearing stability throughout the entire structural system
Three (19)	Step Out Toe Out (SOTO)+ Place blocks, according to leg lengths. (19)	Level the pelvis, create balance of the piriformis muscles, and differentiate the severity of the disc lesion.	Repeat SOTO every 2 minutes, 3 times maximum (on blocks) to further correct the piriformis balance and evaluate the sciatic nerve. (11)	Improved function of the involved piriformis muscle. Achieve a more accurate assessment of the condition of the sciatic nerve and the need for SDT.

Plumb Line Category Defining Indicators

A: Thoracic one/first rib plumb line palpation

The palpation examination for categorisation consists of neck flexion and extension, while palpating the first ribs where they join thoracic-one (T1) transverse processes usually one and a half inches (3 - 4 cm) lateral to the thoracic one spinous process.

- Category One: A bilateral non-painful mobile T1/first rib with no unilateral differences. '*The head nodding shows us a bilateral T1/first rib motion which is characteristic of Category One*'. It is possible that '*the anterior to posterior rocking motion of Category One*' is part of the T1/first rib motion needed to enhance the respiratory function of the PCSRM. (1, 3)
- Category Two: A painful, swollen, mobile Ti/first rib on one side more than the other when forward flexing and extending the cervical spine. '*There will be no rocker motion such as seen in the Category One*'. '*An attempt of the body to maintain an upright posture when challenged by the asymmetrical joint-loading of one sacroiliac joint*'. (1, 3)
- Category Three: A bilateral T1/first rib limited motion as the body attempts to restrict mobility throughout the system in the presents of a disc lesion. The limited motion is consistent with the body's limited motion on the plumb line as it attempts to protect the damaged disc. (1, 3, 11)

B: Plumb line motion

The patient stands on a foot plate unsupported with their back to the plumb line. Arms are at their sides with the head facing forward. Their feet are in the centre two slots unless their knees are touching. If so, move their feet to the outside slots. Try to level their shoulders while maintaining the external occipital protuberance aligned with the centre of the sacrum. Wait 10 seconds with their eyes closed to make the analysis. (1, 3)

- Category One: If observing anterior to posterior sway (A-P) from behind then stand lateral to the patient to visualise the A-P rocking motion more directly. (1, 3)
- Category Two: A category two demonstrates a lateral sway usually away from the side of the unstable sacroiliac weight-bearing joint, 'one side supporting, the other side is avoiding weight'. (1, 3)
- Category Three: In acute cases the patient is antalgic (with a spinal incline) or there could be a curvature of the lumbar vertebra. There is limited motion in an effort by the body to splint the involved disc. (1, 3, 11)

Note the similarities between T1/first rib plumb line findings (A) and the plumb line motion findings (B).

Conclusion

SOT: Methods driven, systems based, functionally oriented, all guided by indicators

Throughout more than fifty years of practicing and studying SOT, I have developed a deep appreciation not only for the complexity of the SOT primary indicators; Heel Tension, Arm/Fossae, and SOTO, but also for how they clearly illustrate the functional connection between the body's structural and neurological systems.

- Heel Tension responds to a disturbance of the PCSRM and its protector, the atlas vertebra, all vital to the function of the central nervous system. (16)
- The Arm/Fossae test reacts to a sacroiliac weight-bearing disturbance as the Nervous System seeks to respond to the loss of stability. (8)

- SOTO is a process of discovery for nerve and disc function, as well as a part of the category three adjustments, as it is applied and re-tested (Chart #3). (11)

It is important to keep in mind when practicing SOT that the indicators discussed in this paper can at times overlap and vary. Nevertheless, verification (retesting the indicator post adjustment) can confirm the choices you have made.

I honour Dr Dejarnette (founder and developer of SOT) for his 70 plus years of extensive research and study all presented and explained in detail in his yearly seminar notes and teaching conferences.

I trust that the readers of this paper will review this commentary as my personal interpretation of the SOT teachings and readings, informed by my years of experience practicing SOT.

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