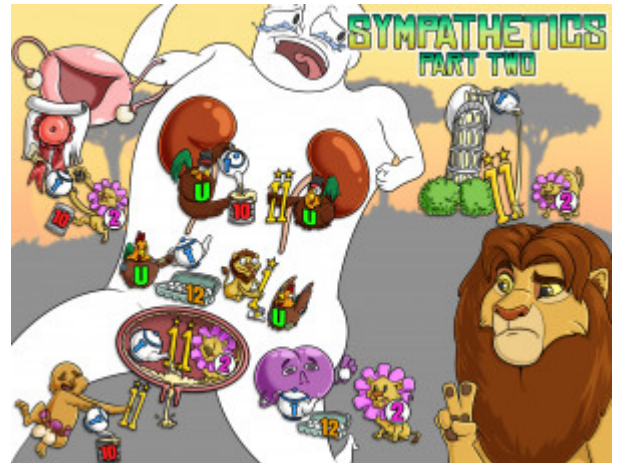


## Sympathetics II

The sympathetic nervous system originates from the thoracic and lumbar regions of the spinal cord and is high yield for the COMLEX. The superior most portion of the thorax is T1 and the sympathetic segments extend all the way down to L3. Understanding the relationship between the autonomic nervous system and the musculoskeletal system is important because many ailments are caused or worsened by reflexes between the two. Osteopathic manipulative treatment directed at the sympathetics is intended to interrupt reflex cycles and normalize sympathetic tone.



PLAY PICMONIC

### Urinary

#### T10-11 Kidneys and Upper Ureters

(T) Tea (10) Tin - Double (1) Wands on Kidneys and Upper-class U-rooster

The kidneys filter the blood to create urine. The kidneys receive sympathetic input from T10-T11 and correspond with the superior mesenteric ganglion. Sympathetic input causes constriction of the afferent arteriole which decreases GFR. The kidneys empty urine into the upper part of the ureters, which also receive sympathetic innervation from T10-T11. Excessive sympathetic input can cause ureterospasm.

#### T12-L1 Lower Ureters

(T) Tea (12) Dozen - (L) Lion (1) Wand on Low-class U-rooster

The ureters are a conduit from the kidneys to the bladder. The lower or distal portions receive sympathetic input from T12-L1, and excessive sympathetic input can cause ureterospasm. Somatic dysfunction in the T12-L1 area may be noticed during the passage of a renal calculus.

#### T11-L2 Bladder

(T) Tea (11) Double Wands - (L) Lion (2) Tutu on Bladder

The bladder receives sympathetic innervation from T11-L2. Sympathetic input can cause the bladder wall to relax and the bladder sphincter to contract, causing urine retention.

### Reproductive

#### T10-11 Gonads

(T) Tea (10) Tin - (11) Double Wands on Gonad-gopher

The gonads are also known as the testes (in males) and the ovaries (in females). They receive sympathetic innervation from T10-T11.

#### T10-L2 Uterus and Cervix

(T) Tea (10) Tin - (L) Lion on Uterus and Cervix-certificate

The uterus and cervix receive sympathetic innervation from T10-T12. Sympathetic input to the uterus causes constriction and the cervix to relax. The reverse is true with parasympathetic input.

### **T11-L2 Erectile Tissue**

(T) Tea (11) Double Wands - (L) Lion (2) Tutu on Erect-building Tissue-box

The penis and clitoris are homologous structures in the male and female and accordingly they both receive sympathetic innervation from T11-L2.

### **T12-L2 Prostate**

(T) Tea (12) Dozen - (L) Lion (2) Tutu on Prostate-plum

The prostate is a gland situated below the bladder in males. The urethra passes through the prostate, and an enlarged prostate can cause urine retention. Sympathetic tone for the prostate comes from T12-L2.