A Few Weeks Ago…

1

2016

The Application of DNS in Non-specific Low Back Pain

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Part One

The Mechanism of Non-specific LBP

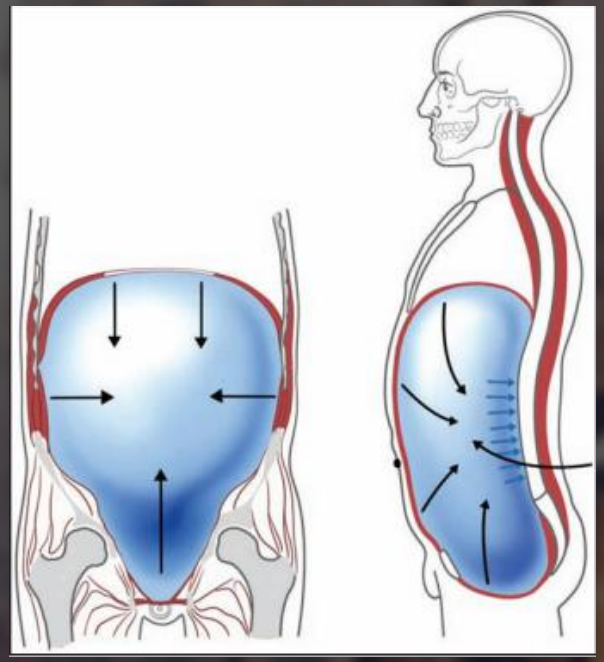
1 The Mechanism of Non-specific LBP

A. No specific injury

B. A lack of systemic disease

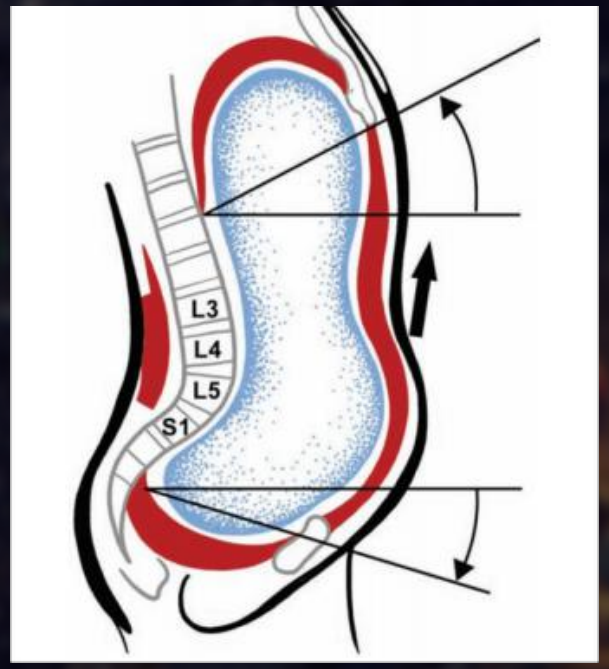
C. Morphological changes of chronic character (Jan Šulc,2012)

1 The Mechanism of Non-specific LBP——IAP and ISSS



(Pavel,2013)

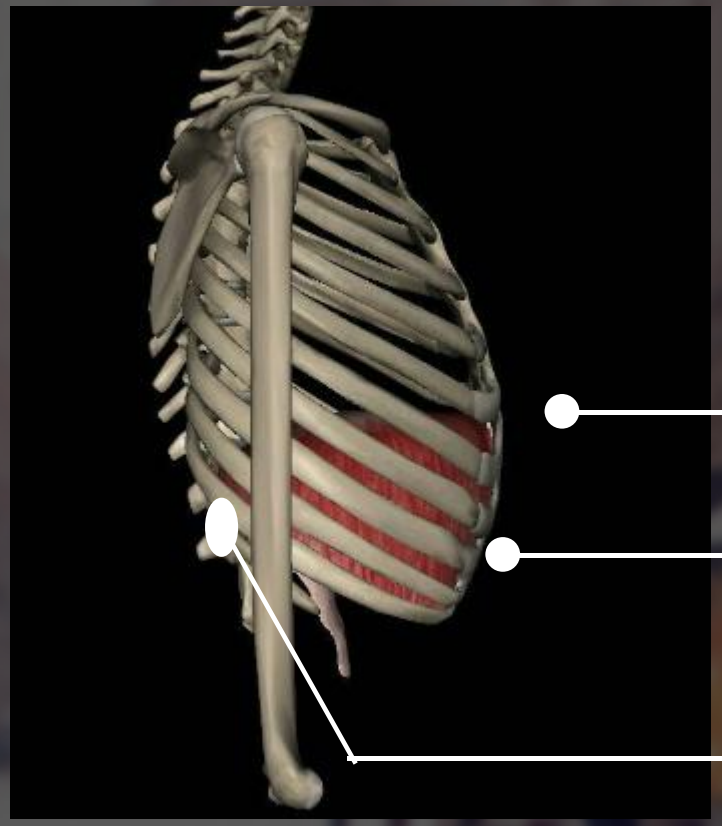
Intra-abdominal Pressure (IAP)



(Pavel,2013)

Integrated Spine Stabilizing System (ISSS)

1 The Mechanism of Non-specific LBP——IAP



(3D Body)

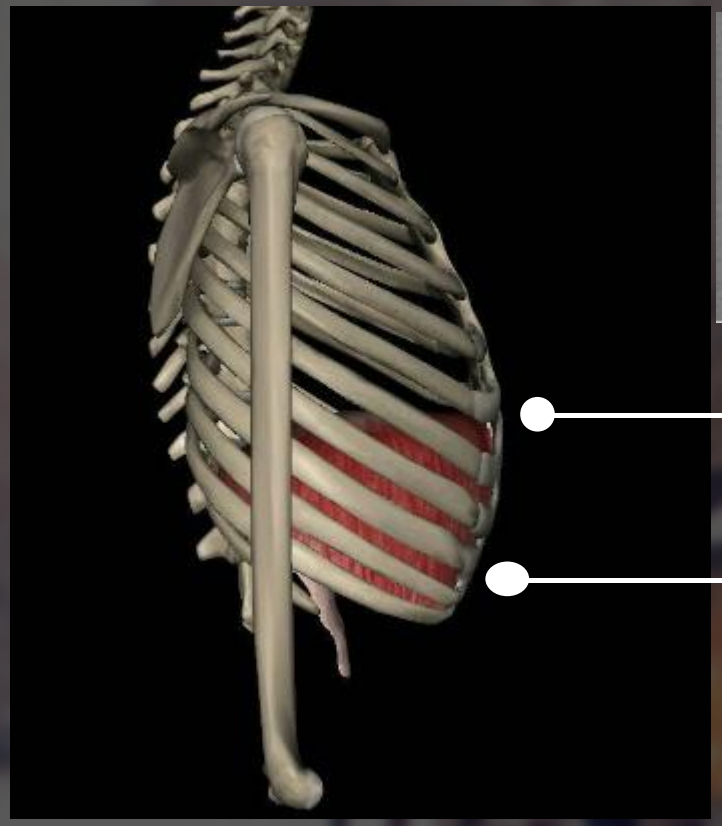
Anterior Part

Medial Part

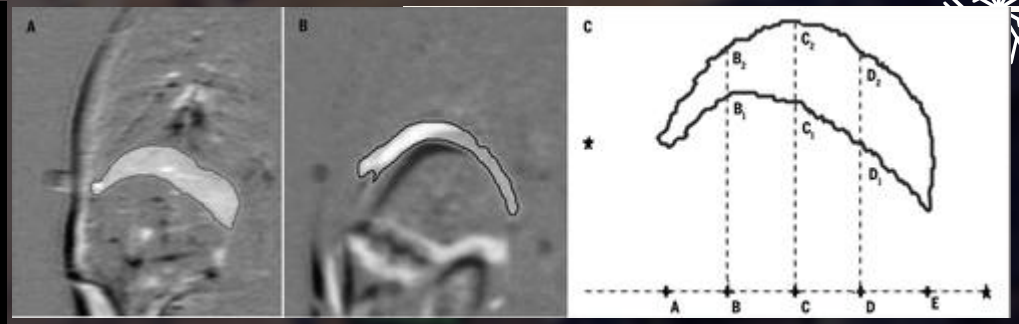
Posterior Part

Symmetric recruitment of all prats (Vostatek,2013)

1 The Mechanism of Non-specific LBP——IAP



(3D Body)



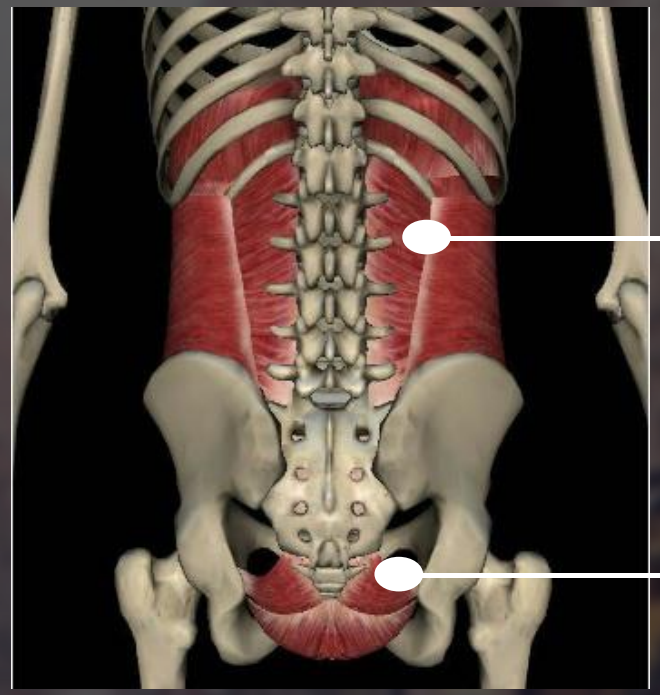
(Pavel,2012)

Anterior Part

Medial Part

- Asymmetric diaphragmatic activation
- A steeper slope of the crural part
- Inadequate IAP (Vostatek,2013)

1 The Mechanism of Non-specific LBP——IAP



(3D Body)

Transverse abdominis

Pelvic floor muscle

The contraction resulting :

- Increasing tension of the thoracolumbar fascia
- Their own length-tension relationship

(Therapeutic Exercise Foundations and Techniques,6th Edition.)

When IAP was decreased by

1.8-5.9 kPa,

the spinal stiffness was decreased by

8-31% at the end of a normal

expiratory effort. (Stokes,2011)

· The intrinsic stabilizing muscles provide stiffness of spine.

· They should be activated before the movement of our limbs.

(Sangeeta Sangwan,2014)

The Mechanism of Non-specific LBP——IAP+ISSS

ISSS consists of intrinsic muscles

+

Inadequate IAP

=

- Spinal curves may becomes exaggerated.
- Passive structural support is called on.
- Strain occurs with creep and fluid redistribution.
- Making them vulnerable to injury and causing pain at the end. (Pavel,2013)

Part Two

Why could DNS be effective to LBP

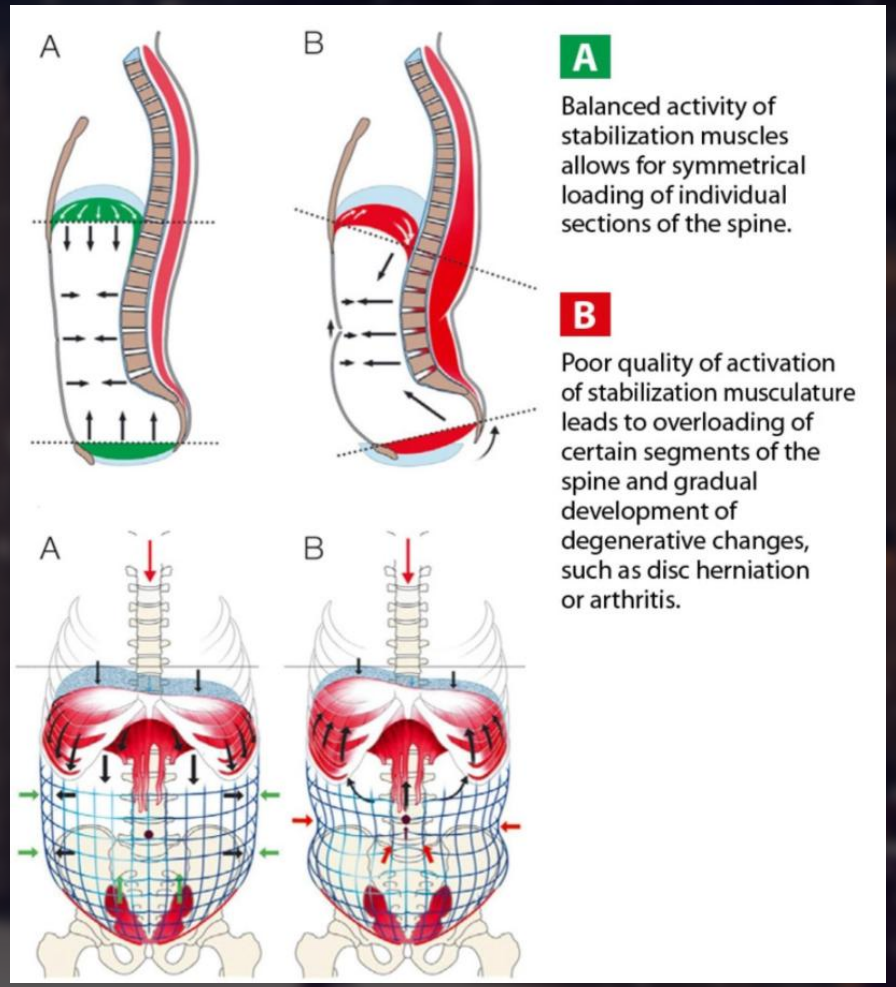
What is DNS?

(Czech P , 2015)

- Dynamic Neuromuscular Stabilization(DNS)
- A new method of intrinsic locomotor system stabilization

The integrated stabilizing system of the spine

- The multifidi
- The deep neck flexors
- The diaphragm
- The abdominal wall
- The pelvic floor



(Kolar P , 2013)

DNS therapeutic system

Activating the stabilizers and training the patients' brain

to Regain the best breathing pattern and IAP

The patients' voluntary control

(xinzhu , 2014)

Part Three

Demonstration

Kolar intra-abdominal pressure Test

(http://www.rehabps.com)

- Lie
- Flex
- Hair line, scapular and waist
- Withdraw

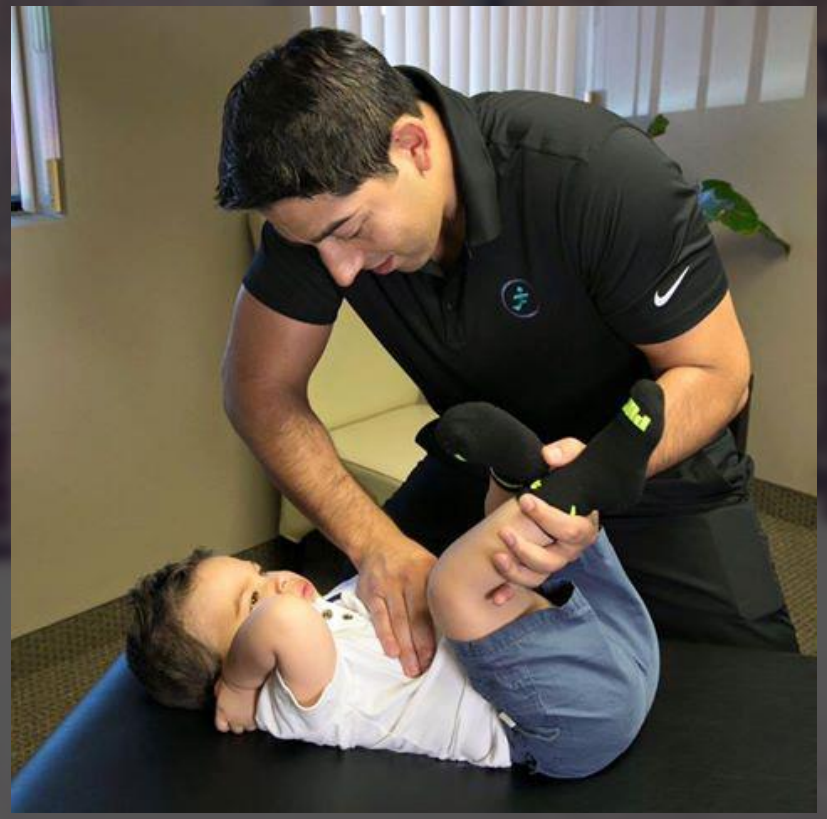
3 Demonstration

Wrong breathing pattern, diaphragm

The muscles next to spine are activated.

Weak, Impaired, Pain

Exercise



- Diaphragm on the right position
- Deep core muscles, resist
- Feedback

(http://www.rehabps.com)

Stepped-up Exercise

- Perplex
- Touch knee or feet
- 3 months to 6 months

(http://cn.bing.com)

Stepped-up Exercise

- Bear load

(Clare Frank , 2013)

Benefits

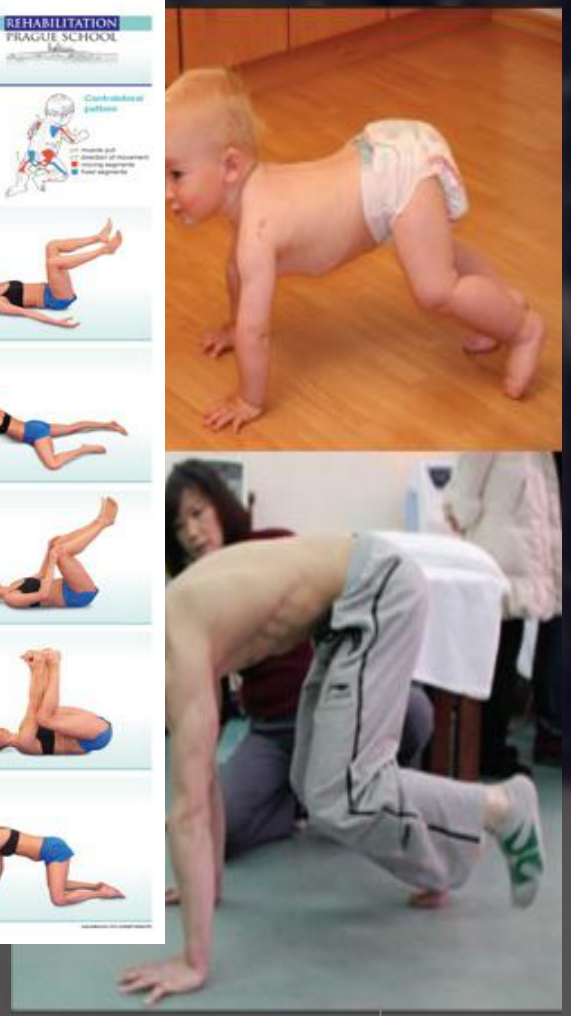
Facilitate abdominal pressurization

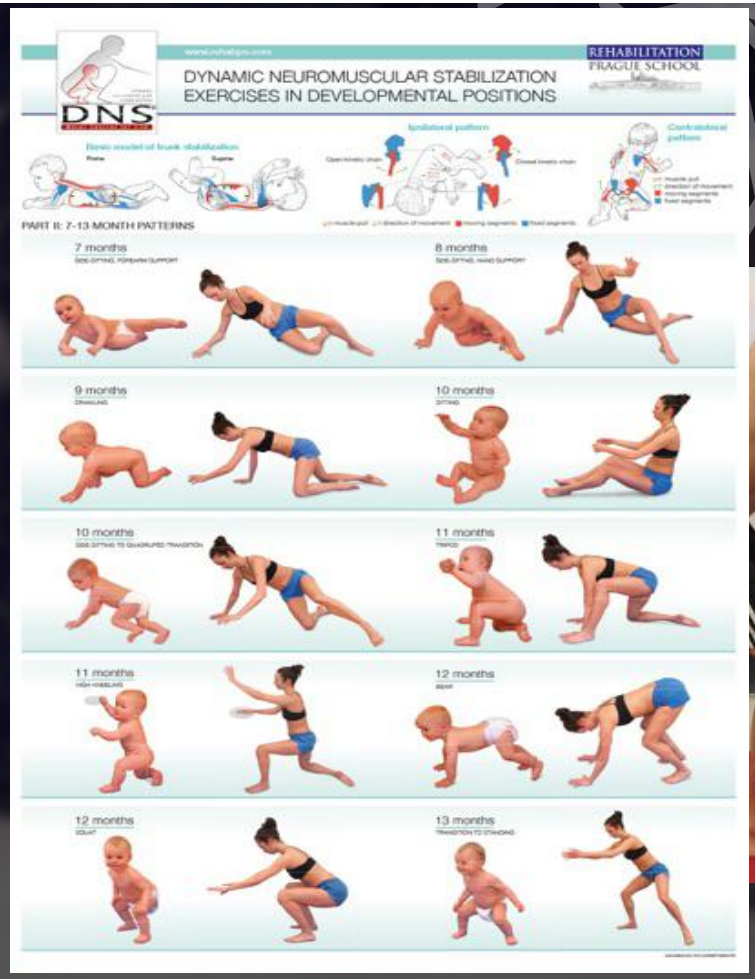
Produce spinal unloading

Produce increased stability

(Milanesi ,2016)

Stepped-up Exercise





(http://www.rehabps.com)

(Clare Frank , 2013)

Brief Conclusion

1.DNS is a new perspective.

2.PTs usually apply this position to non-specific LBP.

3.Teach our patients to exercise in a right pattern.

——http://www.rehabps.com

The approach to right pattern is better...

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DNS Official Website: http://www.rehabps.com

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Thanks for Your Attention !