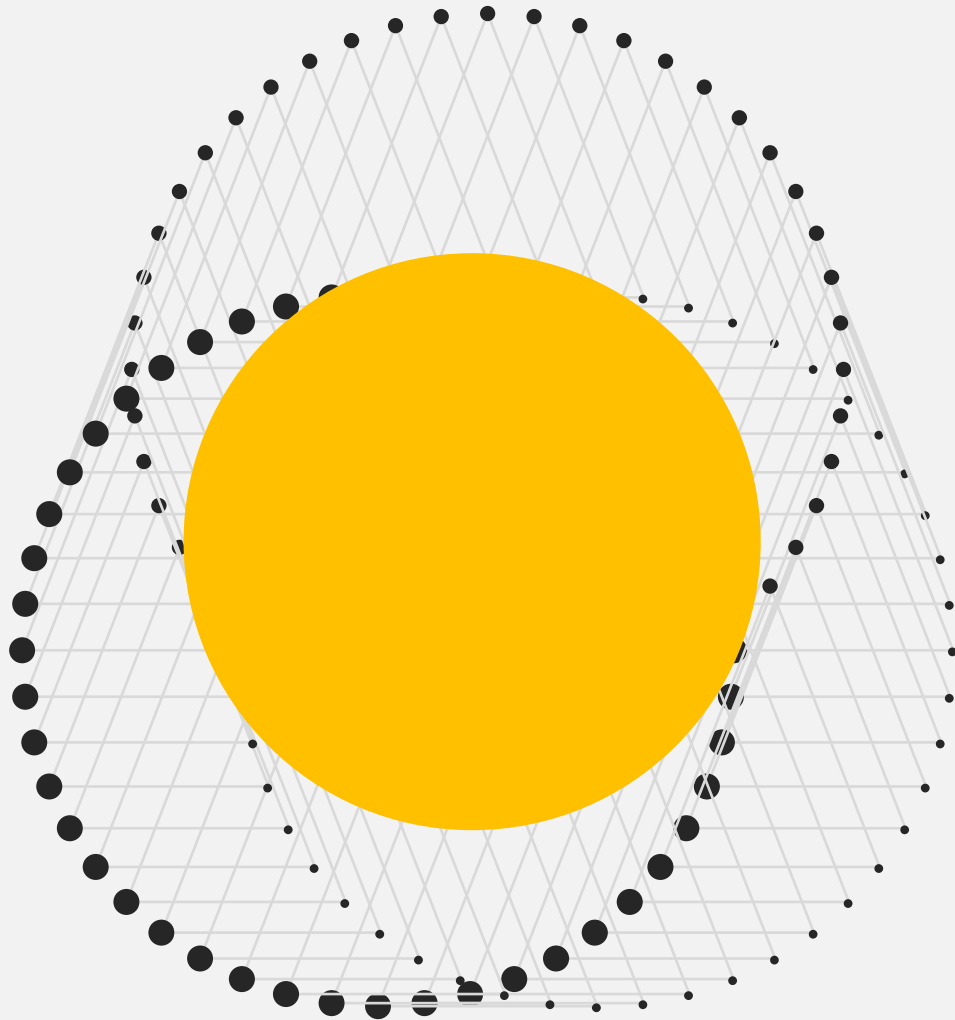


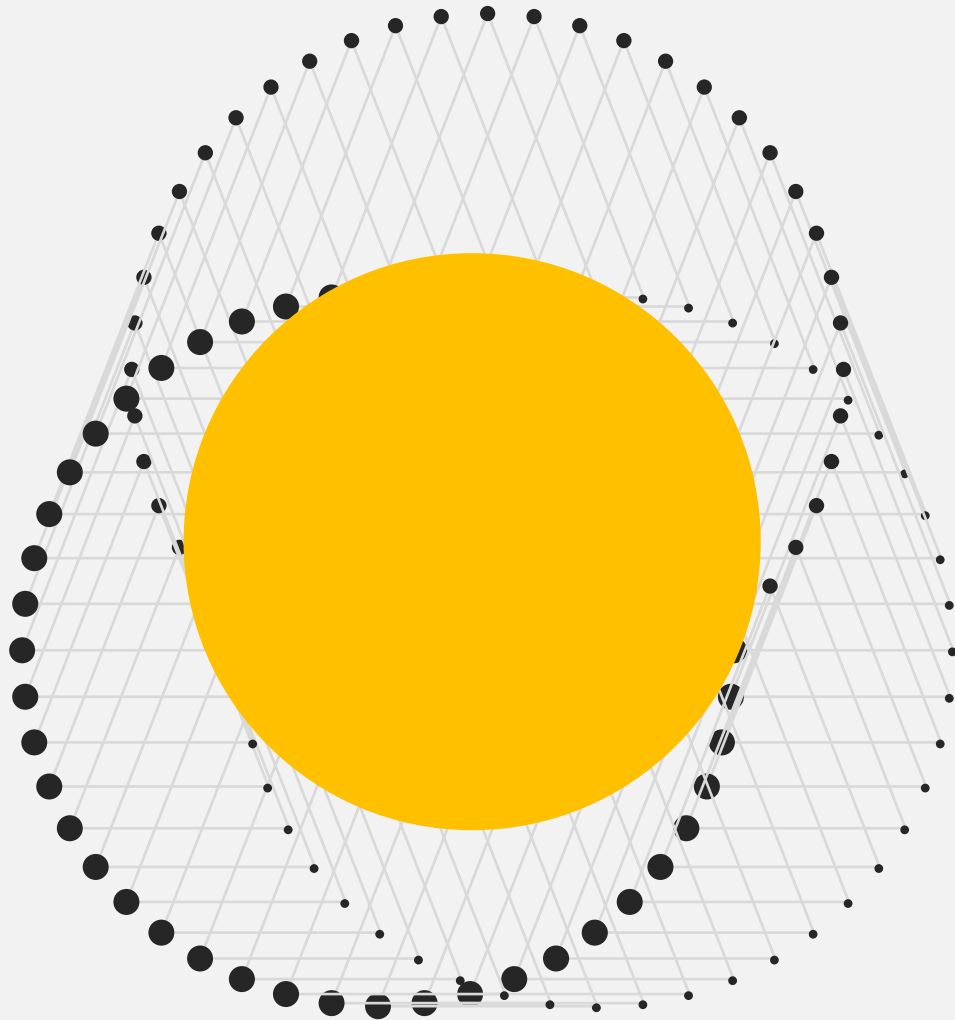
The Therapeutic Exercises of Multifidus for NLBP

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14364016







- Part 1 Anatomy
- Part 2 Mechanism
- Part 3 Therapeutic exercise
- Part 4 References
- Part 5 Appendix



Anatomy 1

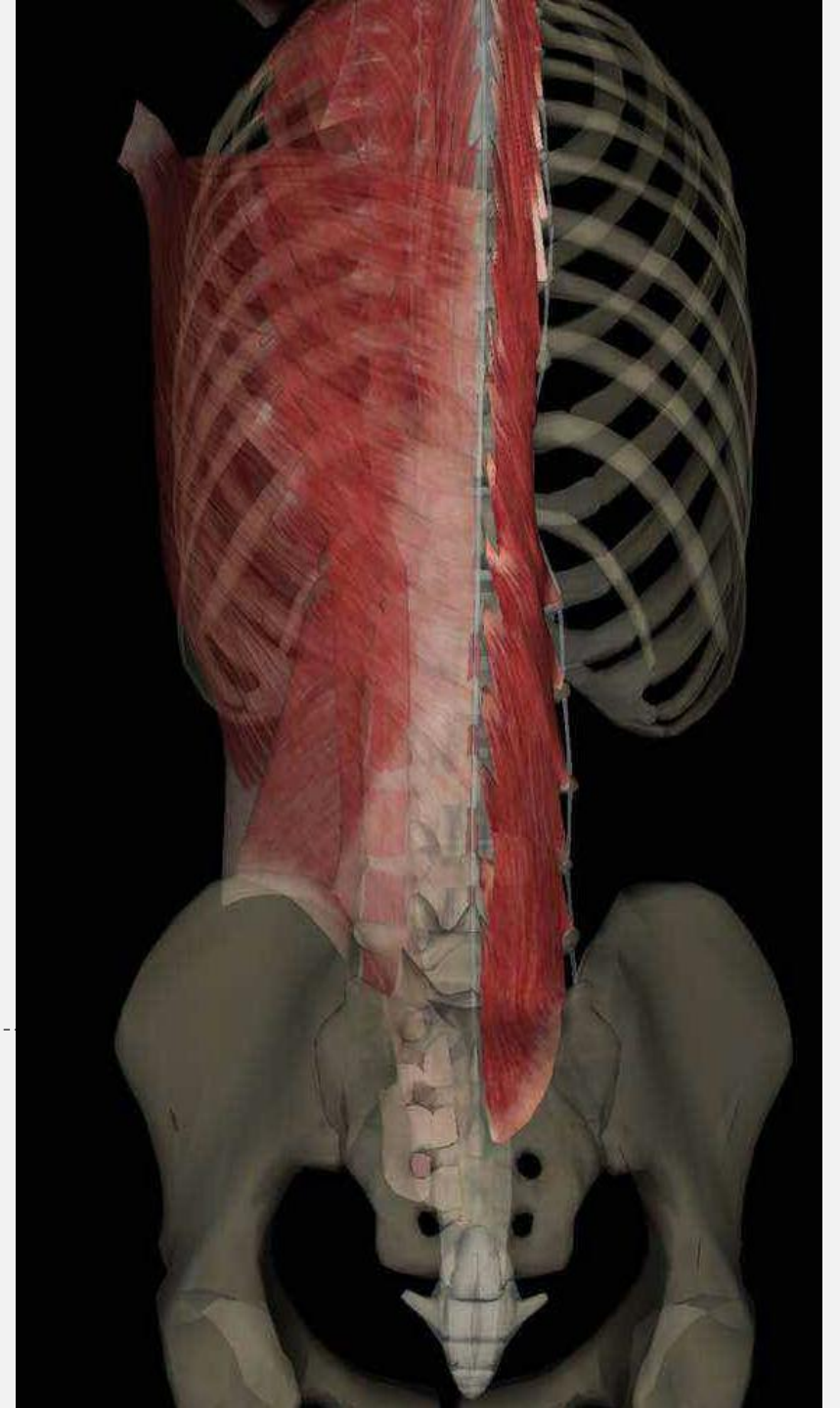
multifidus

The superficial
muscle group

The deep muscle
group

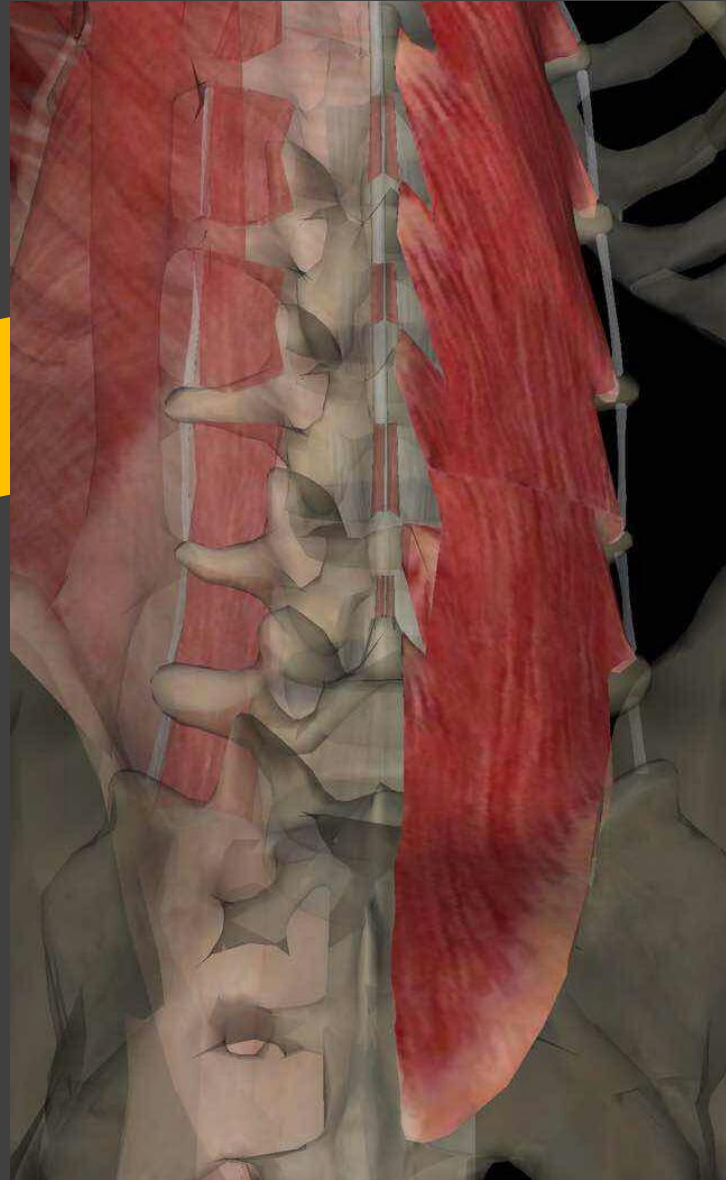


● Anne Asher, 2016



Lumbar multifidus

Originate on:
The L1~L5
spinous process
Insert on:
The L4~S1
mammillary
processes,
ilium and
sacrum



Originate on:
The L1~L5
lamina
Insert on:
The L3~S1
mammillary
processes

Lumbar multifidus

The superficial muscle group

	Originate on	Insert on
L1	L1 spinous process	L4~S1 mammillary processes and posterior superior spine
L2	L2 spinous process	L5, S1 mammillary processes and posterior superior spine
L3	L3 spinous process	S1 mammillary processes and S1~S3 dorsal side
L4	L4 spinous process	S2~S4 dorsal side
L5	L5 spinous process	S3~S4 dorsal side

● Xu Yui

Lumbar multifidus

Main function:
Maintain the
spine erect
posture
and stability.



A large, white, stylized number '2' is centered on a dark gray background. Overlaid on the middle of the '2' is the word 'Mechanism' in a yellow, cursive-style font. The entire composition is enclosed within a circular area filled with small white dots, resembling a starry sky or a particle field. A few larger white dots are scattered outside this circular area.

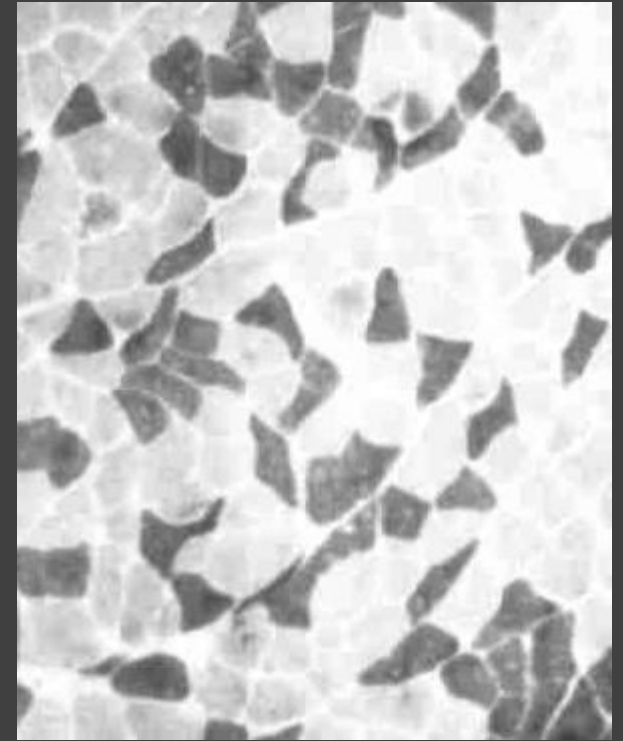
Mechanism

Multifidus



sedentariness

atrophy



(Liu Ya , 2001)

Measure

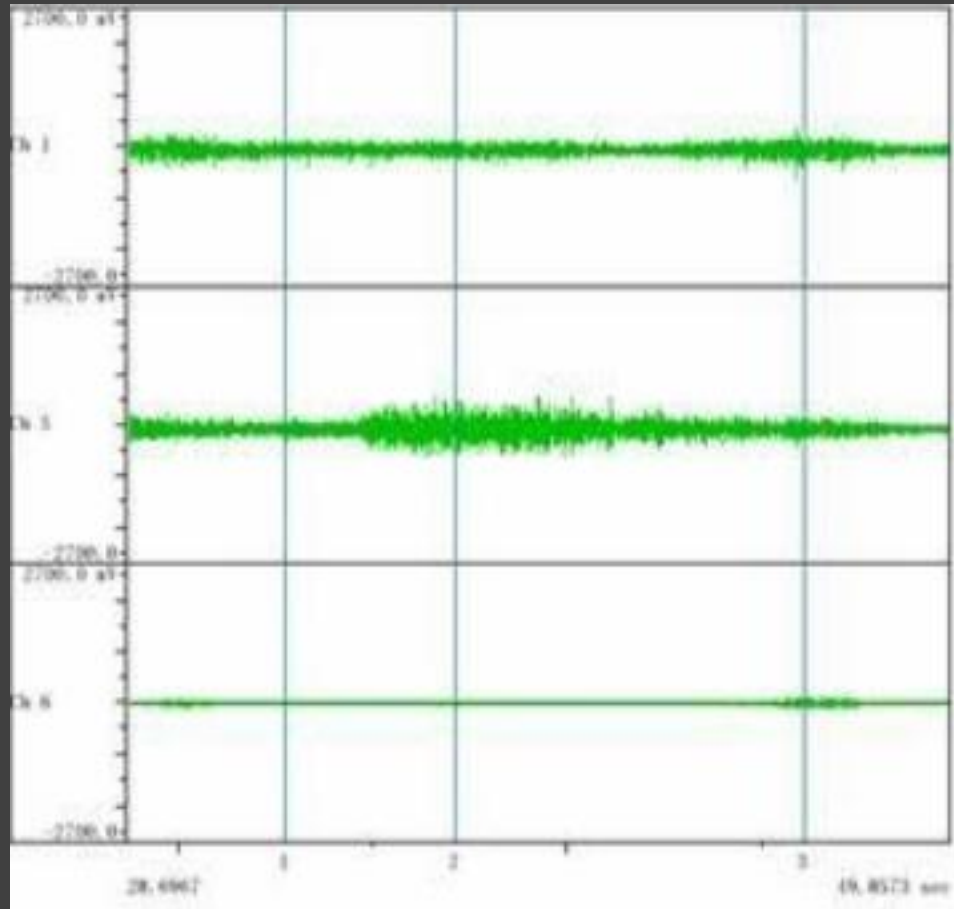
- skeletal-muscle ultrasonic



- CT and MRI

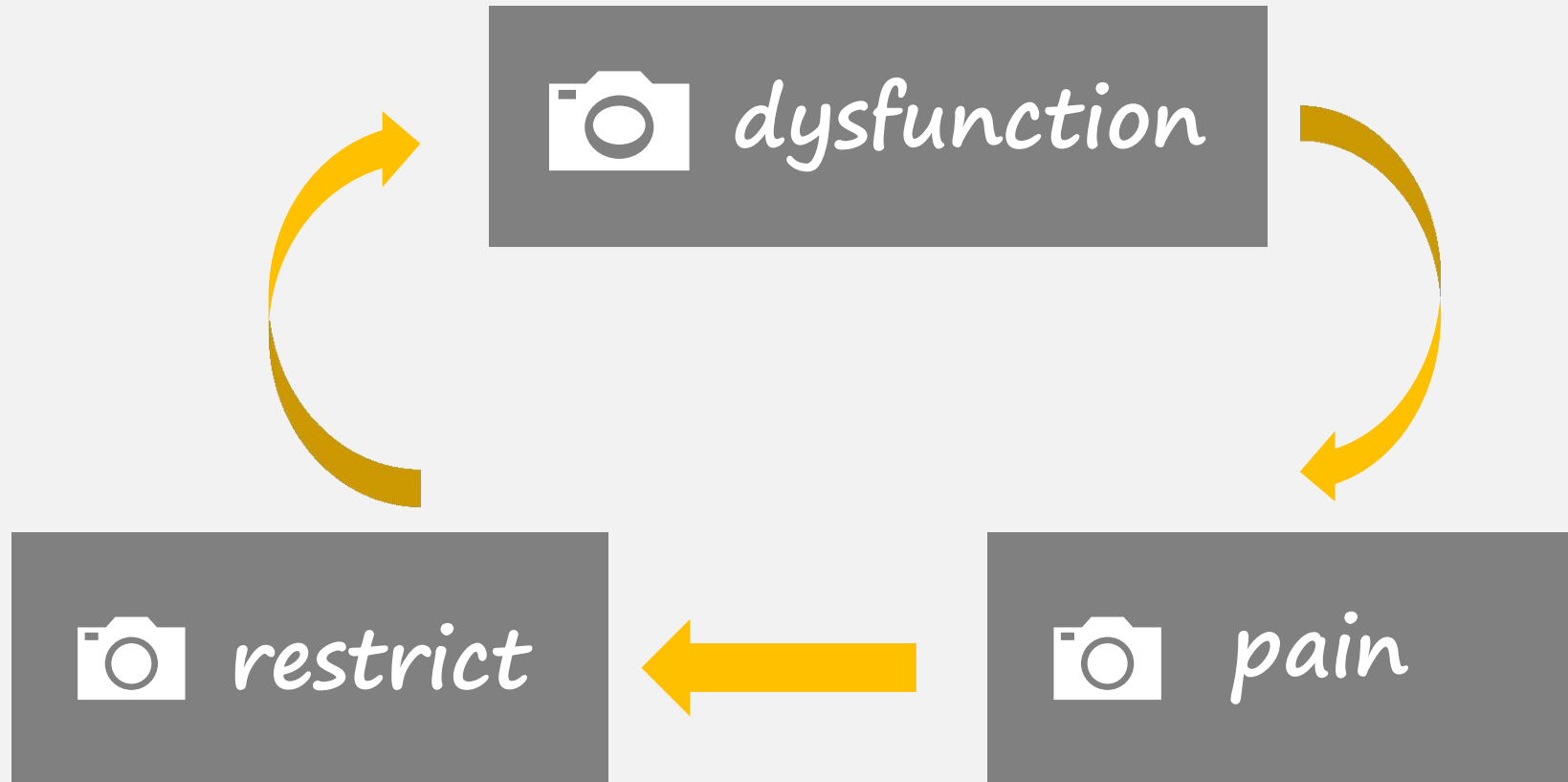
(Zhang Zhijie , 2014)

Dysfunction



(Zhou Tong , 2012)

vicious circle



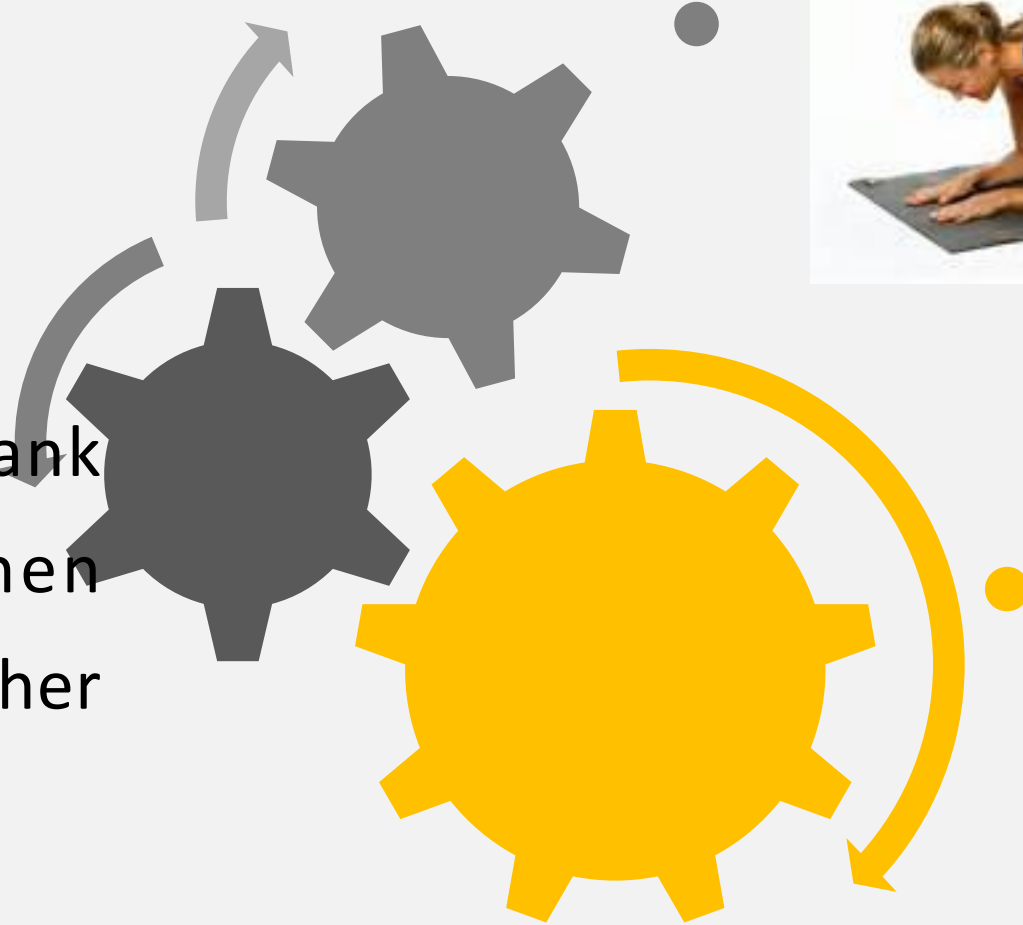
(Zhou Tong , 2012)

A large, white, stylized number '3' is centered on a dark gray background. The number is surrounded by a circular pattern of small white dots, with several larger white dots scattered around it. The text 'Therapeutic Exercise' is written in a yellow, cursive font across the middle of the number '3'.

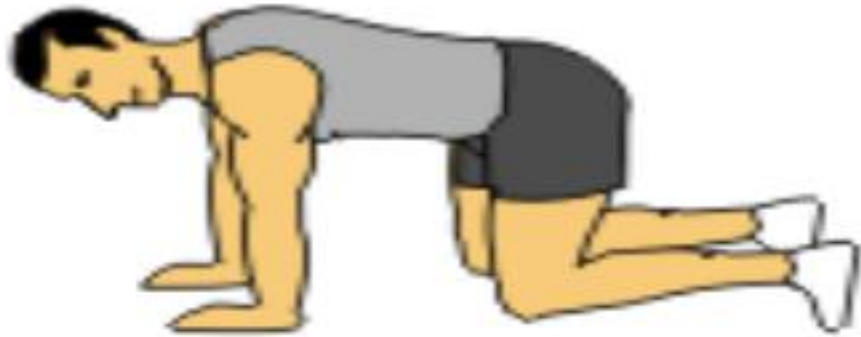
Therapeutic Exercise

• Plank

- Perform stationary plank exercises to strengthen your multifidus and other core muscles.



all-fours position



Opposite Arm and Leg Raise

- Raise your left arm straight and extend your right leg straight
- hold for a full second, and repeat on the other side
- Alternate back and forth

Manual exercises

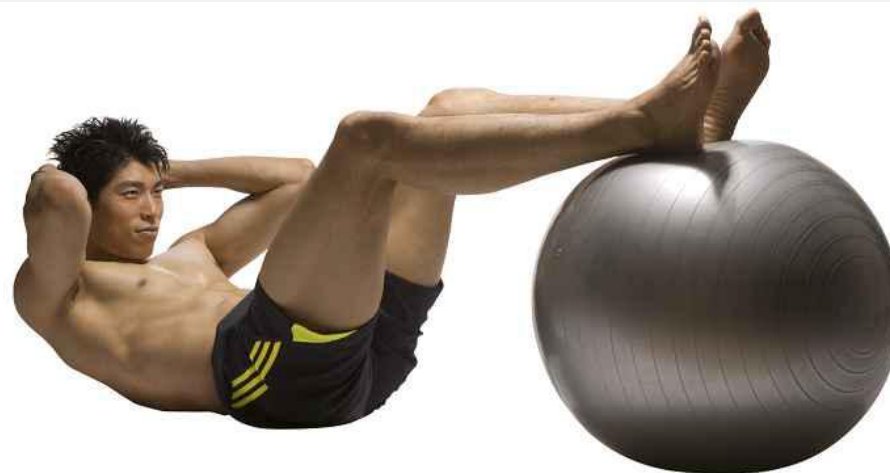
all-fours position



Cat and Cow

- Keeping arms and legs still, let your belly **droop** as you **look forward** and take a deep breath.
- exhale as you **arch** your back and **look downward**.
- Alternate up and down with each breath you take.

The Swiss Ball



Static exercise

- Prone
- Put the ball directly under the lower abdomen that is near the hip
- Separate the legs and elevates them slowly
- the head, back, legs and the ankles are in a line
- Hold for 10s



(Hu Bin, 2010)

Dynamic exercise

- The feet hold onto the wall
- The abdomen and the anterior thigh fix on the ball
- Tilt the body to squeeze the ball when the arms abduct into a line horizontally
- Lift up the body slowly



(Hu Bin, 2010)

Prescription and principles

● *Prescription*

- ✓ The static exercise: maintain 10s
- ✓ The dynamic exercise: 5 times/group
- * 3 groups
- ✓ Relaxation: 5min between groups

● *Principles*

- ✓ from stable to unstable
- ✓ from static to dynamic
- ✓ from manual to weight-bearing
- ✓ from inside to outside
- ✓ from small to large

The Flexi-bar



Back Hyperextension Machine

Back Hyperextension Machine



- The back hyperextension machine is often called a **Roman chair**.
- After placing your hands on the sides of your head, fold your body forward at the hips to lower your torso. Move back up in a steady motion and repeat.



4 References

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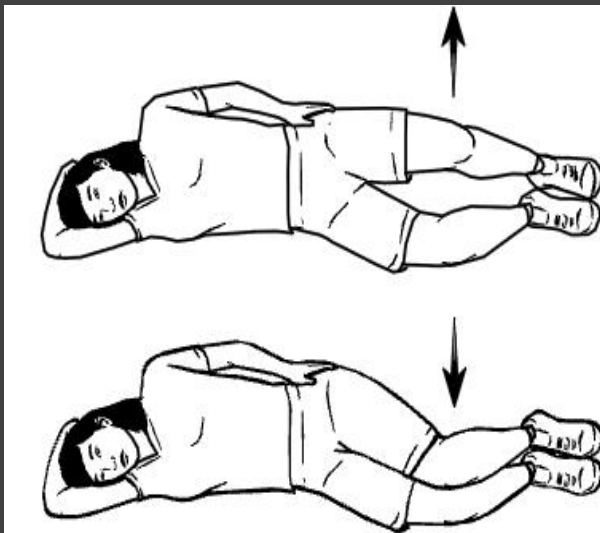
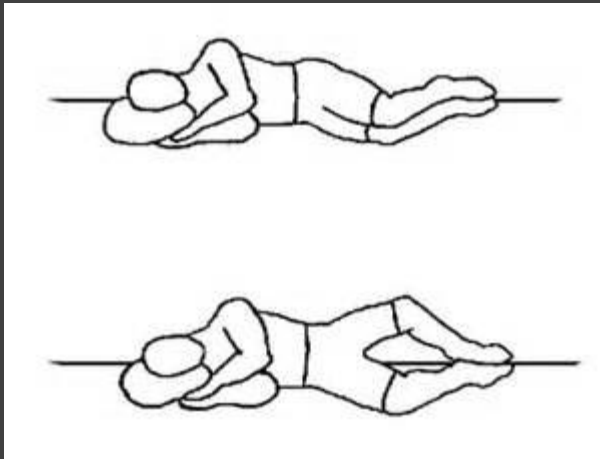
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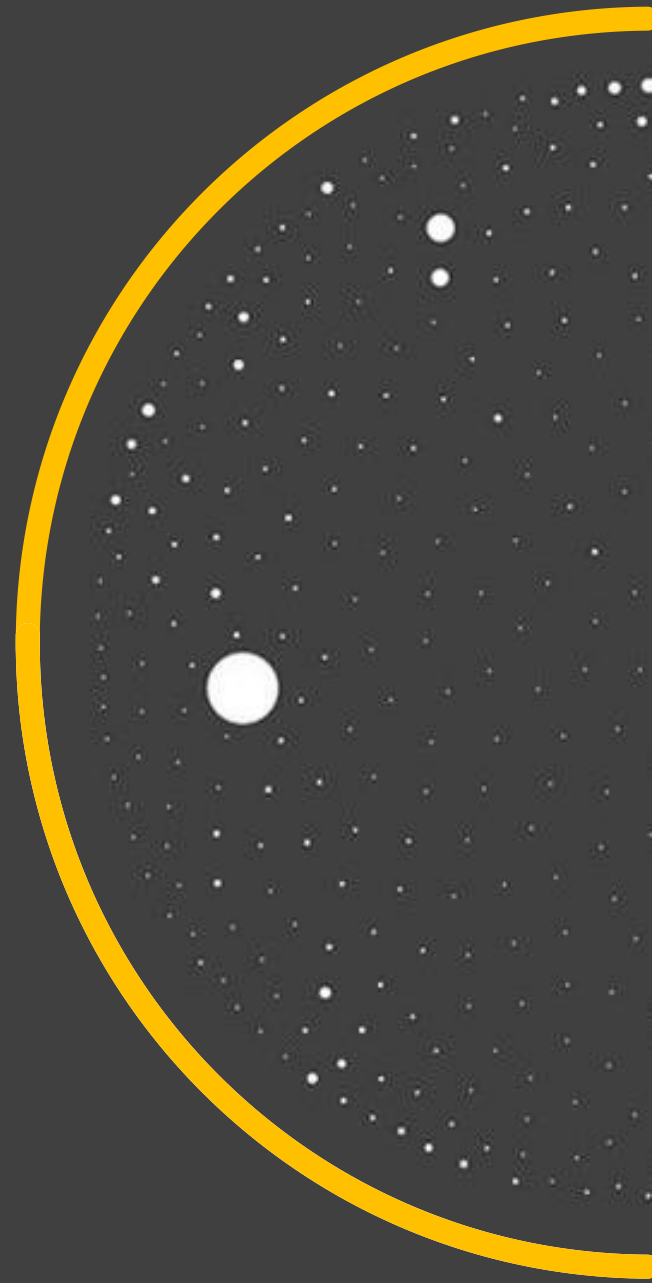
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Appendix



Sidelying Knee Lifts

- Lie on your left side with your knees bent and ankles resting on top of each other.
- Slowly lift your right knee toward the ceiling, keeping your ankles together.
- Hold for three seconds at the top, then slowly lower down. Repeat 10 times, then switch sides.



Superman with a twist

GET A GORGEOUS BACK

The superman with a twist move is excellent for strengthening your back and getting rid of that under bra flab you may be dealing with.

STEP ONE

Lay stomach down on the floor, arms bent and fingers by your ears with the legs extended.



STEP TWO

From here, lift straight up and as you do, twist to one side of the body.



STEP THREE

Once you're up as high as you can go, pause and then lower down. Next rep, twist to the opposite side. Keep doing until you've done 16 reps total, 8 per side.





THANK YOU