

Pain Management and Therapeutic Exercise of Lumbar Disc Herniations

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Abstract

Most people will experience episodes are usually brief, resolve spontaneously, and recur infrequently. The successful management of persistent low back pain requires that treatment be directed to the pain - producing structures in the human body. The spectrum of the treatment of low back pain ranges from very simple and straight foreword to very the complex and intricate. Treatments for lumbar disc herniations are conservative (75~90% of patients), invasive (5~10% of patients), and surgical (5% of patients) treatments. Resolution of the first lumbar disc herniation takes place in approximately 75% of patient over a period of 3 months. With recurrent herniations, the chance of spontaneous relief of symptoms is reduced. In a very acute stage, the patient may require hospitalization to control the level of pain. Bed rest should be limited 2 days with the most comfortable position of the knee and the hip flexion about 80~90 degree. A few days of bed rest, adequate analgesics, and muscle relaxants to reduce muscle spasm usually are require. Physical therapeutic modality(included traction, heat, ultrasound, electrical stimulation), mobilization, manipulation, back school, spinal supports, therapeutic exercise and proper position should be used and educated. If the patient did not controled low back pain after above treatments, invasive treatments such as trigger point injection, facet or sacroiliac joint injection, epidural steroid injection, selective nerve root injection with high frequency heat therapy, or intradiscal injection may quickly alleviate symptoms. Every patient should attend a class in spine education as part of the overall treatment. Instruction is given in low back care, especially as related to the activities of daily living. Participants are taught correct posture, pelvic tilting, knee to chest exercise, and exercises to strengthen abdominal and paraspinal muscles. Individual instructions are given to each patient, explaining in more detail the nature of the patient's particular problem and how the individual can take control of the treatment.

Keywords : Low back pain; Conservative treatment; Bed rest; Therapeutic exercise; Invasive treatment

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1. Treatments for Lumbar Disc Herniations

Conservative (75~90% of patients)

Bed rest
 Medications(analgesics, anti - inflammatories, muscle relaxants)
 Physical therapy modalities(traction, heat, ultrasound, electrical stimulation)
 Mobilization
 Manual therapy
 Manipulation
 Supports
 Back school
 Exercise(i.e., balanced aerobic)
 Activations(i.e., elastic garment)
 Antigravity methods
 Chronic pain management
 Functional restoration
 Work reconditioning
 Chronic pain management

Invasive (5~10% of patients)

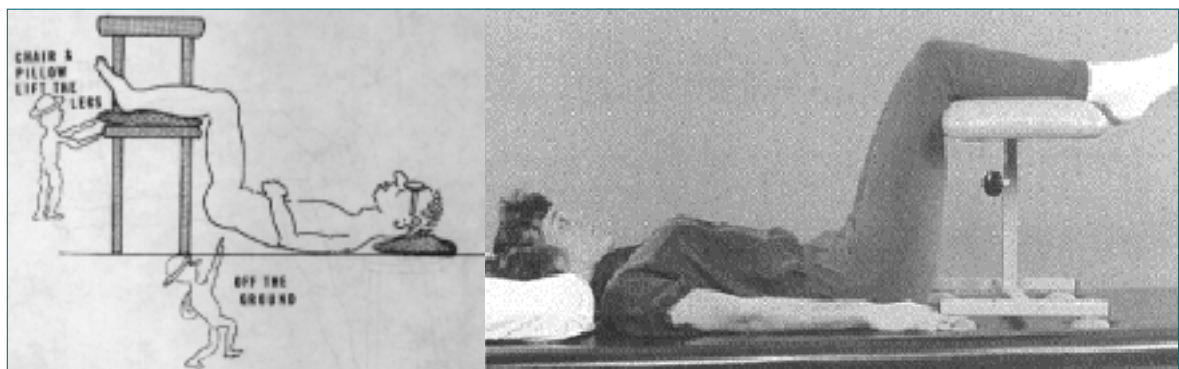
Spinal injection [trigger point, facet joint, sacroiliac(SI) joint, nerve root, epidural]
 Intradiscal therapy(chymopapain, collagenase, electrical therapy)
 Radio - frequency heat therapy

Surgical (5% of patients)

Minimally invasive
 Operative discectomy
 Decompression for spinal stenosis
 Spinal fusion

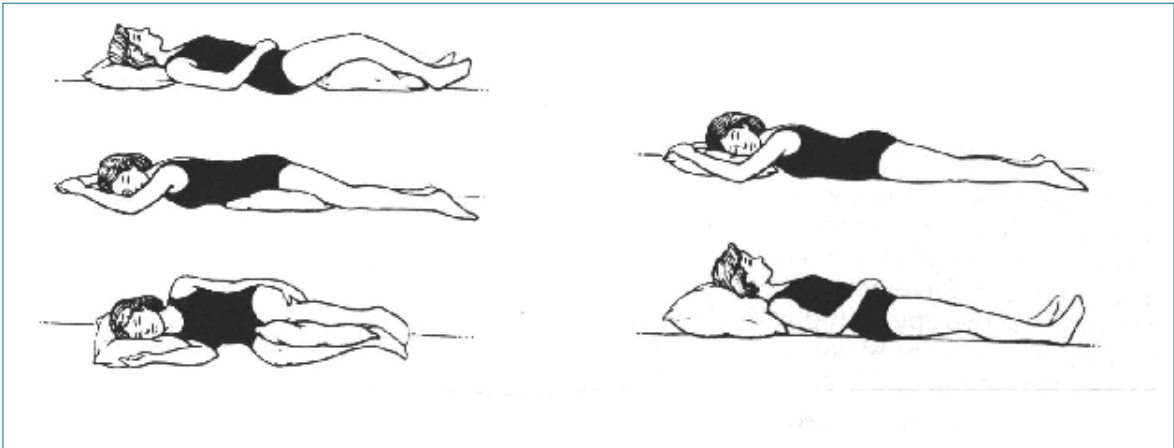
2. Plan of Treatment in Dysfunctional Low Back

Lesion	Treatment			
	Conservative	Manipulation	Injection	Operation
Facet joints	Yes	Facets	Facet & muscle	-
Sacroiliac joint	Yes	SI & muscle	Joint & muscle	-
Myofascial syndrome	Yes	Stretch muscle	Muscle	-
Piriformis syndrome	Yes	-	Muscle	-
Disc Herniation	Yes	Sometimes	Epidural steroid	Sometimes

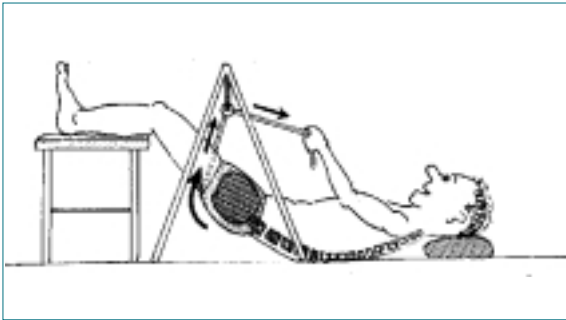


1.

1% 가 , 2~3 48 가 (1), 15~20% (scler- rosing agent) 가 (Intramuscular stimulation, IMS), 80~90 7 cm 가 (2)(10). 12 가 (1)(1). 2.5~5 가 5% (radiculopathy) 가



2.



3. 가

가

(1~3, 10).

가

(3)(7).

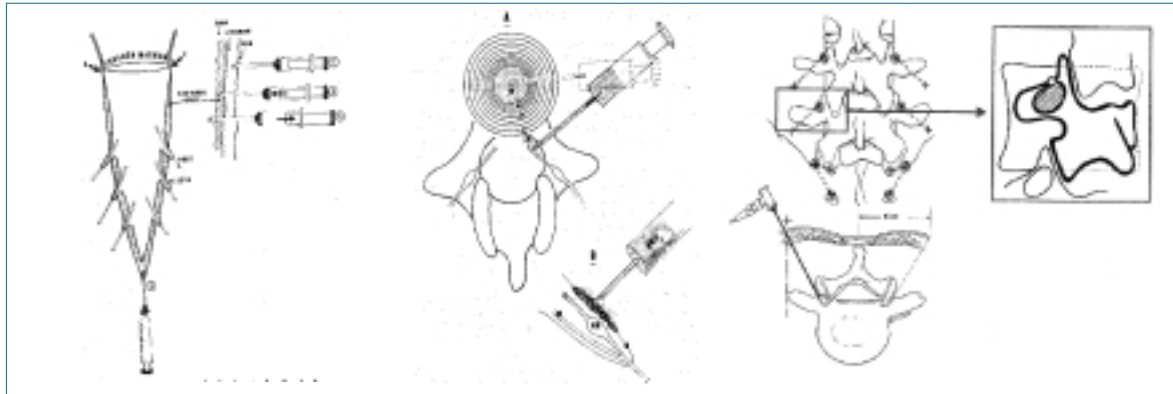
, ,

. 가

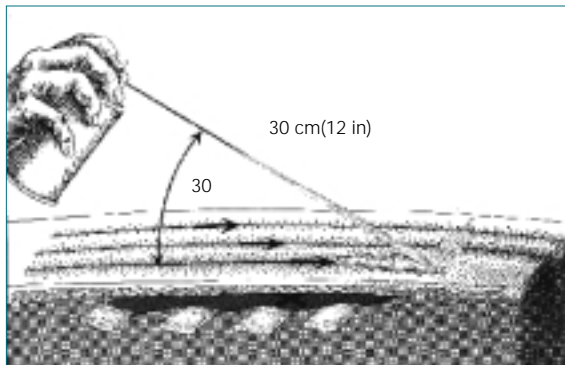
, 가 가

70%

(2).



4.



5.

가 (quad-
ratus lumborum) , (multifidus), (piri-
formis), (glutus)
(perpetuating fac-
tor)

Fluorimethane (cold spray)
30 cm 30

, 가 .

10 cm/sec

4

(5).

3

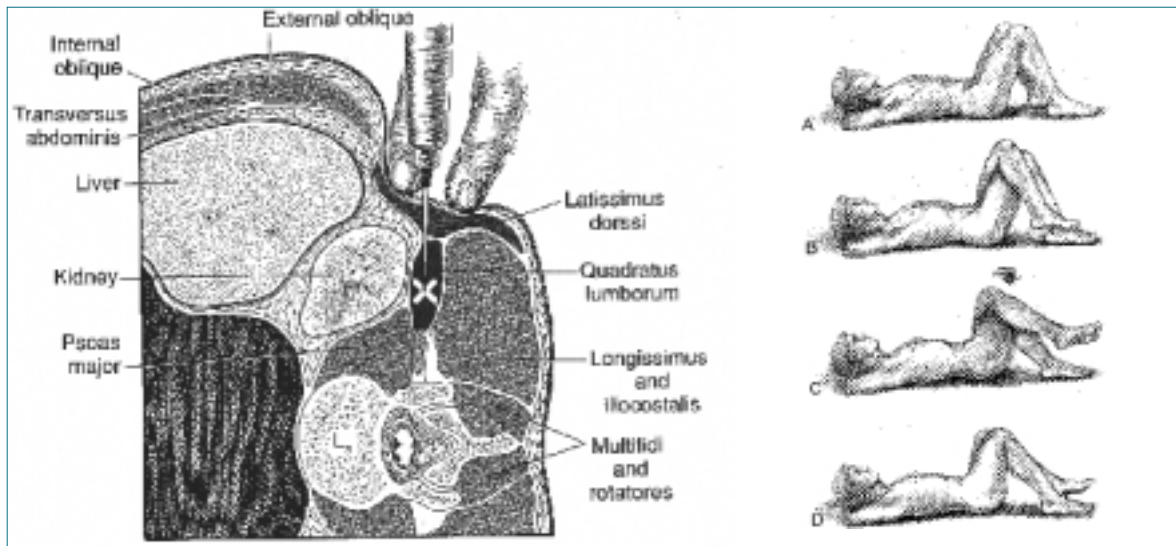
가

가

가 가

(extensor carpi radialis)

가



6. (quadratus lumborum)

가

20~30 lb

1

가 .

가 ,

가 . , 20 (6).

, 가, 가,

가 , , 가

(dry needling)

0.5% procaine, 1% lidocaine

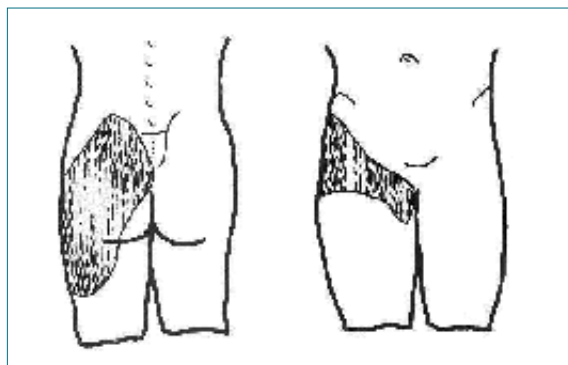
가 가 , 가 (valium)

가

가

가

가



7. 4~5

5 ~ 1

3. Referred pain patterns of lumbar facet syndrome

L5 - S1 facet pain distribution

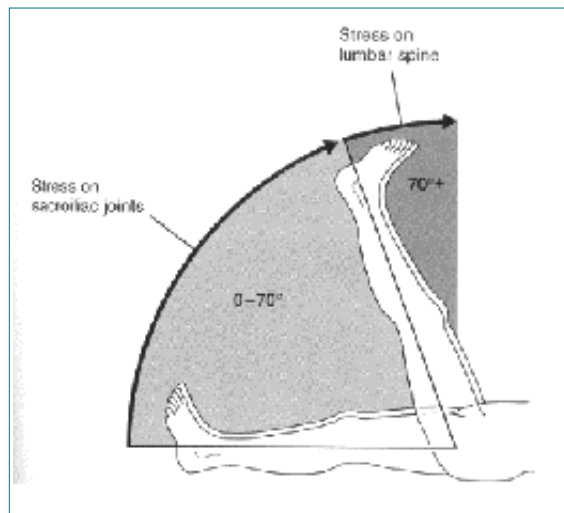
Coccyx, hip, posterior thigh, groin, flank

L4 - L5 facet pain distribution

Posterior hip and thigh, coccyx

L3 - L4 facet pain distribution

Upward to thoracic spine, diffuse flank and groin pain, coccyx



8. Both straight leg raising test

(trigger point

injection) 10

0.2 ml 1%

(TENS),

27~52%

가

4~5

(iliac crest)

6~7 cm

15%

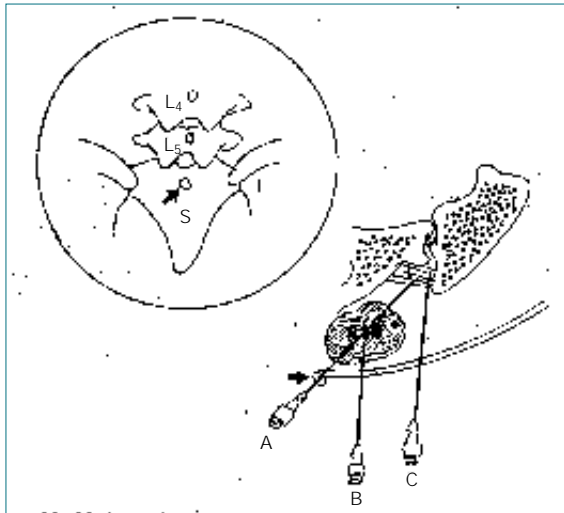
3).

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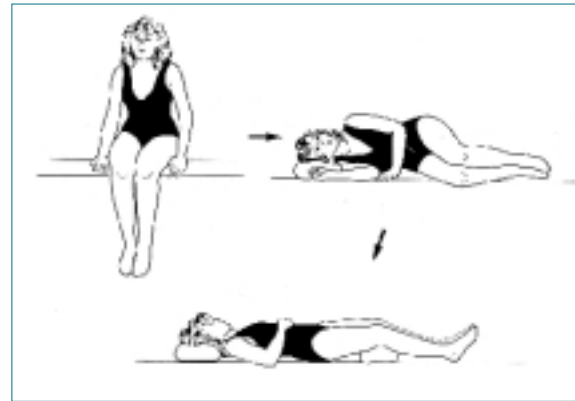
SLR(straight leg raising) test

(65~70)

가 (8).



9.



10.

30~
45 (semi - prone lateral position)

(oblique view of lumbar spine)

8 cm, 22 gauge , 5 cc , 1 %
0.25 % (methypredni-
solone, triamcinolone),
가

(9).

가 가

Coumadin

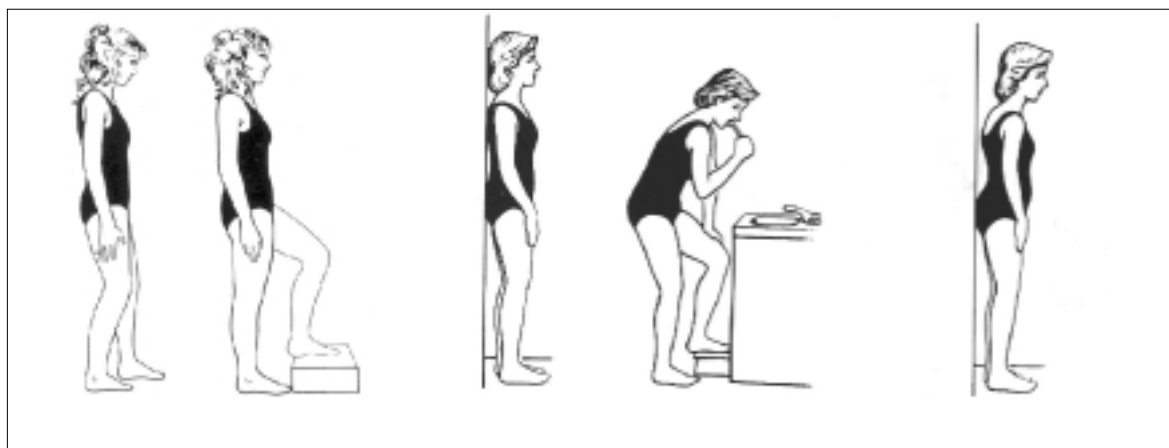
가

4~6

가

가

가



11.



12.

1, 2),

(10).

가

(

11).

(12)

(13~15)

가

90 가

10~15 cm

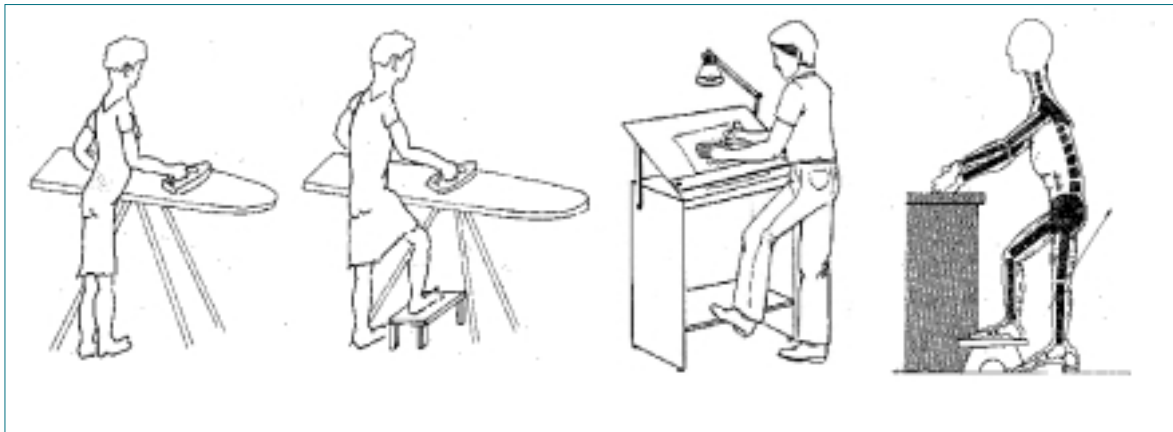
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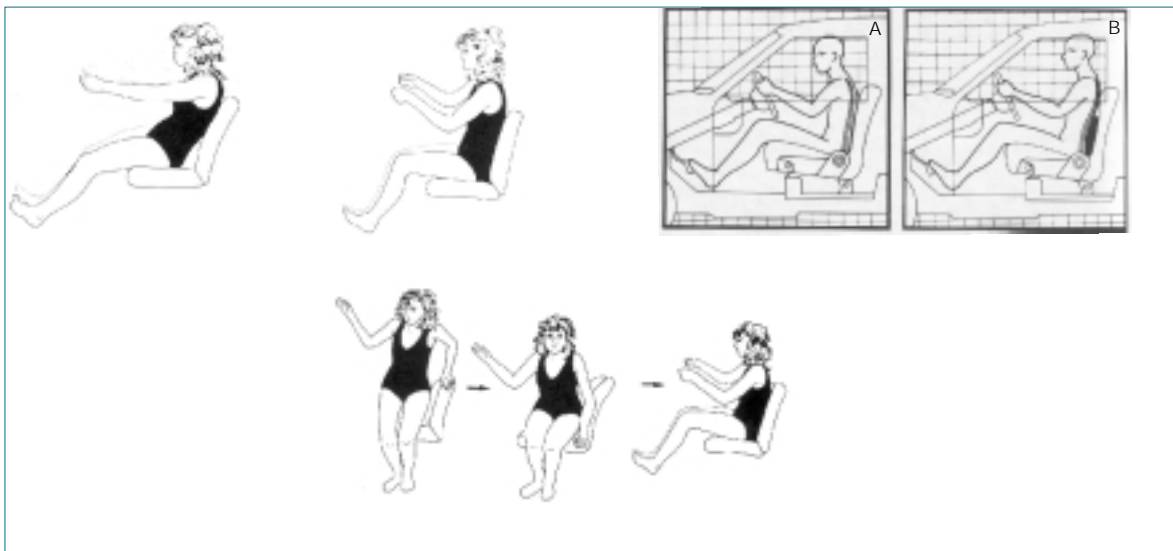
13.



14.



15.



16.



17.



18.

가
가

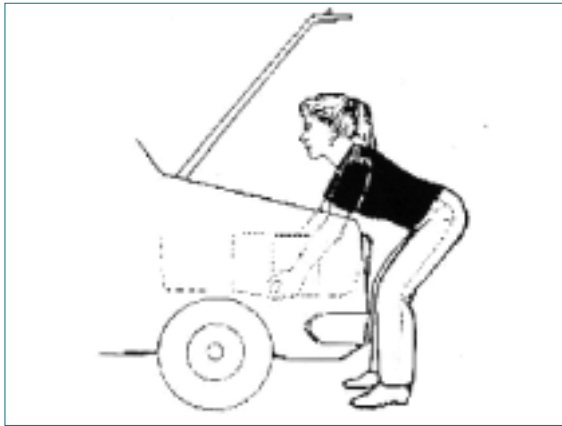
가
90~100 (16)(10, 14).
가

(17).

10~15 cm

가 90

(18).



19.

(21),

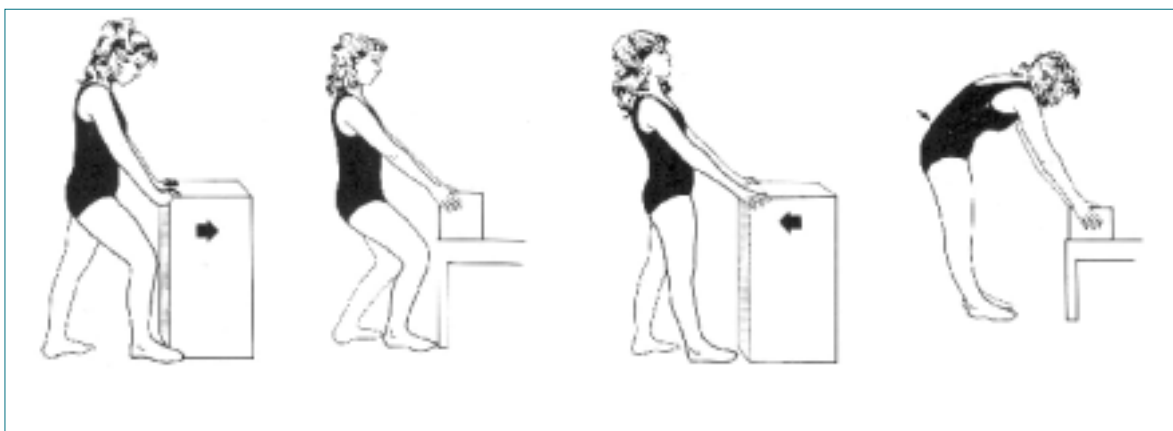
(22)(14).

19).

(20).
(quadratus lumborum)
(multifidus)

가

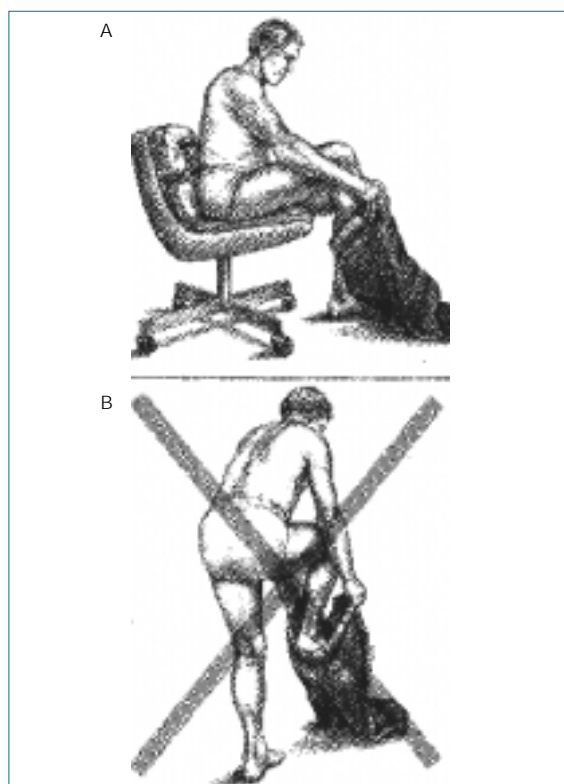
가,



20.



21.



22.

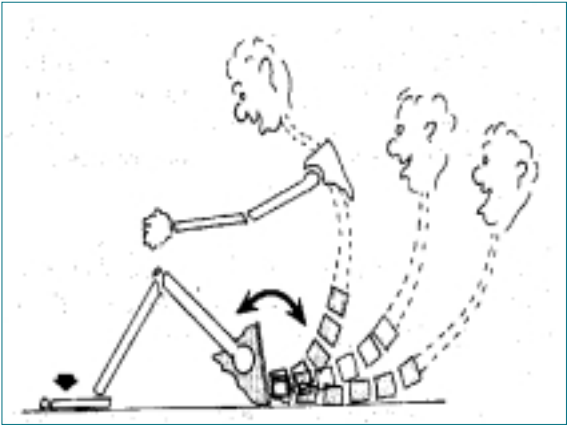
1.

1) (, William's exercise)

가

4. Exercise Type of Low Back Pain

	Extension Exercise	Flexion Exercise
Subjective	Pain in lying & in sitting	Pain in sitting & in lying or standing
Pain	Forward bending	Backward bending
Pain	Backward bending	Forward bending
Efficacy	Neural tension Load on the back Disk pressure Strength & endurance of exercise muscle Proprioceptive interference with pain perception	Articular stresses on the facet joint Stretching to the dorsolumbar fascia & musculature Opening of the intervertebral foramen Relief of stenosis of the spinal canal Stabilizing effect of the abdomen Intra-abdominal pressure Proprioceptive interference with pain perception
Caution	Facet joint degeneration Impingement of vertebral foramen Spondylosis & spondylolisthesis	Avoid in acute disk prolapses Shouldn't done after a flat - lying rest interval >30 mins



23.

5 ~ 10 cm

10

45

90

10

(23).

90 가

4

2)

(Sit - up exercise)

45

6

10

45

6

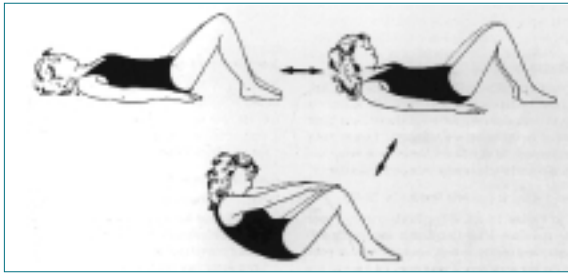
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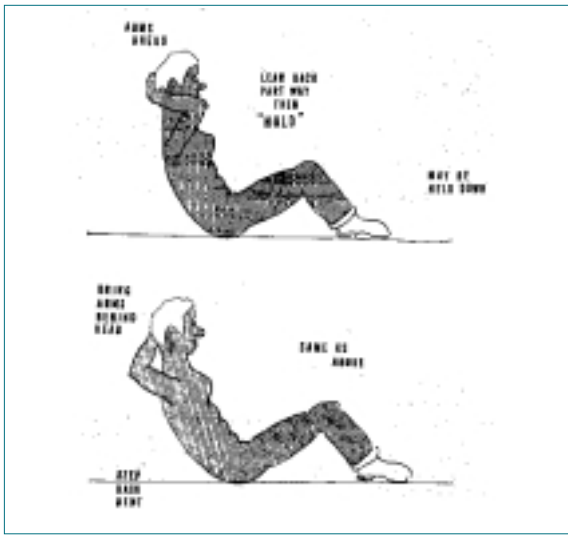
3 ~ 4

1

10



24.



25.

(24).

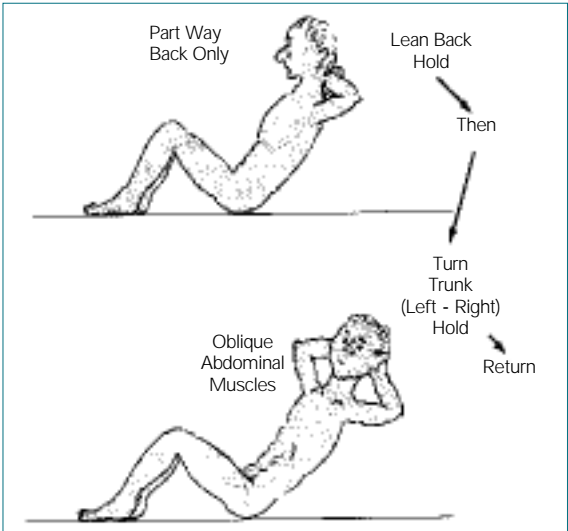
45

6

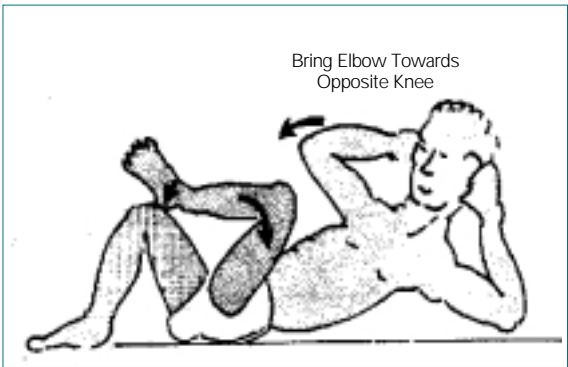
(isometric exercise for abdominal rectus muscle)

18, 19

(25).



26.



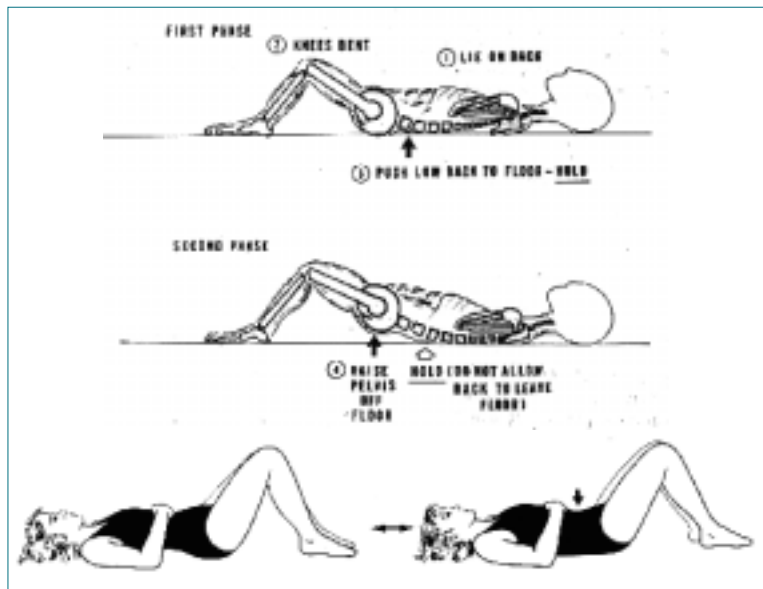
27.

, (obliquus abdominis muscle)

가

20

10~30 (26).



28.

21

(27).

2.

3) (Pelvic tilting exercise)

(lumbo-sacral angle)

가

1) 가 (Knee to chest exercise)

가

가

가

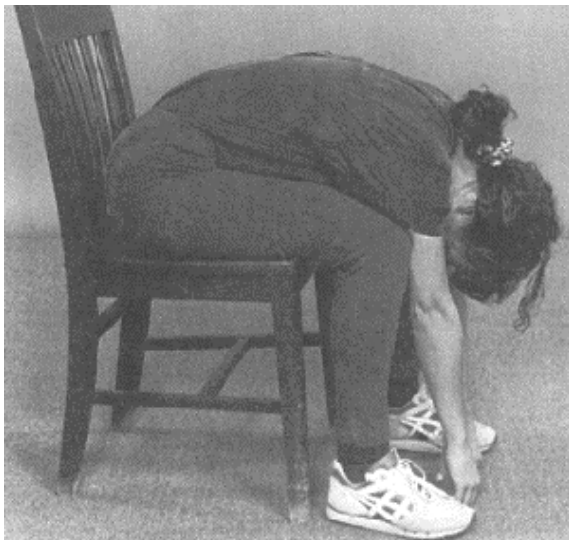
()

가

(28).



29. 가



30. 가

(hamstring muscles)

(31).

가

(32).

가

(curled - up) 가

가

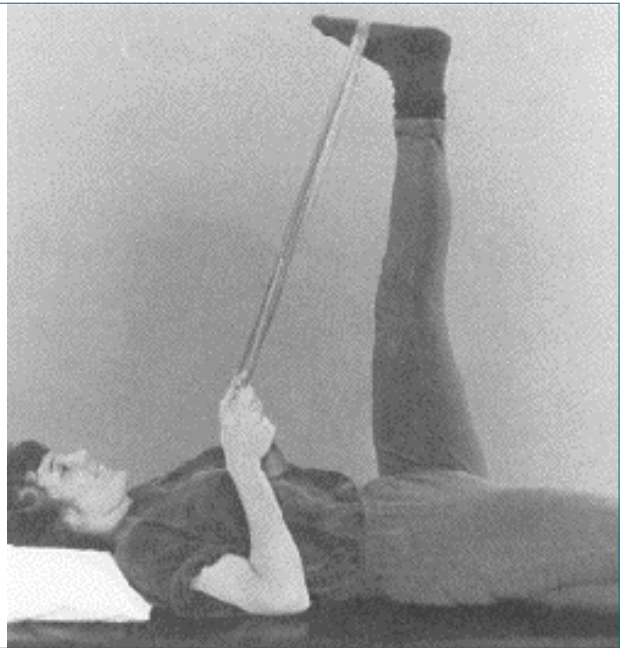
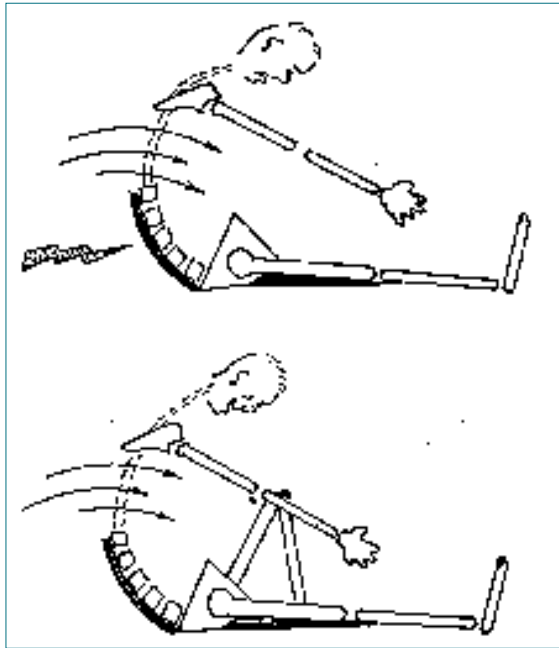
10~20 가
(29).

(30).

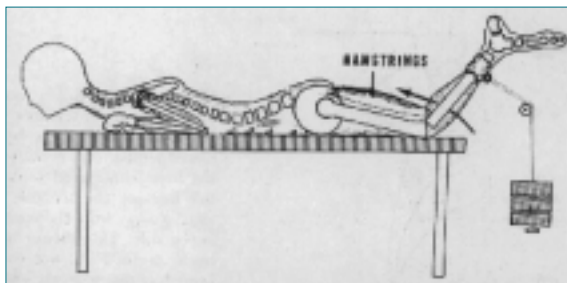
가 가 6~10
(33, 34).

2)

, TENS(Transcutaneous electrical stimulation therapy), ICT(Interferential current



31.



32.



33.

therapy)



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