The Applying Of Pilates In The Exercise For The Gluteus Maximus

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Contents

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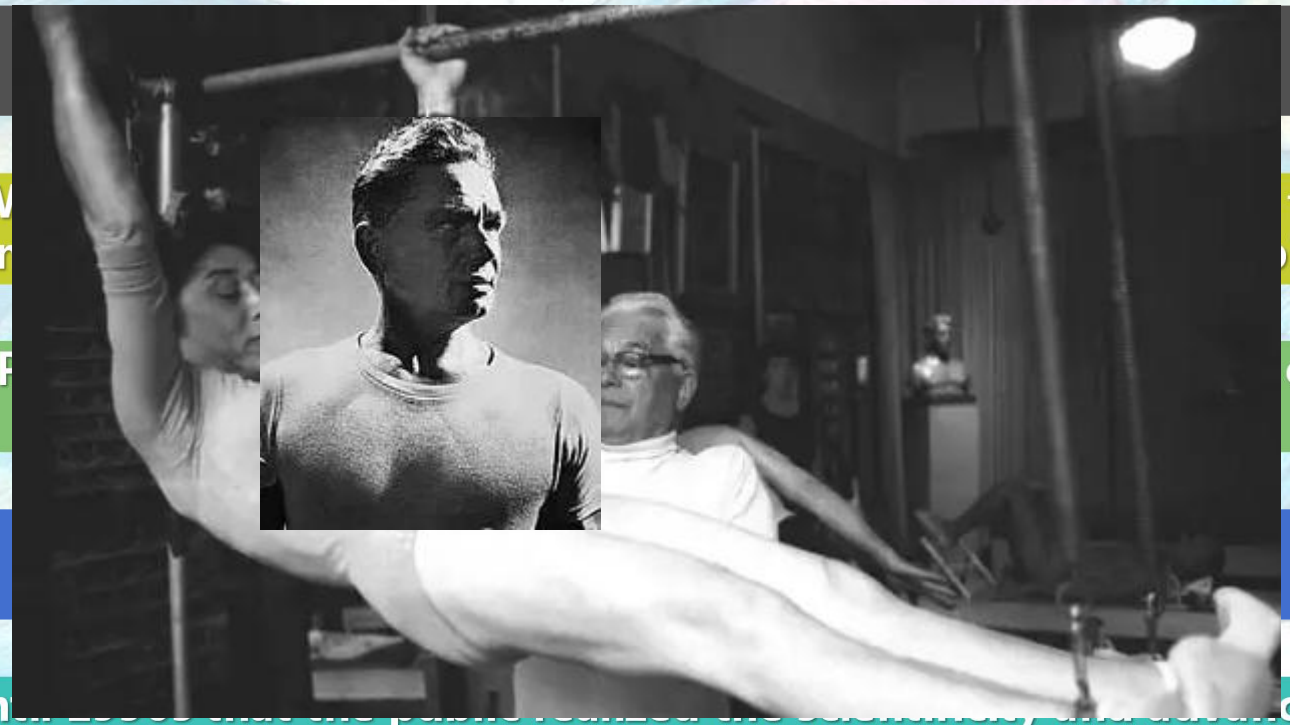
History Of Joseph Pilates

- During World W… fi tness with mental acuity and cor… ility in a camp .
- In 1924 P… of the dance
- It was not un… cement nature of Pilates.



Teaching pilates for posture faults, illness and injury. Jane paterson © 2009, Elsevier Ltd Page 5~6

Joseph's original principles

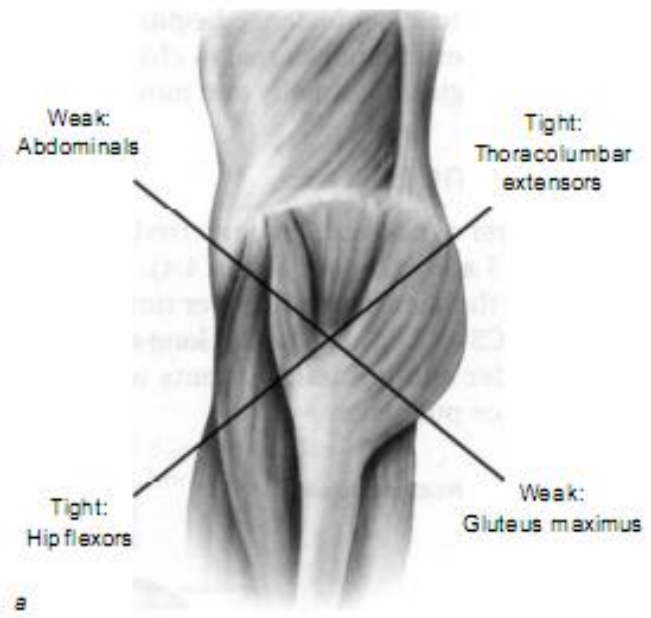
Breathing	**Pilates with the correct breathing, can stimulate your abdominal muscles**
Concentration	**Only concentration can connect the spirit and body, feel the tiny differences of each action.**
Precision	**These tiny differences of actions, will make you get very different feelings**
Flow	**The speed should be uniform, the movement emphasizes the smooth.**
Control	**When body reaches a certain position, we need to control ourselves to maintain it.**
Centring	**Pilates emphasizes the training of core muscles.**

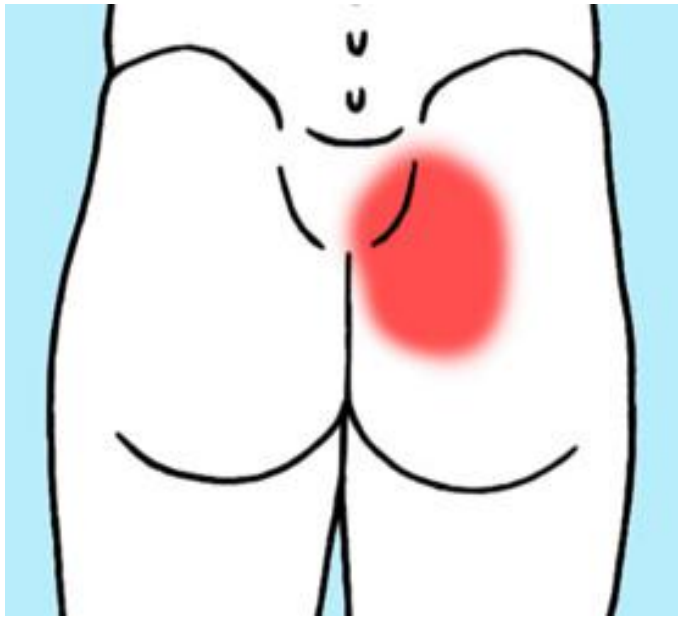
Effects of pilates on patients with chronic non-specific low back pain: a systematic reviewLin HT, Hung WC, Hung JL, Wu PS, Liaw LJ, Chang JH.J Phys Ther Sci. 2016 Oct;28(10):2961-2969. Review.

Analysis

of Gluteus maximus

What's the common point of these pictures?

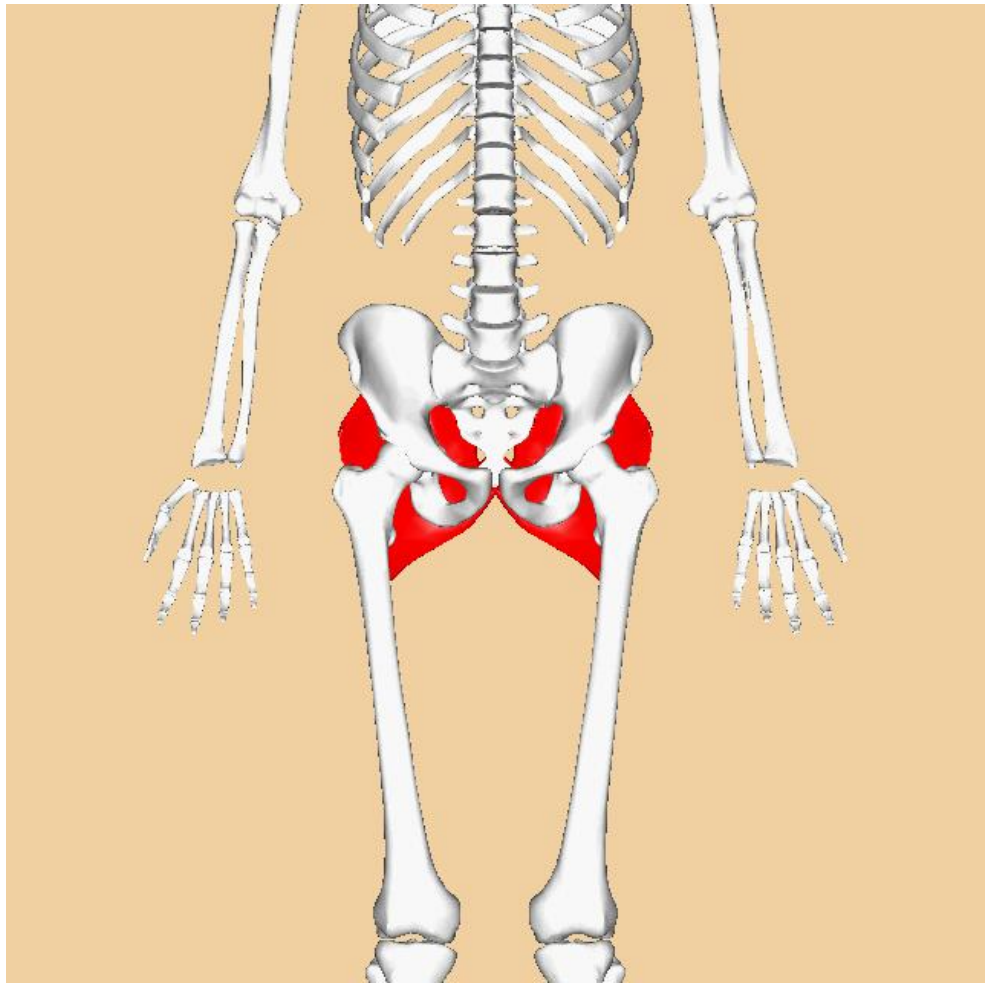




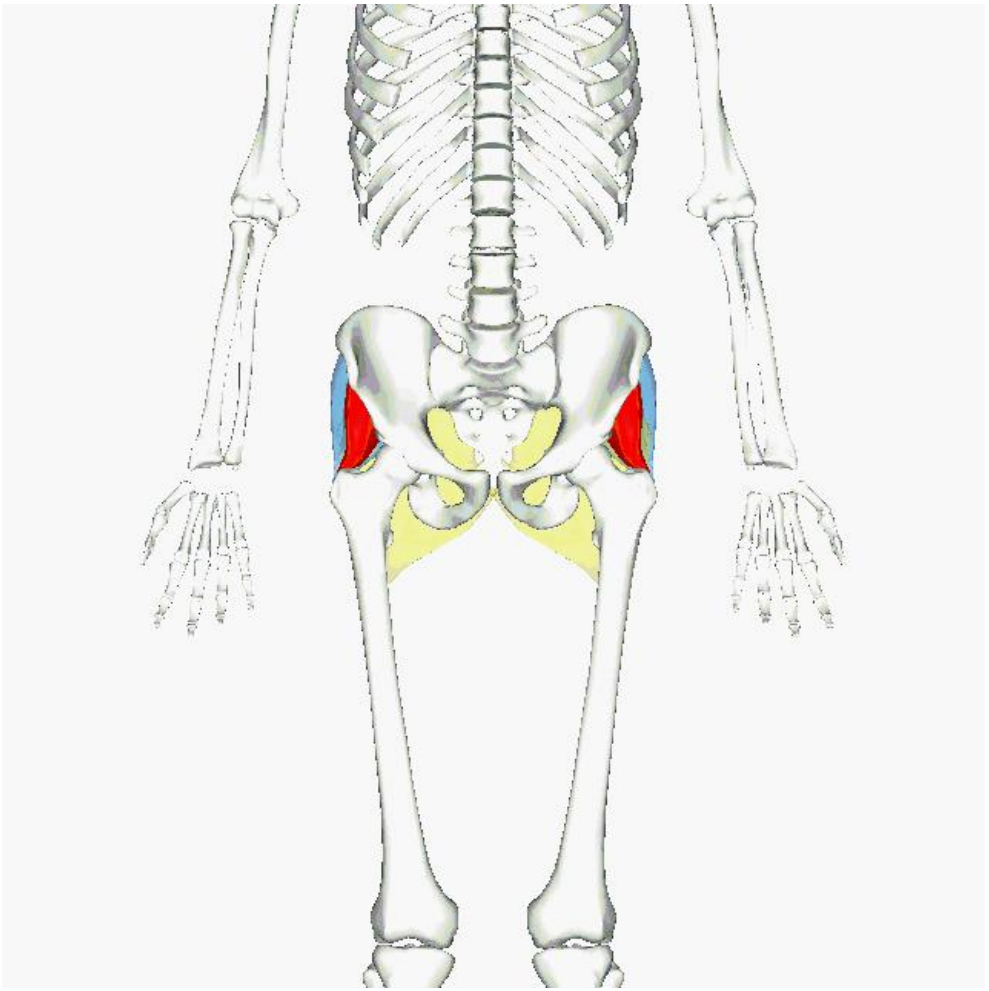
Pictures from: http://www.588ku.com

Zhang HW，Xue Q，Yang YP．Nerve entering point，muscle architecture and spindle in qnadriceps femoris of adult males[J]．Journal of Third Military Medical University，2011，33(18)：1970—1973．(in Chinese)

Gluteus maximus

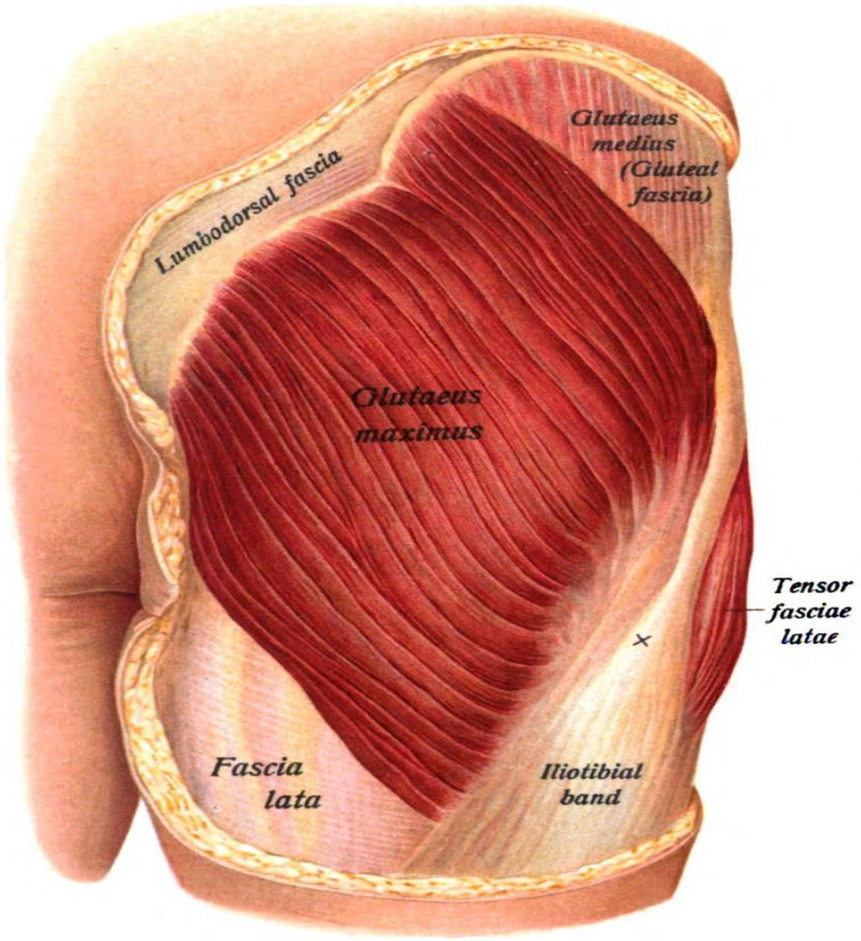


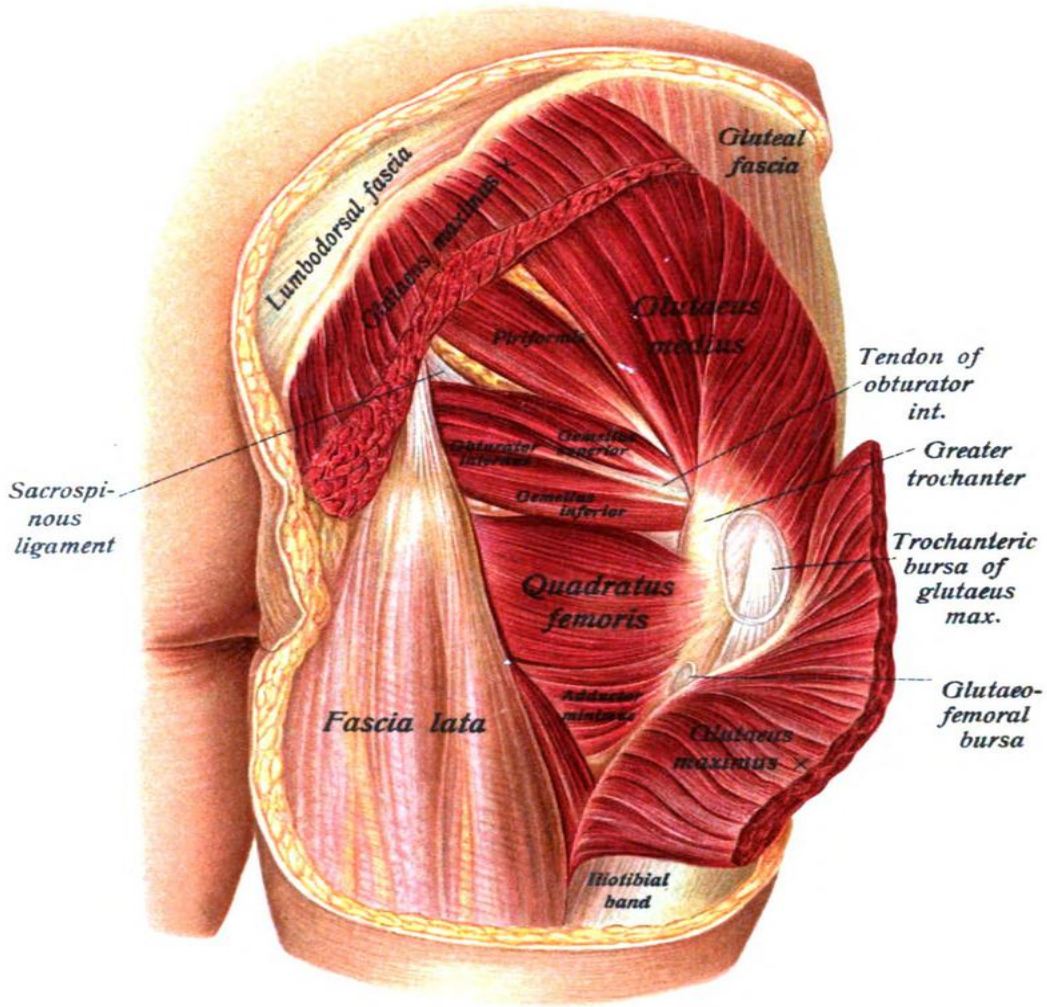
The gluteus maximus as it appear on a skeleton without other muscles



All gluteal muscles, maximus in yellow

1.Anatomy





Picture is from wikipedia.

Xu JZh , Xuc Q . Study on the muscle architecture of gluteus maximus[J] . Sichuan Journal of Anatomy , 2009 , 17(1) : 25·26 . (in Chinese) .

2.Kinematic

◆**Gluteus maixmus :The main extensor and lateral rotator muscle of the hip.**

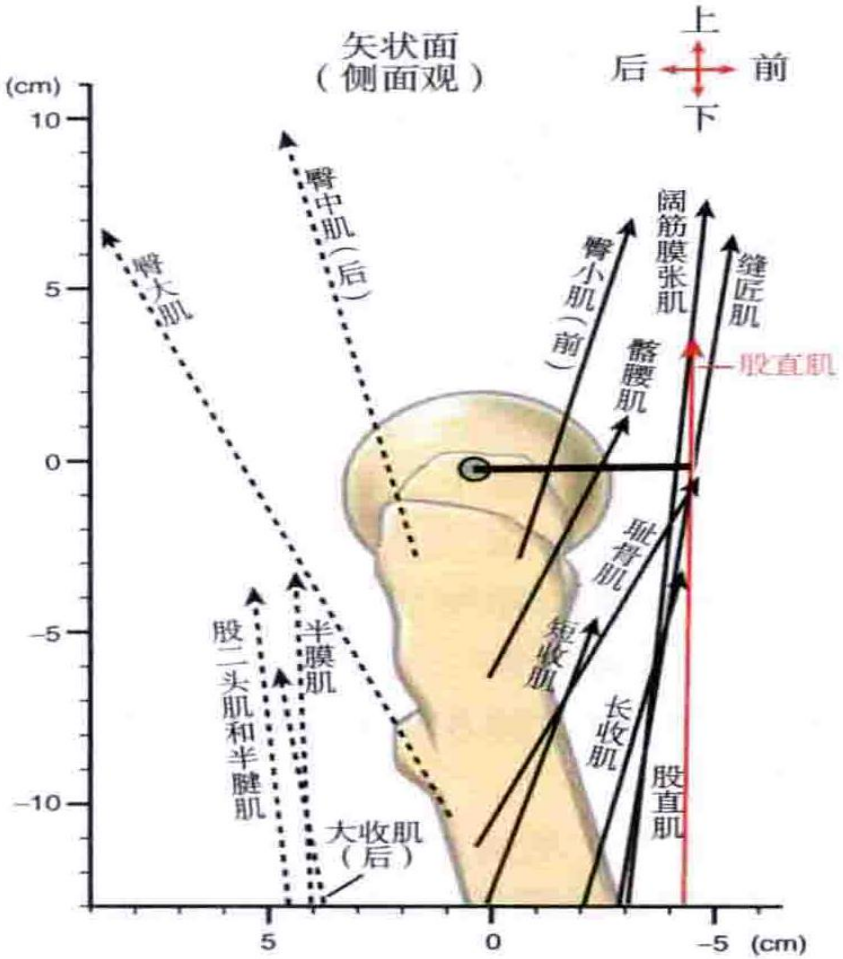


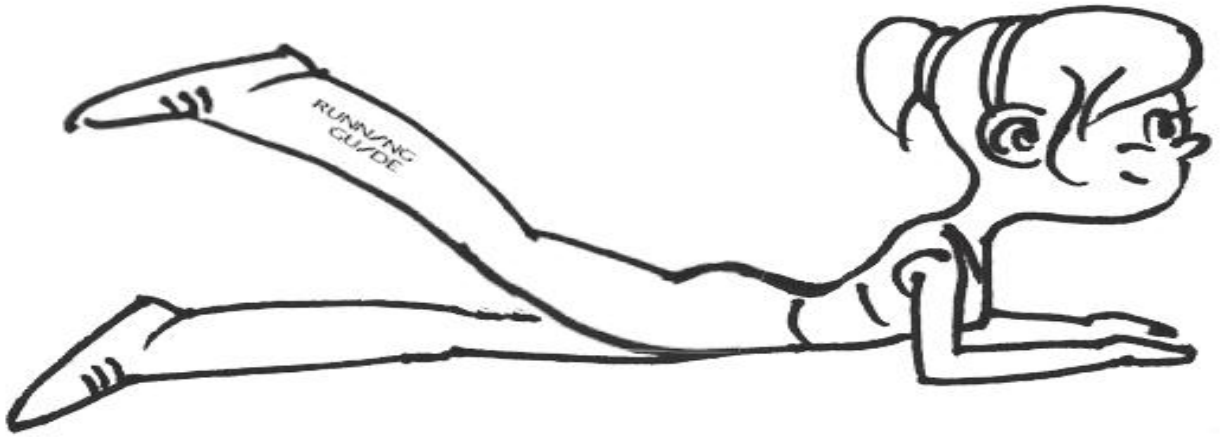
图 12-25　描述横过髋关节的几块肌肉在矢状面内的力量线的侧面观

旋转轴穿过股肌头朝向内外方向。屈肌用实线表示，伸肌用虚线表示。股直肌使用的内力臂用粗黑线代表

Kim JT，Kim YH，Naidu S．Perfecting the design of the gluteus maximus perforator-based island flap for coverage of buttock defects [J]Plastic Reconstr Surg，2010，125(6)：1744—1751．

3.Function

◆Extends the acetabulofemoral joint.



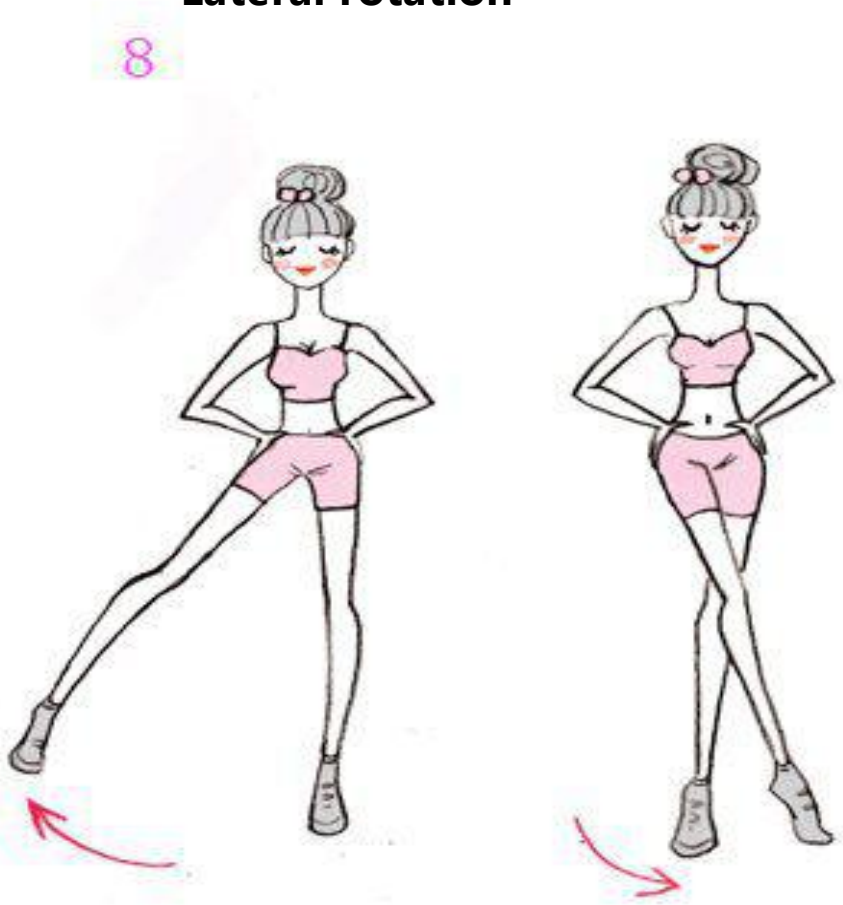
3.Function

◆Cause the body to regain the erect position after stooping.

3.Function

◆Adductor and external rotator of the limb(lower part)

Lateral rotation



Hip adduction

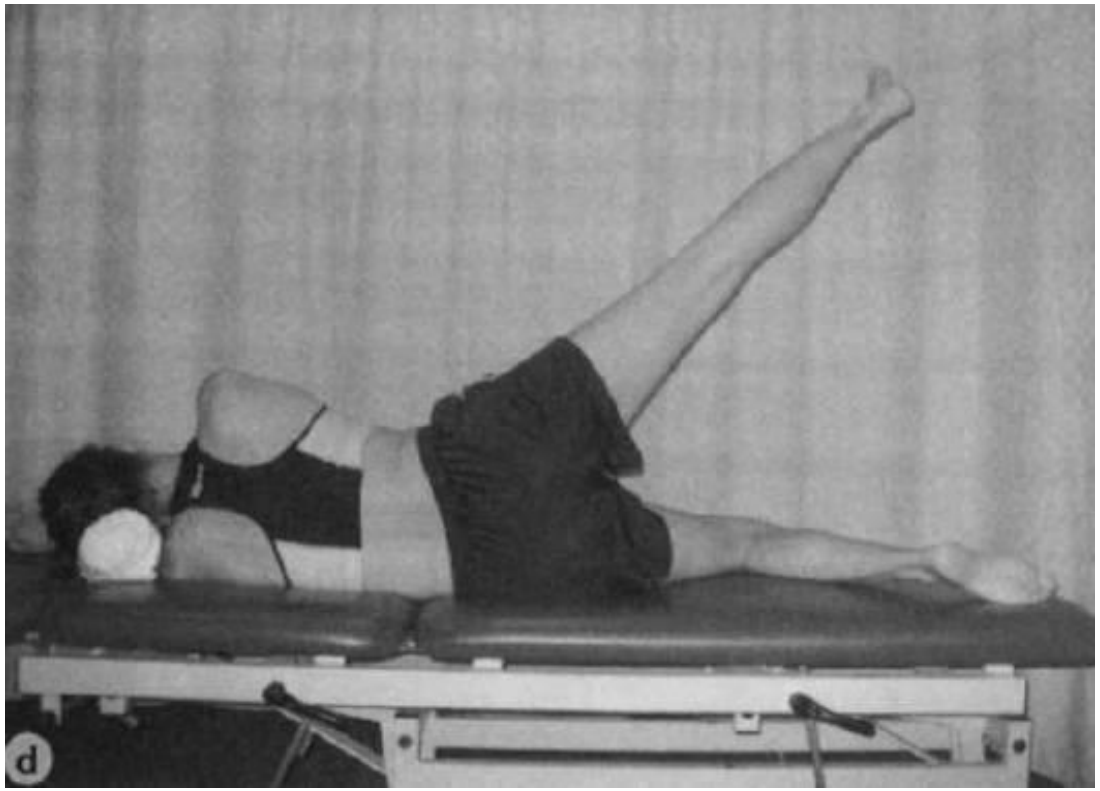
3.Function

◆Supporting pelvis and the trunk

Figure 1

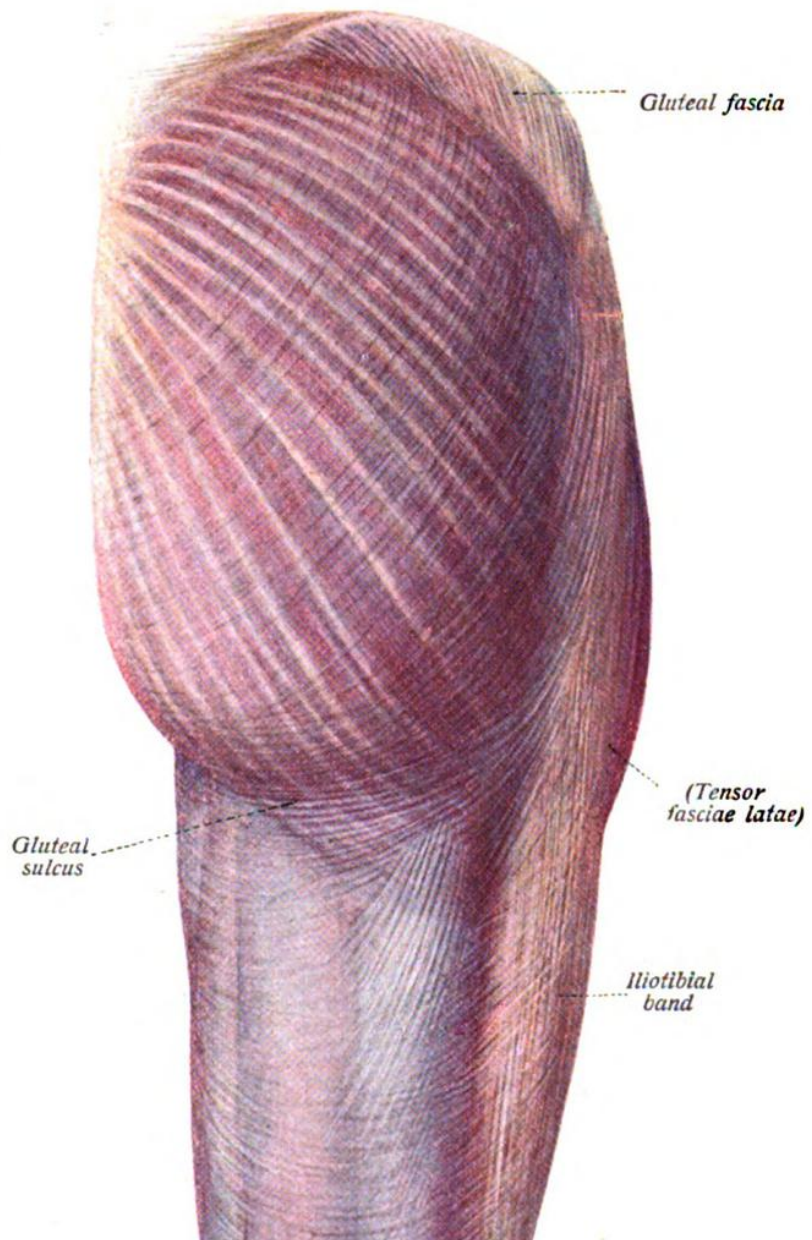
3.Function

◆Abductors of the hip joints(upper fibres)



http://www.image.baidu.com

4.Reference syndrome



- ◆The unbalance movement of the hip.
- ◆ May lead to iliotibial band syndrome
- ◆Knee pain.
- ◆LCS
- ◆Low back pain
- ◆The tightness of the iliopsoas.
- ◆Function in the gait(especially in the patient after stroke)

Li P，Xue Q，Xie P．The architectural features，nerve branch patterns and their clinical significance of gluteus maximus．Anatomy Research，2013，25(3)：206—208．(in Chinese)

The importance of the hip totally extending

◆The hip felxors have more possibility to contracture.

◆Standing straightly can usually maintain less muscle acting which

◆ Protect the cartilage as possible.

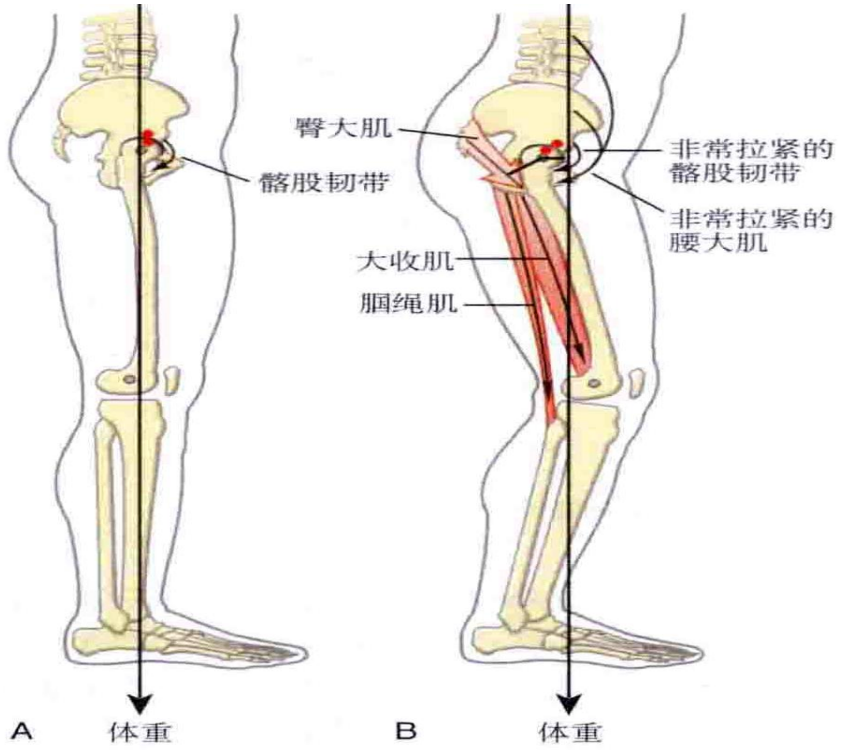


图 12-30 髋关节弯曲挛缩对站立的生物力学的影响

A. 理想的站立姿势；B. 尝试在直立时弯曲挛缩髋关节。图中显示了髋伸肌（红色），这些肌肉主动改变大小以预防髋关节进一步弯曲。这些肌肉和体重利用的矩臂用黑色短线表示，该短线源自髋关节旋转轴。在 A 和 B 中，股骨头中心的绿色虚线表示旋转轴。一对红色圆圈表示相对较厚的关节软骨区域的重叠（详细描述见正文）

Exercise

In pilates

Exercise

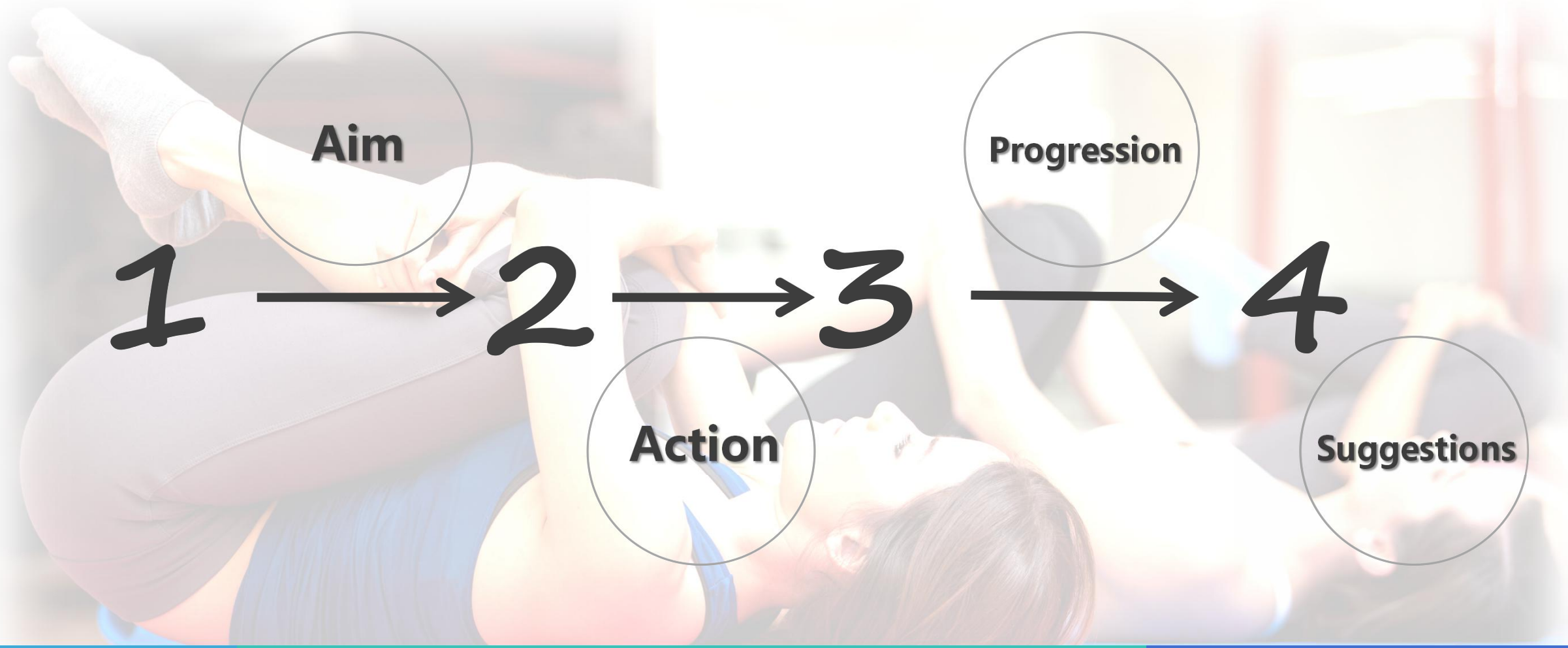
Gluteal strengthener

with flexed knee

https://www.nourishmovelove.com/4-butt-exercises/

Gluteal strengthener

with flexed knee



Gluteal strengthener

with flexed knee

Aim

- To enhance gluteus maximus performance.
- To improve pelvic stability during hip extension through abdominal muscle control.
- To stretch the iliopsoas and rectus femoris muscles.

Gluteal strengthener

with flexed knee

Action

- **Body position**

  Prone with working knee flexed to maximum.

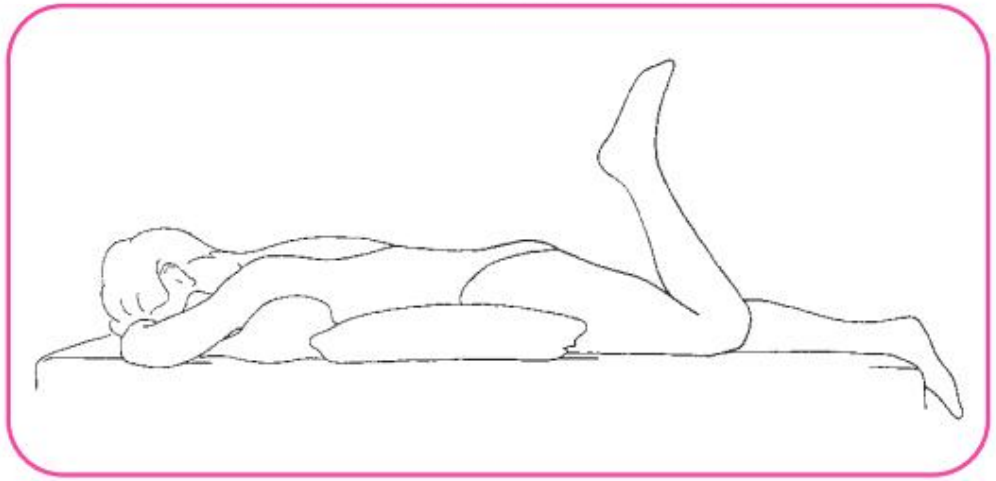


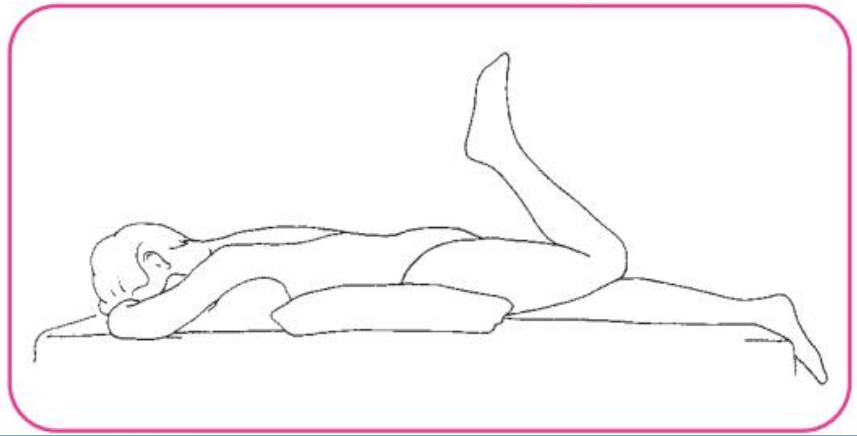
Figure 4.33A Gluteal strengthener – body position.

Gluteal strengthener

with flexed knee

Action

- **Breathing in** – tighten the pelvic floor muscles
- **Breathing out**
  - – contract the pectoral girdle stabilizing muscles,
  - – activate gluteus maximus
  - – lift the thigh no more than 10 degrees away from the mat

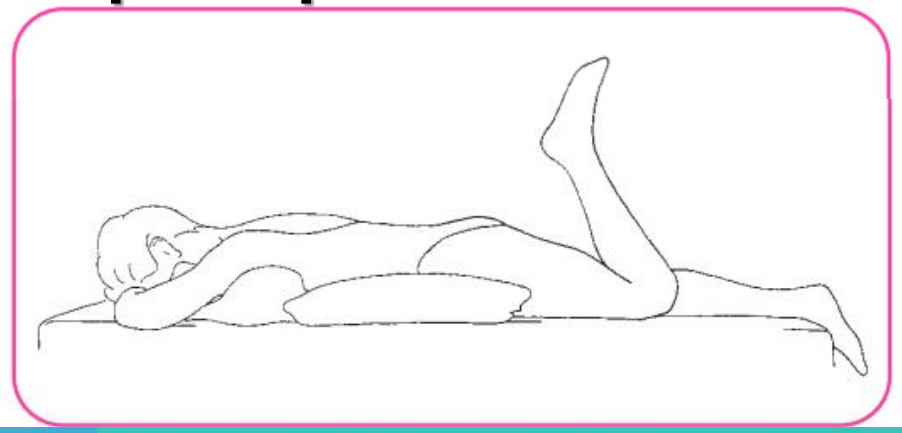


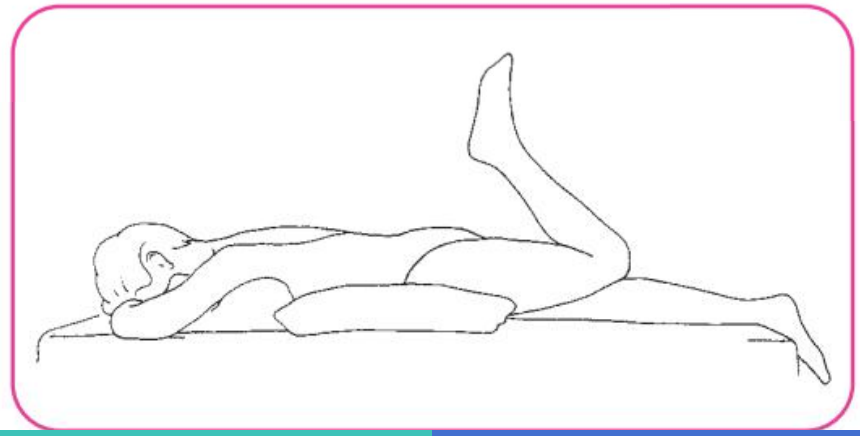
Gluteal strengthener

with flexed knee

Action

- **Breathing normally** – hold this position initially for 3 seconc
- **Breathing in** – to deepen the abdominal muscle contraction
- **Breathing out** – to lower the thigh to the mat.
- **Repeat up to five times.**





Gluteal strengthener

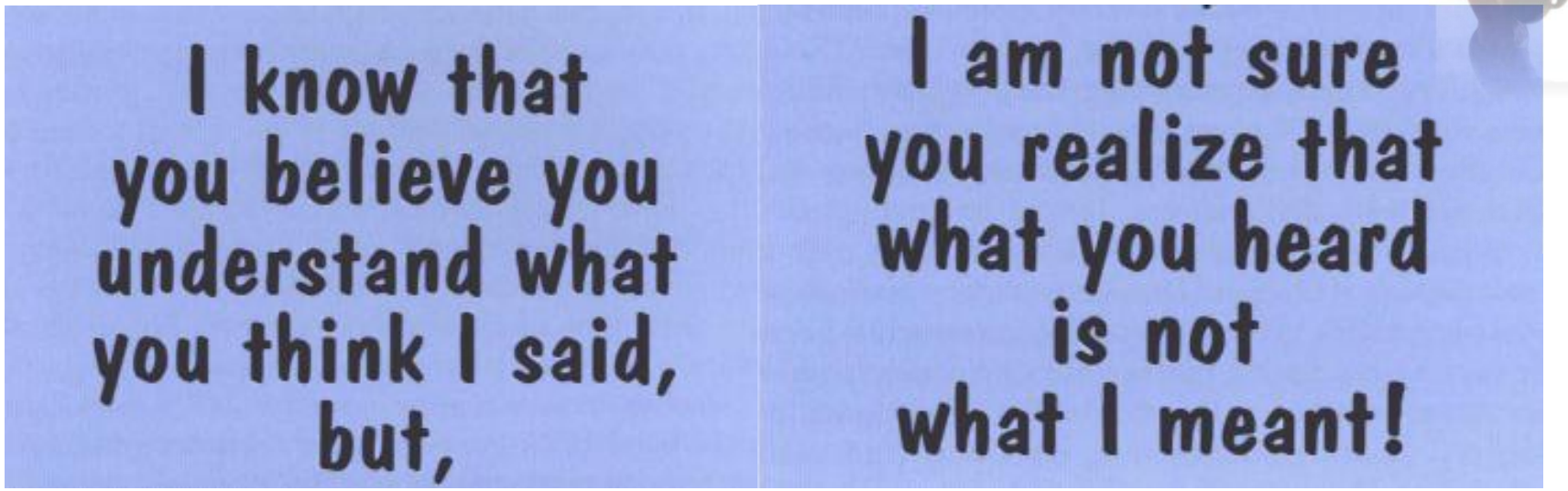
with flexed knee

Progression

- As strength and stamina improve, the lift can be held for up to 10 seconds.
- Extend the knee before lowering the leg.

Gluteal strengthener

with flexed knee



Gluteal strengthener

with flexed knee

Suggestion

Focus On The Common problems :

- Lifting the thigh too high:
  Cue: reaching the knee away from the hip joint

- Over involvement of the hamstrings:
  Cue: Allow the knee to flex as much as possible so that the foot can drop towards the thigh

Muscle activation during four Pilates core stability exercises in prone position
Arch Phys Med Rehabil. 2010 Jan;91(1):86-92. doi: 10.1016/j.apmr.2009.09.016.
Queiroz BC1, Cagliari MF, Amorim CF, Sacco IC.

More Pilates Exercise For The Gluteus Maximus

Booty Pop

Chair pose & Low lunge

Squat & Donkey kick

J Geriatr Phys Ther. 2013 Nov 25. [Epub ahead of print]
The Effects of a Pilates-Based Exercise Rehabilitation Program on Functional Outcome and Fall Risk Reduction in an Aging Adult Status-Post Traumatic Hip Fracture due to Fall.
Stivala A1, Hartley G.

“Impact the world through intelligent movement;

Fostering awareness of self and community.”

References

1. Zhang HW，Xue Q，Yang YP．Nerve entering point，muscle architecture and spindle in qnadriceps femoris of adult males[J]．Journal of Third Military Medical University，2011，33(18)：1970—1973．(in Chinese)
2. Xu JZh，Xuc Q．Study on the muscle architecture of gluteus maximus[J]．Sichuan Journal of Anatomy，2009，17(1)：25·26．
3. Kim JT，Kim YH，Naidu S．Perfecting the design of the gluteus maximus perforator-based island flap for coverage of buttock defects [J]Plastic Reconstr Surg，2010，125(6)：1744—1751．
4. Li P，Xue Q，Xie P．The architectural features，nerve branch patterns and their clinical significance of gluteus maximus．Anatomy Research，2013，25(3)：206—208．(in Chinese)
5. Kinesiology of the musculoskeletal system foundations for Rehabilitations, Donald.A.Neumann
6. https://www.nourishmovelove.com/4-butt-exercises/
7. Teaching pilates for posture faultMuscle activation during four Pilates core stability exercises in prone position
8. Arch Phys Med Rehabil. 2010 Jan;91(1):86-92. doi: 10.1016/j.apmr.2009.09.016. Queiroz BC1, Cagliari MF, Amorim CF, Sacco IC. s, illness and injury. Jane paterson © 2009, Elsevier Ltd Page 168
9. An Analysis of Muscle Activities of Healthy Women during Pilates Exercises in a Prone Position J Phys Ther Sci. 2014 Jan; 26(1): 77–79. J Geriatr Phys Ther. 2013 Nov 25. [Epub ahead of print]
10. The Effects of a Pilates-Based Exercise Rehabilitation Program on Functional Outcome and Fall Risk Reduction in an Aging Adult Status-Post Traumatic Hip Fracture due to Fall.Stivala A1, Hartley G.

References

11.Teaching pilates for posture faults, illness and injury. Jane paterson © 2009, Elsevier Ltd Page 5~6

12.Effects of pilates on patients with chronic non-specific low back pain: a systematic reviewLin HT, Hung WC, Hung JL, Wu PS, Liaw LJ, Chang JH.J Phys Ther Sci. 2016 Oct;28(10):2961-2969. Review.

13.Pilates Exercise for Hypertensive Patients: A Review of the Literature. Gonzáles AI, Nery T, Fragnani SG, Pereira F, Lemos RR, Bezerra PP, Haas P.

14.Altern Ther Health Med. 2016 Sep;22(5):38-43.

15.Muscle activation during Pilates exercises in participants with chronic non-specific low back pain - a cross-sectional case control study. de Oliveira NT, Ferreira Freitas SM, Fuhro FF, da Luz Júnior MA, Amorim CF, Nunes Cabral CM.

16.Arch Phys Med Rehabil. 2016 Sep 29. pii: S0003-9993(16)31097-8. doi: 10.1016/j.apmr.2016.09.111. [Epub ahead of print]

17.The Pilates method and cardiorespiratory adaptation to training. Tinoco-Fernández M, Jiménez-Martín M, Sánchez-Caravaca MA, Fernández-Pérez AM, Ramírez-Rodrigo J, Villaverde-Gutiérrez C.

18.Res Sports Med. 2016 Jul-Sep;24(3):281-6. doi: 10.1080/15438627.2016.1202829.

19.Comparative effectiveness of Pilates and yoga group exercise interventions for chronic mechanical neck pain: quasi-randomised parallel controlled study. Dunleavy K, Kava K, Goldberg A, Malek MH, Talley SA, Tutag-Lehr V, Hildreth J.

20.Physiotherapy. 2016 Sep;102(3):236-42. doi: 10.1016/j.physio.2015.06.002.


Thanks
For
Your
Attention