

IT band



Learning goals

The IT band:

- Gross anatomy
- As a multiplanar knee stabiliser
- As a thickening of the fascia lata
- Does not move anterior-posterior
- Acts converts tensile to compressive force



Sensitive Content
CONTENIDO SENSIBLE

This lecture
contains
dissection
videos

Gluteus
maximus
muscle

Iliac spine

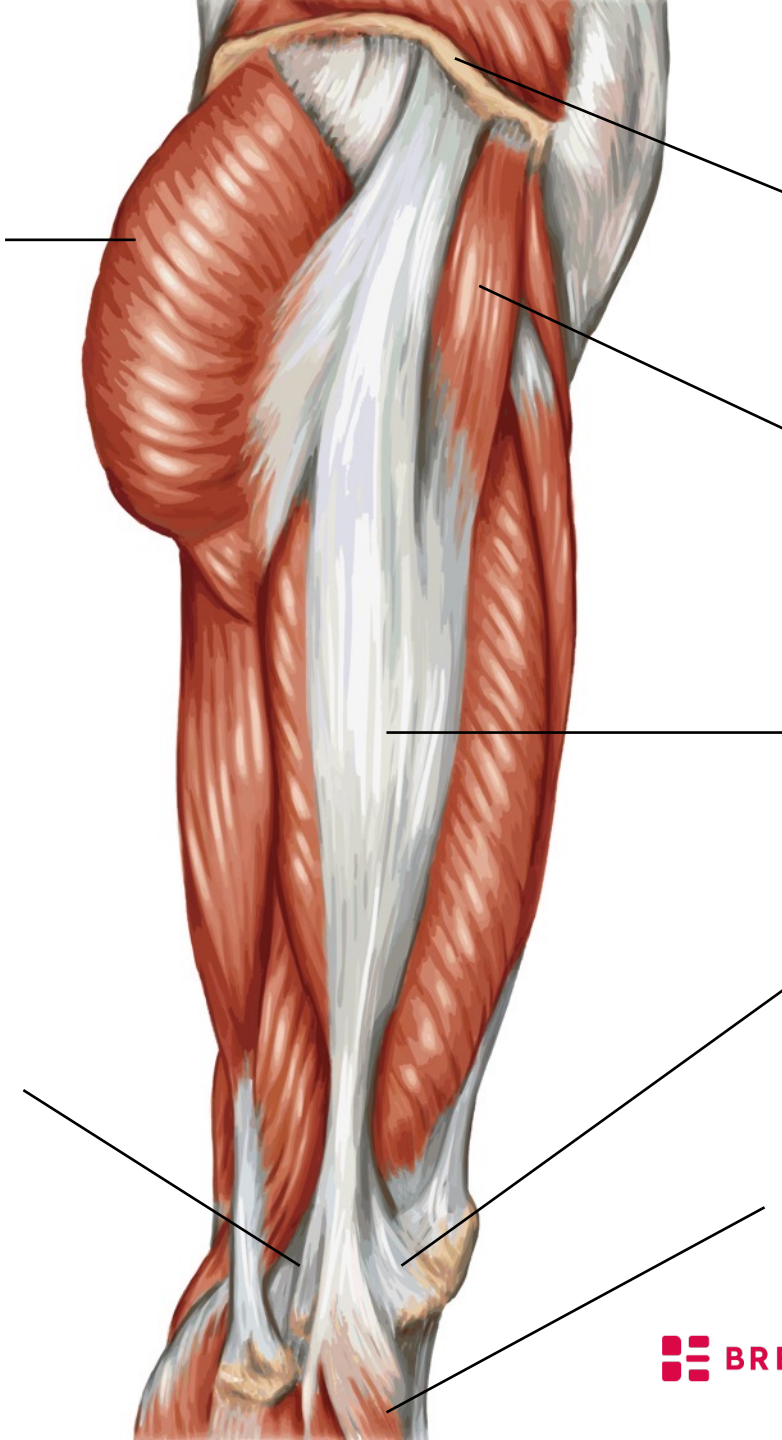
Tensor fascia
latae (TFL) muscle

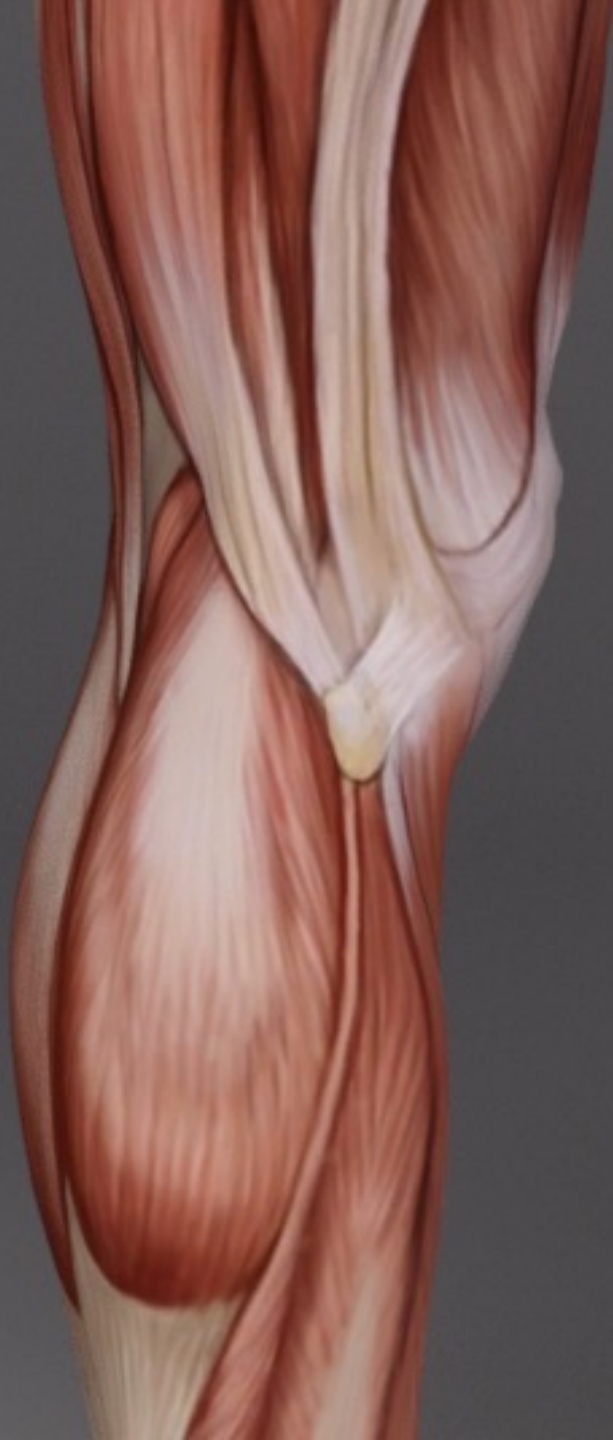
Iliotibial band

Lateral patella

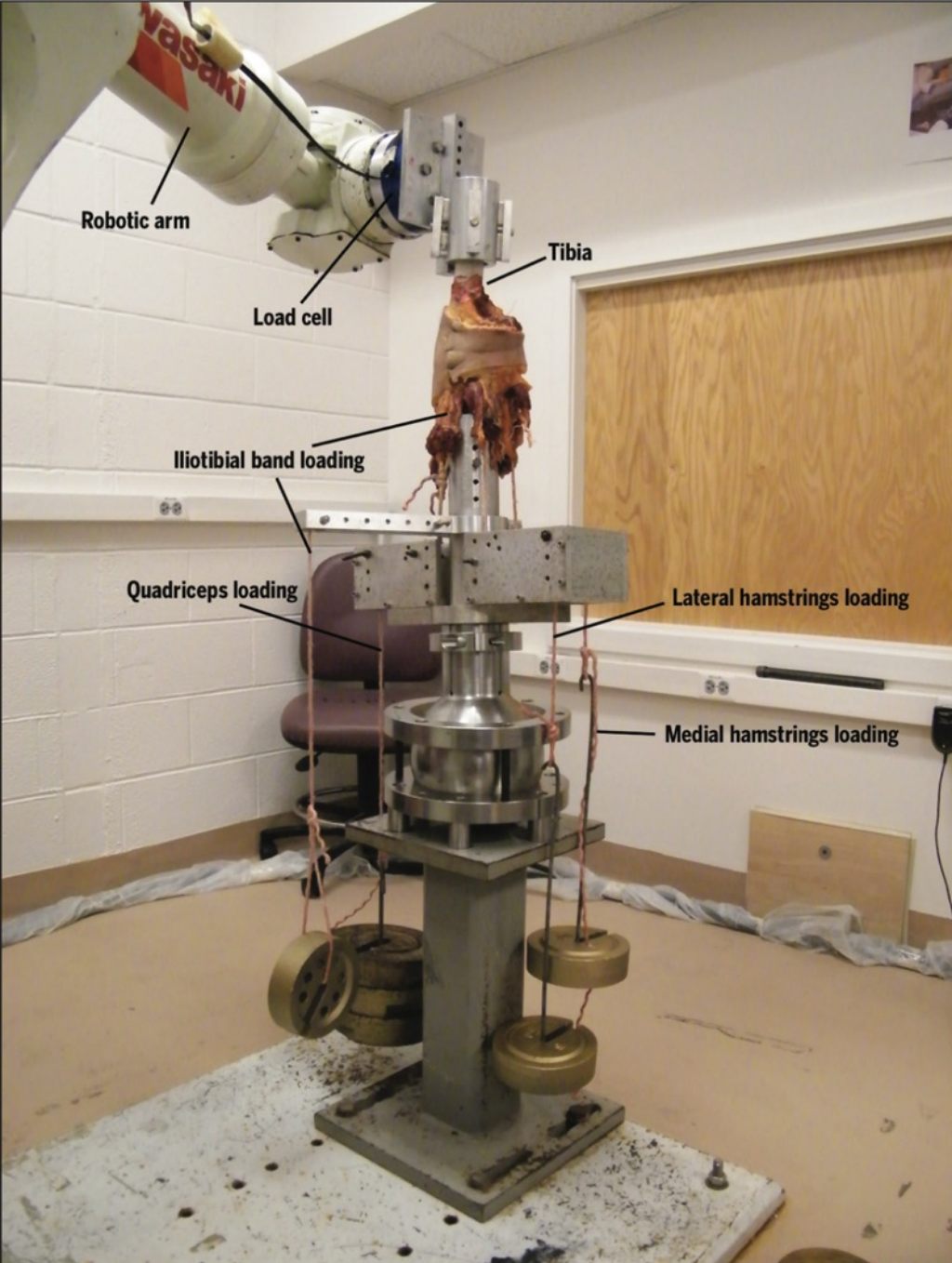
Lateral
epicondyle
of femur

Lateral condyle
of tibia





The IT band
as a knee
stabiliser



IT band tension
increases load on
the **lateral side** of
the knee
& decreases load on the medial side

Source: Gadikota, H. R., Kikuta, S., Qi, W., Nolan, D., Gill IV, T. J., & Li, G. (2013).
*Effect of increased iliotibial band load on tibiofemoral kinematics and
force distributions: a direct measurement in cadaveric knees.* Journal of
Orthopaedic & Sports Physical Therapy, 43(7), 478-485.

FIGURE 1. The experimental setup of a cadaveric knee installed on the robotic testing system. The quadriceps, hamstrings, and iliotibial band are loaded using free weights.



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Source: Gadikota, H. R., Kikuta, S., Qi, W., Nolan, D., Gill IV, T. J., & Li, G. (2013).
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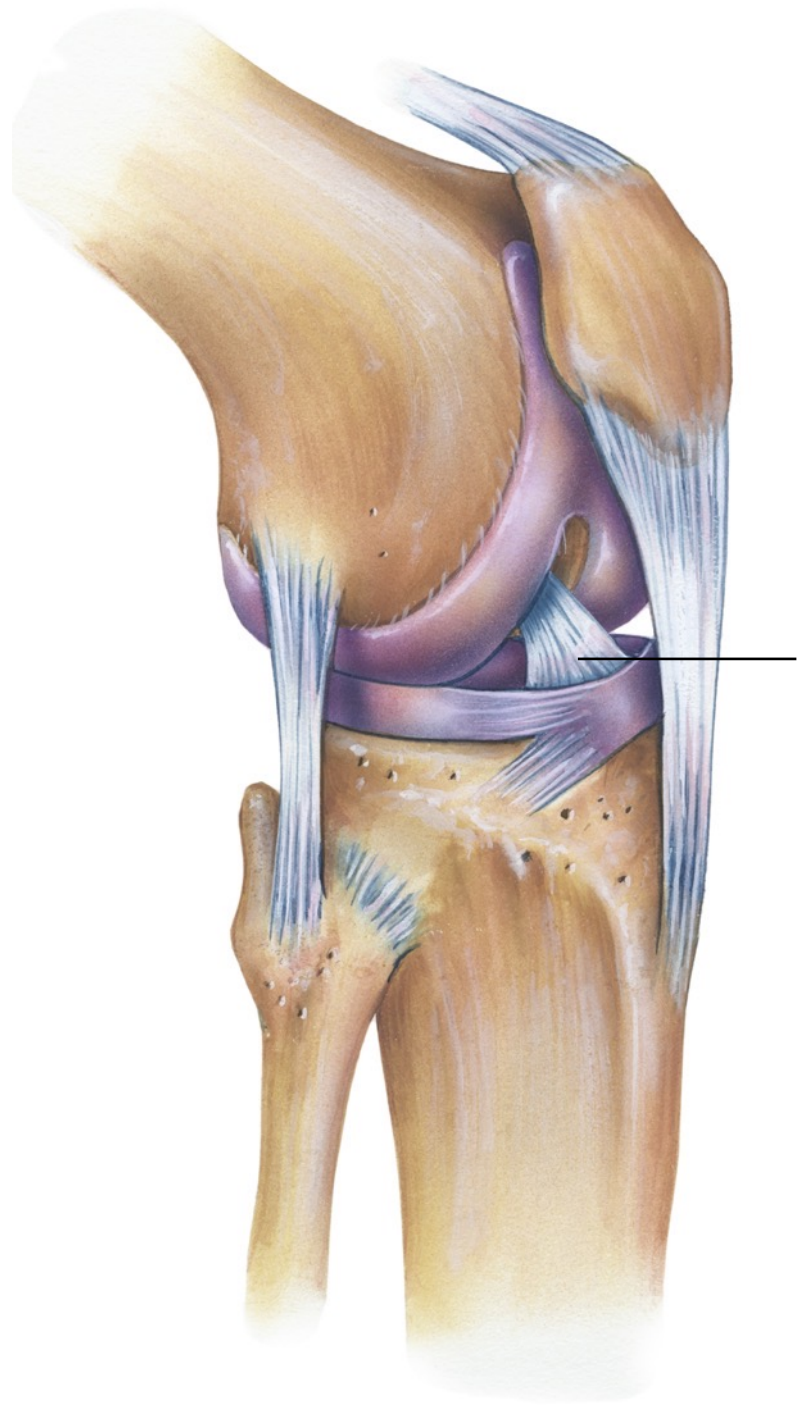
But...

Co-contraction of quads & hamstrings

is the biggest source of lateral-
medial knee stability

Source: Lloyd, D. G., & Buchanan, T. S. (2001). *Strategies of muscular support of varus and valgus isometric loads at the human knee*. *Journal of Biomechanics*, 34(10), 1257-1267.



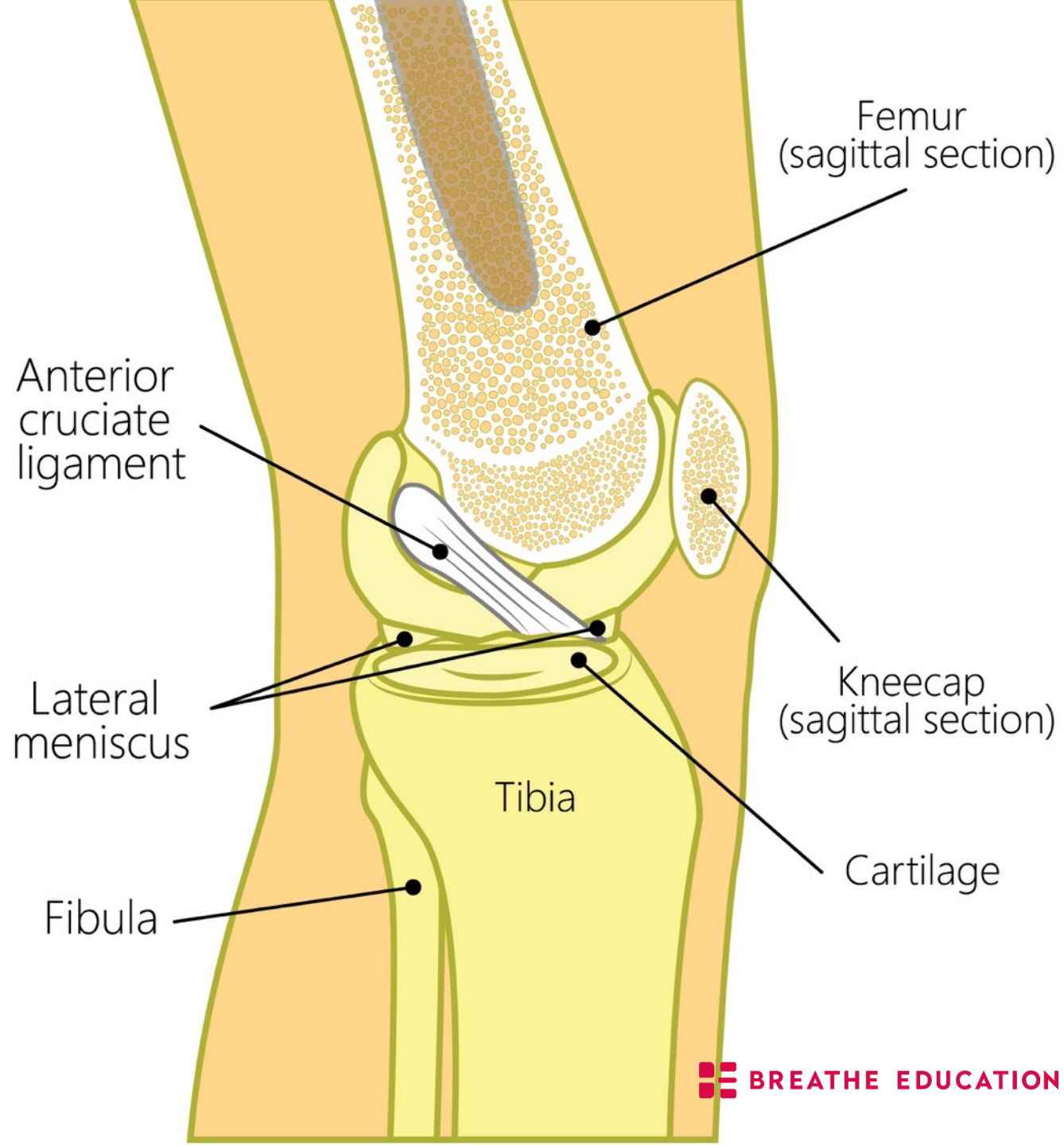


Anterior
cruciate
ligament

Prevents the tibia
shearing forwards

IT band is an
ACL synergist
at all knee
angles

Source: Yamamoto, Y., Hsu, W. H., Fisk, J. A., Van Scyoc, A. H., Miura, K., & Woo, S. L. Y. (2006). *Effect of the iliotibial band on knee biomechanics during a simulated pivot shift test*. *Journal of Orthopaedic Research*, 24(5), 967-973.



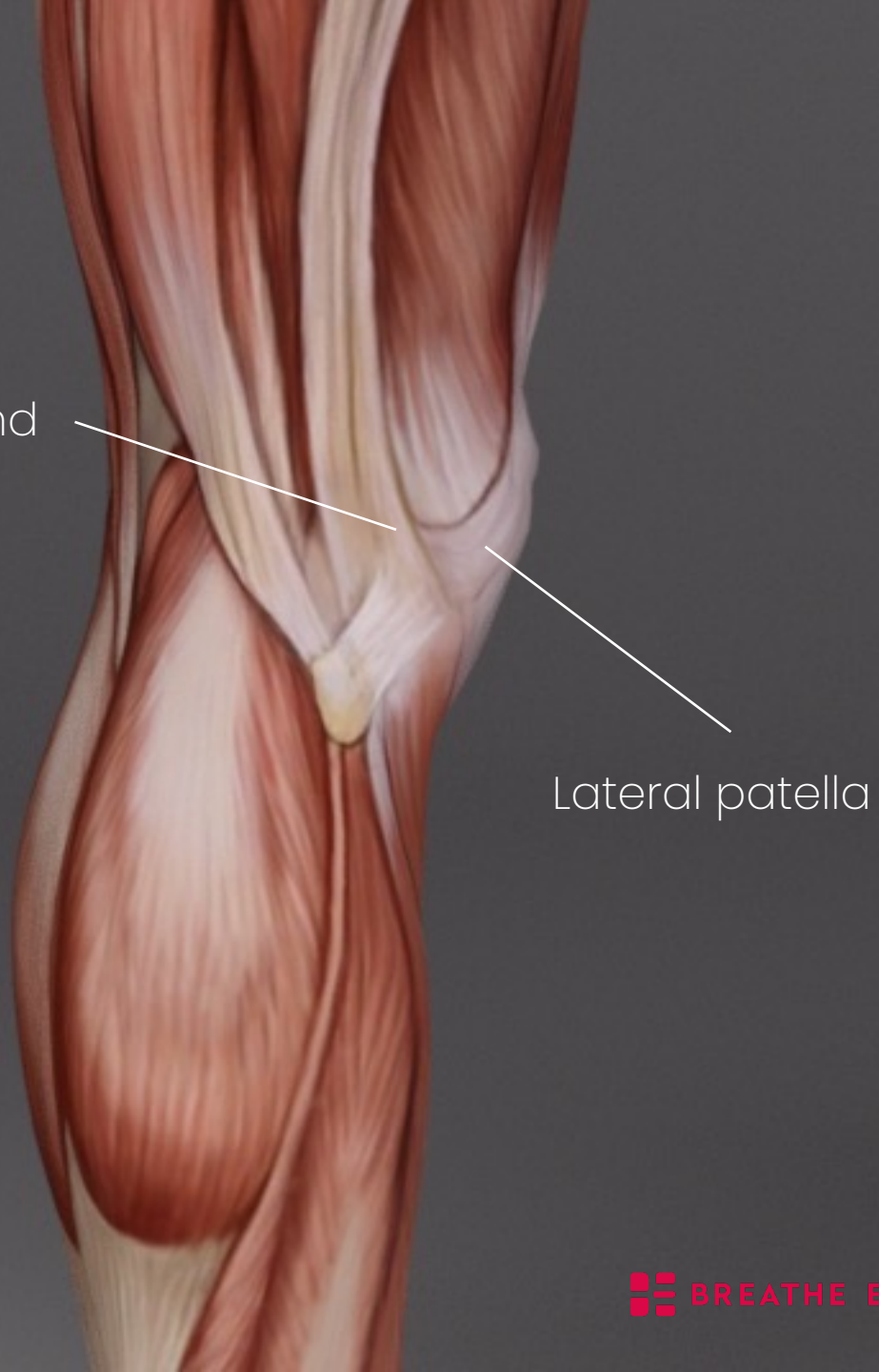
The ACL prevents the tibia **shearing forwards**



IT band is an
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Source: Yamamoto, Y., Hsu, W. H., Fisk, J. A., Van Scyoc, A. H., Miura, K., & Woo, S. L. Y. (2006). *Effect of the iliotibial band on knee biomechanics during a simulated pivot shift test*. *Journal of Orthopaedic Research*, 24(5), 967-973.

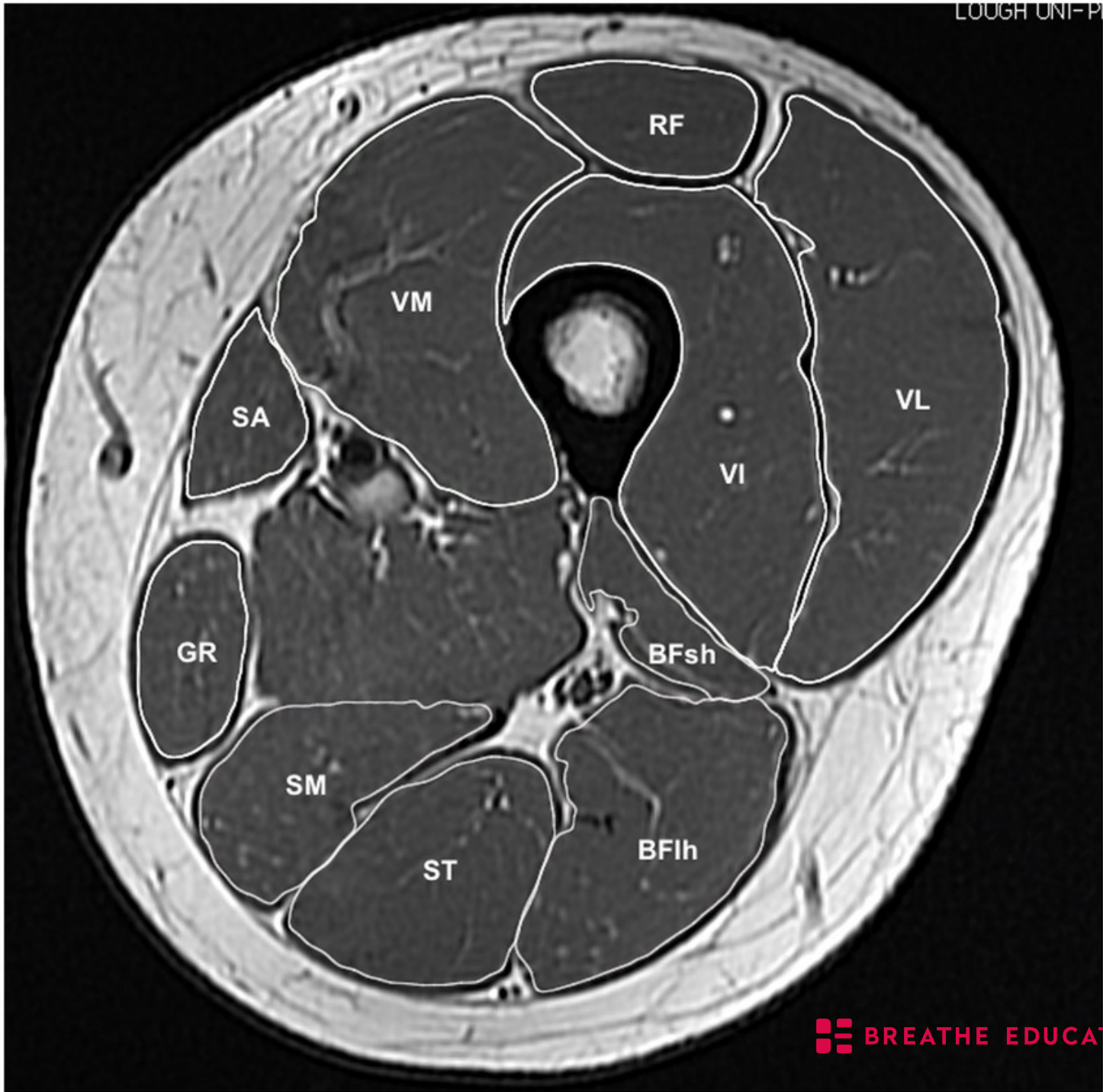
Iliotibial band



Lateral patella

Tension on
the IT band
pulls laterally
on the patella

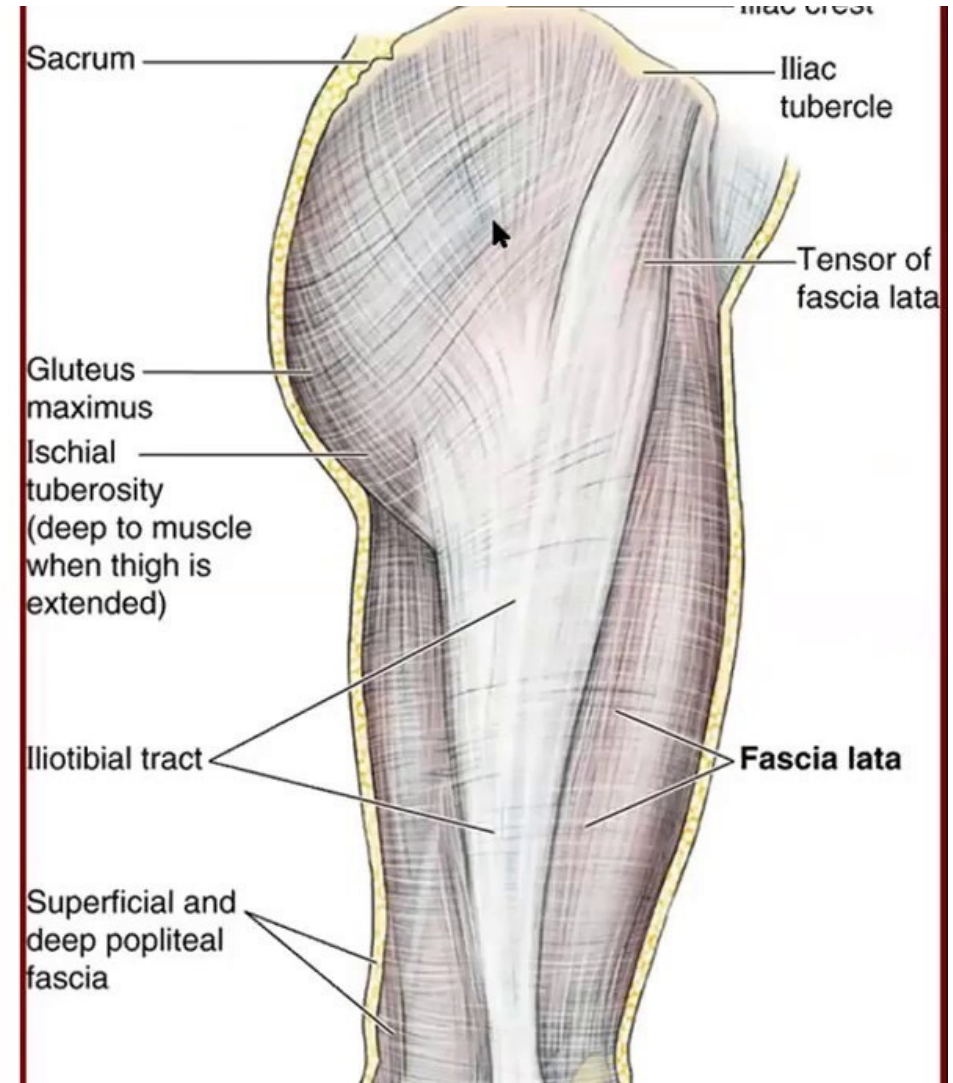
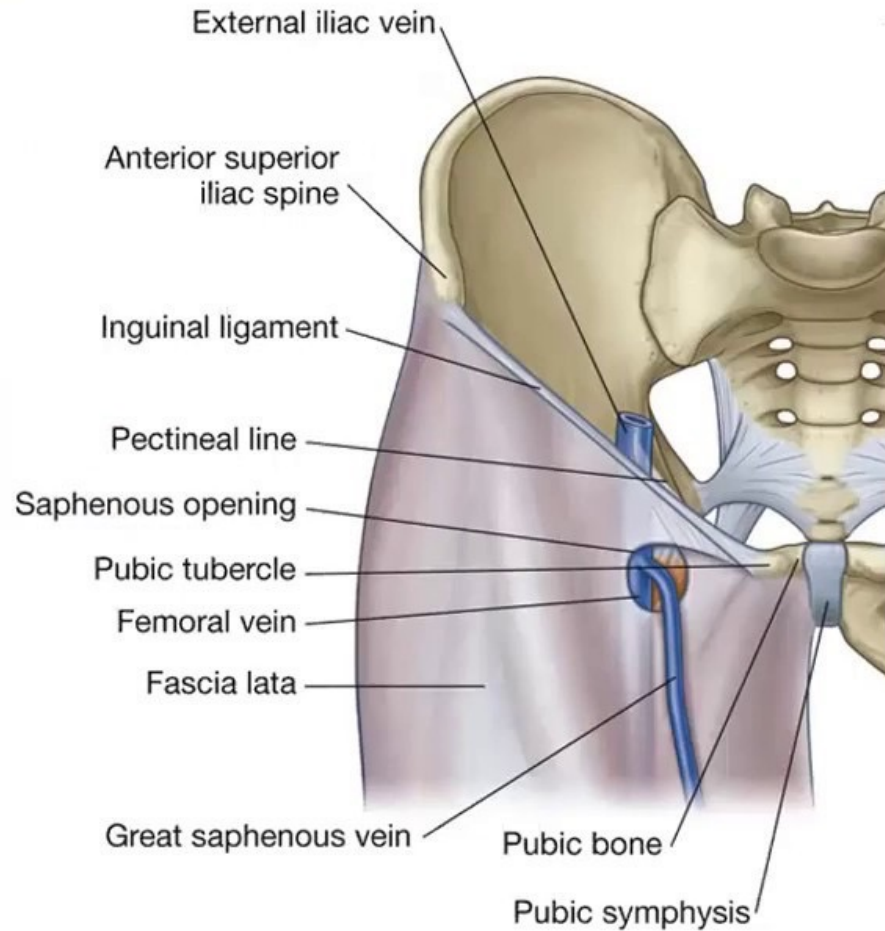
Source: Merican, A. M., & Amis, A. A. (2009). *Iliotibial band tension affects patellofemoral and tibiofemoral kinematics*. *Journal of Biomechanics*, 42(10), 1539-1546



The IT band is a thickening of the fascia lata

Source: Behan, F. P., Maden-Wilkinson, T., Pain, M., & Folland, J. (2018). Sex differences in muscle morphology of the knee flexors and knee extensors. PloS one, 13, e0190903. doi:10.1371/journal.pone.0190903

IT band is a **thickening** of the fascia lata



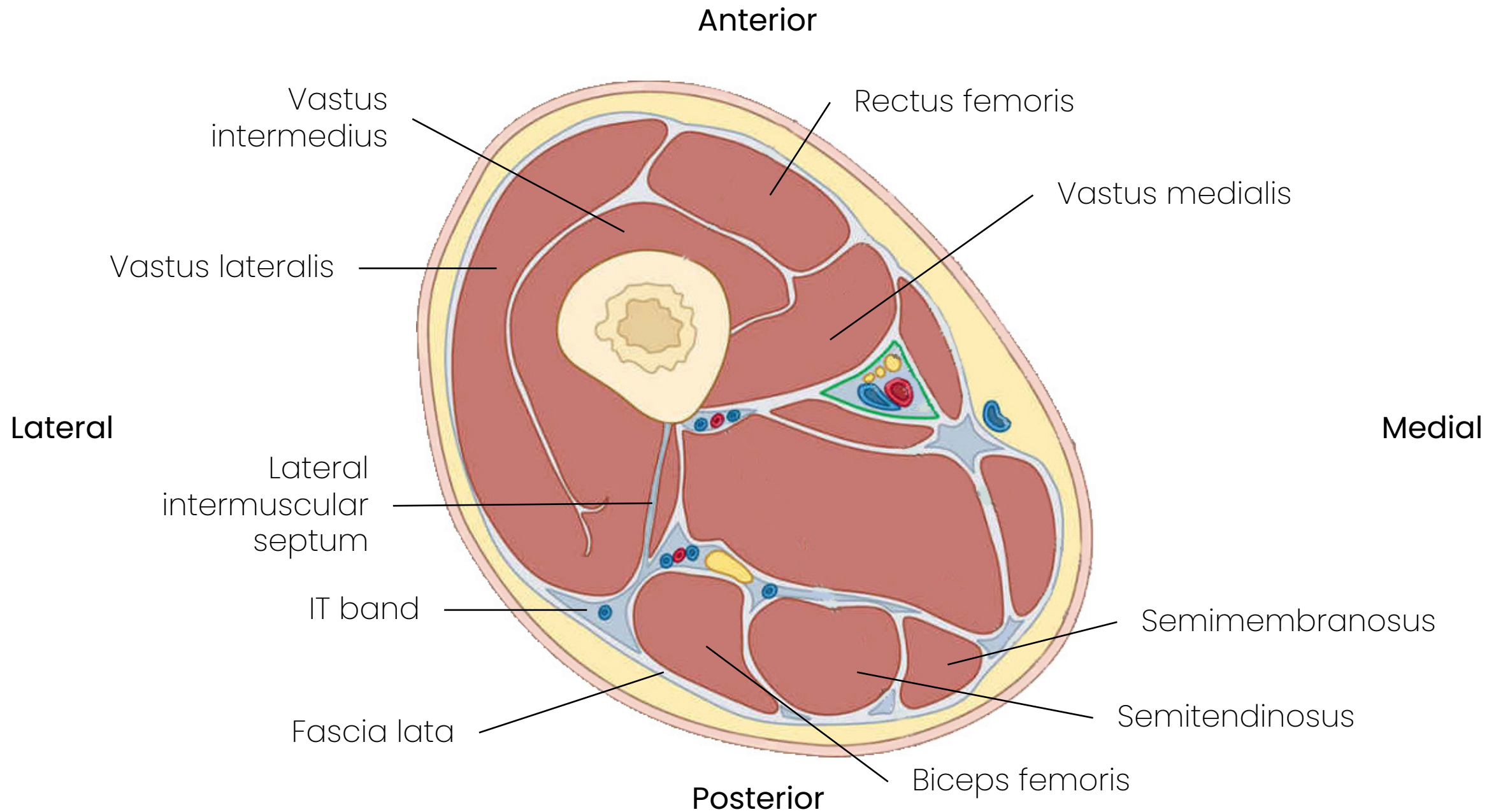


Sensitive Content
CONTENIDO SENSIBLE

Dissection
videos
coming up



Long Saphenous Vein





The

lateral intermuscular septum

of the

fascia lata

inserts into

the linea aspera

Intermuscular = between muscles

Septum = wall

Fascia = bandage

Lata = broad

Linea = line

Aspera = rough



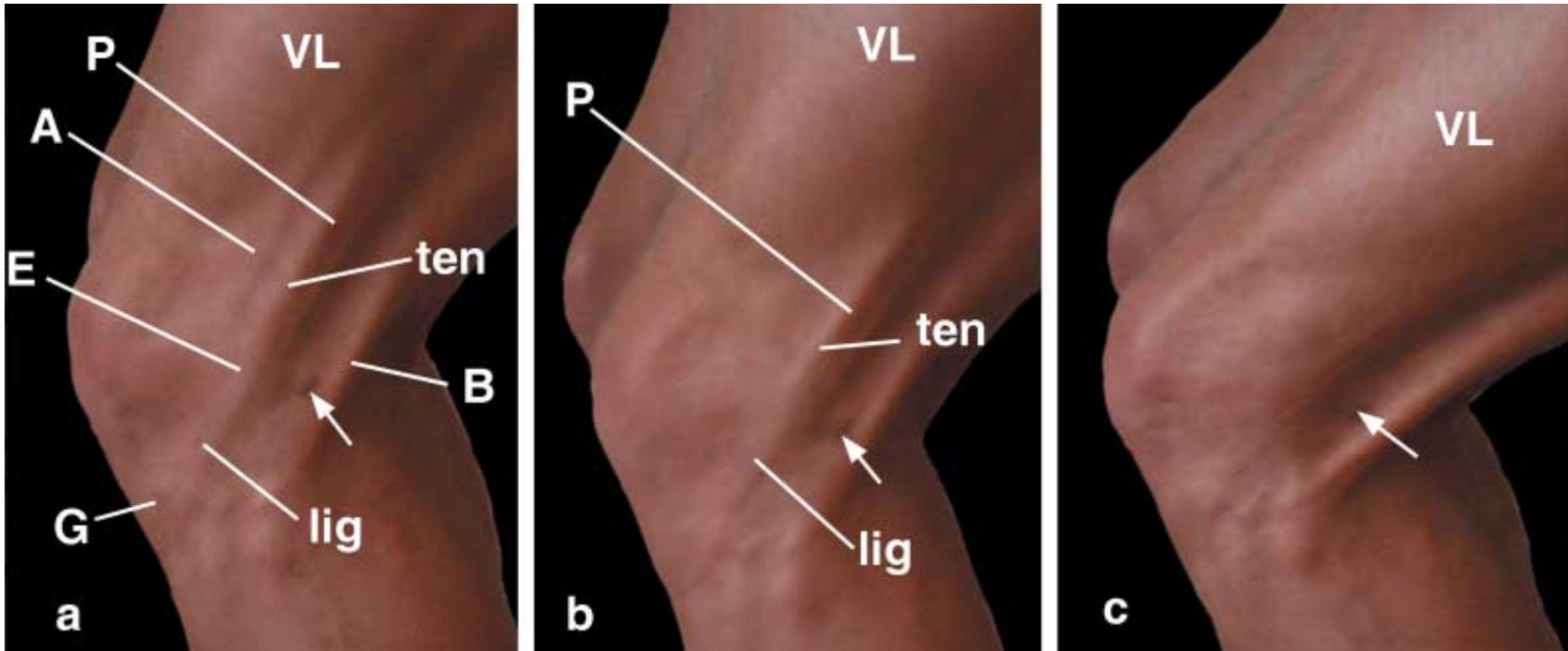
Gary Carter

©FasciaResearchSociety.org/Plastination

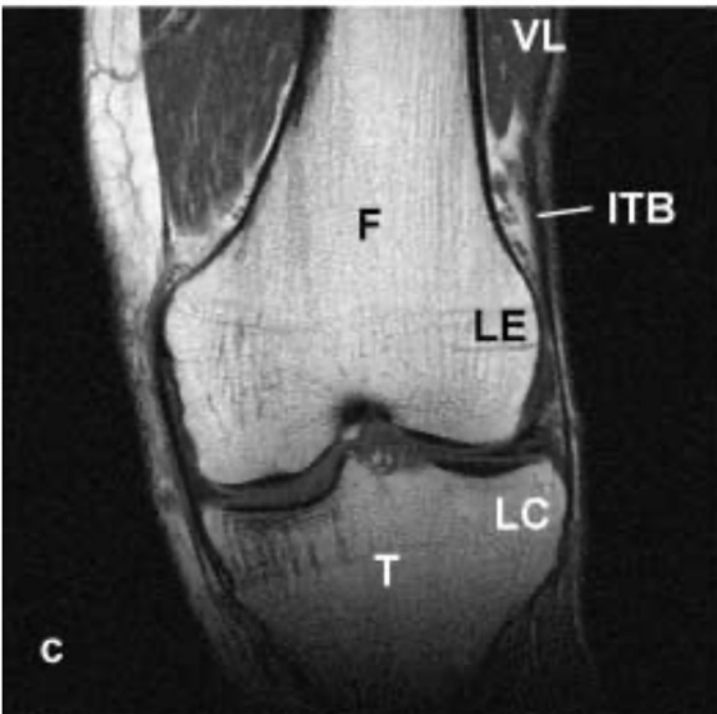
Rolling your ITB?

<https://youtu.be/oXYKhqY8T9o>

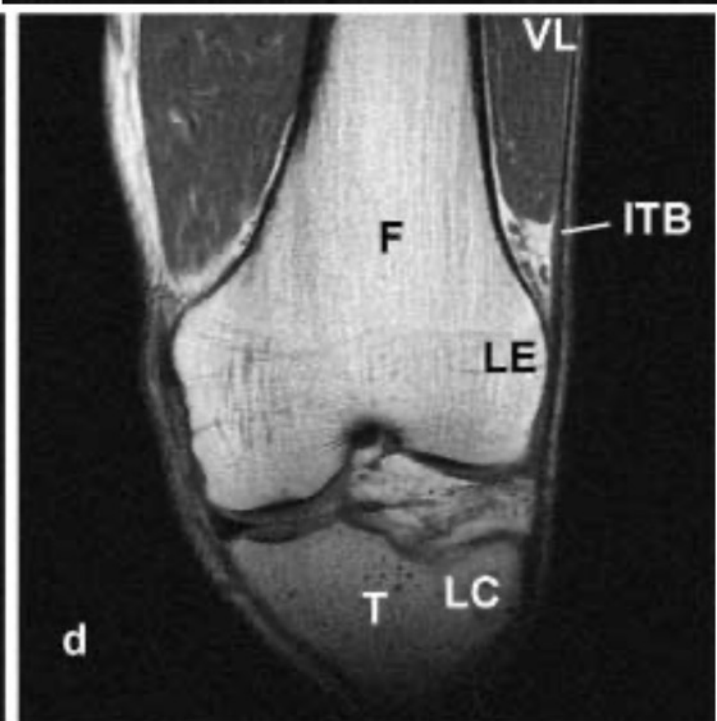
The IT band doesn't move anterior-posterior



Source: Fairclough, J, Hayashi, K, Toumi, H, Lyons, K, Bydder, G, Phillips, N, . . . Benjamin, M. (2006). *The functional anatomy of the iliotibial band during flexion and extension of the knee: implications for understanding iliotibial band syndrome*. *Journal of anatomy*, 208(3), 309-316. doi:10.1111/j.1469-7580.2006.00531.x



Knee straight



Flexed 30°

IT band acts as a
brace by converting
tensile to
compressive load

Source: Fairclough, J., Hayashi, K., Toumi, H., Lyons, K., Bydder, G., Phillips, N., . . . Benjamin, M. (2006). *The functional anatomy of the iliotibial band during flexion and extension of the knee: implications for understanding iliotibial band syndrome*. *Journal of anatomy*, 208(3), 309-316. doi:10.1111/j.1469-7580.2006.00531.x



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Questions?

