

13 year old female with leg pain.









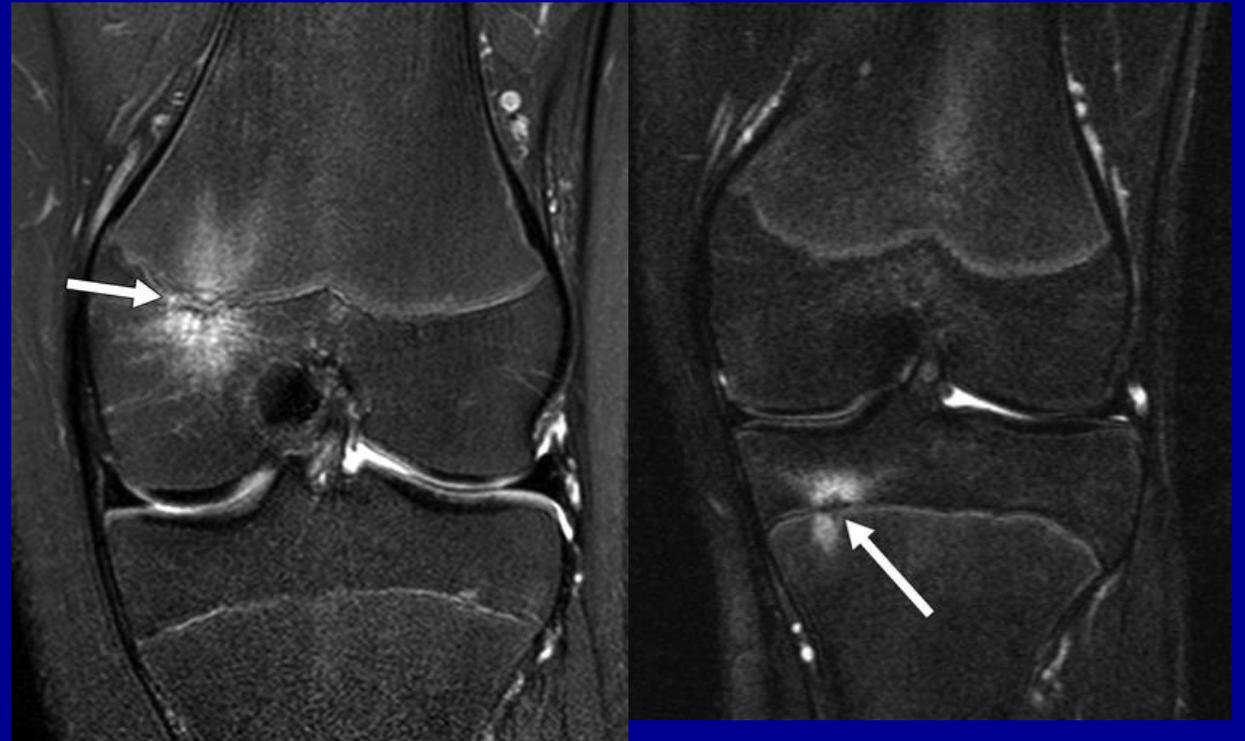
Focal periphyseal edema (FOPE)

Small focal area of bone marrow edema centered around the growth plate at the lateral femoral condyle with a little edema in the adjacent epiphysis and distal metaphysis, consistent **with focal periphyseal edema (FOPE)**.

This is a normal variant seen in the adolescents, related to closure of the physis, and may be a source of pain.

- focal bone marrow edema pattern centered at the physis of the distal femur, proximal tibia, or proximal fibula and extending into both the adjacent metaphysis and epiphysis.

FOPE zones



- FOPE zone can be seen in adolescents and likely relates to the **early stages of physiologic physeal closure.**
- It may be associated with pain particularly when no other MRI abnormalities are present.
- requires no invasive diagnostic procedure, and does not need imaging follow-up.

Etiology

- physeal closure is initiated centrally within the distal femur and proximal tibia
- formation of the metaplastic bone–neofibrocartilage perforations of the physis
- may act as tethers to the surrounding bone and may alter localized mechanics
- chronic repetitive microtrauma at the site of focal tethering
- additional stresses placed on the knee during high-level activity might accentuate the tethering of early physeal fusion

- FOPE zone may also be present in asymptomatic maturing adolescents

Reference:

- Zbojniewicz A.M., Laor T. ***Focal Periphyseal Edema (FOPE) zone on MRI of the adolescent knee: a potentially painful manifestation of physiologic physeal fusion?*** Am J Roentgenol. 2011 Oct;197(4):998-1004.