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: