Osteomyelitis is an increasingly common ~~pathology~~ condition that often poses a diagnostic challenge to clinicians. Accurate and timely diagnosis is critical ~~to~~ for preventing complications that can result in the loss of life or limb. In addition to history, physical ~~exam~~examination, and laboratory studies, diagnostic imaging ~~plays an~~is essential ~~role~~ in the diagnostic process. This narrative review article discusses various imaging modalities employed to ~~diagnoseosteomyelitis~~diagnose osteomyelitis~~:~~, namely plain ~~films~~radiography, computed tomography (CT), magnetic resonance imaging (MRI), ~~ultrasound~~ultrasonography, bone scintigraphy, and positron emission tomography (PET). Articles were obtained from PubMed and screened for relevance to the topic ~~of~~ "diagnostic imaging for osteomyelitis." The authors ~~conclude~~concluded that plain ~~films are~~ radiography is an appropriate first step~~,as they~~ because the images may reveal osteolytic changes and can help rule out alternative ~~pathology~~disease. MRI is often the most appropriate second ~~study, as~~step because it is highly sensitive and can ~~detect~~reveal bone marrow changes within days of an infection. Other ~~studies~~imaging modalities such as CT, ~~ultrasound~~ultrasonography, and bone scintigraphy may be useful in patients who cannot undergo MRI. CT is useful for ~~identifyingnecrotic~~identifying necrotic bone in chronic infections. ~~Ultrasound~~Ultrasonography may be useful in children or ~~those~~individuals with sickle-cell disease. Bone scintigraphy is particularly useful for detecting vertebral osteomyelitis. Finally, PET ~~scan~~ has demonstrated high sensitivity and specificity; however, its clinical application is limited by its high cost and poor availability. When used appropriately, diagnostic imaging can ~~provide~~ be highly sensitive~~ity~~ and specific~~ity~~ for detecting osteomyelitis, making ~~radiographic evaluation~~it a crucial step in the diagnostic process of this debilitating condition.

Comment [Editor1]: Academic manuscripts should be free from spacing errors, and a space should be inserted between two words.

Comment [A2]: At a previous instance in the text, the term "PET" has been used. Therefore, at this instance, "PET scan" has been revised to "PET" to maintain consistency.