A nitrene species is one of the intriguing active intermediates that provide easy access to nitrogen-containing compounds. Although several precursors to generate such species have been developed so far, they must be carefully treated due to their low stability. In this context, we have developed catalytic nitrene-transfer reactions using cyclic oxime esters as stable and novel nitrene precursors, which undergo oxidative addition to low-valent transition metal followed by decarboxylation to form vinylnitrene and related complexes. The recent advances of nitrene-transfer reactions in my group will be presented.