PURPOSE: To assess the influence of age-related macular degeneration (AMD) on critical flicker-fusion frequency (CFF). METHODS: CFF was measured centrally for a red, green and blue target, and in 10 degrees eccentricity with a red target. Twenty-eight patients with non-exsudative AMD, 12 patients with exsudative AMD and 45 age-matched healthy eyes were included. RESULTS: CFF decreased in eyes with non-exsudative AMD (red 1.3 Hz, p=0.025; green 1.4 Hz, p=0.053; blue 2.1 Hz, p=0.006) and exsudative AMD (red 2.2 Hz, p=0.02; green 3.3 Hz, p=0.001; blue 2.9 Hz, p=0.02). The difference between central and peripheral CFF increased in non-exsudative AMD (red-red 10 degrees, 0.7 Hz, p=0.024), but was not significantly increased in exsudative AMD (1.3 Hz, p=0.059). There was no difference between eyes with non-exsudative AMD with good visual acuity (VA>20/32, n=18) and healthy eyes, nor between eyes with non-exsudative (n=10) and exsudative AMD (n=9) with VA from 20/100 to 20/40. CONCLUSIONS: CFF decreased in non-exsudative and exsudative AMD. CFF is not able to distinguish between AMD eyes and healthy eyes of equal visual acuity, and therefore is not applicable as a possible diagnostic test.