Obesity is a major health concern in the US causing annual death of more than 300'000 deaths per year. World Health Organization has implemented intervention program to fight obesity. Understanding how people become obese is key to design adequate intervention program. In 2007, Christakis and Fowler claimed that obesity spread through social networks and argued that contacts with obese person increase the likelihood of becoming obese. This claim has been subject to much controversy and was refuted by Shalizi and Thomas who highlighted the confusion made between social contagion, homophily and confounding. Hill et al. have proposed a derived version of the SIS model, the SISa model, to allow for both social transmission of obesity and automatic infection. Using a network of 85 subjects living next to MIT for which longitudinal weight data were available, we try to fit a SISa model. However, we do not find any evidence of social contagion for obesity using conventional significance level keeping in mind the relatively limited size of our sample.