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In this work, we develop a mathematical model of HIV epidemiology to explore a possible mechanism by which mass incarceration can lead to increased HIV incidence. The results are particularly relevant for the African American community in the United States that represents only 12% of the total population *but* accounts for 45% of HIV diagnoses and 40% of the incarcerated population. While most explanations of the link between mass incarceration (or anything else that leads to a population with a low ratio of males to females) and higher HIV burden are based on the complicated idea of sexual concurrency,

we propose a much simpler mechanism based on the idea of sexual activity compensation. (Received September 26, 2017)