Endometriosis is a gynecologic disorder that plagues millions of women worldwide, frequently associated with abdominal pain and subfertility. It is important to continue characterizing the many factors that contribute to these symptoms. Our research focuses on determining how early stage embryos, collected from rats that have been surgically induced with endometriosis (Endo group), develop in an in vitro system. Embryonic quality is assessed, and compared, between the Endo group and healthy controls on developmental days two and four. Our data indicates that embryos collected from Endo rats are unable to be improved by removing them from the harmful in vivo environment and culturing them in vitro. It even seems that culture media may further decrease the quality of these same embryos. These results suggest that the culture of embryos from women with endometriosis in an IVF clinical environment may not be the most optimal means of improving fertility.