Apoptotic signaling in ejaculated spermatozoa is known to be mediated by activation of caspases. In vitro fertilization (IVF) involves coincubation of spermatozoa with the oocyte. The aim of the study was to examine if caspases (CP) become activated following incubation of spermatozoa over course of time in the absence of any external triggers.

Semen samples from 35 healthy donors were washed immediately following liquefaction. Spermatozoa were incubated in Biggers, Whitten and Wittingham (BWW) media at 37°C in a 5% CO₂ incubator. Activated caspases (CP 1, 3, 8 and 9) were determined using carboxyfluorescein derivatives by flow cytometry. They were examined at 0, 1, 2, 3, 4, 5, 6 and 24 hours of incubation. No significant activation of CP 1, 3, 8 and 9 was seen up to 3 hours of incubation. Significant activation of caspases was seen after 6 hours and it reached a maximum of 80% after 24 hours of incubation.

We have demonstrated for the first time that ejaculated spermatozoa are able to activate caspases in a chronological manner even in the absence of external stimuli. It is important to keep the duration of spermatozoal incubation to the minimum in IVF to avoid the possibility of autoactivation of caspases.