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## REVIEW

# The meaning of sperm capacitation. A historical perspective

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It should be recalled that sperm capacitation was originally defined in 1952 as some physiological changes of the spermatozoa in the female genital tract before they are capable of penetrating and fertilizing the eggs. It was found further that capacitation can be achieved outside the female tract, first in the presence of biological fluids, and then in the absence of biological fluids. Later on it was found that capacitated rabbit uterine spermatozoa still have acrosome and that the acrosome reaction of rabbit spermatozoa occurred in contact with eggs in the oviduct. Thus, several authors separated acrosome reaction from capacitation and considered capacitation as a preparation for the acrosome reaction, even though the titles of their articles still implied that capacitation included acrosome reaction. During the past 30 years we have found many membrane changes on the molecular and immunological level in spermatozoa that prepare them for physiological changes such as "hyperactivation," and morphological changes such as "the acrosome reaction." These events lead to more vigorous motility and to the release of various enzymes for the penetration of the egg. Undoubtedly, further study will reveal more molecular, physiological, and morphological changes in the mammalian spermatozoa before they are capable of fertilization. There are definite changes before hyperactivation and acrosome reaction, but these changes are parts of capacitation, if we prefer to keep its original meaning. It is proposed here that in order to save further confusion, capacitation of spermatozoa should be defined as originally proposed, that is, to include all the events that lead to the development of the capacity of mammalian spermatozoa to penetrate eggs. (ABSTRACT TRUNCATED AT 250 WORDS)

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