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JOURNAL ARTICLE

Separation of cryopreserved human semen using Sephadex columns, washing, or Percoll gradients

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The following methods were evaluated for their ability to separate motile cryopreserved sperm from semen after thawing: single washing, Percoll separation followed by a single washing, and Sephadex column separation. For Sephadex separation, washing, and Percoll separation, percent recovery of motile sperm was 65%, 76%, and 28%, and motility was 81%, 39%, and 60%, respectively. Percoll separation and washing were the best methods for removing seminal constituents, but sperm velocity and linearity were lower after Percoll separation and washing than after Sephadex separation. During 3 hours of incubation, there was an additional decrease in the motility, viability (exclusion of supravital dye), velocity, linearity, and intact acrosomes of Percoll-separated sperm, indicating that Percoll separation may not be suitable for cryopreserved sperm. Motile, washed sperm also had lower velocities and higher spontaneous acrosome reactions than Sephadex-separated sperm, but velocity and linearity were maintained during incubation. When semen was separated with Sephadex followed by washing, motility was well maintained (84%). The Sephadex method is a promising technique for selecting and concentrating motile cryopreserved sperm.

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