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## JOURNAL ARTICLE

# Leukocytic infiltration into the human ejaculate and its association with semen quality, oxidative stress, and sperm function

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Immunocytochemical techniques have been used to monitor the size and composition of the leukocyte population in unfractionated human semen samples and sperm populations generated by Percoll gradient centrifugation. The characteristics of the leukocyte population have then been related to the quality of the semen profile, the production of reactive oxygen species, and the functional competence of the spermatozoa. A majority (97%) of the ejaculates examined contained leukocytes, and in 82.4% the major cell type was the granulocyte. Small numbers of T cells, B cells, and monocytes/macrophages could also be found in 62%, 43%, and 21% of samples, respectively, and patients were occasionally identified in whom one of these cell types became the predominant leukocyte species. Although a subpopulation of patients was identified in whom the infiltration of multiple leukocyte species was positively correlated with the concentrations of spermatozoa and precursor germ cells in semen, in general, the presence of leukocytes, to the point of leukocytospermia, did not significantly influence any component of the semen profile. Similarly, the fertilizing potential of the washed spermatozoa, as assessed by *in vitro* tests of the acrosome reaction and sperm-oocyte fusion, was not correlated with the concentration of seminal leukocytes. In contrast, the carryover of leukocytes into the washed sperm preparations profoundly influenced the fertilizing potential of the spermatozoa via mechanisms that were associated with the production of reactive oxygen species. These results have implications for the diagnostic significance of leukocyte contamination in the context of male infertility and assisted conception.

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