

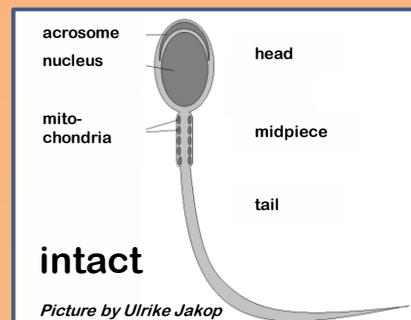


# Lion sperm morphology

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A cooperation project of

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Spermatozoa are highly specialized cells in service of reproduction. A normal morphology is prerequisite to their function. If - out of the large amount of spermatozoa produced by a male - too many cells are defective, fertility is reduced. Spermatogenesis might be disturbed by several factors like e. g. stress and disease or genetic isolation and inbreeding. We monitor sperm morphology in different lion populations to (i) characterize its relation to male reproductive performance, (ii) determine semen suitability for cryopreservation, and (iii) define threshold values to select males for potential conservation breeding programs.

Sperm quality, particularly morphology, in non-domestic animal species and even humans is not comparable to that of farm animals which often were selected for sperm traits to be bred applying assisted reproduction techniques like cryopreservation and artificial insemination. In lion semen, a high incidence of sperm defects ( → ) is generally reported (Pukazhenthi et al., 2006; Lueders et al., 2012), and a proportion of 50% intact spermatozoa may be considered as a good sample! Also, so-called knobbed acrosomes ( → ) are often found. Here, sperm with this abnormality were mostly motile and classified as intact if no other defect was detected. However, their fertility might be reduced as it is reported for bulls. Characteristic morphological pattern of sperm samples of five males from Ukutula lodge are shown.

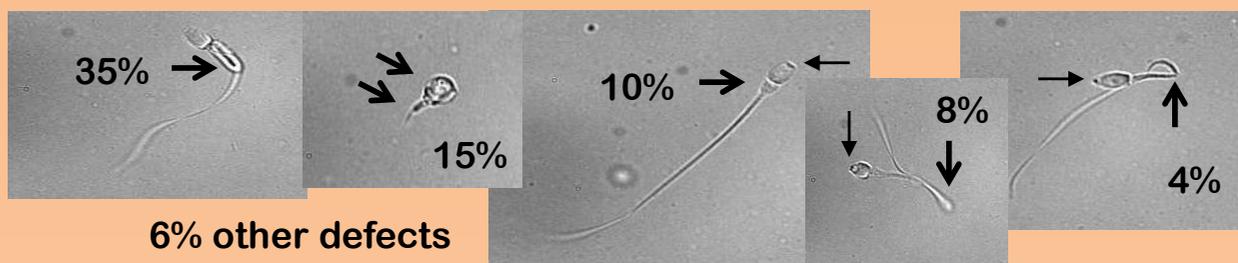
## Ukutula lions

Photographs by Sandra Augustin (IZW)

### Andrew

22% intact

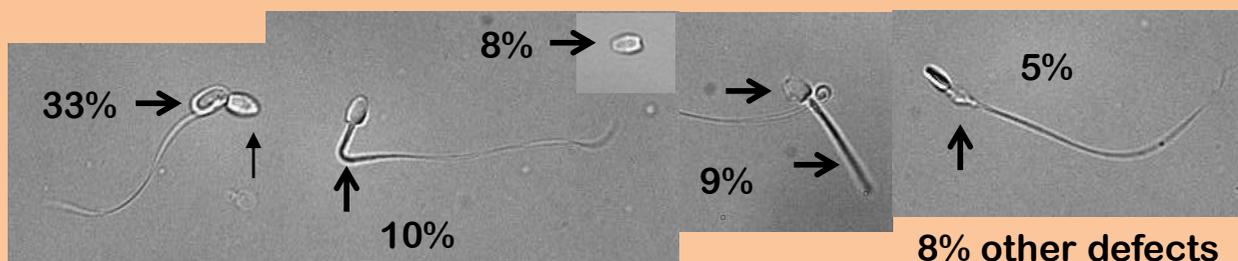
41% knobbed acrosomes



### Columbus\*

27% intact

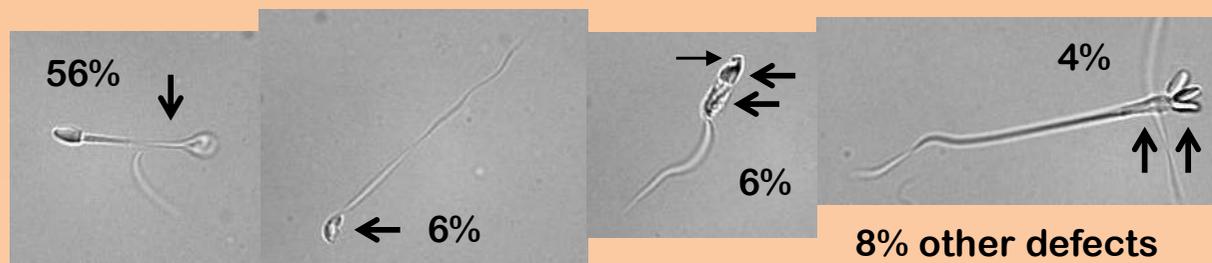
28% knobbed acrosomes



### Maximus

20% intact

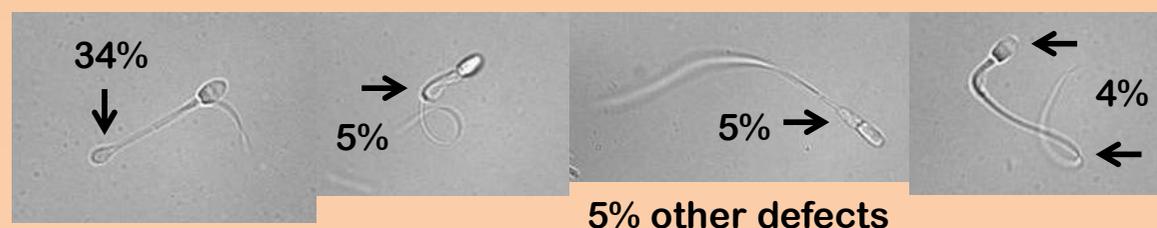
1% knobbed acrosomes



### Mufasa

47% intact

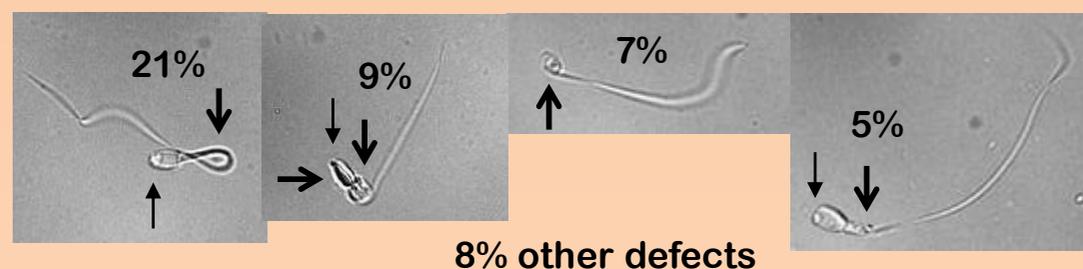
3% knobbed acrosomes



### Prince\*

50% intact

68% knobbed acrosomes



\*white lion