American Urological Association

Guideline Amendment Summary

Male Infertility

Published 2020; Amended 2024

The changes below constitute updates made in the 2024 Amendment:

Section	Document Update
Purpose	This section has been modified to include information on intracytoplasmic sperm injection (ICSI) and the importance of male infertility workup
Methodology	The methodology section has been updated to note updated search dates and amendment peer review details
Introduction	This section has been updated to include text on defining infertility. In addition, intrauterine insemination (IUI) was included as a procedure under the summary of specific goals of evaluating the infertile male Table 1 on "Common Terms for Semen Analysis" has been added under the section on "Definitions of Infertility and Treatment Success"
Determination of Evidence Strength	This section has been updated to include AUA's Strength of Evidence system. Table 2 has been added to define AUA's Strength of Evidence
Peer review and Document Approval	This section has been updated with new information on the peer review and approval process
General	The term "miscarriage" has been replaced with "pregnancy loss" throughout the Guideline
Statement #2	Statement has not changed

Section	Document Update
	The supporting text and Table 4 has been updated to include new information from the 6th Edition of the World Health Organization Laboratory Manual for the Examination and Processing of Human Semen Additional text was added for point-of-care and mail-in semen tests
Statement #3	Statement has not changed The supporting text has been updated to include additional information on the benefits of male evaluation for patients who may be infertile
Statement #4	Statement has been upgraded from an Expert Opinion to a Moderate Recommendation based on new evidence Supporting text has been updated to include information on karyotype testing and sperm DNA fragmentation
Statement #6	Statement has not changed Supporting text has been added on heterozygosity at the loci responsible for cystic fibrosis and the associated effects
Statement #8	Statement has been updated to include “occupational exposures” as a risk factor Table 8 on the risk factors of infertility has been updated to replace “obesity” with “Obesity with or without metabolic syndrome.” The risk factor for cellphones was identified not to be a risk factor previously, but that has been modified to state that evidence is inconclusive
Statement #11	Statement has been updated to include semen pH and to reorder the list of initial evaluation components in azoospermic males Supporting text has been updated to include IUI as a procedure that can also be utilized when obtaining viable sperm from urine or any location in the male reproductive tract
Statement #12	Statement has been updated

Section	Document Update
	"Clinicians should recommend karyotype testing for males with primary infertility and azoospermia or sperm concentration <5 million sperm/mL when accompanied by elevated follicle-stimulating hormone, testicular atrophy, or a diagnosis of impaired sperm production. (Expert Opinion)"
Statement #13	This is a new evidence-based statement "Clinicians should recommend Y-chromosome microdeletion analysis for males with primary infertility and azoospermia or sperm concentration ≤1 million sperm/mL when accompanied by elevated follicle-stimulating hormone, testicular atrophy, or a diagnosis of impaired sperm production. (Moderate Recommendation; Evidence Level: Grade B)" Supporting text has been added to support this new statement
Statement #15	This statement has been updated to include males who have absence of the vas deferens (unilateral or bilateral)
Statement #22	Statement has not changed Supporting text has been updated to include information on scrotal ultrasound
Statement #23	Statement has been updated to include pelvic MRI, and the semen volume has changed from <1.5mL to <1.4mL Supporting text has been updated to support the inclusion of pelvic MRI within the recommendation
Statement #28	Statement has been modified to "prior to surgical sperm retrieval with assisted reproductive technologies" from "prior to assisted reproductive technologies"
Statement #29	Statement has not changed The second paragraph of the supporting text has been moved ahead of the first paragraph

Section	Document Update
Statement #30	The recommendation type has been modified from “Moderate” to “Conditional” as per AUA guideline nomenclature Supporting text has been updated to include information on fresh and cryopreserved sperm, and fertility-center preferences on when to extract sperm
Statement #31	The recommendation type has been modified from “Moderate” to “Conditional” as per AUA guideline nomenclature Supporting text has been added on epididymal sperm retrieval
Statement #32	This is a new Clinical Principle statement “Clinicians may consider the utilization of testicular sperm in nonazoospermic males with an elevated sperm DNA Fragmentation Index. (Clinical Principle)” Supporting text has been developed to support this new recommendation
Statement #34	This statement has been modified to state sympathomimetics “with or without alkalinization and/or urethral catheterization” when clinicians treat patients with infertility associated with retrograde ejaculation Supporting text has been updated to include information on sperm wash media
Statement #37	This statement has been modified to remove males with azoospermia “For infertile males with ejaculatory duct obstruction, the clinician may consider transurethral resection of ejaculatory ducts (TURED) and/or surgical sperm extraction. (Expert Opinion)” Supporting text has been updated to include pelvic imaging and IUI in appropriate areas
Statement #38	Statement has not changed Supporting text has been updated to correct the live delivery rate per initiated IVF cycle and the deliveries involving twins

Section	Document Update
Statement #39	Statement has been updated to clarify “in vitro fertilization (IVF) with ICSI in lieu of IVF/ICSI”
Statement #40	Statement has not changed Supporting text has been updated to include information on exogenous testosterone therapy, and updates were made to the hCG dosages and frequency for initial treatments
Statement #42	Statement has been modified to not prescribe exogenous testosterone therapy to males interested in current and future fertility Supporting text has been updated to support this change
Statement #45	The recommendation type has been modified from “Conditional” to “Moderate” as per AUA guideline nomenclature Supporting text has been updated to include information on a randomized controlled trial from 2020 to further support the recommendation
Statement #47	The recommendation has been modified to state that clinicians “may” versus “should” inform the patient as per AUA guideline nomenclature for Conditional Recommendations Supporting text has been updated to include information on medical therapy eligibility
Statement #49	Statement has been modified to clarify that patients undergoing chemotherapy and/or radiotherapy should “avoid initiating a pregnancy” versus “avoiding a pregnancy”
Statement #50	Statement has not changed Supporting text has been modified to include information on mail-in kits

Section	Document Update
Statement #51	The recommendation has been modified to state that clinicians “may” versus “should consider” as per AUA guideline nomenclature for Conditional Recommendations
Statement #52	Statement has been modified to include “or retrograde ejaculation”
Statement #53	Statement has been modified to include “and reduced volume ejaculate”
Statement #54	Statement has not changed Supporting text has been modified for appropriate use of the terms: micro-TESE, conventional TESE, and surgical sperm retrieval
Future Directions	Section has been modified to include information on lifestyle and behavioral effects on male fertility
References	The references were updated to support the new additions throughout the Guideline
Algorithm	The Male Infertility Algorithm has been updated with the following changes: • One year of failure to conceive if female partner <35 years old or 6 months of failure to conceive if female partner ≥35 years old ~~or if female partner ≥35 years old, 6 months of failure to conceive~~ • Post-Vasectomy arrows and boxes were removed • “Failed ART” has been changed to “Failed IUI or IVF±ICSI or RPL” • Complete male evaluation box was updated to include semen analysis • Testosterone has been added when categorizing azoospermia • “Further male evaluation management” for oligozoospermia patients has been changed to “Further male evaluation and management. Consider IUI or IVF±ICSI” • “ART” under Normozoospermia has been changed to “IUI or IVF±ICSI” • The azoospermia section was updated to include testosterone during categorization and the “option for microTESE” box was updated to include IVF+ICSI

Note: Additional editorial changes were made throughout the guideline to align with current AUA guideline criteria and for consistency purposes. These additional changes were not substantial and were not content-related.