**Suppl. Table 1:** Keywords used for each step in the Stepwise Model

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| **Steps** | **Content (1999-2018)** | **Keywords** |
| Step 1 | SDF | (A) |
| Step 2 | SDF and Male Infertility | (A) AND TITLE-ABS ("infertil\*" OR "subfertil\*" OR "sterility") |
| Step 3 | Clinical Scenarios/Risk Factors |  |
| Varicocele | (A) AND TITLE-ABS ("varico\*")  |
| Oligozoospermia | (A) AND TITLE-ABS ("oligozoosperm\*")  |
| Astheno\*/Oligoastheno\* | (A) AND TITLE-ABS ("astheno\*" OR "oligoastheno\*")  |
| Globozoospermia | (A) AND TITLE-ABS ("globozoo\*")  |
| Testicular Cancer | (A) AND TITLE-ABS ("testicular cancer" OR "testicular carcinoma" OR "testicular neoplasm" OR "testicular malignanc\*" OR "testicular germ cell tumor") |
| UMI | (A) AND TITLE-ABS ("Unexplained male infertility" OR "Unexplained infertil\*" OR "UMI") |
| Recurrent Pregnancy Loss | (A) AND TITLE-ABS ("recurrent" AND "pregnancy loss" OR "abortion" OR "spontaneous abortion" OR "miscarriage")  |
| Hypogonadism | (A) AND TITLE-ABS ("hypogonad\*")  |
| Obesity | (A) AND TITLE-ABS ("obes\*" OR "overweight" OR "BMI")  |
| Lifestyle | (A) AND TITLE-ABS ("lifestyle" OR "smoking" OR "alcohol" OR "caffeine")  |
| Occupational Exposure | (A) AND TITLE-ABS ("Occupational" OR "hazard" exposure)  |
| Step 4 | Mechanistic Studies |  |
| Oxidative Stress | (A) AND TITLE-ABS ("oxidative stress" OR "reactive oxygen species" OR "ROS" OR "oxidative damage")  |
| Apoptosis | (A) AND TITLE-ABS ("apoptosis" OR "caspase")  |
| Sperm Function | (A) AND TITLE-ABS ("sperm function" OR "acrosome reaction" OR "capacitation" OR "sperm-oocyte fusion" OR "zona-pellucida binding" OR "zona binding")  |
| Prognostic/Diagnostic Studies | (A) AND TITLE-ABS ("prognos\*" OR "diagnos\*" OR "predict\*")  |
| Step 5 | Evaluation Techniques |  |
| COMET | (A) AND TITLE-ABS ("COMET" OR "Single-cell gel electrophoresis" OR "SCGE")  |
| SCSA | (A) AND TITLE-ABS ("SCSA" OR "Sperm chromatin structure assay") |
| SCD | (A) AND TITLE-ABS ("SCD" OR "Sperm chromatin dispersion" OR "Halosperm")  |
| TUNEL | (A) AND TITLE-ABS ("TUNEL" OR " terminal deoxynucleotidyl transferase-mediated dUDP nick-end labelling")  |
| Step 6 | ART | (A) AND TITLE-ABS ("assisted reproducti\*" OR "ART" OR "IVF" OR "in vitro fertilization" OR "ICSI" OR "intracytoplasmic sperm injection")  |

1. = (TITLE-ABS-KEY ( "sperm\* DNA fragmentation" OR "Sperm\* DNA damage" OR "Sperm\* DNA integrity" OR "Sperm\* chromatin damage" OR "Sperm\* chromatin integrity" OR "sperm chromatin structure" OR "DNA fragmentation index" ) OR TITLE-ABS ( "sperm" OR "spermatozoa" AND "DNA strand break" OR "deoxyribonucleic acid fragmentation" OR "nuclear DNA damage" OR "DNA fragmentation" OR "DNA damage" ) AND TITLE-ABS-KEY ( "human" )