

**Supplementary table S3. Cohort studies and controlled trials (excluding nested case-control studies).**

Criteria	Condition required to obtain a star	Bias assessed
Selection 1) Representativeness of the Exposed Cohort (Syphilis infected)	Cases were representative of an epidemiological core group commonly of interest-MSM and other high-risk groups	Individuals in a serodiscordant partnership or with other higher-risk sexual behaviour excluded
Selection 2) Selection of the Non-Exposed Cohort	Awarded for all studies	
Selection 3) Ascertainment of Exposure	Unexposed group was defined as Syphilis seronegative throughout the study (rather than just at baseline)	Misclassification of outcome
Selection 4) Demonstration That Outcome of Interest Was Not Present at Start of Study	Awarded for all studies	Misclassification of outcome; exposure did not precede outcome
Comparability 1a) Comparability of Cohorts on the Basis of the Design or Analysis	Adjustment or matching for condom use was done	Confounding
Comparability 1b) Comparability of Cases and Controls on the Basis of the Design or Analysis	Adjustment or matching for number of sexual partners (any timeframe) was done	Confounding
Outcome 1) Assessment of Outcome (HIV seroconversion)	Method for confirming HIV positives stated	Misclassification of outcome
Outcome 2) Was Follow-Up Long Enough for Outcomes to Occur?	Length of follow-up was at least a year	Inadequate identification of outcome
Outcome 3) Adequacy of Follow-Up of Cohorts	Follow-up rate was at least 80%	Participants drop out for reasons related to the exposure or outcome

We independently and in duplicate, screened all the articles. 19 publications were included on the basis of selection criteria. We also checked the reference lists of pertinent articles for additional citations and 3 studies were identified for further analysis. For those unpublished data and unclear data, we mailed the correspondence author to gain access to the primary data.

## B. Data extraction

Overall sample size, sample size of syphilis exposed group and unexposed comparison group were extracted from eligible articles. We also extracted information on participant characteristics (e.g., age, population, country and world region, syphilis prevalence) and study characteristics (e.g., study years, study design, syphilis confirm test, length and rate of follow-up, frequency of sampling, definition of exposed group and unexposed group, timing of incident syphilis infection relative to HIV acquisition and key potential confounders). Key potential confounders include condom use, male circumcision status, genital ulcer disease, any sexual behaviour (excluding condom use), number of sexual partners, age and drug use. (Supplementary Table S4)