**Read me First – Memo**

All the data, results figures and results interpretation are stored in the below google drive link:

<https://drive.google.com/drive/folders/1gN42OzGmDY04fnfB7f74jU8y7iyU88e4?usp=drive_link>

The results figures were stored in the ***results figure*** *folder*. In each of the 4 sub-folders, there are funnel plots for each subgroup, and strong effect and average effect (*the explain of what strong effect and average effect, please check below step 1 data preparing in the method section*)

All the results interpretations were stored in the ***Result interpretation*** *folder*.

The *results interpretation - general meta analysis* file is the Word file includes the interpretation of general meta analysis and publication bias assessment.

There are 3 sub-folders, including the interpretation of meta-analysis and publication bias assessment of 3 subgroup analyses. Each sub-folder includes two Word files.

**Method steps**

Step 1: data preparing

Some papers provided multiple odd ratios. In the dataset named strong\_or, we choose the strongest OR. In the dataset named average\_or, we calculate the average OR. The Morgan 20 paper provides three different ORs based on different sample methods. We record the Morgan 20 paper using three different observations in the dataset. The data is included in the data Excel file, which includes three files: strong\_or, average\_or, and code book.

Step 2

I have included all the papers in the general meta-analysis and plotted the forest plot to check if the papers have extreme OR values. Then, I assess the publication bias using **Egger’s, Begg, and Trim and Fill tests**.

Step 3, Remove the paper Keshavarz (4), Hong (8), Marotta (23).

First, general meta-analysis and

I conducted the general meta-analysis and assessed the publication bias using Egger’s, Begg, and Trim and Fill tests.

Second subgroup analysis

Subgroup nation China vs Other region

I conducted the meta-analysis and assessed the publication bias using Egger’s, Begg, and Trim and Fill tests for both subgroups.

Subgroup study design Case-control vs Cross-sectional

I conducted the meta-analysis and assessed the publication bias using Egger’s, Begg, and Trim and Fill tests for both subgroups.

Subgroup sample method Urine vs other (blood, self report)

I conducted the meta-analysis and assessed the publication bias using Egger’s, Begg, and Trim and Fill tests for both subgroups.