

Contents

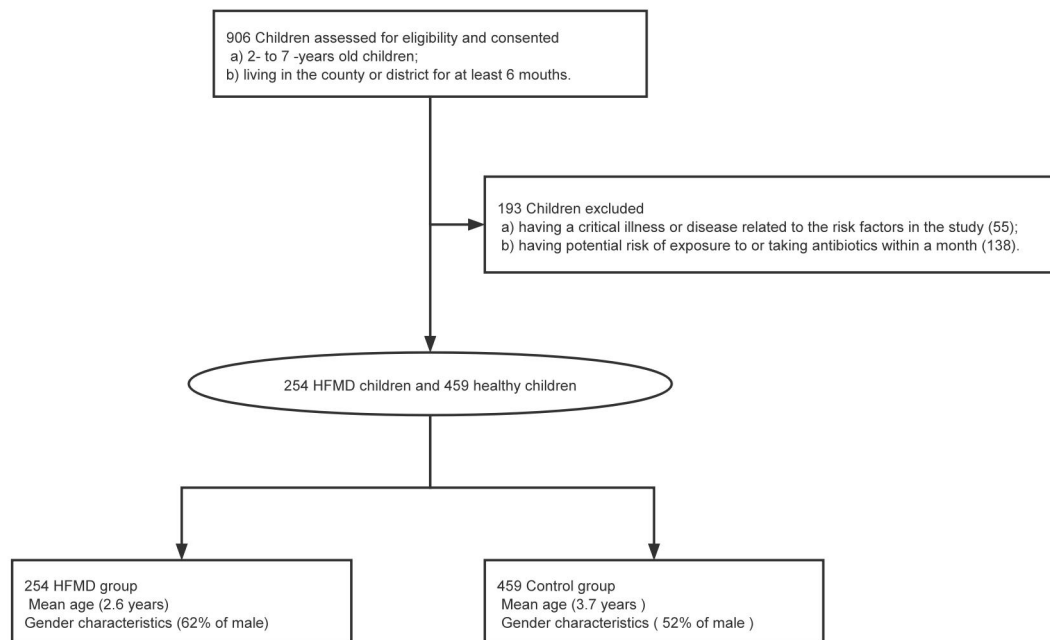
1. Supplementary Figures 2

 1.1 Supplementary Figure 12

2. Supplementary File 3

 2.1 Supplementary File 1 3

Supplementary Figures



Supplementary Figure 1 Flow chart of subjects selection along with inclusion and exclusion criteria. 906 subjects who were assessed for eligibility and consented were included in the initial survey. After exclusion of health status and antibiotics usage history, 713 children were enrolled, including 254 hand-foot-mouth disease children (HFMD) and 459 healthy children. In the HFMD group, the average age of children was 2.6 years and males made up 62 percent of the group. In the control group, the average age of children was 3.7 years and 52 percent of them were male children.

Supplementary File

Supplementary File 1 The script of compute the Tail statistic index

```
#' tail_statistic
#' formula: sqrt(sigma(Pr[i]*(i-1)^2))
#' @param data otu/asv table
#' @return tail_statistic table
#' @export
#' @examples
#tail_statistic <- function(data) {

  stat <- lapply(data, function(x) {
    res <- sort(x[x>0], decreasing = T) / sum(x)
    index <- lapply(2:length(res), function(i) res[i]*(i-1)^2) %>%
      unlist() %>% sum() %>% sqrt()
  }) %>% as.data.frame %>% t %>% as.data.frame
  colnames(stat)[1] <- "Tail statistic"
  stat %>% tibble::rownames_to_column(var="sample.id")

}

#library(dplyr)
#data <- data.table::fread("otutab.txt", header=T) %>%
  tibble::column_to_rownames(var = "#OTUID")
#stat <- tail_statistic(data)
#openxlsx::write.xlsx(stat, "tail_statistic_result.xlsx", asTable = T)
```