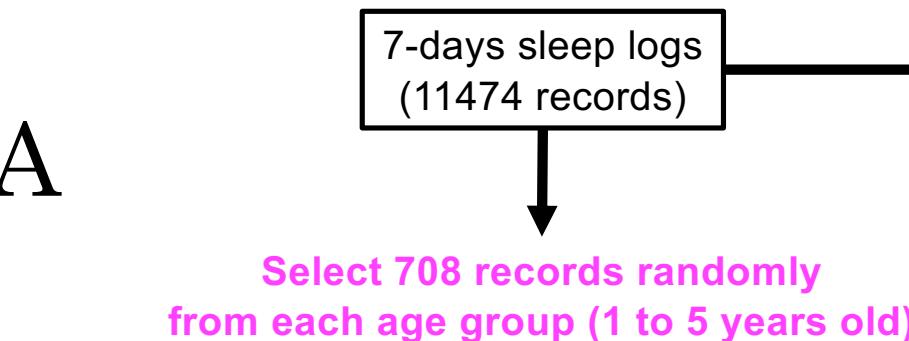


# **Figure & Table**

## Discovery data

Fig.1A



## Discovery train data

### Conduct NTD

Bases of Discovery train data

7-days sleep logs (11474 records)

7-days sleep logs (1550 records)

## Validation data

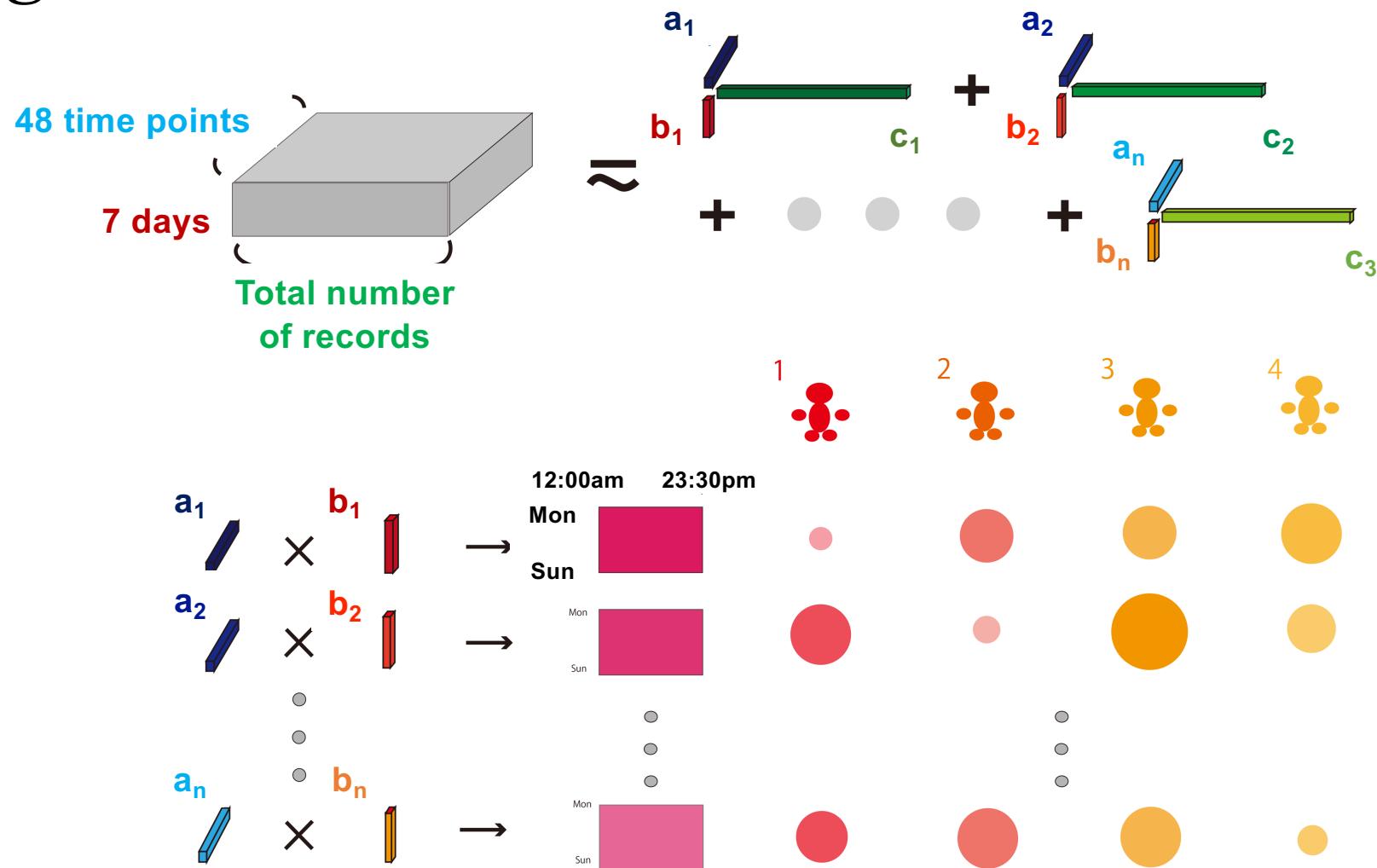
Exclude children who has more than 2-days missing data

7-days sleep logs (1435 records)

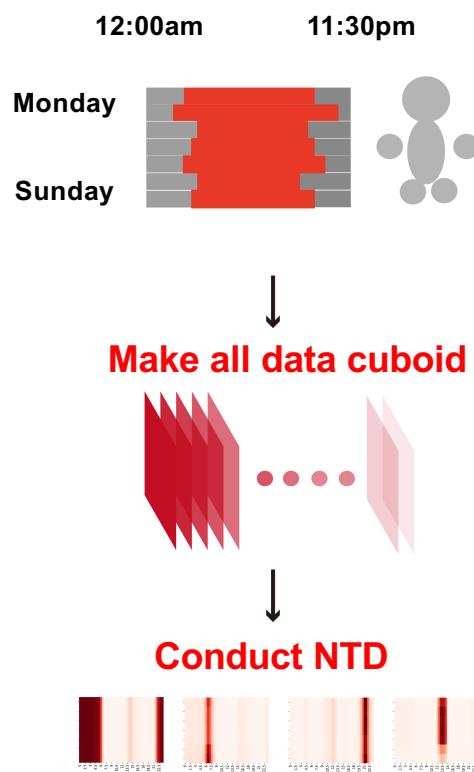
Obtain Bases of Validation data

Obtain Bases of Discovery data

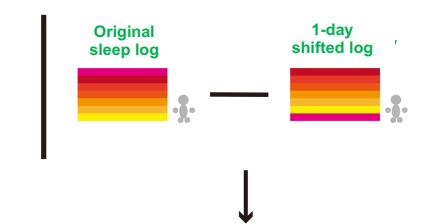
Fig.1 B



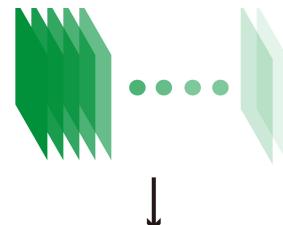
# Fig.2 A,B,C



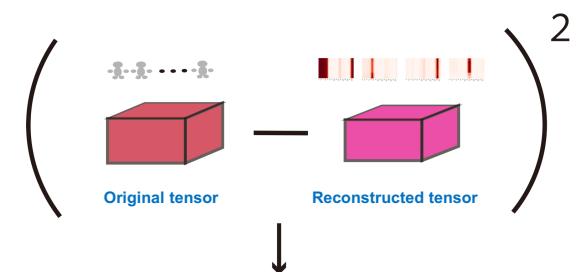
Take the absolute value of the difference



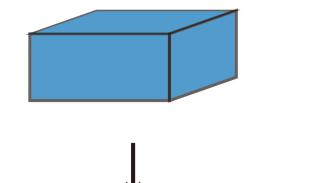
Make all data cuboid



Take the square of these tensors

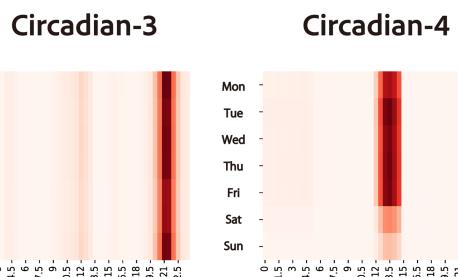
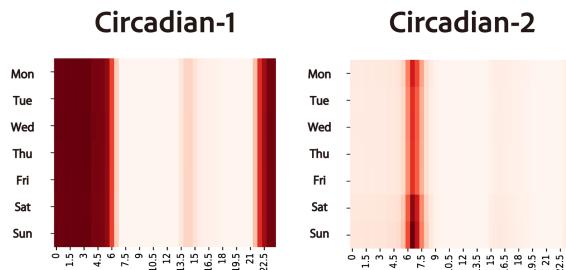


Make a reconstruction error tensor

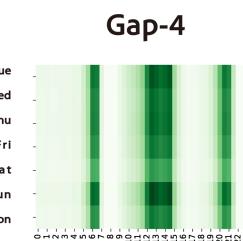
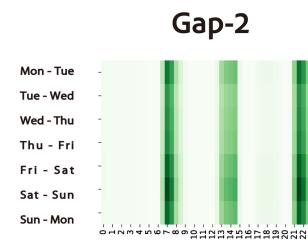
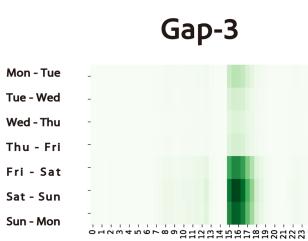
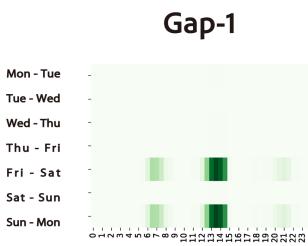


# Fig.3 A,B,C

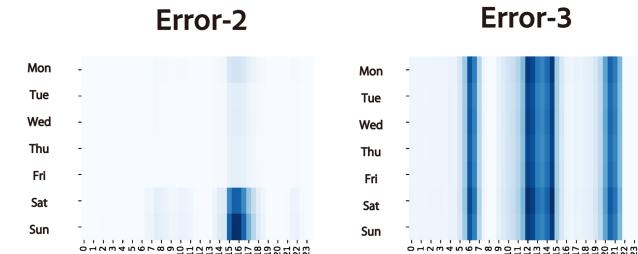
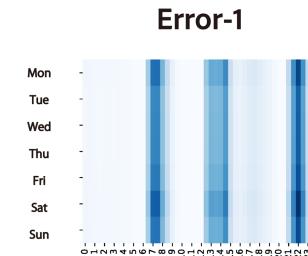
## Circadian bases



## Gap bases



## Error bases



# Fig.4

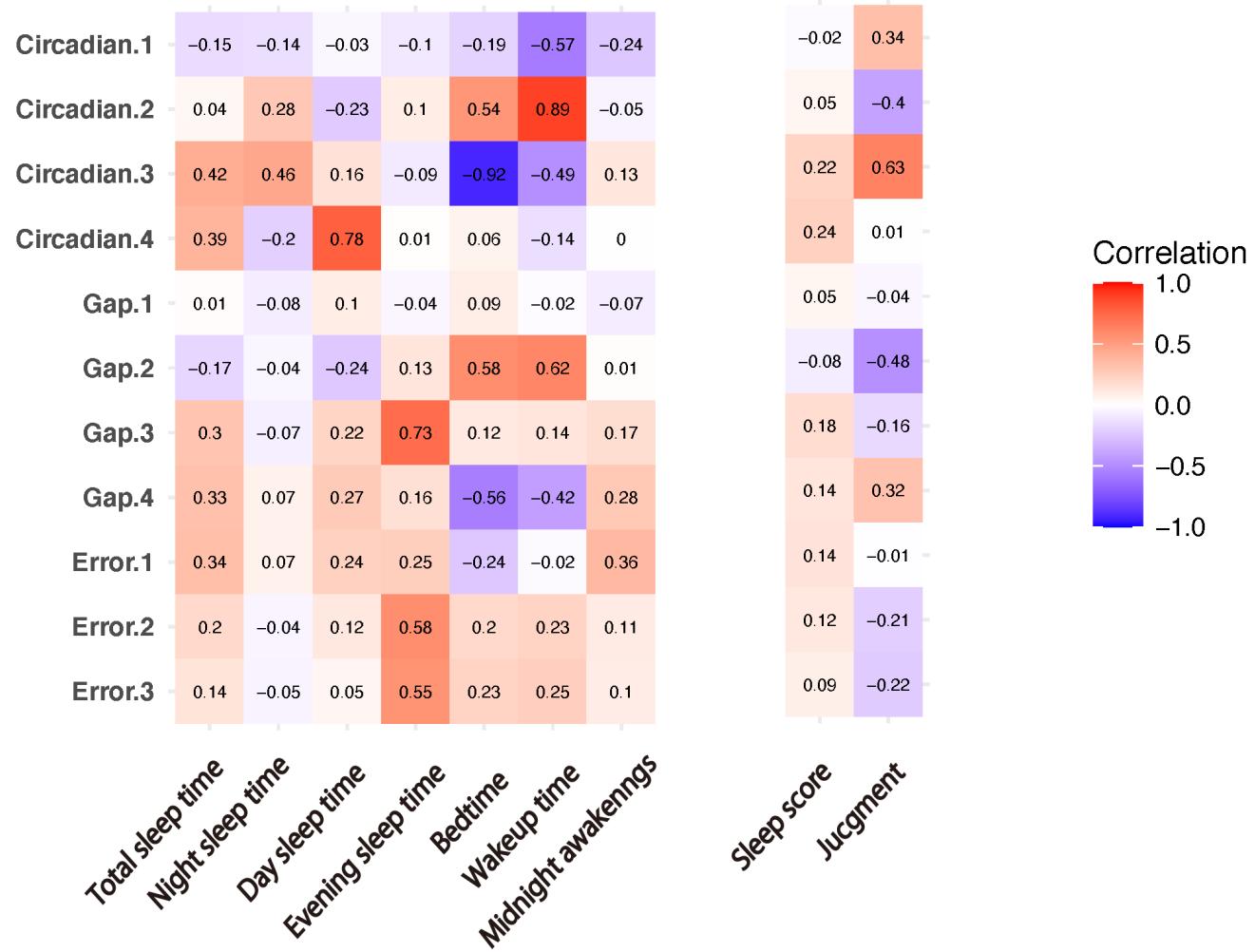
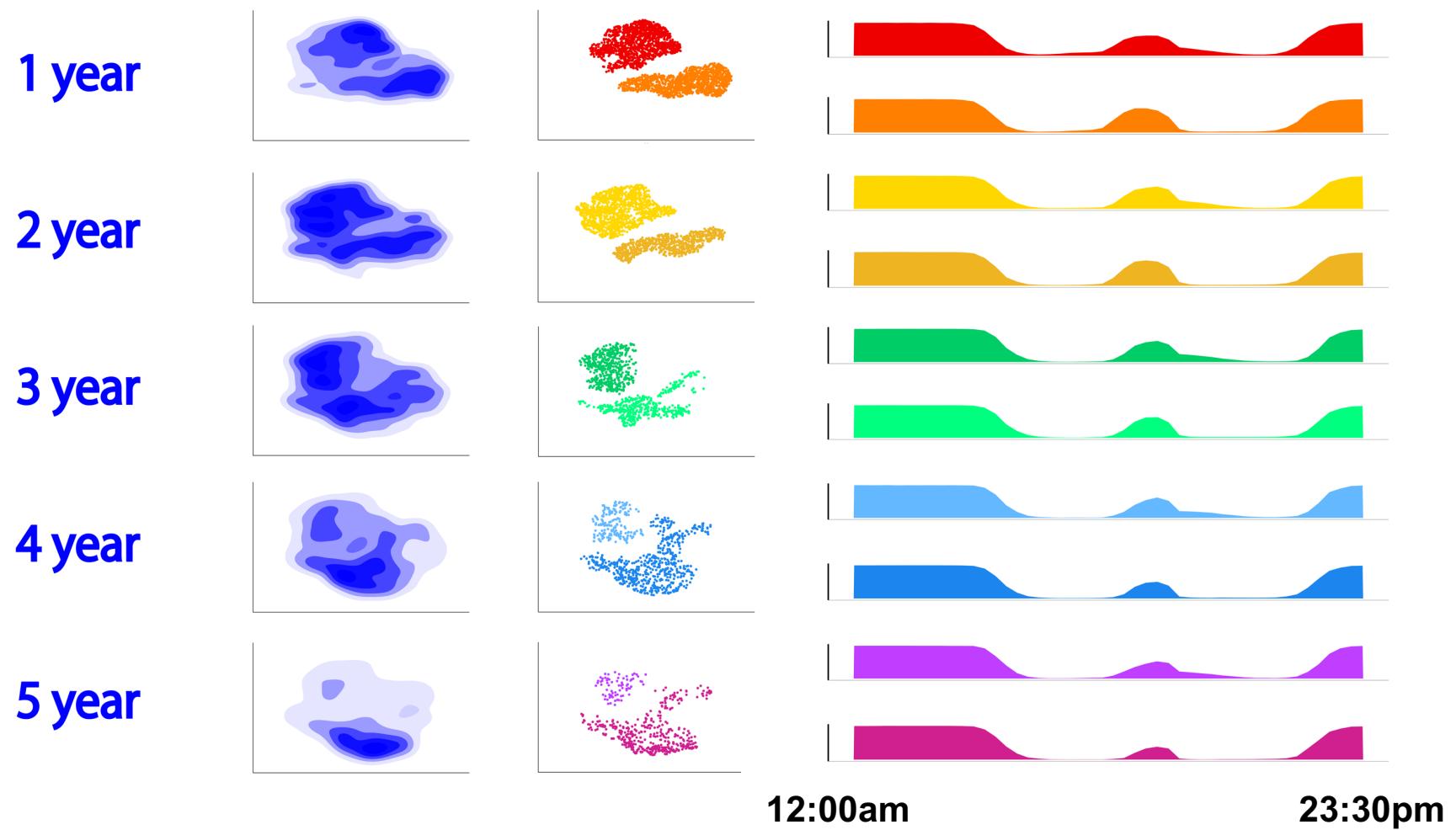


Fig.5 A,B,C



# Fig.6 A,B

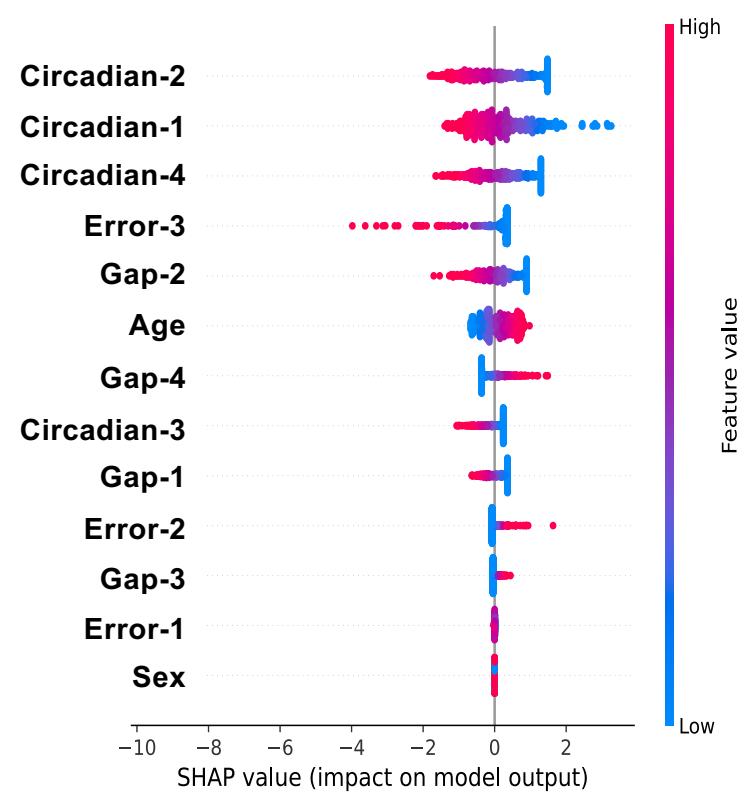
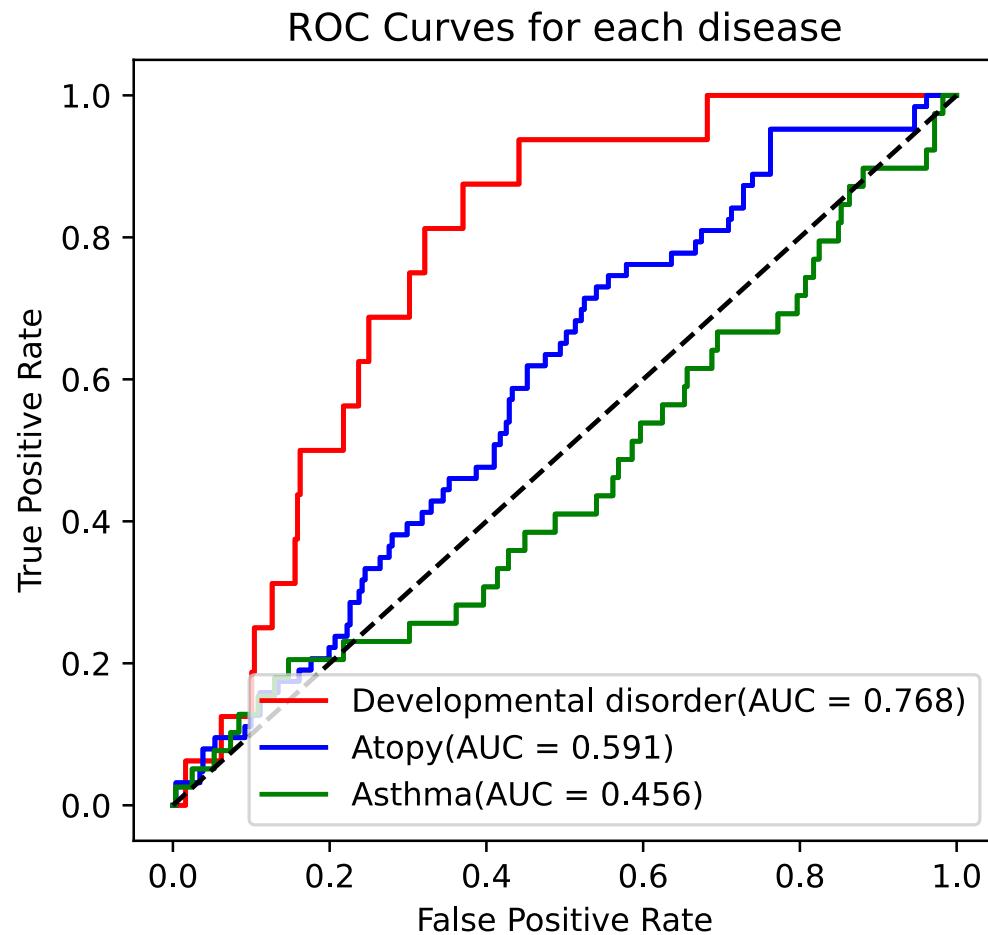
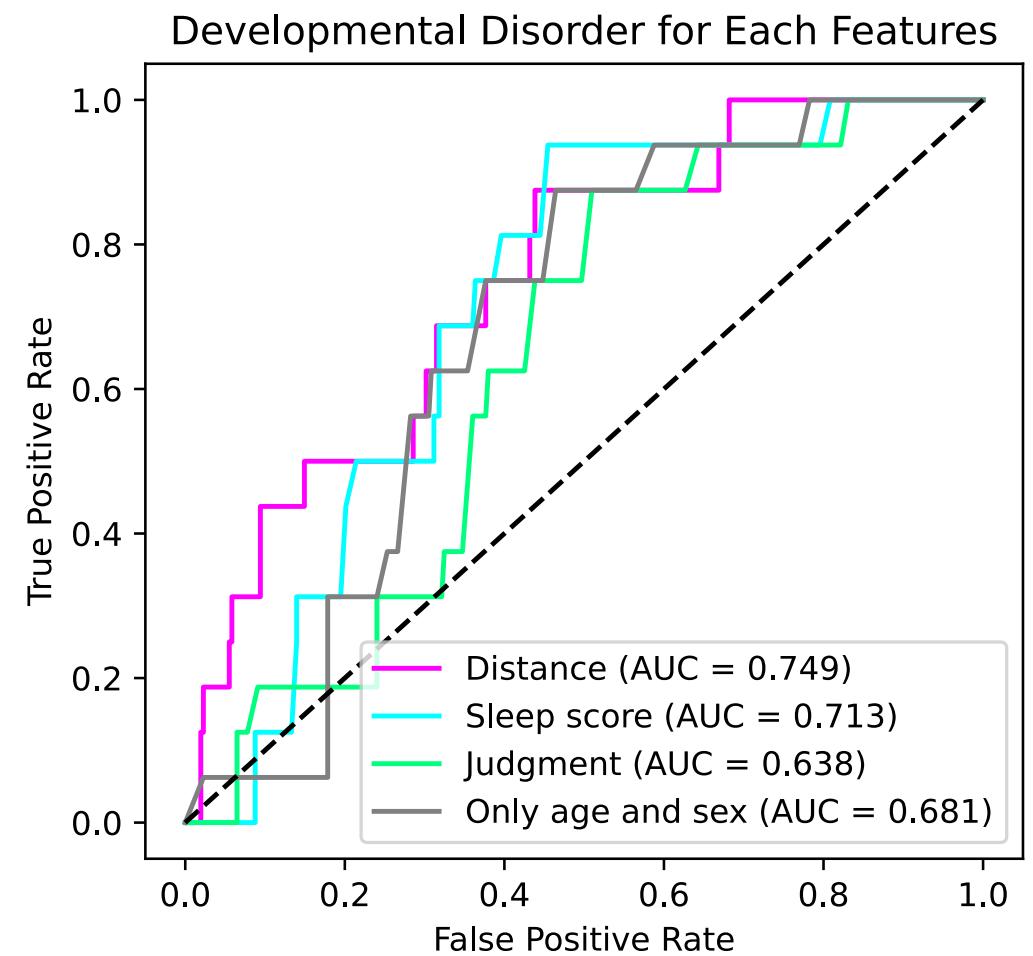
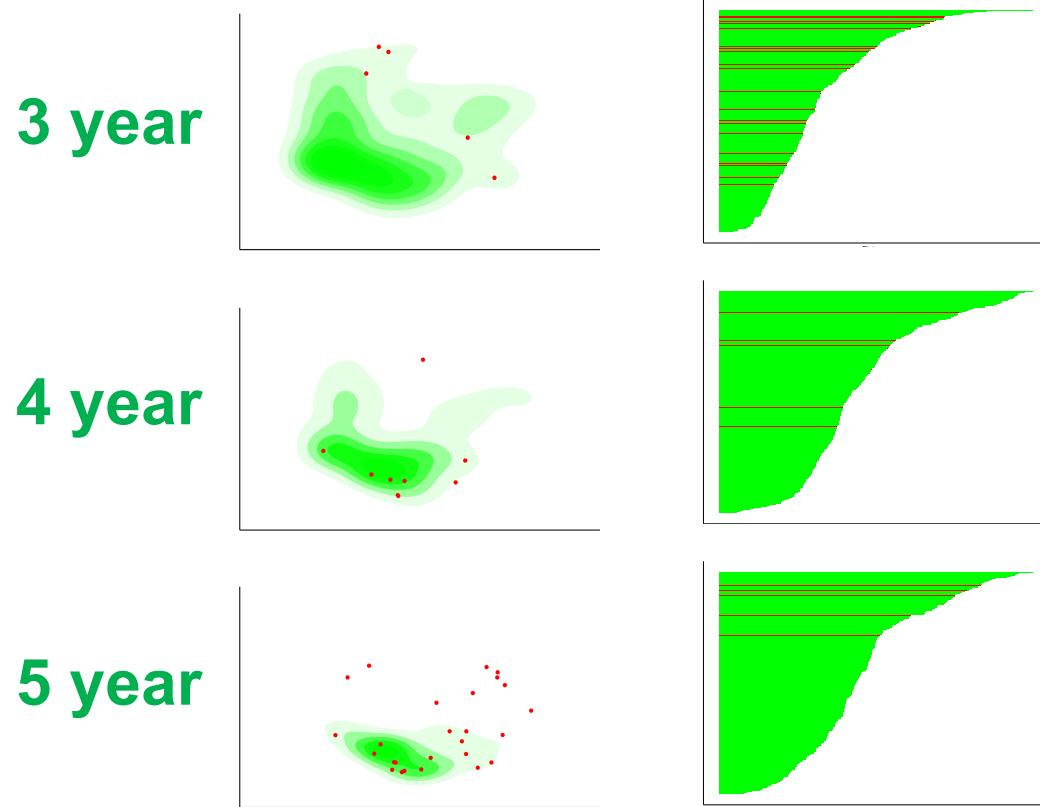


Fig. 7 A,B,C



# Fig.8 A,B

