COLLOQUE RECHERCHE
FIRENDO - 7ème ÉDITION -

MODÈLES EXPÉRIMENTAUX : NOUVEAUX HORIZONS POUR LES MALADIES RARES ENDOCRINIENNES

MARDI
5 DÉCEMBRE
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FILIÈRE MALADIES RARES ENDOCRINIENNES

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FILIERE MALADIES RARES ENDOCRINIENNES

UNVEILING TRANSDIAGNOSTIC BRAIN MECHANISMS IN CHILDREN WITH EARLY-ONSET ANOREXIA NERVOSA

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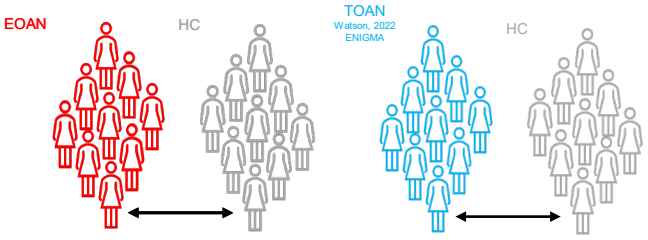
USC Stevens Neuroimaging and Informatics Institute

ENIGMA

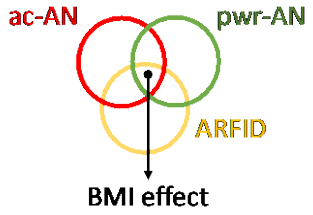
Aim 1.

Characterize brain alteration in EOAN and compare the impact on brain structure of EOAN *vs*. TOAN forms



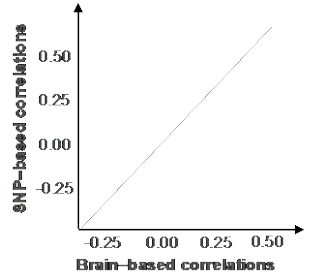
Aim 2.

Investigate the effect of BMI on brain structure

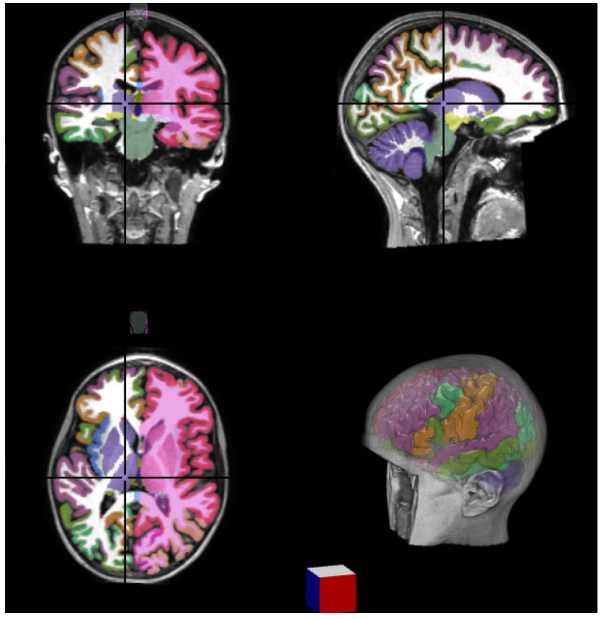


Aim 3.

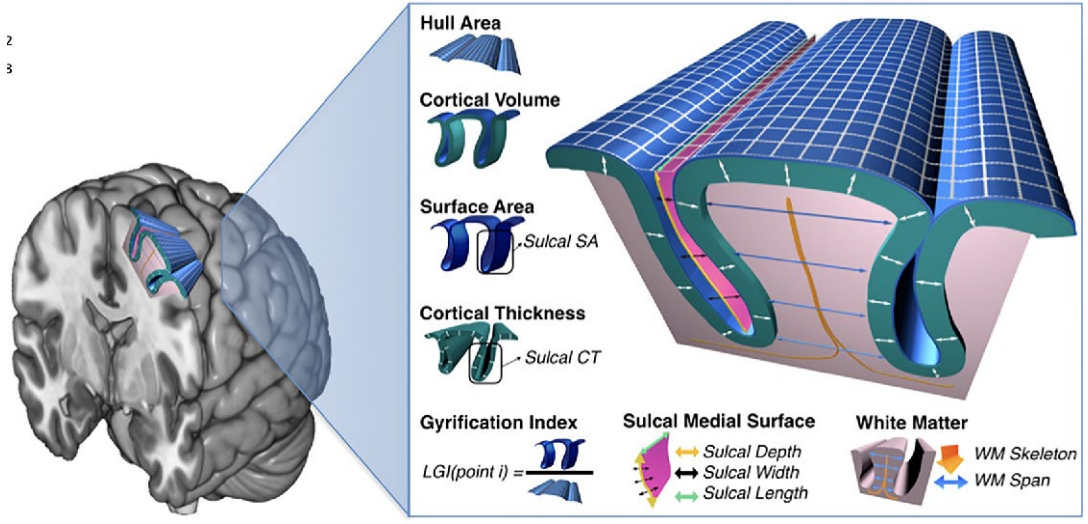
Quantify brain similarities between EO-AN and others psychiatric disorders, and compare these relationships with patterns of genetic based correlations.



T1 segmentation



Metrics extraction



Cortical thickness, surface area, volume

https://enigma-brain.org/enigmavis/tools/regplot/

Table 1. Demographic information on inpatients with a diagnosis of either EO-AN or ARFID and children with a typical development (TD).

	Early-onset AN			ARFID	TD
	all	Acutely-ill	Partially weight restored		
Sample size	99	46	52	33	95
PRI	114 [77-148] (21NA)	117 [92-148] (8 NA)	111 [77-128] (12 NA)	108 [86-132] (16NA)	NA
BMI perc	10.6 [0.1, 69.3]	0.81 [0.1, 3.0]	19.3 [3.3, 69.3]	8.3 [0.1, 60.7]	NA
Z-scored BMI	-1.8 [-4.1, 0.61]	-2.65 [-4.1, -1.9]	-1 [-1.9, 0.6]	-2.04 [-4.2,0.4]	NA
tesla (1.5 vs 3T)	74 vs 25	34 vs 12	39 vs 13	20 vs 13	88 vs 7
seq (iso, tfe, tse)	22,75,2	11,35,0	10,40,2	3,30,0	35,53,7
sex (F/M)	87/12	40/6	46/6	24/9	47/48
Age at scan	11.5 (1.2)	11.5 (1.3)	11.5 (1.2)	11.4 (1.4)	9.8 (1.7)

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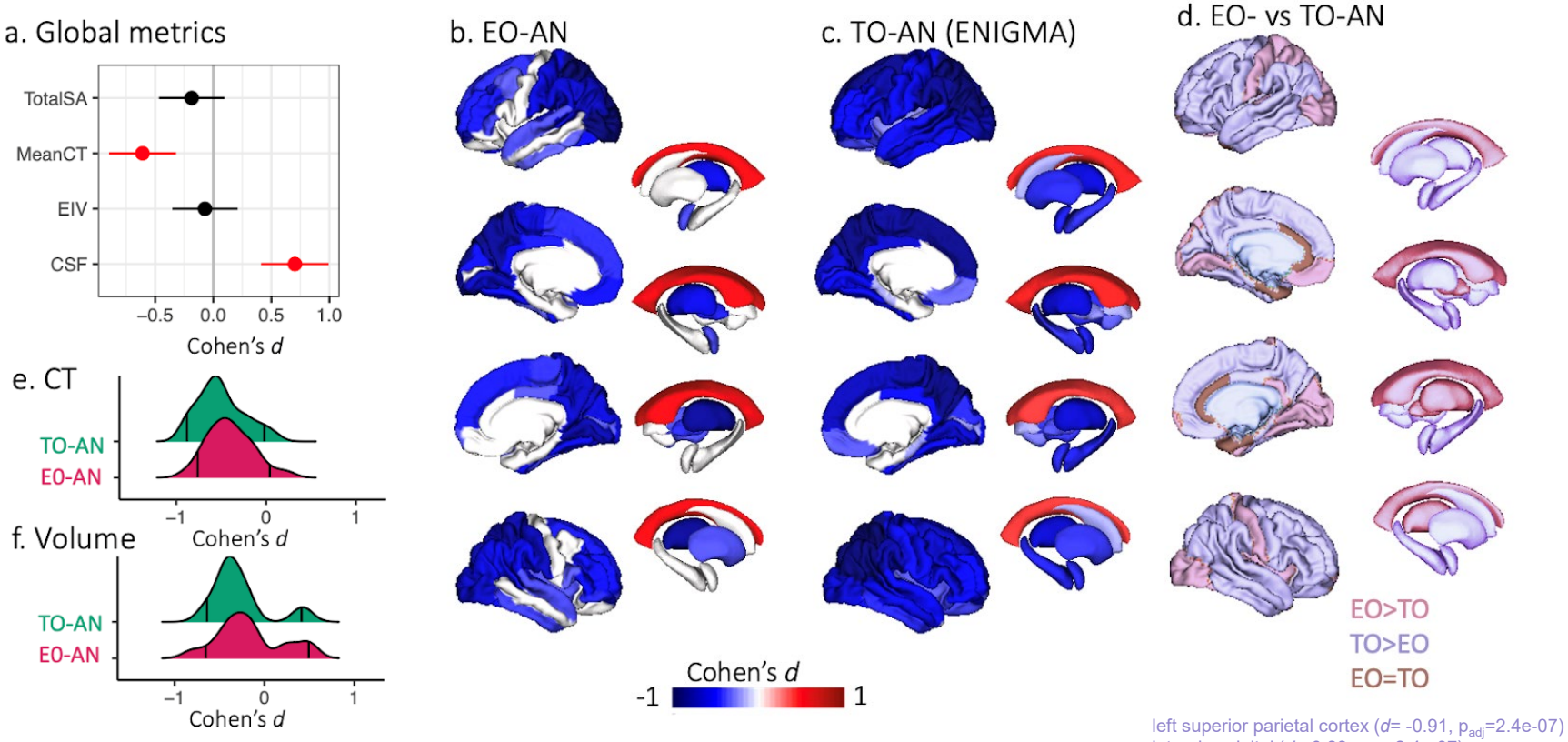
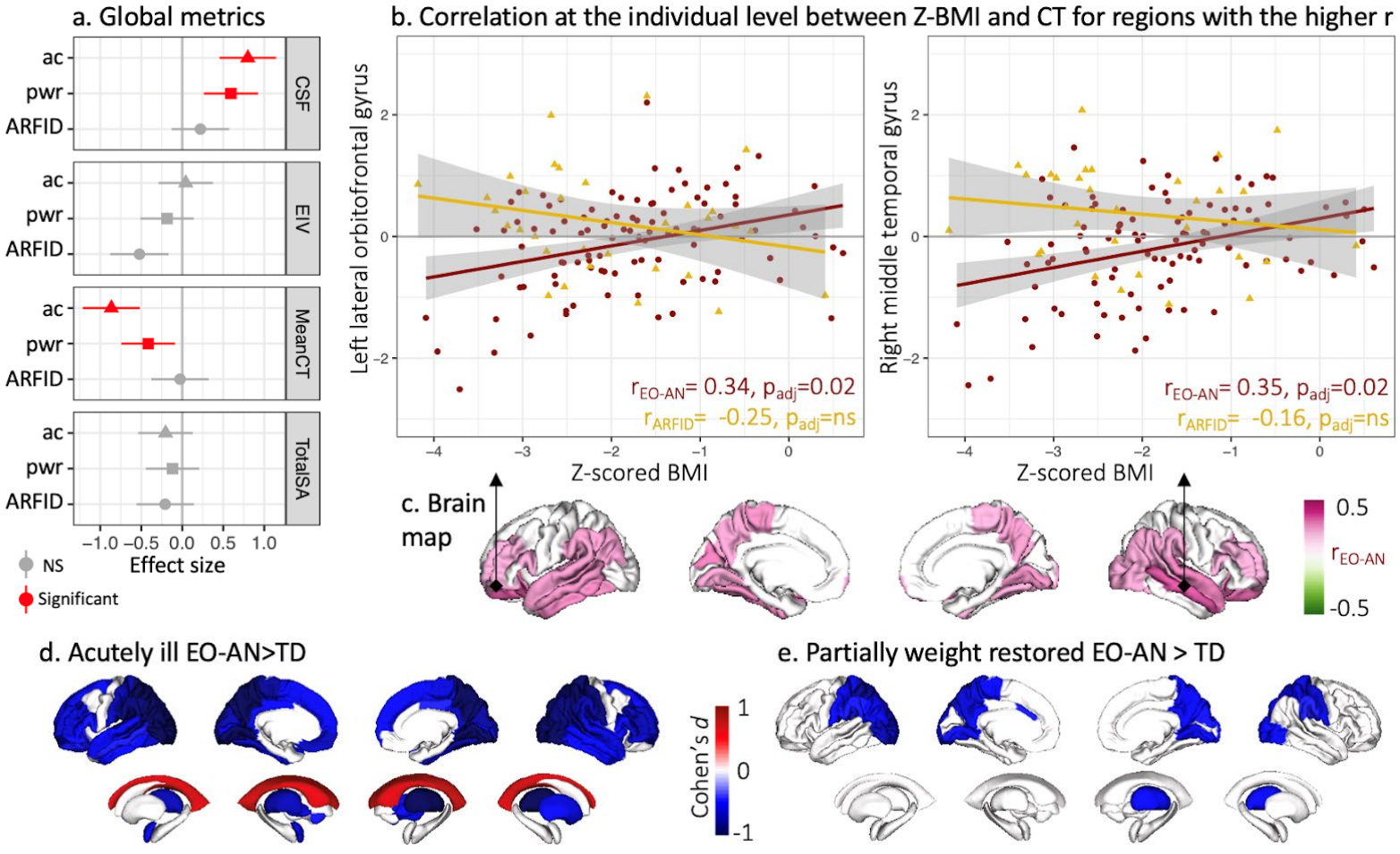
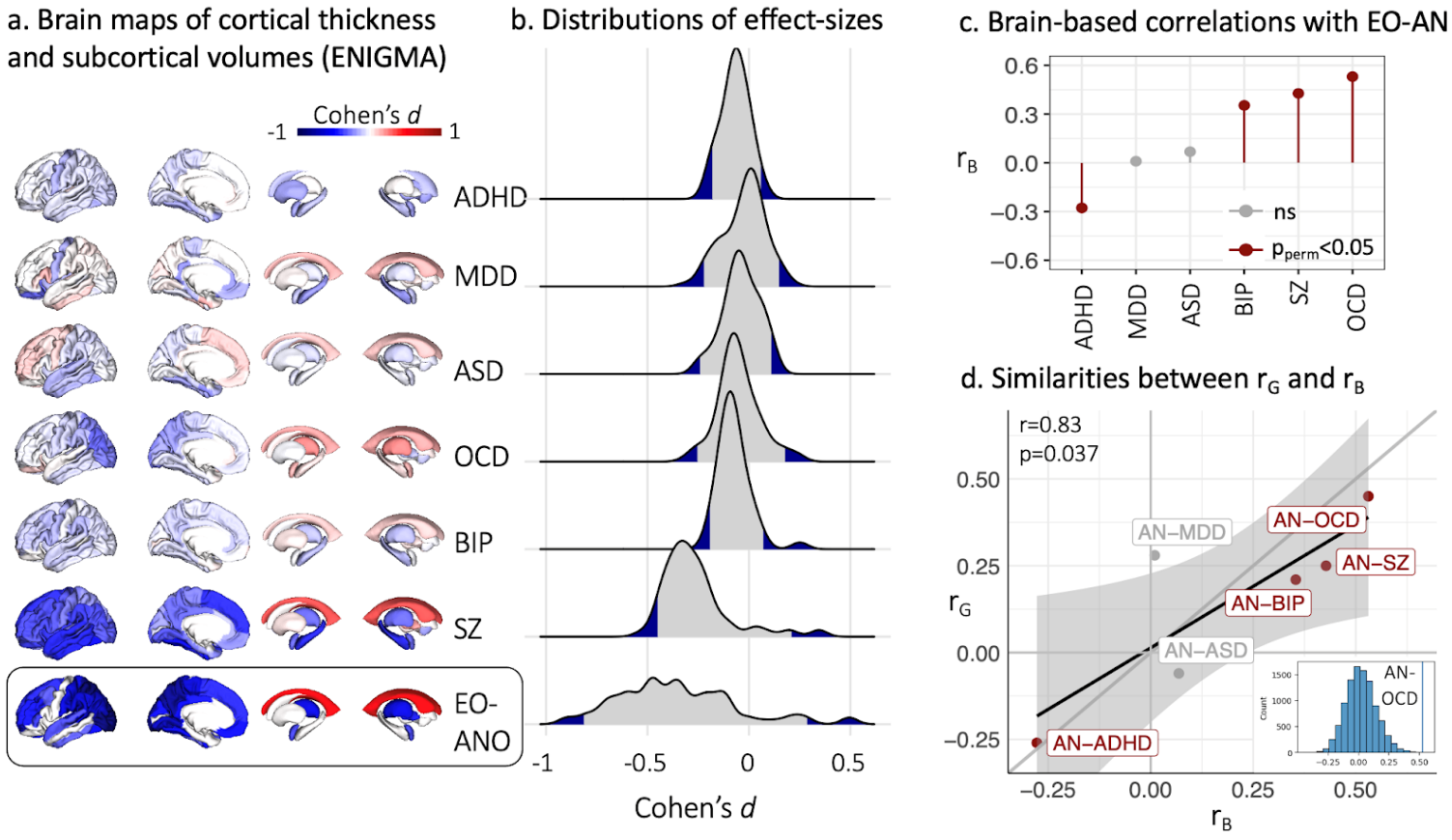


left superior parietal cortex (d= -0.91, p_{adj}=2.4e-07)
lateral occipital (d=-0.89, p_{adj}=2.4e-07)
precuneus (d=-0.81, p_{adj}=2.05e-06)

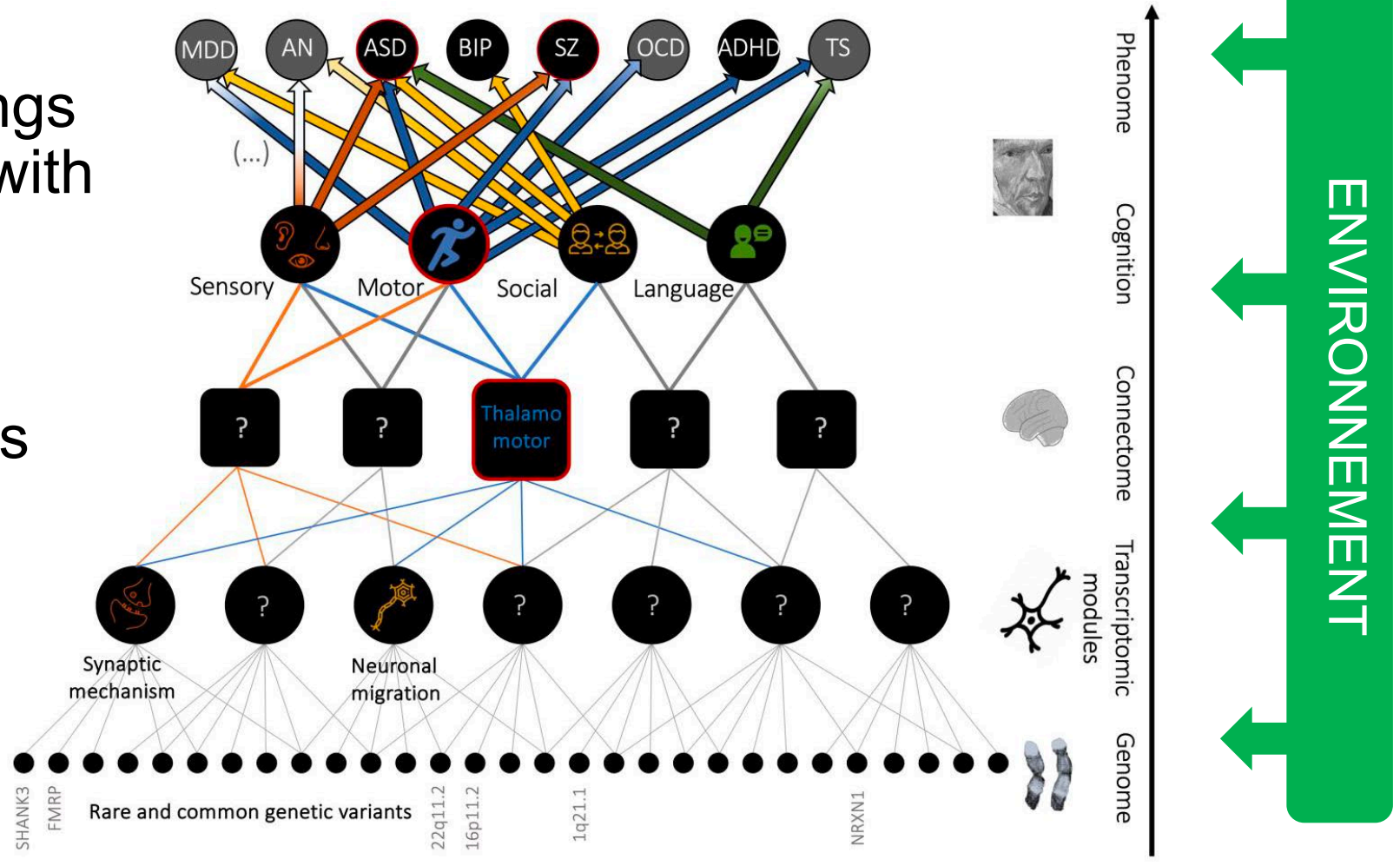
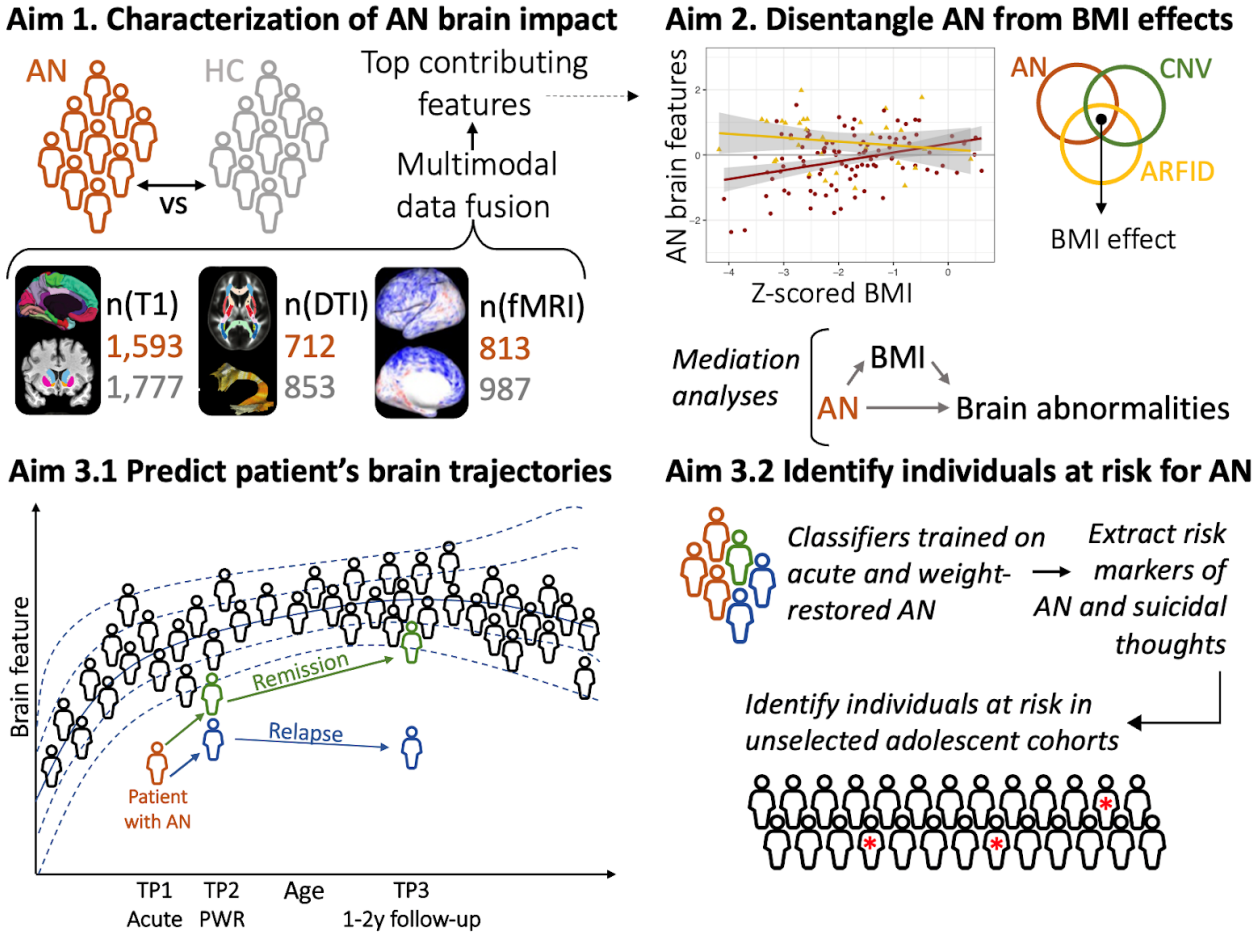
Aim 2. Investigate the effect of BMI on brain structure



Aim 3. Quantify brain similarities between EO-AN and others psychiatric disorders, and compare these relationships with patterns of genetic based correlations.



Cross-disorder findings in EOAN are in line with the development of multidimensional conceptualization of psychiatric conditions



Perspectives : Grant R01