

# Brief overview of the pathology

## Attention-deficit/hyperactivity disorder (ADHD)

- ◆ the most common neurobehavioural disorder in children and adolescents
- ◆ estimated prevalence is 4-7% in the USA and 1-3% in Europe
- ◆ up to 4 times more frequent in males than in females
- ◆ highly comorbid with a range of other neuropsychiatric disorders
- ◆ in approximately 80% of children with ADHD, symptoms persist into adolescence; in about 30-50% of these cases, symptoms may even persist into adulthood



### ADHD children

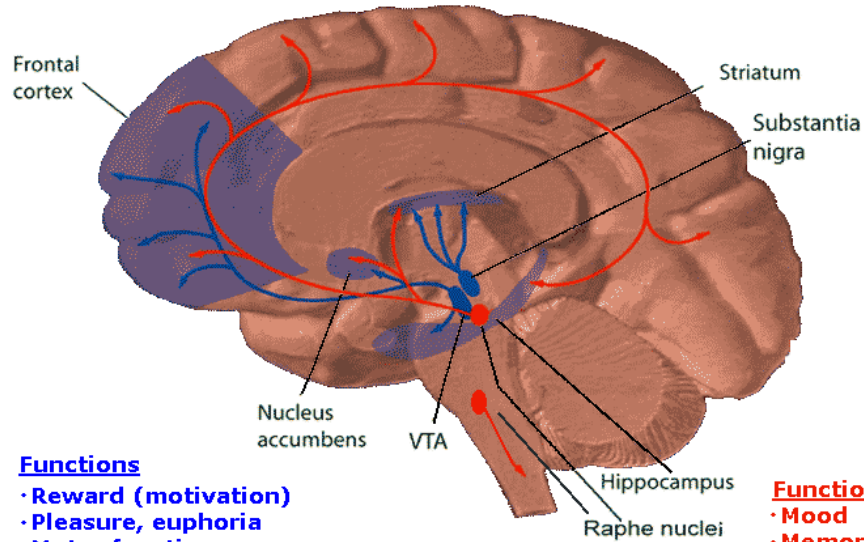
- ◆ impaired attention
- ◆ impulsivity
- ◆ excessive motor activity
- ◆ poor school performance
- ◆ difficulties with peers
- ◆ low self-esteem due to repeated failures

### ADHD adolescents and adults

- ◆ impaired attention
- ◆ impulsivity
- ◆ risk proneness
- ◆ pathological gambling
- ◆ abuse of alcohol and drugs
- ◆ antisocial personality

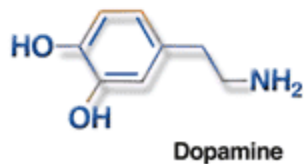
# Neurochemical systems

## Dopamine Pathways



### Functions

- Reward (motivation)
- Pleasure, euphoria
- Motor function (fine tuning)
- Compulsion
- Perseveration

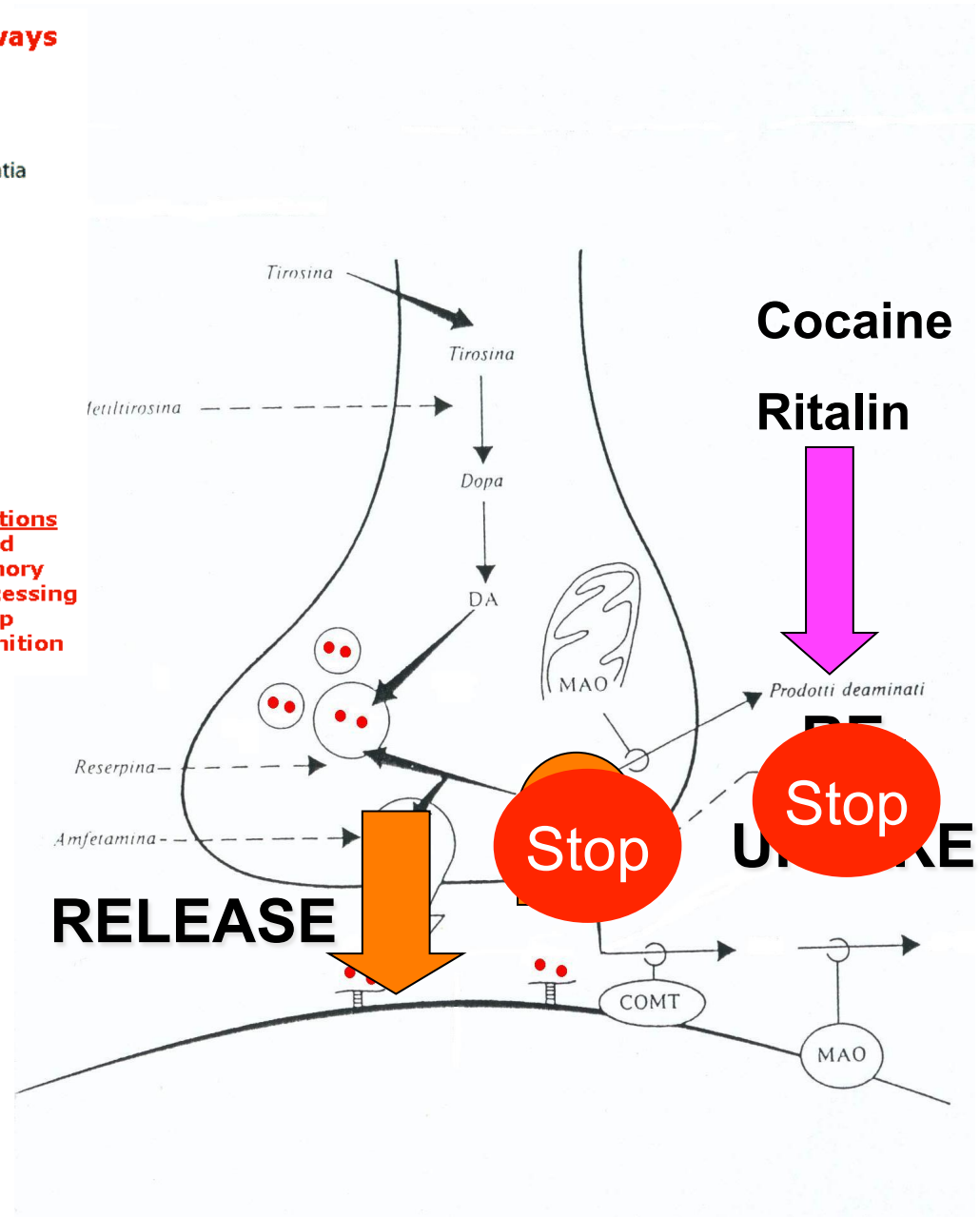


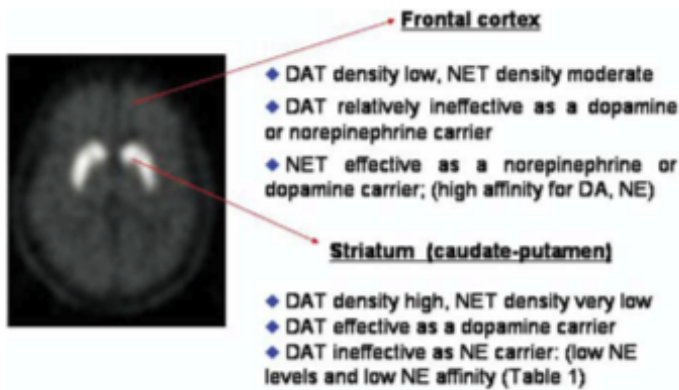
Neurotransmitter: **Dopamine**

## Serotonin Pathways

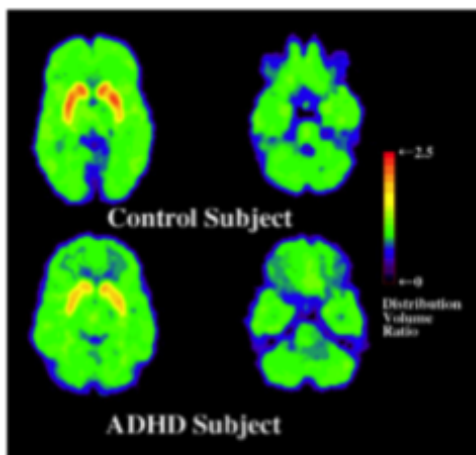
### Functions

- Mood
- Memory processing
- Sleep
- Cognition



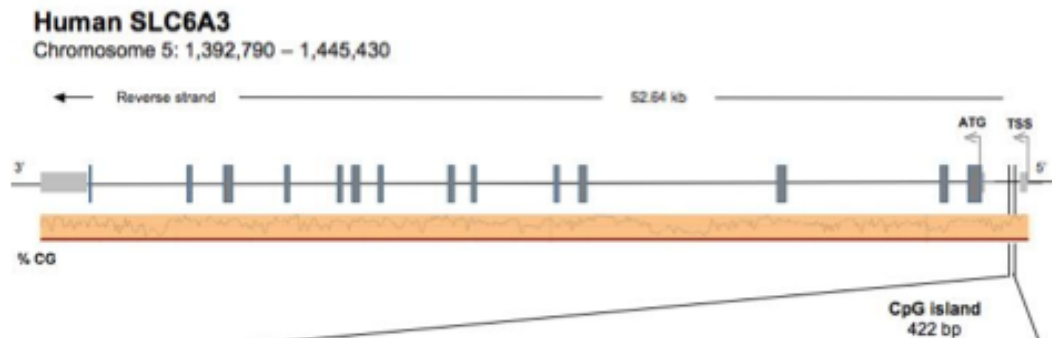


bersaglio selettivo  
del MPH



studi di imaging

Figure 1



- Misurare i livelli plasmatici di autoanticorpi (aAbs) contro epitopi del DAT in soggetti con dg di ADHD e monitorare le modificazioni della concentrazione aAbs nel tempo a seconda dell'intervento terapeutico in atto
- Genotipizzare il campione per i polimorfismi del DAT (10/10, 9/9, 9/10)
- Correlare i dati biologici con i dati clinici

# Materiali e metodi:

## ✓ *CAMPIONE:*

- 63 soggetti con diagnosi di ADHD



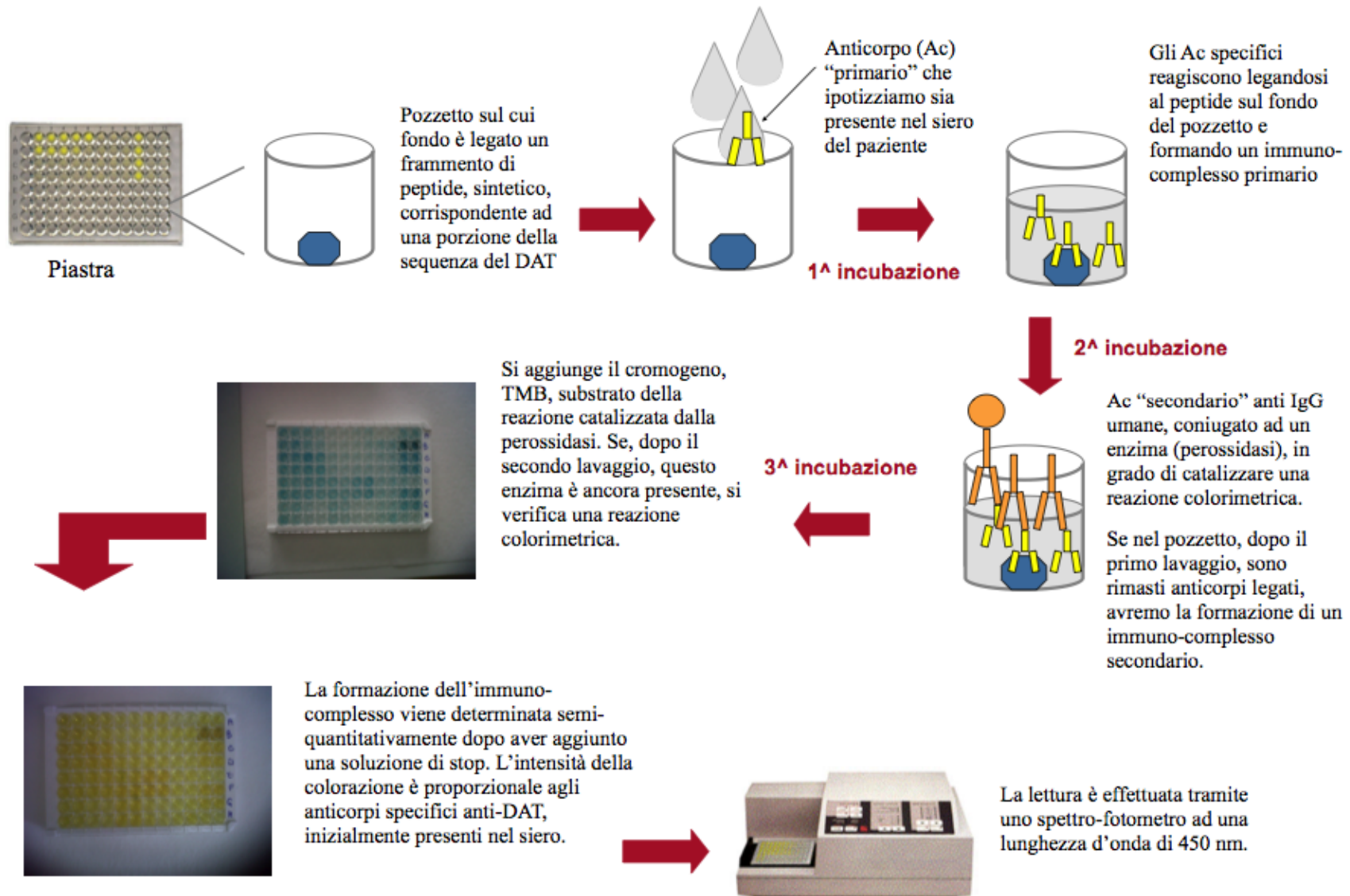
52 M                      11 F  
Età 6-14 aa      Età 6-12 aa

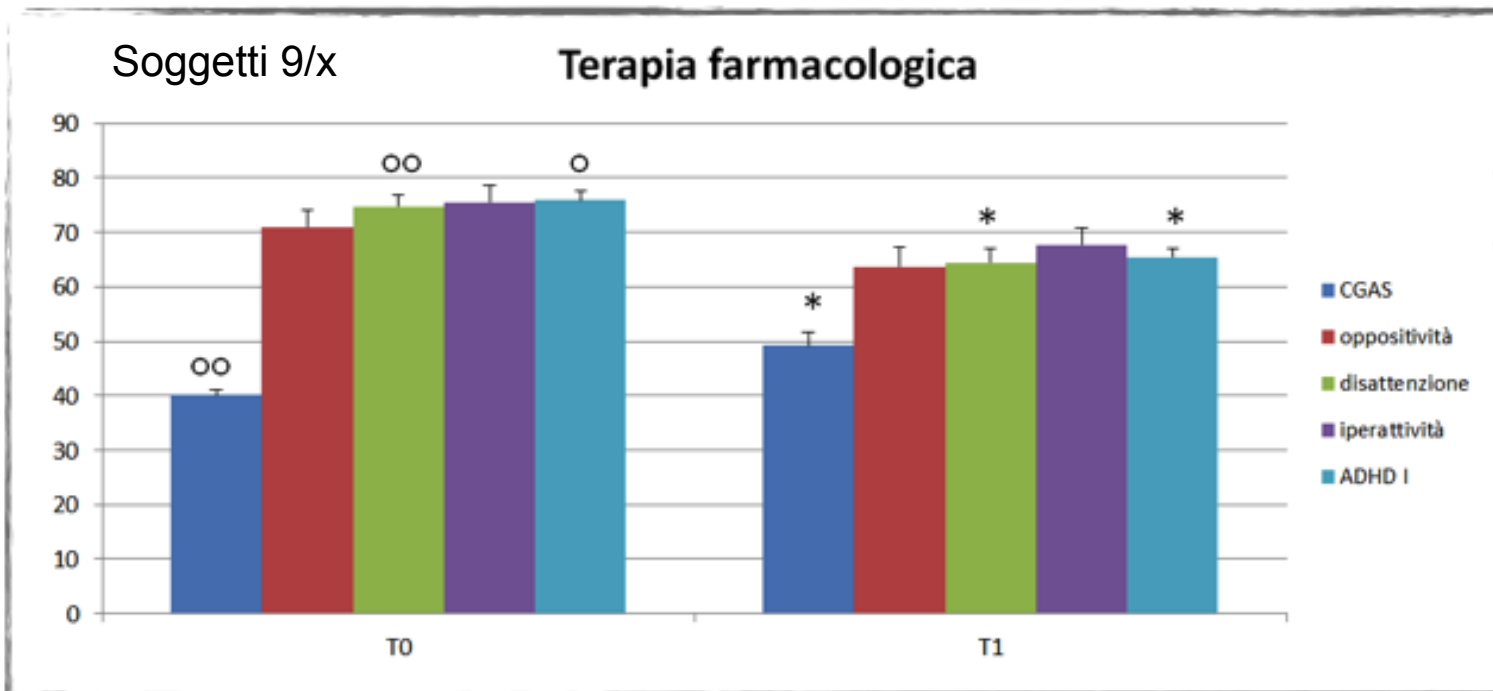
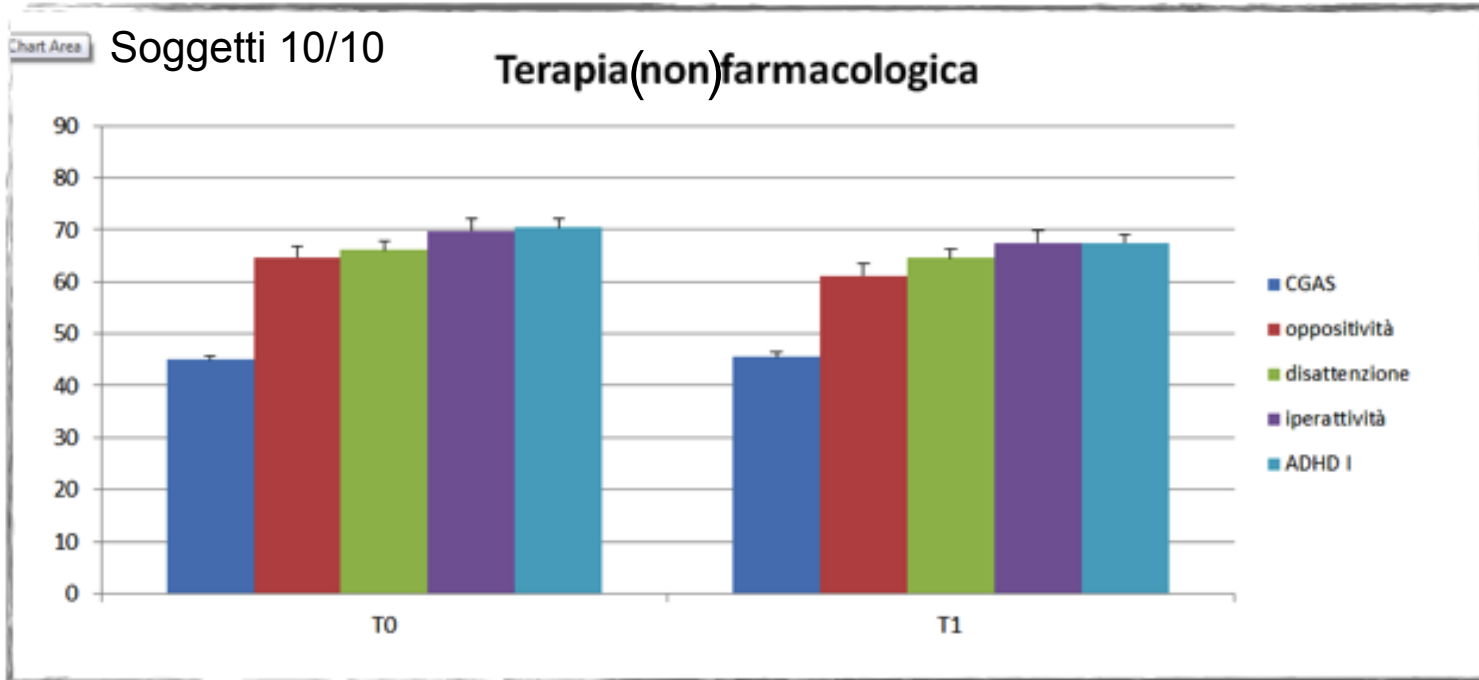
## ✓ *TRATTAMENTO:*

- 43 soggetti in terapia cognitiva-comportamentale (TNF)
- 20 soggetti in terapia farmacologica con MPH (TF)

✓ *CRITERI DI ESCUSIONE:* ritardo mentale, comorbidità con altri disturbi psichiatrici, condizioni mediche gravi

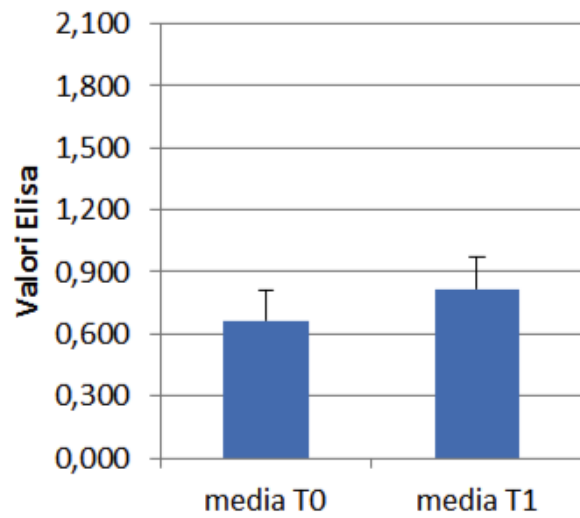
# Procedura ELISA kit



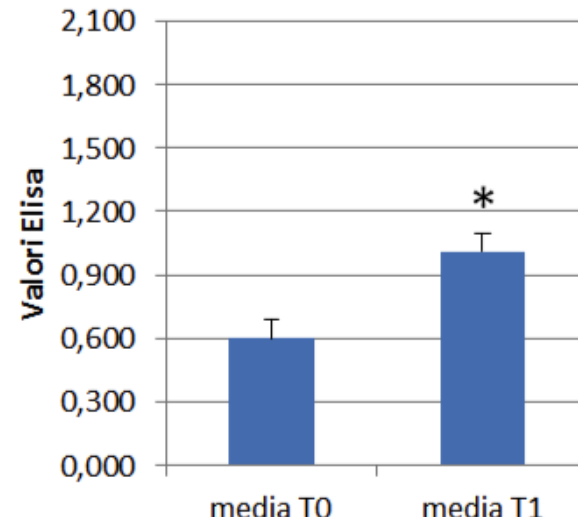




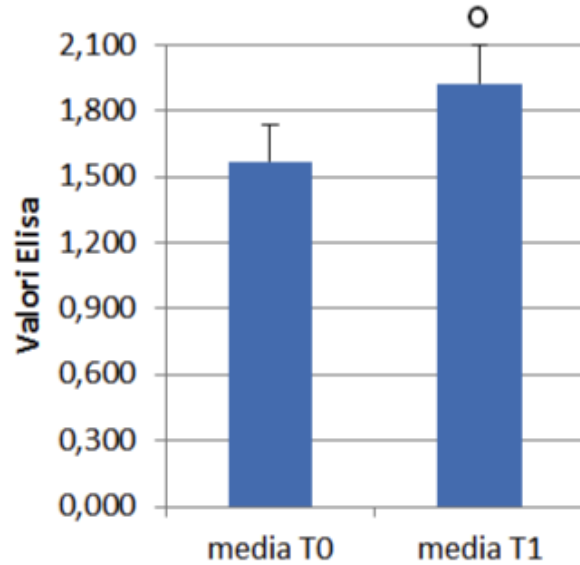
### TNF: genotipo 10/10



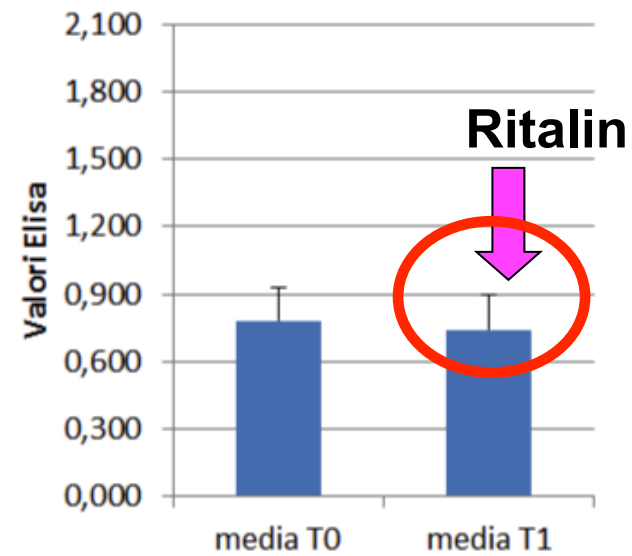
### TNF: genotipo 9/X



### TF: genotipo 10/10



### TF: genotipo 9/X



# Conclusioni: 1/3

1. nei bn con dg di ADHD si ritrovano livelli misurabili di aAbs contro epitopi del DAT:

- i titoli basali risultano più elevati nei soggetti destinati a trattamento farmacologico
- titoli in assoluto più elevati si ritrovano in soggetti con genotipo DAT 10/10, considerato "a rischio" per lo sviluppo dell'ADHD

*aABS contro il DAT: possibile marker per indirizzare il paziente verso il trattamento con MPH*