



64<sup>th</sup>

EAAP 2013

AUGUST 26<sup>TH</sup> - 30<sup>TH</sup>, 2013  
NANTES, FRANCE

ANNUAL MEETING  
OF THE EUROPEAN FEDERATION OF ANIMAL SCIENCE



## Horse Commission August 28<sup>th</sup>

S31 - Behavioral evaluation of the working horse

**THERAPEUTIC RIDING AND AUTISM: THE ROLE OF HORSE UMAN  
RELATIONSHIP IN A PILOT RESEARCH PROJECT**

**FIRST STEPS AND CONSIDERATIONS**

*Stefania Cerino, Nicoletta Miraglia, and Francesca Cirulli*  
*Italy*  
*s.cerino@alice.it*

# AUTISM SPECTRUM DISORDER



## VERY SEVERE PSYCHIATRIC ILLNESS

Aethiology	➔	Multifactorial, not completely known
Therapy	➔	No specific pharmacological therapy
Rehabilitation	➔	Very important since the first onset

# AUTISM SPECTRUM DISORDER (ASD)

```
graph TD; ASD[AUTISM SPECTRUM DISORDER (ASD)] --> Comm[COMMUNICATION CAPABILITIES DEFICIENCY]; ASD --> Social[SOCIAL INTEGRATION AND RELATIONSHIPS PROBLEMS]; ASD --> Behavior[UPSET BEHAVIORAL PATTERNS]; ASD --> Sensory[ANOMALOUS REACTIONS TO SENSORIAL EXPERIENCES];
```

COMMUNICATION  
CAPABILITIES  
DEFICIENCY

SOCIAL  
INTEGRATION AND  
RELATIONSHIPS  
PROBLEMS

UPSET BEHAVIORAL  
PATTERNS

ANOMALOUS  
REACTIONS TO  
SENSORIAL  
EXPERIENCES

# AUTISM SPECTRUM DISORDER

USA 1/88

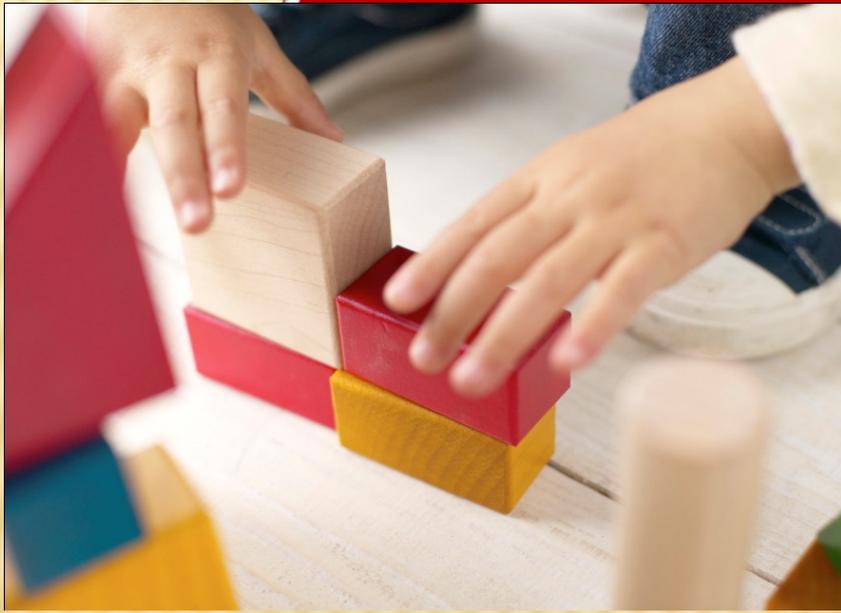
ITALY- 550.000  
EUROPE -  
5.000.000

▲ INTENSIVE  
TREATMENTS

▲ REHABILITATION  
IN SCHOOL  
AND PRE-SCHOOL  
AGE



*ASD*  
**SEVERE COMPROMISSION OF  
EXECUTORY FUNCTIONS**



# EXECUTORY FUNCTION

THE WHOLE OF THE MENTAL  
PROCESSES



DEPENDING ON THE CONTEXT  
WHERE THE SUBJECT IS LIVING

LET HIM HAVING A SERIES OF A  
MENTAL ACTIVITIES



**ANIMALS ASSISTED INTERVENTIONS**



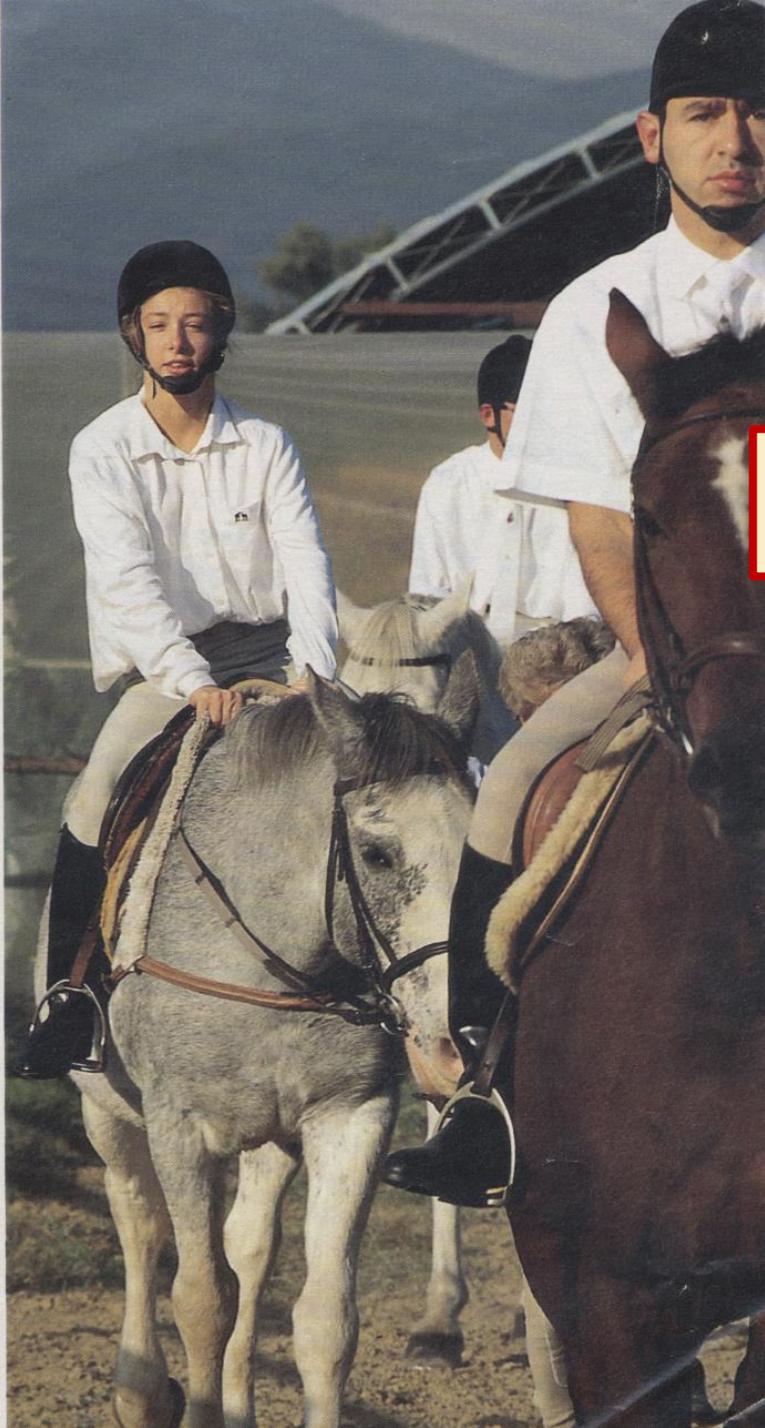
**IMPORTANT ROLE**



**ASD REHABILITATION**



**EXECUTORY FUNCTIONS**



## **THERAPEUTIC RIDING**

**PSYCHIATRIC  
REHABILITATION**

**NEURODEVELOPMENT  
DISTURBANCES**

**POSSIBILITY TO INFLUENCE BOTH  
PHYSICAL AND  
PSYCHOLOGICAL ASPECTS**

# HORSE -HUMAN RELATIONSHIP

- Emotional, Cognitive and Motor aspects
- The horse stimulates communication behaviors and emotional expressions
  - Game aspects
  - Social integration





# **FIEROBECCO PROJECT**

**Pilot project about ASD and Therapeutic Riding**



- 1. Participation and relation level**
- 2. Motor abilities development**
- 3. Executory functions**



**INVOLVES**

**Children**

**Horses**

### **35 children with ASD**

- 6-12 y. aged,
- two groups cross mode (sample/control)



- Clinical and test diagnoses of ASD
- No cognitive retard (I.Q.>70)
- No previous experiences in TR

### **20 horses**

- different races
- 13-20 y. aged
  
- experience in TR
- working in the riding school with able bodied riders

# PROJECT STEPS

- ❑ First Tests Submission
- ❑ Therapeutic Riding Sessions
  - ❑ Re-test at time  $\frac{1}{2}$
  - ❑ Data elaboration
  - ❑ Results /Discussion
- ❑ Re-test at final time (12 months) to verify the previous results

# STAFF

## TR STAFF

1 Health operator

2 TR Trainer

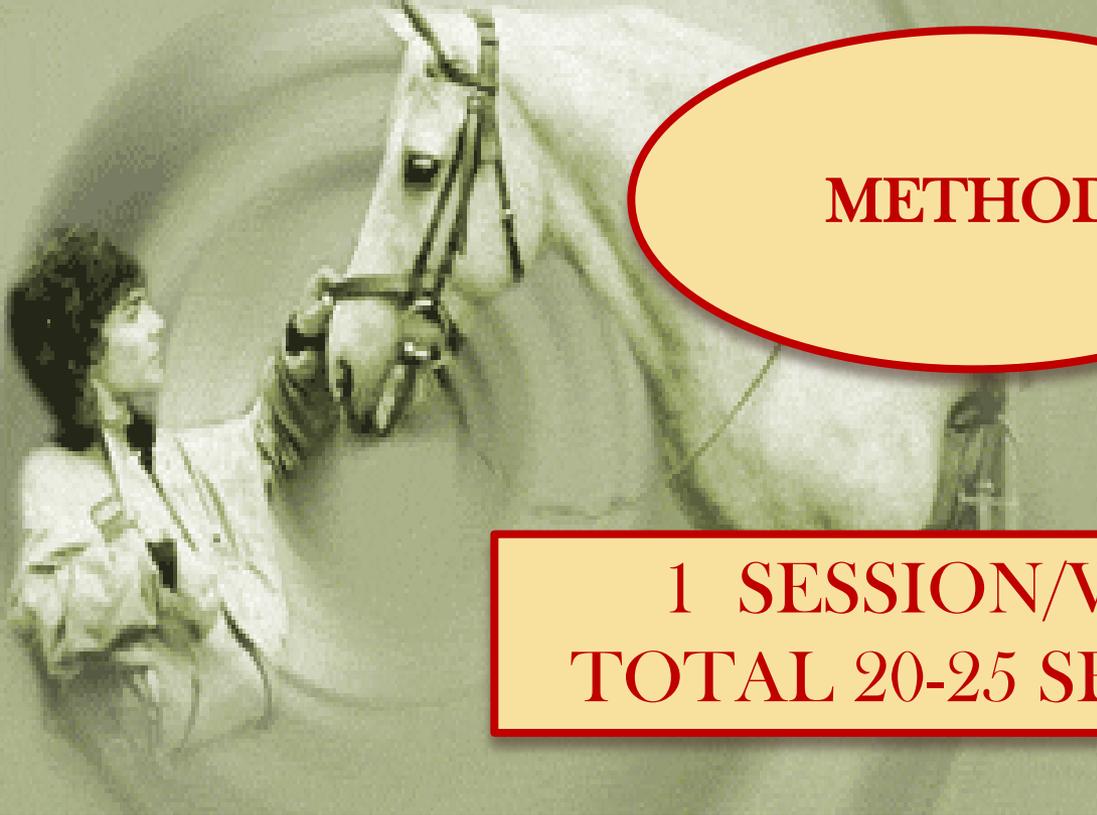
## SUPERVISION STAFF

Medicine Doctors, Psychologists



# TESTS

- ❖ **ADOS** - to evaluate ASD
- ❖ **LEITER** - to verify cognitive level
- ❖ **ICF**- International Classification of disabilities
  - ❖ **VINELAND** (study of adaptive behavior)
  - ❖ **ABC MOVEMENT** ( motor development)



## METHOD

1 SESSION/WEEK  
TOTAL 20-25 SESSIONS

DURATION  $\frac{1}{2}$  H x SESSION,  
TOTAL 30-40H

# METHOD

## GROUND WORK PHASE

### 4 SESSIONS

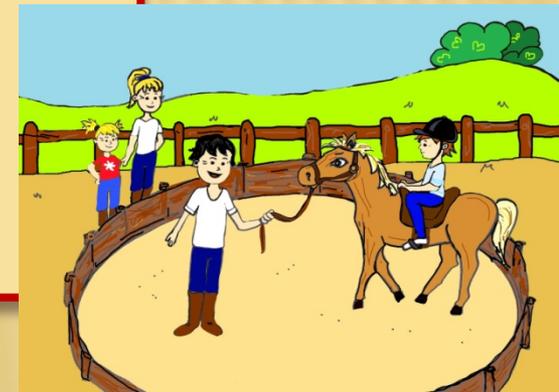
- Pictures and cards about horse behavior and riding
  - Farriery activities observation
    - Harness and grooming
    - Handling and longe work

# METHOD



## RIDING PHASE

- First 2 sessions with vaulting girth then saddled
  - Grooming and Harness
  - Saddling- Handling
- Riding ( individual or group sessions , 2-3 children)
  - Physical exercises
  - Therapeutic games
  - Education
- Unsaddling and Breefing



# HORSE ROLE

A “therapeutic riding horse” doesn’t exist

A domestic horse exists, with specific attitudes to be “used” in Therapeutic Riding



Morphological and psycho-aptitude aspects

# METHOD

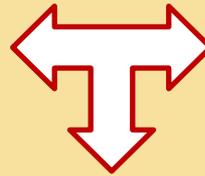
## DATA ANALYSIS

### ELABORATION BY

- ITALIAN SUPERIOR HEALTH INSTITUTE (Ministry of Health)
  - NATIONAL CENTER FOR ANIMAL ASSISTED INTERVENTION (Ministry of Health)  
*(still in progress, preliminary considerations will be showed)*

FINAL DATA: DECEMBER 2013

THE HORSE



CENTRAL ROLE

AVAILABILITY TO INTERACT WITH OTHERS

HUMAN-HORSE  
RELATIONSHIP

DIFFERENT EMOTIONAL  
LEVELS

COMPETITIVE  
COMPARISON

COLLABORATING  
COMPARISON





# HORSES CHOISE FOR ASD PATIENTS

❖ ETHOLOGICAL AND BEHAVIORAL EVALUATION

❖ BIOMECHANIC

❖ HEALTH AND WELLNESS

❖ PSYCHOLOGICAL APTITUDE

ESSENTIAL



WELLNESS MONITORING

**CHRONIC STRESS**

**NEGATIVE EFFECTS**

**PSYCHOLOGICAL AND PHYSICAL  
HEALTH**

*THEREFORE*

**ON RELATIONSHIP AND  
LEARNING CAPABILITIES**



# EVALUATION OF HORSE STRESS AND WELLNESS

## WELLNESS LINEAR EVALUATION CARD

Gagliardi D., et al "HORSE WELFARE AND BEHAVIOR IN THERAPEUTIC RIDING"

63° EAAP MEETING 2012, Bratislava

### WELLNESS INDICATORS

- *NORMAL BEHAVIOR DIVERSITY AND STEADFAST*
  - *BODY CONDITION*
  - *COAT CONDITION*
  - *POOR ILLNESSES INCIDENCE*
    - *PERFORMANCE*
  - *NO STEREOTYPES AND MISBEHAVIOR*
- *NOPHYSICAL AND PSYCHOLOGICAL PROBLEMS*

# WELLNESS LINEAR EVALUATION CARD

DOES THE HORSE BEHAVIOR CHANGE?



IS THE CHANGE  
A SIGNAL OF NO-WELFARE OR DISTRESS?

TESTS: TWICE A MONTH



TO POINT OUT EVERY POSSIBLE  
DIFFERENCES IN THE HORSES BASIC  
BEHAVIOR

# WELLNESS LINEAR EVALUATION CARD

*Gagliardi et al., Horse Welfare and Behavior,  
63<sup>rd</sup> EAAP Meeting 2012, Bratislava*

Part 1

CARD N° \_\_\_\_\_

DATE \_\_\_\_\_

HORSE \_\_\_\_\_

MICROCHIP \_\_\_\_\_

AGE \_\_\_\_\_ GENETIC TYPE \_\_\_\_\_ SEX \_\_\_\_\_

STEREOTYPIES    N

Y

➤ TYPE \_\_\_\_\_

➤ INTENSITY (1-5) \_\_\_\_\_

APPEARANCE \_\_\_\_\_

# WELLNESS LINEAR EVALUATION CARD

## Part 2

### LINEAR BEHAVIOR EVALUATION AT REST

1 - 2 - 3 - 4 - 5

Hypersensible - sensible - Unsensible

1 - 2 - 3 - 4 - 5

Intolerant - tolerant - hyporeactive

1 - 2 - 3 - 4 - 5

Provocative - cooperating - indifferent

1 - 2 - 3 - 4 - 5

Nervous - calm - apathetic

# WELLNESS LINEAR EVALUATION CARD

## Part 3

### LINEAR BEHAVIOR EVALUATION AT WORK

1 - 2 - 3 - 4 - 5

Hypersensible - sensible - Unsensible

1 - 2 - 3 - 4 - 5

Intolerant - tolerante - hyporeactive

1 - 2 - 3 - 4 - 5

Provocative - cooperating - indifferent

1 - 2 - 3 - 4 - 5

Nervous - calm- apathetic

# WELLNESS LINEAR EVALUATION CARD

## Part 4

General clinic examination \_\_\_\_\_

Collateral examinations \_\_\_\_\_

Harness \_\_\_\_\_

Aids \_\_\_\_\_

Observations \_\_\_\_\_

# CONCLUSIONS

## SOME PRELIMINARY CONSIDERATIONS

### WELLNESS LINEAR EVALUATION CARD

➤ USEFUL AND SIMPLE METHOD TO MONITOR THE BASIC HORSE WELLNESS

➤ CAN BE USED BY TRAINERS AND EXPERT GROOMS, BUT HAS TO BE PERIODICALLY EVALUATED BY A VET

# CONCLUSIONS

## SOME PRELIMINARY CONSIDERATIONS

### CHILDREN

- ALL THE PATIENTS INVOLVED IN THE STUDY HAD A SIGNIFICATIVE IMPROVEMENT IN THEIR EXECUTORY AND MOTOR FUNCTIONS(Vineland and ABC Movement scores improvement)
- NO DROP OUTS
- GOOD LEVEL OF INTERPERSONAL RELATIONSHIPS
- THE HORSE IS A GOOD “WAY” TO FACILITATE EMOTIONAL RELATIONSHIPS

# CONCLUSIONS

## SOME PRELIMINARY CONSIDERATIONS

### HORSES

- ALL THE HORSES INVOLVED IN THE PROJECT HAVE MAINTAINED A STANDARD LEVEL BEHAVIOR
- NO PARTICULAR STRESS SIGNS HAVE BEEN FOUND

- IT IS NECESSARY TO IMPROVE THE TRAINER CULTURE ABOUT THE IMPORTANCE OF TESTING THE HORSE BEHAVIOUR
- THIS STUDY, WITH ALL ITS LIMITS, COULD BE A STARTING POINT TO DISCUSS THIS KIND OF PROBLEMS

*Thank you for your  
attention*

