Animal-Assisted Interventions for Autism Spectrum Disorder

Dr. Maggie O’Haire
PURDUE UNIVERSITY
Animals capture our attention.
zoos > sports
nuala gardner

a friend like henry

The remarkable true story of an autistic boy and the dog that unlocked his world

Animals in Translation

Using the Mysteries of Autism to Decode Animal Behavior

“Deeply moving and fascinating.”
—Oliver Sacks

Temple Grandin and Catherine Johnson
author of Thinking in Pictures

The Horse Boy

Based on THE NEW YORK TIMES BESTSELLING BOOK

How far would you travel to heal someone you love?

filmwolke.com
Animals provide social support.
Animals provide social support.
What does the science say?

**Animal-Assisted Intervention for Autism Spectrum Disorder: A Systematic Literature Review**
Marguerite E. O'Haire
2013

**Research on animal-assisted intervention and autism spectrum disorder, 2012–2015**
Marguerite O'Haire
2016
The field is international.
The field is interdisciplinary.
The field is growing.
animals & autism

systematic review

- intervention
- sample
- outcomes
# What is Animal-Assisted Intervention?

<table>
<thead>
<tr>
<th>TERMINOLOGY</th>
<th>dog assisted</th>
<th>pet therapy</th>
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<tbody>
<tr>
<td>animal intervention</td>
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<td>animal therapy</td>
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<td>therapeutic animal(s)</td>
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<tr>
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<td>hippotherapy</td>
<td>therapeutic horse(s)</td>
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<td>canine assisted</td>
<td>horseback riding</td>
<td>therapeutic horseback</td>
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<tr>
<td>canine facilitated</td>
<td>human animal bond</td>
<td>therapeutic pet(s)</td>
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<tr>
<td>companion animal(s)</td>
<td>human animal</td>
<td>therapeutic riding</td>
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<td>dog therapy</td>
<td>interaction(s)</td>
<td>therapy with animals</td>
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What is Animal-Assisted Intervention?
What is Animal-Assisted Intervention?
What is Animal-Assisted Intervention?

**DOSE**
- 12 weeks
- 1 per week
- 35 minutes
- 10 hours

**Ratio**
- 2:1:1 personnel : participants : animals
- 1:1:1 personnel : participants : animals
animals & autism
systematic review

What is Animal-Assisted Intervention?

<table>
<thead>
<tr>
<th>TERMINOLOGY</th>
<th># of studies</th>
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<td>human intervention</td>
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What is Animal-Assisted Intervention?

- DOSE:
  - 12 weeks
  - 1 per week
  - 35 minutes
  - 10 hours

- personnel: participants: animals
  - 2:1:1
  - 1:1:1

outcomes
AGE
2 – 20 years

GENDER
80% male
<table>
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<tr>
<th></th>
<th>mixed</th>
<th>vs</th>
<th>positive</th>
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</thead>
<tbody>
<tr>
<td>social interaction</td>
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<td>motor skills</td>
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<td>parental stress</td>
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<td>repetitive behaviors</td>
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</tbody>
</table>

Outcomes for Autism

- Social interaction: mixed vs positive
- Positive emotions: mixed vs positive
- Stress physiology: mixed vs positive
- Language & communication: mixed vs positive
- Motor skills: mixed vs positive
- Problem behaviors: mixed vs positive
- Autism diagnostic: mixed vs positive
- Parental stress: mixed vs positive
- Repetitive behaviors: mixed vs positive
animals & autism

social interaction

31 studies • 27 teams • 16 countries
99 x children
age 4-12

33 ASD

66 TD
Social Behaviors Increase in Children with Autism in the Presence of Animals Compared to Toys

Marguerite E. O’Haire¹*, Samantha J. McKenzie², Alan M. Beck³, Virginia Slaughter¹

¹ School of Psychology, The University of Queensland, Brisbane, Queensland, Australia, ² School of Population Health, The University of Queensland, Herston, Queensland, Australia, ³ College of Veterinary Medicine, Center for the Human-Animal Bond, Purdue University, West Lafayette, Indiana, United States of America

![Bar chart showing intervals per minute for verbal, visual, and physical interactions with animals and toys. Significant differences are indicated with asterisks.]
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![Bar chart](image-url)
Animals May Act as Social Buffers: Skin Conductance Arousal in Children With Autism Spectrum Disorder in a Social Context

![Graph showing emotions and arousal peaks per minute with animal and toy categories.](Image)
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social behaviors
emotions
stress
behavioral measure

![Graph showing behavioral measures for verbal, visual, and physical intervals per minute with error bars and significance indicators.]

- **Verbal**: Blue bars with an average of approximately 2.8 intervals per minute, with a significance indicator (***)
- **Visual**: Blue bars with an average of approximately 3.5 intervals per minute, with a significance indicator (***)
- **Physical**: Blue bars with an average of approximately 1.6 intervals per minute, with error bars indicating variability

Legend:
- Blue = animal
- Red = toy
behavioral measure

- smile
- laugh
- frown/cry

Intervals per minute

- Animal
- Toy

Significance levels: ***
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social behaviors

emotions
What does the science say?
Thank You!