



Psychiatric and Medical Conditions Among Adults with ASD

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Children with ASD have increased rates of medical and psychiatric conditions



Children with ASD become adults with ASD



ASD in Adults Study Objectives

- Health status of adults with ASD
- Health care utilization among adults with ASD
- Healthcare provider knowledge and experience

Study Population

- Adults 18+ years of age
- Kaiser Permanente Northern California (KPNC) member for 9+ months per year
- 2008-2012
- **ASD CASES (N = 1,507)**
 - 2+ ASD diagnoses recorded in KPNC medical record
 - Anytime through Dec 31, 2012
- **CONTROLS (N = 15,070)**
 - No ASD diagnoses
 - Randomly sampled at 10:1 ratio
 - Matched to cases on total length of KPNC membership, sex and age

Health Status Definitions

All conditions recorded in the electronic medical record between 2008-2012

- Validated algorithms using ICD-9 codes, lab results, medications
- Linkage to cancer and diabetes registries
- ICD-9 code groupings based on PheWAS
- Body Mass Index calculated at office visits

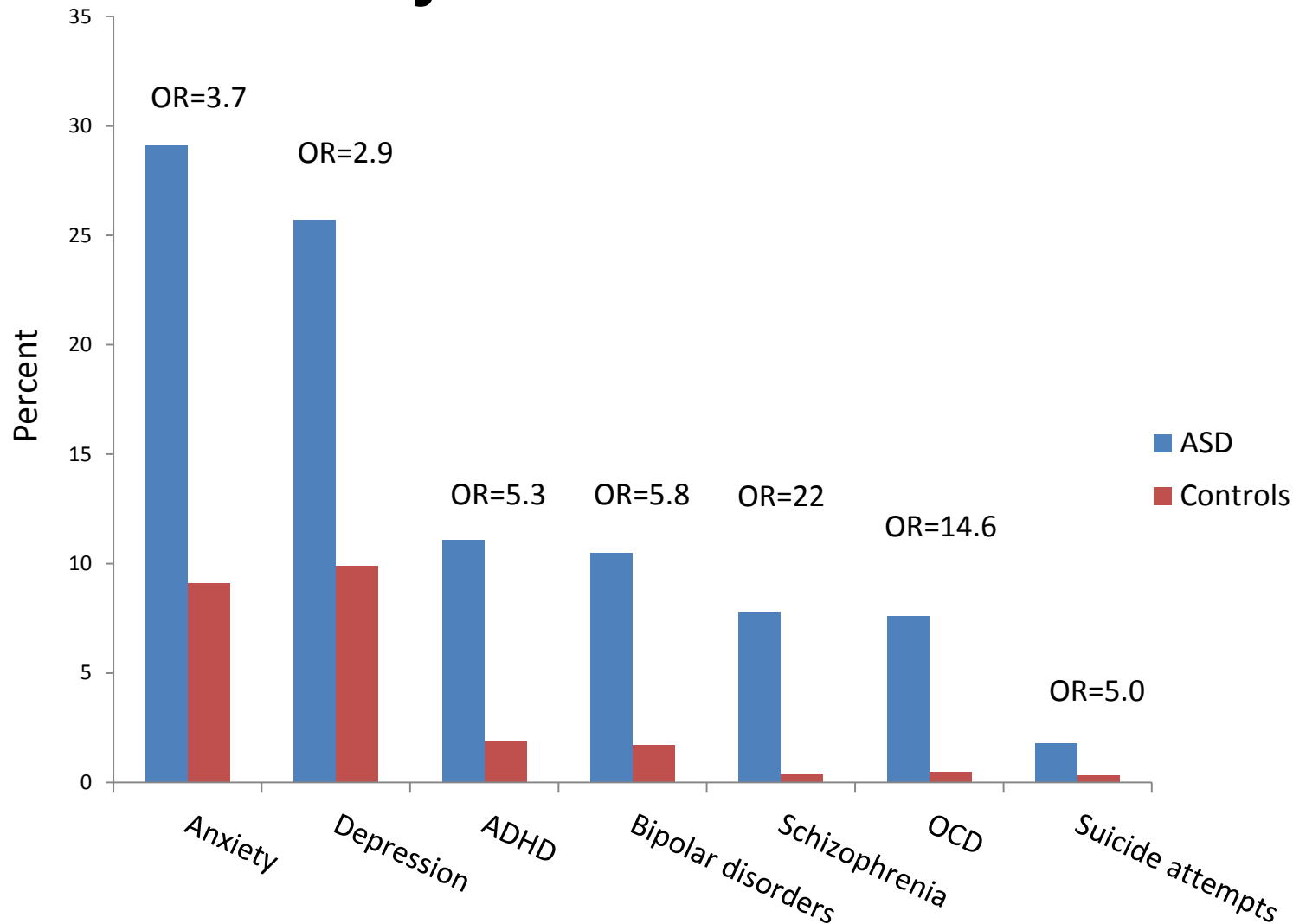
Demographic Characteristics

	Adults with ASD (N=1,507)	Controls (N=15,070)
Age, mean (SD)	29.0 (12.2)	29.4 (12.1)
>35	26%	26%
Race/ethnicity, %		
White, non-Hispanic	65.6%	44.0%
White, Hispanic	3.9%	4.2%
Black	7.6%	7.3%
Asian	11.1%	16.8%
Other	11.7%	27.7%
Sex, %		
Male	73.5%	73.2%
Female	26.9%	26.9%

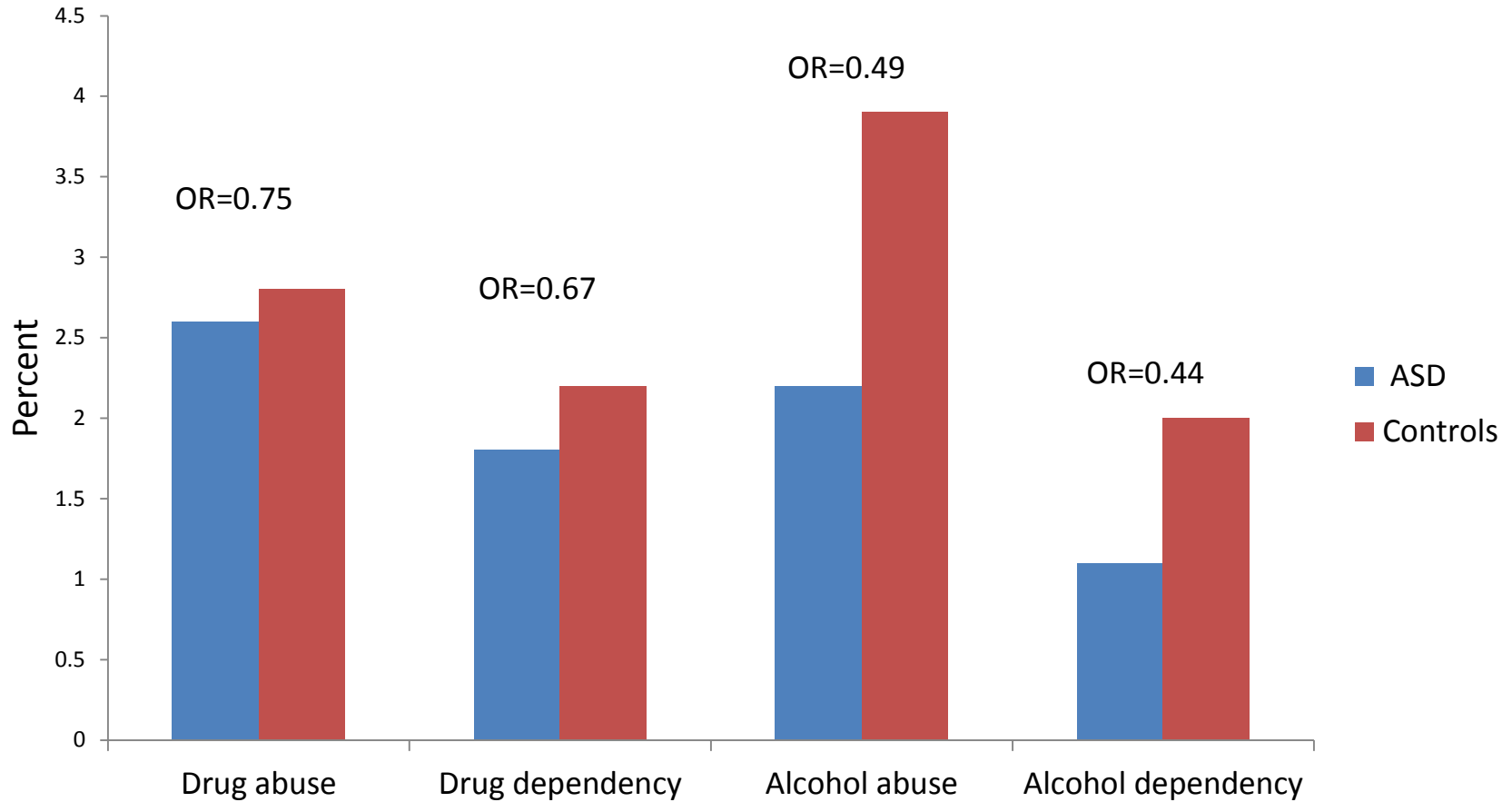
Phenotypic Characteristics

	Adults with ASD (N=1,507)
ASD Diagnosis	
Autistic Disorder	37.2%
Asperger Syndrome	29.7%
Not specified	33.1%
Intellectual Disability	
Yes	19.2%
Mild	12.8%
Moderate	3.1%
Severe	6.2%
NOS	77.9%
No	80.8%

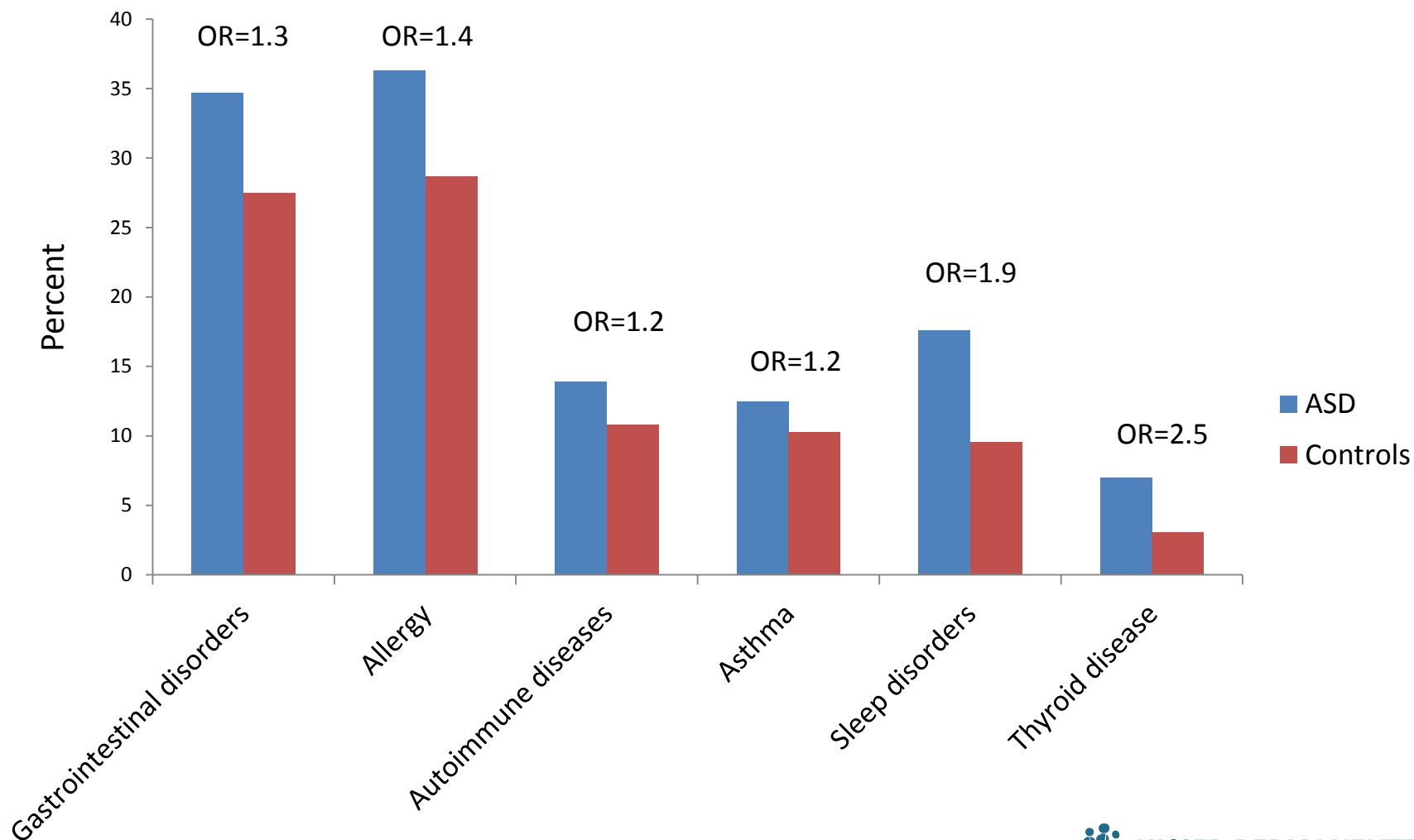
Psychiatric Conditions



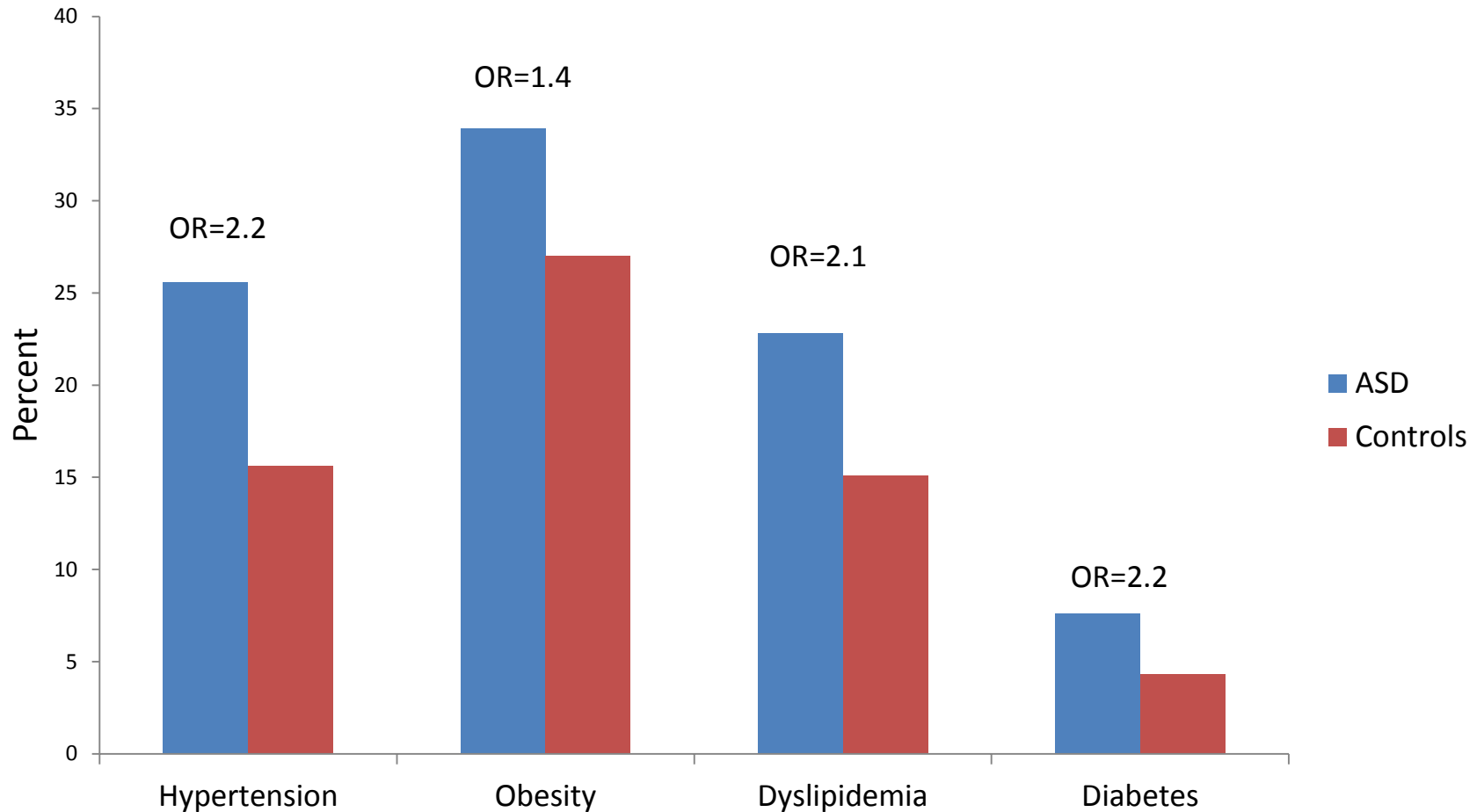
Drug and Alcohol Use



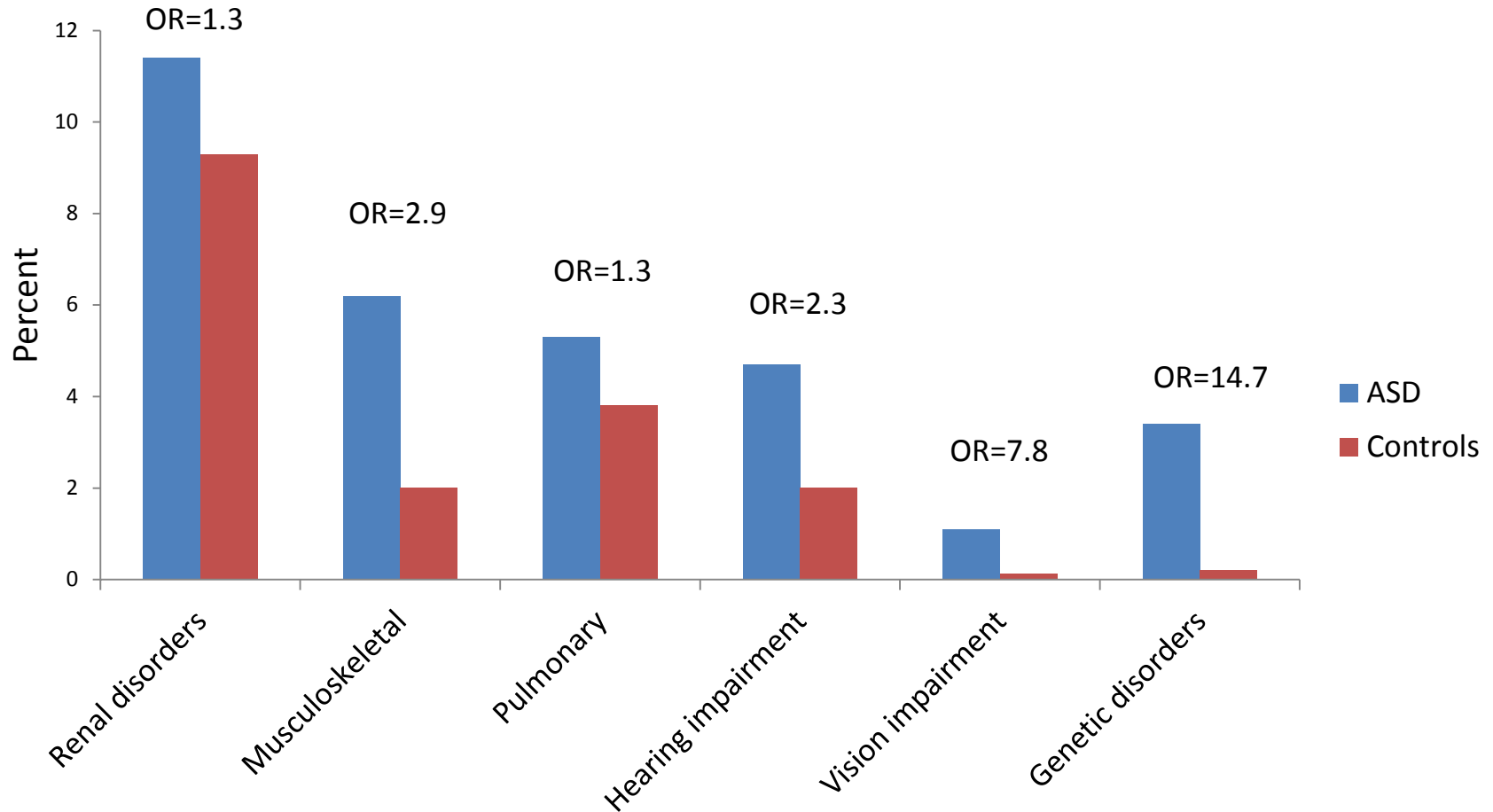
GI, Immune, Sleep, Thyroid



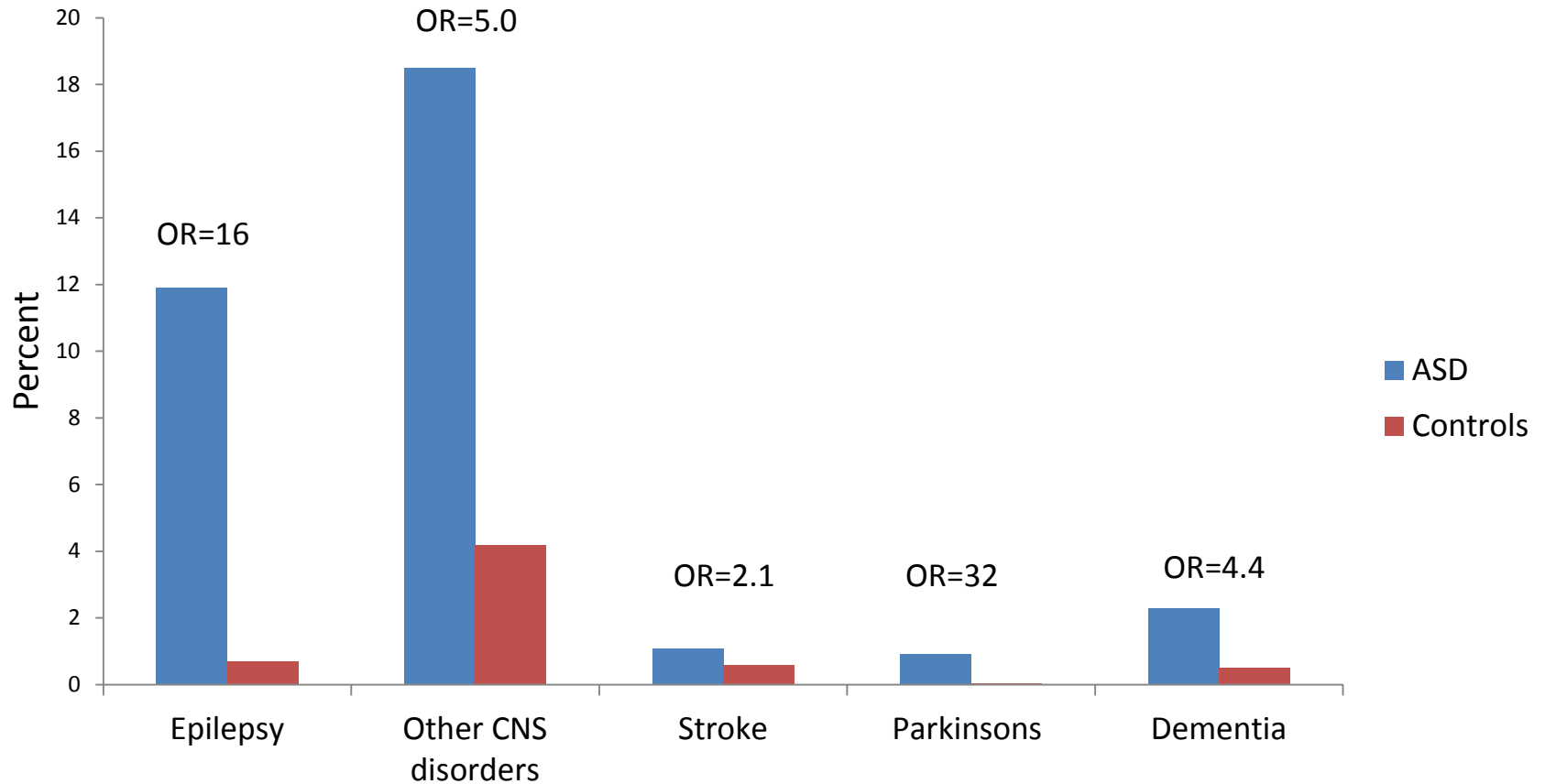
Metabolic Conditions



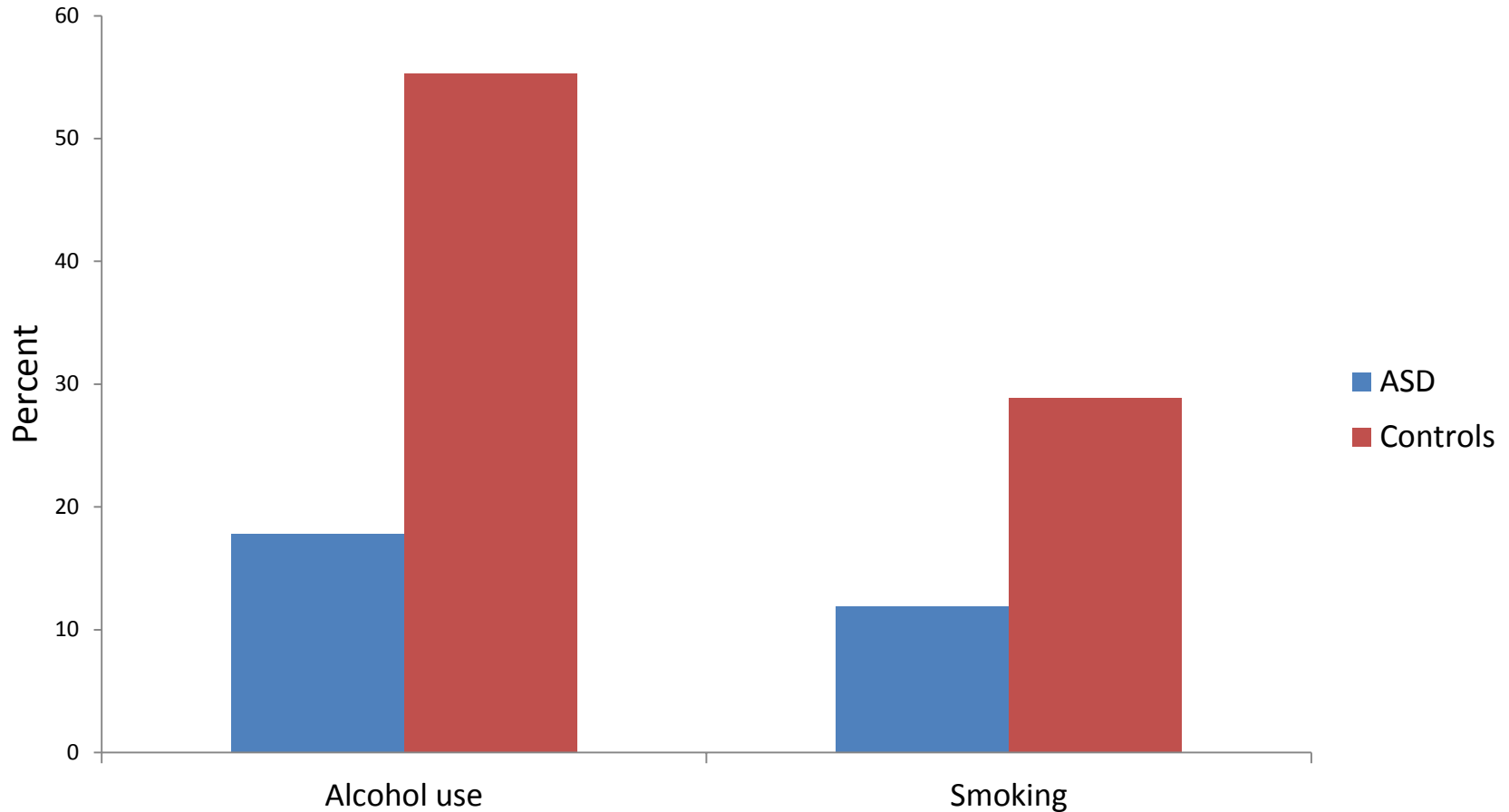
Other Medical Conditions



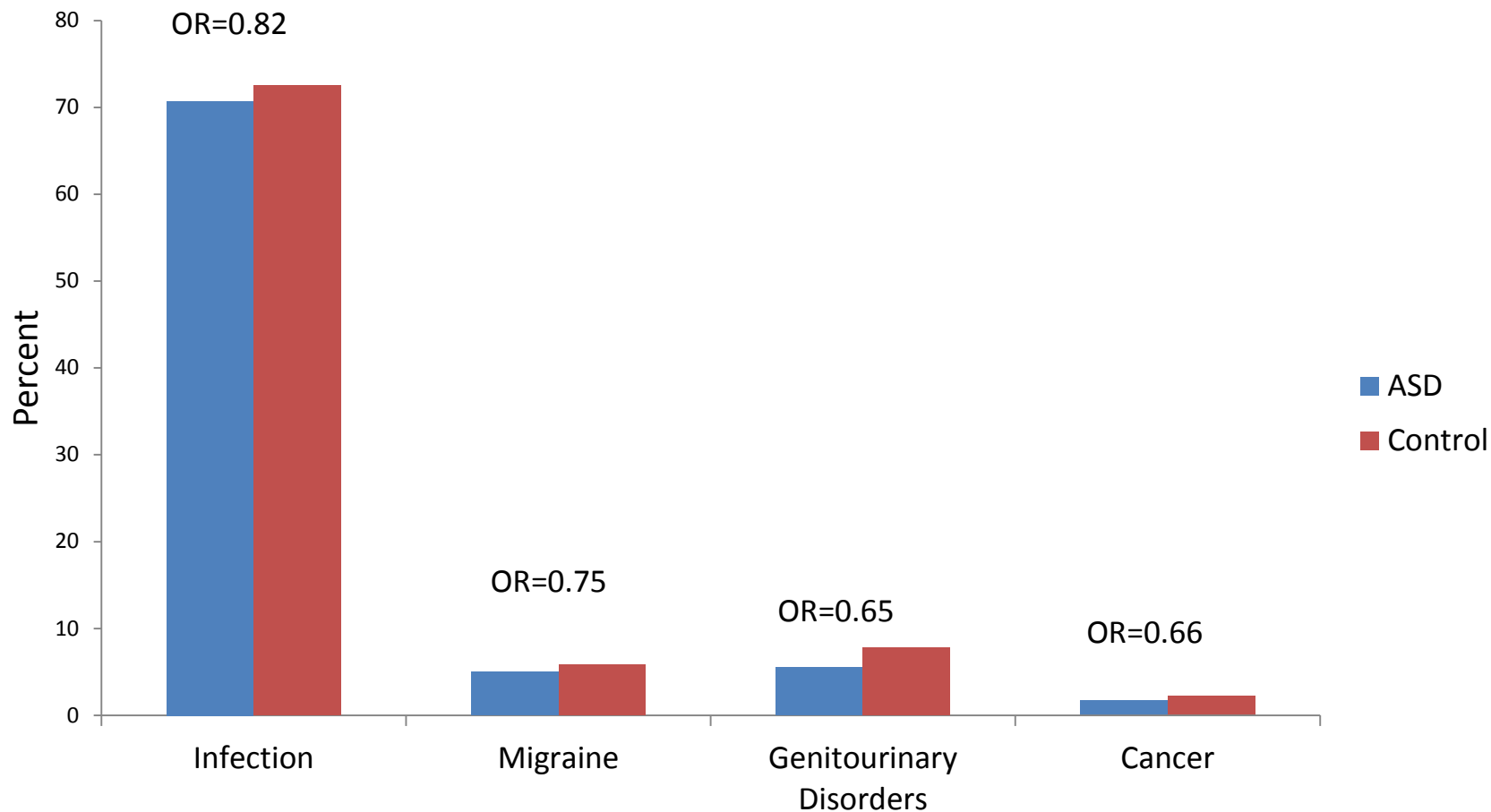
Neurologic Conditions



Alcohol and Tobacco Use Self-Reported



Conditions Less Common in ASD



Summary and Conclusions

- Evidence for increased rates of many health conditions in ASD
- Some evidence for common biologic causes
 - E.g., shared genetic susceptibility to several psychiatric disorders including ASD
 - Obesity is a risk factor for several chronic conditions observed in autistic adults
- Communication and social impairments and sensory issues impede preventive health, early diagnosis, timely treatment
- Need health education and lifestyle interventions early on to improve diet, exercise, and reduce risk factors for chronic illnesses
- Need better integration of people with ASD into all aspects of society to reduce social isolation, discrimination and lower burden of disease

Research Opportunities

- Understand the social, health care access, and biologic mechanisms underlying the increased rates of medical and psychiatric conditions
- Understand how physicians investigate and manage chronic disease in adults with ASD
- Develop and test improved strategies for delivering health care to adults with ASD

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**Children and Adults with ASD and
Families**

