Alzheimer’s Disease Genetics Consortium
ADGC

Alzheimer’s Disease Sequencing Project
ADSP

National Institute on Aging Genetics of Alzheimer’s Disease Storage site
NIAGADS

Partners:
National Alzheimer Coordinating Center – NACC
National Cell Repository for Alzheimer’s Disease - NCRAD
<table>
<thead>
<tr>
<th>Cohort</th>
<th>Cases</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADC1</td>
<td>1,549</td>
<td>512</td>
</tr>
<tr>
<td>ADC2</td>
<td>727</td>
<td>156</td>
</tr>
<tr>
<td>ADC3</td>
<td>894</td>
<td>586</td>
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<tr>
<td>ADC4</td>
<td>304</td>
<td>377</td>
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<tr>
<td>ADC5</td>
<td>286</td>
<td>505</td>
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<td>ADC6</td>
<td>213</td>
<td>338</td>
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<tr>
<td>ADC7</td>
<td>500</td>
<td>790</td>
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<tr>
<td>ADC8</td>
<td>1,061</td>
<td>1,597</td>
</tr>
</tbody>
</table>

ADGC Cohorts

| ADGC | 5,534 cases | 4,861 controls |

IGAP

<table>
<thead>
<tr>
<th>Consortium</th>
<th>Cases</th>
<th>Controls</th>
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</thead>
<tbody>
<tr>
<td>ADGC</td>
<td>15,988</td>
<td>16,949</td>
</tr>
<tr>
<td>CHARGE</td>
<td>2,137</td>
<td>13,474</td>
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<td>EADI</td>
<td>2,240</td>
<td>6,631</td>
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<td>GERAD</td>
<td>3,177</td>
<td>7,277</td>
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<tr>
<td>Totals</td>
<td>23,542</td>
<td>44,331</td>
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</tbody>
</table>
ADGC Major Project

Rare Variant GWAS
Previous analysis – impute to HapMap, MAF ~> 2%
Impute to 1,000 Genomes – MAF to 0.1% to 1.5%
Validate by Sanger sequencing
Replicate in 19,000 subjects from IGAP

Exome Chip
8,158 Cases, 6,703 Controls
Replicate in 10,000 IGAP samples

Transethnic analysis
Caucasian
African American
Asian
Caribbean Hispanic
Recent ADGC Publications


56 publications
7 submitted/under review

https://www.niagads.org/node
Recent ADGC Publications


Alzheimer’s Disease Sequencing Project (ADSP)

Whole exome sequencing:

5,000 unrelated cases: 4,220 from the ADGC
2,430 from ADC’s

5,000 elderly normal controls: 3,240 from the ADGC
840 from the ADC’s

1,000 cases from multiplex families – one/family

Whole-genome sequencing: 585 subjects
111 multiplex families

Replication

All sequencing completed
QC in process
VCF files (genotypes) available by June

https://www.niagads.org/node/116
Data Access – all subjects

SNP array data – all subjects/studies
  Published data sets: NIAGADS
  Most recent data: SAG process
  3 page application to ADGC
  imputed 1000 Genome data

ADSP Sequence data
  dbGaP – all data, de-identified
  embargoed (publication) until August 2015
Genotype Data Access
data from specific subjects from an ADC

Array genotypes
APOE genotypes
Imputed genotypes
Sequence Data Access (ADSP)
data from specific subjects from an ADC

Whole genome sequence
Whole exome sequence

ADC

ADC ID

ADC ID + sequence data

NACC

NACC ID

NACC ID + Sequence data

NIAGADS

Apply for access

Access granted

dbGaP

NACC ID + sequence data
Alzheimer’s Disease Genetics Consortium

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NIA/NIH, Alzheimer’s Association