

Alzheimer's Disease Genetics Consortium ADGC

Updates:

Alzheimer's Disease Genetics Consortium
ADGC

Alzheimer's Disease Sequencing Project
ADSP

Partners:

NIA-funded Alzheimer's Disease Centers - ADCs

National Alzheimer Coordinating Center – NACC

National Cell Repository for Alzheimer's Disease - NCRAD

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

Alzheimer's Disease Genetics Consortium

ADGC - Goals

- Assemble a large collection of AD cases, controls
31 Alzheimer's Disease Centers, 25 other cohorts
- GWAS - common/rare-variants
- Expand to include minority populations
- Provide samples for the ADSP – Discovery and Replication
- IGAP – international consortium

ADGC Cohorts

Cohort	Cases	Controls
ACT	532	1,571
ADC1	1,549	512
ADC2	727	156
ADC3	894	586
ADC4	304	377
ADC5	286	505
ADC6	213	338
ADC7	566	878
ADC8	517	664
ADC9	475	645
ADNI	268	173
BIOCARD	6	112
CHAP	27	144
EAS	9	141
GSK	666	712
LOAD	1,798	1,568
MAYO	658	1,046
MIRAGE	491	738
MTV	256	189
NBB	80	48
OHSU	132	153
PFIZER	696	762
RMAYO	13	233
ROSMAP	295	769
ROSMAP2	59	217
TARC1	323	181
TGEN2	668	365

ADCs
5,531 cases
4,661 controls
10,192 total

In progress

Cohort	Cases	Controls
UKS	596	170
UMVUMSSM	1,177	1,126
UPITT	1,255	829
WASHU	339	187
WASHU2	38	94
WHICAP	73	560
Totals	15,514	16,114
Grand total	31,608	

IGAP

Consortium	Cases	Controls
ADGC	14,428	14,562
CHARGE	2,137	13,474
EADI	2,240	6,631
GERAD	3,177	7,277
Totals	21,982	41,944

Alzheimer's Disease Genetics Consortium

ADGC – Current Projects

- 1,000 genomes GWAS
- Exome chip (with IGAP)
- Human Reference consortium GWAS
- Whole exome sequencing – African Americans
- Minority cohort expansion (and Caucasians)
- Assemble deep phenotypes from ADGC cohorts

Rare variants
MAF 0.1 – 5%

African American WES: by study

Study	Affected	Unaffected	Total
MIRAGE	117	138	255
Miami/Duke/North Carolina	396	582	978
Alzheimer's Disease Centers	517	681	1,198
GenerAAtions	246	206	452
Case/Vanderbilt	91	171	262
Rush	227	1,026	1,253
Total	1,594	2,804	4,398

WHICAP (contributed)	162	550	752
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Autopsy	Affected	Unaffected	Total
Yes	171	34	205
No	1,423	2,770	4,193

ADGC -Future Plans

- Expand cohorts – ADCs and existing cohorts
- Identify additional rare-variants
- Aggregate deep-phenotype data across many cohorts
- **Convert GWAS signals (loci) to genes**
- Integrate with systems biology (AMP, others)
- Resolve all genetics of AD
- Develop therapeutic targets

Alzheimer's Disease Genetics Consortium

University of Pennsylvania

Li-San Wang
Adam Naj
Laura Cantwell
Beth Dombroski
Otto Valladeras
Sherry Beecher

Familial AD

Richard Mayeux

Clinical Group

Deborah Blacker
Debbie Tsuang

Neuropathology Group

Tom Montine

Biomarker Group

Alison Goate

NACC

Bud Kukull
Duane Beekly

NCRAD

Tatiana Foroud
Kelly Michelle Faber

University of Miami

Peggy Pericak-Vance
Gary Beecher
Eden Martin
Kara Hamilton
Brian Kunkle

Boston University

Lindsay Farrer
Kathryn Lunetta

Case Western

Jonathan Haines
Will Bush

Columbia

Christiane
Reitz
Badri
Vardarajan
Jennifer Manly

NIA

Marilyn Miller

NIA/NIH, Alzheimer's
Association