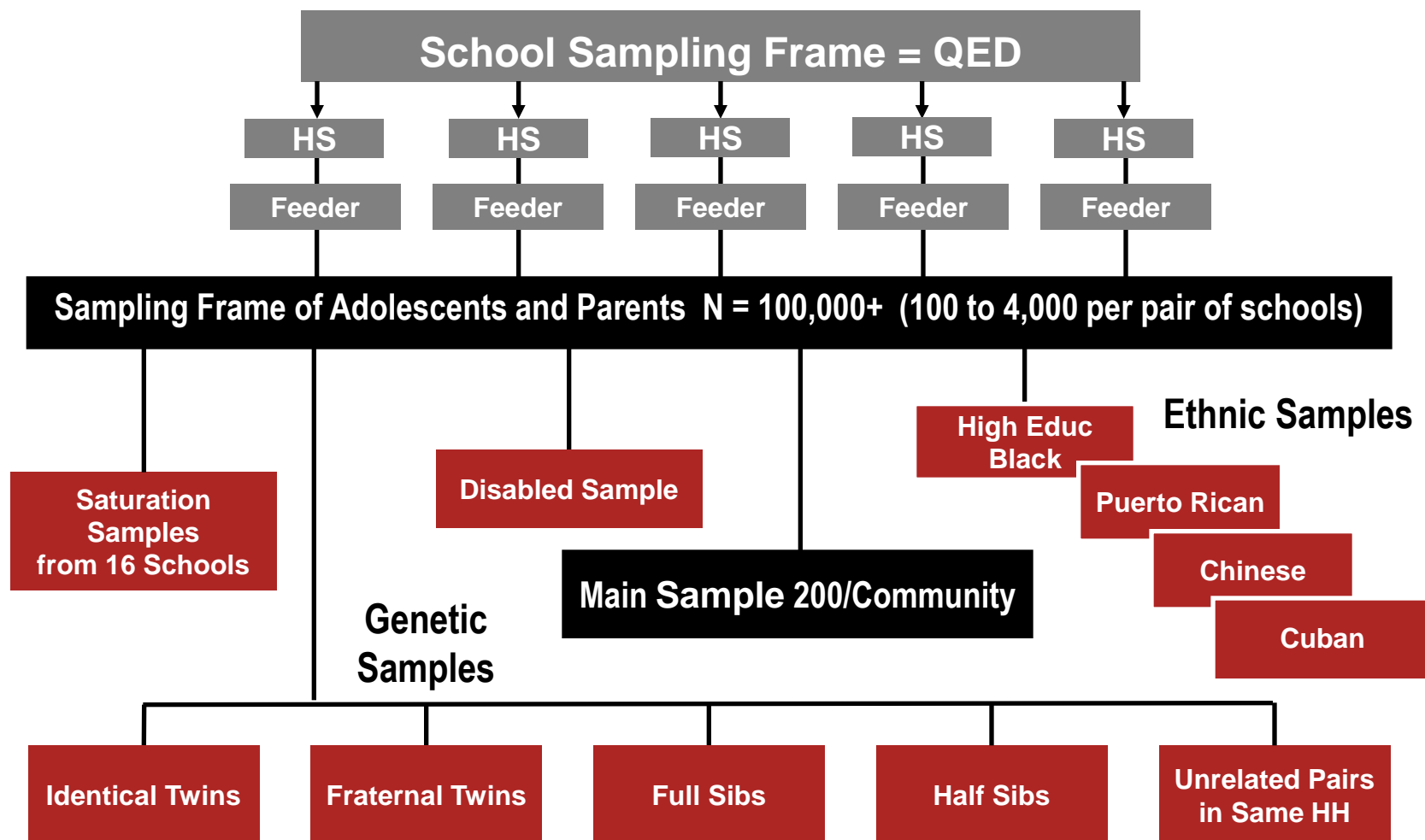


A map of the United States where each state is represented by a different photograph of people in various settings, such as a crowd, a woman holding a child, a person at a computer, and a religious ceremony.



Sampling Structure



Longitudinal Design

In-School
Administration



In-Home
Administration

Wave I
1994-1995

Students
90,118

School
Admin
144[‡]

Adolescents
in grades 7-12
(20,745)

Parent
17,670

Wave II
1996

School
Admin
128

Adolescents
in grades 8-12
(14,738)

Wave III
2001-2002

Partners
1,507

Young Adults
Aged 18-26*
(15,197)

Wave IV
2007-08

Adults
Aged 24-32[†]
(15,701)

*24 respondents were 27-28 years old. †52 respondents were 33-34 years old.

‡ 144 schools participated in in school administration. School administration questionnaires from 143 of these schools

Wave I Sample Design



- 80 high schools were selected from a sample frame of 26,666
- Prior to sampling, schools were sorted by:
 - size
 - school type
 - census region
 - level of urbanization
 - percent white

Replacement Schools



- Of the 80 selected high schools, 52 were eligible and agreed to participate
- The remaining 28 schools were replaced by similar high schools. They were found by sorting the frame by eight variables:
 - school size
 - school type
 - level of urbanization
 - percent white
 - grade span
 - percent black
 - census region
 - census division

Replacement Schools



- Schools were sorted in a random order within each category
- The replacement school was the school that followed the initial sample school on the sorted file
- As a result, the replacement school matched the selection it was replacing with respect to the eight characteristics

Replacement Schools



- If the first replacement school was ineligible or failed to cooperate, it was replaced by the next school on the list
- Within some categories, there were not enough potential replacements, or the list of replacements was exhausted. In these cases, similar categories were combined and the file resorted

Feeder Schools



- Participating high schools were asked to identify junior high or middle schools that were expected to provide at least 5 students to the entering class of the high school
- A single feeder school was selected for each high school

Feeder Schools



- The feeder's probability of selection was proportional to the percentage of the high school's entering class that came from that feeder
- Four schools had no eligible feeder, as students came from a very large number of junior high or middle schools
- Twenty high schools were their own feeder schools, as they had grade ranges that included 7th or 8th grades

Participating High Schools



Region	(No.)	Grade Span	(No.)
Northeast	17	K-12	7
South	27	7-12	10
Midwest	19	9-12	49
West	17	10-12	7
		Other	7
School Type	(No.)	Metropolitan Status	(No.)
Public	71	Urban	24
Catholic	3	Suburban	42
Other Private	6	Rural	14

Parental Consent



- Parental consent was required to list student names in a directory and to allow students to participate in the study
- Unless otherwise directed by the school, passive consent forms were used (it was assumed that a parent granted permission unless the form was returned with a signature that indicated otherwise)
- Some schools required active consent forms (the form had to be returned with a signature indicating that permission was granted)

Security System



- To protect the identities of participants, a rigorous security system prevents anyone from being able to link a respondent's answers to a name or other identity
- Identification numbers used to collect data are never used for data distribution
- At the same time, the security system allows researchers to link questionnaires across all components of the study

In-school Components



- 144 middle, junior high, and high schools participated
- 90,118 students completed a 45-minute questionnaire
- Each participating school was asked to complete a School Administrator questionnaire

In-school Questionnaire



Gathered general descriptive information about the student:

- student's and parent's background
- his or her friends
- school life
- school work and school activities
- general health status and health-related behaviors

School Administrator Questionnaire



Gathered information about the educational setting and environment of the school

- Content areas included:
 - general characteristics of the school and student body
 - curriculum, school services, and programs

In-home Components



- Each school provided a roster of all students enrolled
- From the rosters and the pool of participants in the in-school survey, adolescents in grades 7 to 12 were sampled to participate in the in-home interview
- Adolescents were interviewed at two points in time, first at Wave I and then a year later, at Wave II

In-home Interview



- Written informed consent was obtained from the parent or legal guardian and the adolescent
- A Computer-Assisted Personal Interview (CAPI)/Audio Computer-Assisted Self Interview (ACASI) was administered to the adolescent
- Sections with more sensitive questions were asked in the self-administered portion of the interview

Parent Interview



- A parent or guardian was interviewed during Wave I of the study
- This interview provided further information about the family composition and the adolescent's health history
- The questionnaire asked demographic and health-related information about the parent or guardian and general questions about the adolescent respondent

In-home Sample



- A core sample of adolescents derived from rosters supplied by the selected schools and from in-school participation
- A sample for a study of relationship patterns where all respondents were selected from two schools
- A genetic sample composed of siblings and twins
- A sample of unrelated adolescents who reside in the same household

In-home Sample



- An oversample of black adolescents with college-educated parents
- An oversample of Cuban and Puerto Rican adolescents
- An oversample of Chinese adolescents
- An oversample of physically disabled adolescents (Wave I only)

Sample Selection: Core and PAIRS Samples



- The core sample consisted of roughly equal-sized samples drawn from 12 student-level strata
- Strata were formed by cross-classifying students by their sex and grade
- Overall sample-size targets were set for each stratum by dividing the total size of the core sample by the number of strata

Sample Selection: Core and PAIRS Samples



- School-level targets were also set for each stratum by dividing the overall stratum target by the number of schools with at least one student in the stratum
- The main frame for selecting the core sample was the set of rosters developed at the sample high schools and their linked feeders
- At the two (purposively selected) PAIRS schools, all of the students were selected for data collection

Sample Selection: Non-Genetic Supplements



Eligibility was determined by race/ethnicity and by disability status:

- **High education blacks** – included black students, either of whose parents was a college graduate
- **Cubans** – included students who were from Cuba or whose parents were from Cuba

Sample Selection: Non-Genetic Supplements



- **Puerto Ricans** – included students of Puerto Rican descent
- **Chinese** – included students of Chinese descent
- **Disabled** – included students who had difficulty using their limbs for the year prior to the survey, and, as a result, used a cane, wheelchair, orthopedic shoes, artificial limb, or some other mechanical aid (Wave I only)

Sample Selection: Genetic Supplements



- **Twins** – any student who identified himself as a twin (in the in-school questionnaire); previously unreported twins discovered during the in-home interview were added to the sample at that time
- **Other siblings of twins** – the non-twin siblings of those in the twin sample; to be eligible they had to be enrolled in grades 7 to 12 at the time of sample selection

Sample Selection: Genetic Supplements



- **Other full siblings** – full siblings where neither member was a twin and both were enrolled in grades 7 to 12
- **Half-siblings** – pairs of half-siblings of which both members were enrolled in grades 7 to 12
- **Non-related** – adolescents living in the same household who did not share the same biological mother or father and were enrolled in grades 7 to 12

Wave I In-home Adolescent Participants



Category	No.	Category	No.
Overall	20,745	Twins	1,534
Core	12,105	Full-siblings	2,500
Disabled	957	Half-siblings	848
High ed blacks	1,547	Non-related	1,314
Cuban	538	Pairs	2,553
Puerto Rican	633		
Chinese	406		

Wave II Sample Selection



- The Wave II sample was drawn primarily from the pool of participants in Wave I
- The majority of 12th-grade respondents were removed from the Wave II sample, as they exceeded the grade eligibility requirement

Wave II Sample Selection



- Twelfth-graders who were part of a genetic pair were retained
- Wave I disabled sample was not re-interviewed at Wave II
- The Wave II sample contains a small number of adolescents who did not participate in the first wave
- No parent interview was conducted during the second wave

Wave III In-home Components



- **Wave III respondents: 15,197**
 - Includes 15,170 original Wave I respondents and 27 Wave II special genetic respondents
 - 14,979 were interviewed during the main study and 218 were interviewed during the pretest
- **Romantic partners: 1,507**
 - Partners of Add Health respondents, new in Wave III

Wave III Interview



- Interviewer administered in-home interview (CAPI) with sections containing sensitive questions asked in the self-administered portion
- Respondents who agreed to provide a urine and/or saliva sample were asked to read and sign an additional consent form
- Respondents received an additional incentive for these samples

Wave III Biomarkers



- Urine was analyzed for the presence of three sexually-transmitted diseases (STDs), chlamydia, gonorrhea, and trichomoniasis
- Saliva was collected and analyzed for DNA from all full sibs and twins interviewed at Wave III
- Additional saliva was analyzed for the presence of HIV antibodies

Wave III Binge Drinking



- All respondents with Wave I and II data who were in the 7th or 8th grade at Wave I were pre-identified to answer questions about attitudes toward binge drinking

Composition:

- 700 attending two or four year college: 350 males, 350 females, never married
- 700 not attending college: 350 males, 350 females, never married

Wave III Couples



- 1,500 from pre-selected group of 10,000
- Final quota to include 1/3 married, 1/3 cohabiting, 1/3 dating
- Heterosexual couples only
- 18 years or older
- Current relationship
- Relationship had lasted three months or more

Additional Wave III Components



- Measured and self-reported height and weight
- Latitude and longitude of current residence
- Questions about contact with school friends
- Information on relationships with siblings

Wave III Sample Selection



- The Wave III sample was drawn primarily from the pool of participants in Wave I
- Respondents were required to be 18 years of age or older
- Partners had to be 18 years old or older, opposite sex, in a current relationship that had lasted for at least three months

Wave III Consent



- Respondent was asked to read and sign an informed consent form
- Parental consent was not needed as respondents were 18 to 26 years old
- All respondents who agreed to participate in the interview received an incentive payment

Wave IV Sample Selection



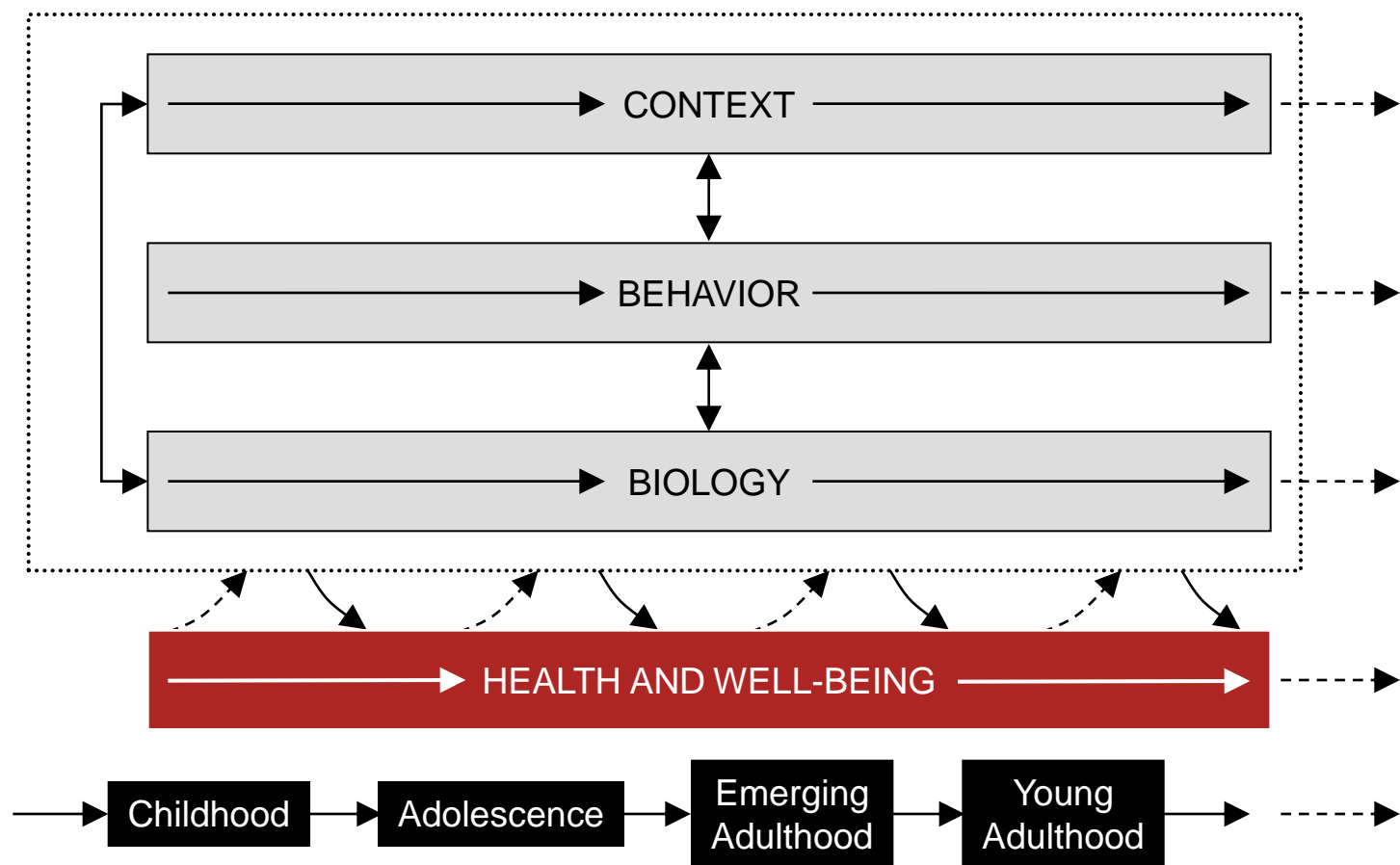
- Follow-up of Wave I respondents
- Data collection in 2007-08 when cohort members were 24-32 years old and completing transition to adulthood
- 92.5% locate rate
- 80.3% response rate
- N=15,701

Wave IV Builds on Add Health Strengths



- Combined rich social and behavioral data with biological data relevant to the current and future health concerns of Add Health cohort at ages 24-32
- Expanded collection of biological data to understand genetics, stress, and pre-disease pathways
- Focused on obesity, stress, and health risk behavior
- Trans-disciplinary program of research in Wave IV: “Social, Behavioral, and Biological Linkages”

Integrative Life Course Theoretical Framework



Wave IV Data Collection



- Social/economic status, behaviors, and experiences
- Psychological status and experiences
- Reported health status and health behavior
- Environmental contexts
- Biomarkers including blood pressure, waist circumference, lipids profile, and other metabolic, inflammatory, and immune function measures as well as repeated measures of height and weight
- DNA from saliva samples

Domains of Wave IV Biological Measures



- Anthropometric: height, weight, BMI, waist circumference
- Cardiovascular: blood pressure, pulse
- Metabolic processes: lipids, glucose, glycosylated hemoglobin
- Immune function: EBV
- Inflammatory processes: CRP
- Genetic: 10 candidate loci

Wave IV Biomarker Collection Sequence



1. Anthropometric (height, weight, waist)
2. Blood pressure
3. Finger prick for blood spots on filter paper
4. Saliva collected for DNA

Wave IV Intra-Individual Variation (IIV) Study



- Purpose: To estimate reliability of biomarker measures by collecting repeat measures on 100 respondents
- Interviewed IIV respondents twice, 1-2 weeks apart
 - Visit 1: full interview + biomarkers
 - Visit 2: abbreviated interview + biomarkers
- Process the biomarkers (labs and technicians masked)
- Use reliability estimates to:
 - Help monitor/assure/control biomarker data quality
 - Correct for measurement error