



The OCTO Twin Study  
"Origins of Variance in the Old-Old"  
NIA, AG 08861

## OCTO-TWIN



The OCTO-Twin Study ("Origins of Variance in the Old-Old") was planned in the late 80's and became the first major population-based longitudinal twin study directed to the oldest old when the data collection started in 1991. On the basis of ubiquitous genetic influence demonstrated earlier in the life-span, the study was designed to study whether the relative impact of genetic influences decrease, increase, or remain at the same magnitude for various aspects of bio-behavioral functioning.

**Design:** The OCTO Twin design is based on five measurement occasions at two-year intervals. Each wave of data collection took 3 years to complete. The table below shows the periods for data collection in Wave 1 – Wave 5.

Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
1991 - 1994	1993 -1996	1995 - 1998	1997 - 2000	1999 - 2002
<i>(91-02-26 – 94-03-30)</i>	<i>(93-05-10 – 96-05-14)</i>	<i>(95-04-28 – 98-05-14)</i>	<i>(97-04-01 – 00-05-15)</i>	<i>(99-12-15 – 02-03-22)</i>

**Sample:** The twins were drawn from the Swedish population-based Twin Registry. At the first wave the twins had to be born 1913 or earlier and both partners in the pair had to accept participation. At the first wave 351 twin pairs (149 MZ and 202 like-sex DZ pairs) were investigated (average age 83.57 years; 67% of the sample were female). The two-year longitudinal follow-ups were conducted on all twins alive who agreed to participate, irrespective of twin status. The participation in the 2<sup>nd</sup> Wave was 235 pairs (568 individuals), in the 3<sup>rd</sup> wave 144 pairs (430 individuals), in the 4<sup>th</sup> wave 4 86 pairs (315 individuals), and at the last occasion (wave 5) 43 pairs (222 individuals participated). The initial OCTO-Twin sample was found to be similar to a representative sample of non-twins aged 80 and older (ref. Simmons et al., 1997). Linkages are continuously performed to the Twin Registry/ Census register and to the death register for vital status.

**Measures and procedure:** The variables included in the assessment battery were originally selected on the basis of demonstrated age-relevance, pertinence to different disciplinary perspectives in the gerontological literature and non-invasiveness. The battery should be possible to administer while visiting participants in their own place of residency . Measures were also chosen to allow extension into advanced ages of previous findings in SATSA. Domains include health and functional ability; cognitive functioning; personality; personal control and mental health; interpersonal relationships; and functional ratings.

All assessments were performed in-person by registered nurses (RNs) who visited the twins at their place of residence, whether in ordinary housing or in institutions. Blood samples were selectively collected from all twins with unknown zygosity for the purpose of zygosity verification and from most subjects for clinical blood chemistry assessments and DNA extractions. Supplement information was gathered by reviews of medical and dental records.

## Overview of measures

### **Background information** (incl. information from baseline in twin registry)

Marital Status and Family relations (childhood until present)

Socioeconomic status (childhood/adulthood)

Education and occupational history

Living Arrangement

Parents Longevity (age, cause of death)

### **Overall Health**

Anthropometric measures (height/ weight etc)

Self-rated Health (overall, relative to age and past)

Medical history per specific conditions/events (self-reported, medical/dental records)

Blood Pressure, heart rate

Medications (number/type of prescribed med (ATC-codes)

Pulmonary Function (PEF)

Blood Samples (DNA, Clinical chemistry)

### **Health Behaviors**

Alcohol Consumption, Tobacco Use

Diet

Exercise

Health life-style (self rated)

### **Sensory/Motor/Neurological functioning**

Vision and Hearing (auditory and visual acuity)

Balance and Gait (McArthur/SATSA battery)

Hand Grip Strength

Finger Agnosia

### **Functional Capacity**

Activities of Daily Living (ADL)

Instrumental ADL (IADL)

ADL (apparatus)

Activity Level

Hobbies

Home Help

### **Cognitive Functioning/Dementia**

Cognitive status; global (MMSE)

Crystallized abilities (Information, Synonyms, Coin Test)

Fluid abilities (Block Design, Figure Logic)

Speed (Digit Symbol, Perceptual Speed)

Dementia work-up; including type of diagnosis and differential diagnosis

### **Memory**

Digit Span Forward / Backward

Episodic memory (Prose Recall, MIR Memory Test, Thurstone Picture Memory)

Delayed Word List Free Recall

Self-rated Memory and Cognition

### Personality and Personal control

Eysenck Personality Scale, Locus of control, Health locus of control

### Interpersonal Functioning

Social (incl. family) networks, network history

Loneliness

Social Support / Informal Help

### Life Satisfaction / Mental Health

Depression (CES-D)

Life Satisfaction (Life satisfaction index)

### Ratings

Vision, hearing, language, cognitive status

## Acknowledgement

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