DEVELOPING THE MICHIGAN TWINS PROJECT TO STUDY HEALTH AND DEVELOPMENT

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GOALS OF THE MTP

- To develop a resource for MSU and outside scientists to examine genetic, environmental, and neurobiological influences on health conditions
  - Mental and physical disorders
WHY TWINS?

Disentangle genetic from environmental risk without extensive biological or environmental measures
TARGET POPULATION

- All twins born in lower Michigan ages 3-25 years
  - ~30,000-40,000 twins
    - Includes same-sex and opposite-sex pairs

- Currently assessing twins ages 3-17 years
  - ~12,000 twins to date
IDENTIFICATION

- Birth records, with the Michigan Department of Community Health (MDCH)
  - Glenn Copeland, Manager, Vital Statistics
  - Two Staff Members: Helen Saunders and Hillary Webb
RECRUITMENT

WRINKLE #1: Birth records confidential

- How contact them?
  - Developed anonymous mailing procedure
    - All recruitment through MDCH
      - Match parent names to drivers license
      - Mail assessment packet
      - Twin families unknown to MSU until they send back completed assessments
  - Up to 4 mailings
RECRUITMENT

WRINKLE #2: Response rates
  • Will this work?
RECRUITMENT

WRINKLE #2: Response rates
- Will this work?
  - YES!
  - Response rates $\geq 50\%$
ASSESSMENT

- Invited to complete health questionnaire on-line or via scantron
  - Basic demographic information
  - Identical versus fraternal twins
  - Developmental “milestones”
    - Prenatal risks, birth weight, etc.
    - Pubertal development (twins 8-17 years)
  - Health conditions for parents and twins
Partial List of Disorders on Health Questionnaire

- Alcoholism
- Allergies
- Asthma
- ADHD
- Cerebral palsy
- Drug abuse
- Delinquency
- Depression
- Anxiety
- Anorexia nervosa
- Bulimia nervosa
- Diabetes
- Head injury
- Bipolar
- Schizophrenia
- Obsessive-Compulsive
- PTSD
- Hearing problems
- Learning disability
- Snoring
- Polycystic ovary syndrome
- Cancer
- Heart problems
- Stroke
- Blindness
- Cystic fibrosis
USES FOR THE MTP

- Immediately generate new data
  - Heritability, gene-environment interactions
    - One of largest and most diverse twin registries
USES FOR THE MTP

- Can be used as a participant “bank”!
  - **Key item:** Would you be willing to be contacted for future research?
    - Select families with health conditions for follow-up studies
      - **EX:** Case-control studies, high-risk longitudinal studies, etc.
    - Advantageous for low base rate disorders
    - ≥95% respond “Yes”
RECRUITMENT FOR FOLLOW-UP STUDIES

- **Data use proposal:**
  - 1-2 page proposal outlining goals, and participants, data and resources needed
    - Minimize overlap with existing projects

- **Recruitment procedures:**
  - Mailings through MDCH

- **Recruitment costs:** Costs for mailings, MTP and MDCH staff time

- **Response rates:** 75-86%
CURRENT PROJECTS

○ **MSU:**
  - Genetic and hormonal influences on **eating disorders** (Klump & Burt)
  - Gene-environment interactions in the development of **conduct disorder** (Burt & Klump)
  - The etiology of **cerebral palsy** (Paneth)
  - Changes in **personality** across adolescence (Hopwood)
  - Psychophysiologial markers of **anxiety** (Moser)
  - Genetic influences on **physical activity** (Pivarnik)

○ **Outside MSU**
  - **Sleep problems** (Moore & Mindell; U of Penn)
THANK YOU!

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