

ICPSR 36365

## **The Common Cold Project: 5 Studies of Behavior, Biology, and the Common Cold**

Description

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## **Bibliographic Description**

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Title: The Common Cold Project: 5 Studies of Behavior, Biology, and the Common Cold

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## **Scope of Study**

Summary: The Common Cold Project began in 2011 with the aim of creating, documenting, and archiving a database that combines final research data from 5 prospective viral-challenge studies that were conducted over the preceding 25 years. The data collection includes the British Cold Study (BCS), which focused on psychological stress; the Pittsburgh Cold Study 1 (PCS1), which built on the BCS; the Pittsburgh Cold Study 2 (PCS2), which examined childhood socioeconomic status and personality; the Pittsburgh Mind-Body Center Cold Study (PMBC), which recorded detailed mood and behavior data over 14 days; the Pittsburgh Cold Study 3, which focused on childhood environment; the Pittsburgh Cold Study 3 Social Rhythm Data (PCS3-SRM), which recorded daily interview data of mood, health behavior, and social interaction; and finally the 5 Study Aggregate, which was designed to facilitate analysis across studies. These studies assessed predictor (and hypothesized mediating) variables in healthy adults aged 18 to 55 years, experimentally exposed them to a virus that causes the common cold, and then monitored them for development of infection and signs and symptoms of illness. Standard control variables (covariates) included age, sex, socioeconomic status (SES), race/ethnicity, body mass index (BMI), season of the year, and specific antibody (Ab) titer to the challenge virus (specific immunity). Three of the studies also include daily evening interviews (conducted for 6 or 14 days before exposure to a virus and assessing daily social interactions, mood, health behaviors, and physical symptoms; and daily

diaries collected during the quarantine period (1 day before and 5-6 days after viral exposure), including cold-specific and nonspecific symptoms, mood, and health behaviors. These data accompany datasets four, five, and seven.

Many common variables were collected across 2 or more studies, and all 5 studies include measures of upper respiratory infectious illness (URI) (e.g., infection, signs and symptoms of a cold, local [nasal mucosa] release of pro- and anti-inflammatory cytokines). Data were also collected on a broad assortment of health-related outcomes not specific to URI including anthropomorphic measures (such as body mass index and waist circumference), complete blood cell counts and differentials, measures of functional immunity, self-reported and objectively assessed health behaviors (smoking, alcohol consumption, physical activity, diet, and sleep), measures of functional physiology across several biological systems (such as pulmonary function, resting cardiovascular function, endocrine, and metabolic activity), and self-reported assessments of physical and psychological health and well-being. In addition, the 5 studies collected data on an extensive range of demographic, health behavior, psychological and social variables including adult SES and subjective social standing, childhood SES, major stressful life events and perceived stress, personality, psychological expectations and beliefs, social relationships, and state and trait affect.

Subject Term(s): biomarkers, health behavior, illness, psychological wellbeing, respiratory diseases, social integration, social interaction, social roles, social support, stress

Smallest Geographic Unit: none

Geographic Coverage: Global, Great Britain, Pennsylvania, Pittsburgh, United States

Time Period:

- 1986 - 1989, British Cold Study
- 1993 - 1996, Pittsburgh Cold Study 1
- 1997 - 2001, Pittsburgh Cold Study 2
- 2000 - 2004, Pittsburgh Mind-Body Center Cold Study
- 2007 - 2011, Pittsburgh Cold Study 3

Date(s) of Collection:

- June 10, 1986 - July 4, 1989, British Cold Study
- May 7, 1993 - April 19, 1995, Pittsburgh Cold Study 1
- May 24, 1997 - July 21, 2000, Pittsburgh Cold Study 2
- December 15, 2000 - April 3, 2004, Pittsburgh Mind-Body Center Cold Study
- July 21, 2007 - August 20, 2011, Pittsburgh Cold Study 3

Unit of Observation: Individual

Universe: Healthy adults aged 18-55 years.

Data Type: clinical data

survey data

Data Collection Notes: The variables SUBJ\_ID and STUDY\_ID are present in all datasets within the collection.

The evening interview data files for datasets 4, 5, and 7 have not been processed by ICPSR and are available as "other" downloadable materials.

For more information on The Common Cold Project, such as sample design, measurements, and related publications, please visit [The Common Cold Project](#) Web site.

## Methodology

Purpose of the Study: The Common Cold Project aimed to create, document, and archive a database that combined research data from 5 prospective viral-challenge studies that were conducted from 1986 to 2011.

Study Design: The British Cold Study (BCS): After completing baseline psychosocial questionnaires and biological assessments (immune assessments and measurement of cotinine [a biochemical indicator of smoking] in serum) participants were administered nasal drops containing one of 5 respiratory viruses: rhinovirus (RV) type 2 (n=86), RV9 (n=126), RV14 (n=92), respiratory syncytial virus (RSV, n=40), or coronavirus type 229E (n=55). Starting 2 days before viral challenge and continuing through 6 days after challenge, each participant was examined in quarantine daily by a clinician using a standard checklist of respiratory signs and symptoms. Approximately 28 days after challenge, participants' own physicians collected a second serum sample, which was sent to the CCU for serological testing. The definition of a clinical illness in this study was based on the combination of infection (based on viral shedding and/or 4X increase in antibody titers to the challenge virus) and physician diagnosis based on daily cold symptom protocols.

Pittsburgh Cold Study 1 (PCS1): After completing baseline psychosocial questionnaires and biological assessments, participants were administered nasal drops containing either rhinovirus 39 (RV39; n=147) or rhinovirus 21 (RV21; n=129). They were then followed in quarantine for 5 days and monitored for development of infection and objective

signs of illness. Approximately 28 days after virus exposure, blood was collected for serological testing. Volunteers were considered to have a cold if they both were infected with the study virus and met illness criteria.

Pittsburgh Cold Study 2 (PCS2): After completing baseline psychosocial questionnaires and biological assessments, participants were administered nasal drops containing either rhinovirus 39 (RV39; n=228) or RV23 (n=106). They were then followed in quarantine for 5 days and monitored for development of infection and objective signs of illness. Approximately 28 days after virus exposure, blood was collected for serological testing. Volunteers were considered to have a cold if they both were infected with the challenge virus and met illness criteria.

The Pittsburgh Mind-Body Center (PMBC) Study: This study included detailed daily interviews with participants over 14 consecutive days to assess social interactions (number of interactions, with whom they were interacting, etc.), mood, and health behaviors. After completing baseline psychosocial and biological assessments, participants were administered nasal drops containing the challenge virus, followed in quarantine for either 5 (for RV39) or 6 (for influenza) days, and monitored for development of infection and objective signs of illness. Approximately 28 days after virus exposure, blood was collected for serological testing. Participants were considered to have a cold if they both were infected with the challenge virus and met illness criteria.

Pittsburgh Cold Study 3 (PCS3): After completing baseline psychosocial questionnaires and biological assessments (e.g., biological aging markers, saliva cortisol), participants were administered nasal drops containing rhinovirus 39 (RV39). They were then followed in quarantine for 5 days and monitored for development of infection and objective signs of illness. Approximately 28 days after virus exposure, blood was collected for serological testing. Participants were considered to have a cold if they were both infected with the challenge virus and met illness criteria.

Sample: The British Cold Study (BCS) was a prospective viral challenge study conducted from 1986-1989 among healthy volunteers ages 18-54 years (mean 33.6; SD 10.6). Participants were 153 men and 246 women who were residents of Great Britain and who volunteered to participate in trials at the Medical Research Council's Common Cold Unit (CCU) in Salisbury, England. All were judged to be in good health after clinical and laboratory examination on their arrival at the unit. At baseline, participants completed an in-person health evaluation to assess study eligibility.

Pittsburgh Cold Study 1 (PCS1) was a prospective viral challenge study conducted from 1993-1996 among healthy volunteers ages 18-55 (mean 29.1; SD 9.1). Participants were 125 men and 151 women from the

Pittsburgh, Pennsylvania metropolitan area who responded to newspaper advertisements and were judged to be in good health after a medical examination. At baseline, participants completed a telephone screening followed by an in-person health evaluation by study physicians to assess study eligibility.

Pittsburgh Cold Study 2 (PCS2) was a prospective viral challenge study conducted from 1997-2001 among healthy volunteers ages 18-54 (mean 28.9; SD 10.4). Participants were 159 men and 175 women from the Pittsburgh, Pennsylvania metropolitan area who responded to newspaper advertisements and were judged to be in good health after a medical examination. At baseline, participants completed a telephone screening followed by an in-person health evaluation by study physicians to assess study eligibility.

The Pittsburgh Mind-Body Center (PMBC) Study was a prospective viral challenge study conducted from 2000-2004 among healthy volunteers ages 21-55 (mean age 37.3; SD 8.8). Participants were 95 men and 98 women who responded to advertisements and were judged to be in good health. To maximize the rate of infection, only volunteers with viral-specific antibody titers less than or equal to 4 were deemed eligible for participation in the study. Prior to enrollment, volunteers completed a telephone screening, and screened participants were followed up with an in-person health evaluation by a study physician to further assess eligibility.

Pittsburgh Cold Study 3 (PCS3) was a prospective viral challenge study with data collected from 2007-2011 among healthy volunteers ages 18-55 (mean 30.1; SD 10.9). Participants were 123 men and 90 women from the Pittsburgh, Pennsylvania metropolitan area who responded to newspaper advertisements and were judged to be in good health after a medical examination. Prior to enrollment, volunteers completed a telephone screening interview followed by an in-person physical health evaluation conducted by a study physician. To maximize the rate of infection, only eligible volunteers with viral-specific antibody titers less than or equal to 4 were included in the study.

For more information on sampling and inclusion/exclusion criteria, please visit the Human Subjects section of the [Common Cold Project](#) Web site.

Weight: The data are not weighted.

Data Source: British Cold Study, 1986-1989

Pittsburgh Cold Study 1, 1993-1996

Pittsburgh Cold Study 2, 1997-2001

Pittsburgh Mind-Body Center Cold Study, 2000-2004

Pittsburgh Cold Study 3, 2007-2011

Mode of Data Collection: coded on-site observation

face-to-face interview

on-site questionnaire

telephone interview

Presence of Common Scales: For detailed information on measurement tools and scales used in The Common Cold Project, please visit [The Common Cold Project](#) Web site.

Extent of Processing: Checked for undocumented or out-of-range codes.

## Access and Availability

Note: A list of the data formats available for this study can be found in the [summary of holdings](#). Detailed file-level information (such as record length, case count, and variable count) is listed in the [file manifest](#).

Original ICPSR Release: 2016-09-02

- Dataset(s):
- DS1: British Cold Study
  - DS2: Pittsburgh Cold Study 1
  - DS3: Pittsburgh Cold Study 2
  - DS4: Pittsburgh Mind-Body Center Cold Study
  - DS5: Pittsburgh Cold Study 3
  - DS6: Pittsburgh Cold Study 3 - Social Rhythm Data
  - DS7: 5-Study Aggregate