

# IN EUROPE, HOW REPRESENTATIVE ARE OVERWEIGHT / OBESE SUBJECTS RECRUITED VIA THE INTERNET ?

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## BACKGROUND

- The PROCEED is a multinational observational cohort of overweight and obese subjects (BMI ≥ 25 kg/m<sup>2</sup>) willing to take action to lose weight during the next 12 months, recruited in 2005 through an existing Internet panel in Germany and the UK.
- All data collected were self-reported via the Internet.
- The range of demographic, behavioral, and health characteristics of subjects recruited via the Internet has not been yet established in European countries.

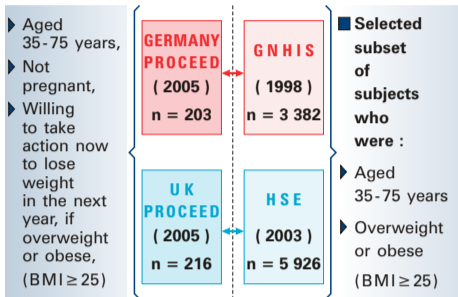
## OBJECTIVES

- To compare distributions of self-reported demographic, behavioral and health characteristics of subjects recruited via the Internet in Germany and the UK to a nationally representative sample in each country in order to understand what differences may exist between the Internet based cohort and a national probability-based sample.

## METHODS

### INCLUSION CRITERIA

- Based on the age and BMI range in PROCEED, subsets were selected from each national sample:
- 1998 German National Health examination and Interview Survey (GNHIS) for Germany,
- 2003 Health Survey of England (HSE) for the UK.



### VARIABLE DEFINITIONS

	PROCEED GERMANY AND UK	GNHIS	HSE
Smoker	Currently smoke cigarettes	Smoke now (daily or occasionally)	Smoke cigarettes nowadays
Drink alcohol	Currently drink alcoholic beverages (occasionally, < 7 or > 7 weekly)	Any response except "almost never" to question "Did you drink beer with normal or high alcohol content, wine, high-proof alcoholic drinks in the last 12 months?"	Drink alcohol "nowadays", this includes drinking occasionally and drinks you brew or make at home
Education	For Germany: baccalaureate (in German: Abitur) For UK: Bachelor's degree (e.g. BSc, BA), Master's degree (e.g. MSc, MA), Doctorate (e.g. PhD)	Baccalaureate (in German: Abitur)	NVQ4 / NVQ5 / Degree or equivalent
Income	For Germany: not available For UK: Annual household income < £ 10 000	Not available	Annual household income < £ 10 400
Professional training	For Germany: Apprenticeship ("Lehre") For UK: not available	% Apprenticeship (in German: Lehre)	Not available
Active	Participated at least one a month in one or more moderate or vigorous physical activities of at least 10 minutes duration within the past month	Have you participated in sports or other strenuous activities in free time that cause you to sweat or to be out of breath in the past 3 months?	Any moderate 30-minute activity in the past 4 weeks, including housework, manual work, walking and sports
Dyslipidemia	Based on self-reported lab value: Total cholesterol ≥ 5.180 mmol/L LDL ≥ 3.367 mmol/L HDL < 1.036 mmol/L for men, < 1.295 mmol/L for women Triglycerides > 1.7 mmol/L OR self-reported history of high cholesterol, low HDL cholesterol, abnormal lipids or triglycerides (ever told by a doctor)	Not available	Based on self-reported lab value: Total cholesterol ≥ 5.180 mmol/L LDL ≥ 3.367 mmol/L HDL < 1.036 mmol/L (men), < 1.295 mmol/L (women) Triglycerides > 1.7 mmol/L

▶ Presence of hypertension, diabetes and cholesterol was based on self-reported in PROCEED and national surveys.

### PATIENT CHARACTERISTICS

- Separately for each country, PROCEED data were standardized for gender and BMI category observed in the subset of the national sample.
- Demographics, and selected health and behavior characteristics of the PROCEED cohort were compared with national estimates by country.

## RESULTS

### AGE, WAIST CIRCUMFERENCE AND BMI

#### PROCEED VERSUS GNHIS (GERMANY)

	GERMANY PROCEED (2005) n = 203	GNHIS (1998) n = 3382
Mean age (years)	46.8	54.6
Mean WC (cm)	104.0	99.0
Mean BMI (kg/m <sup>2</sup> )	30.2	29.6

#### PROCEED VERSUS HSE (UK)

	UK PROCEED (2005) n = 216	HSE (2003) n = 5926
Mean age (years)	52.2	53.0
Mean WC (cm)	100.3	99.1
Mean BMI (kg/m <sup>2</sup> )	30.4	29.9

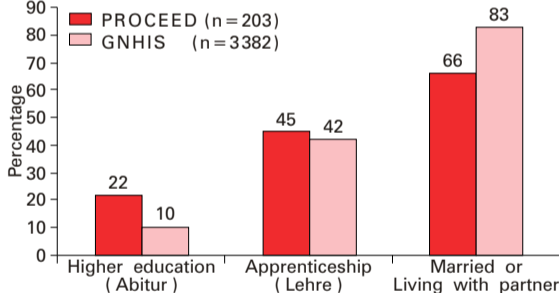
- The average age in the German PROCEED cohort (n=203) was 7.8 years younger than the national survey estimate, and the average WC was 5 cm higher.

- The average age and WC in the UK PROCEED cohort (n=216) were similar to the national survey estimates.

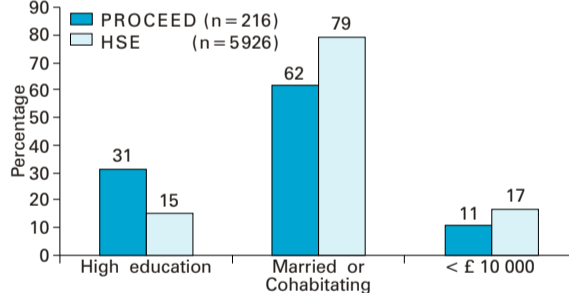
- Because the UK and German PROCEED cohorts were standardized by BMI categories, we see similarities in average BMI (and possibly WC) compared to the national survey samples.

### DEMOGRAPHIC CHARACTERISTICS

#### PROCEED VERSUS GNHIS (GERMANY)



#### PROCEED VERSUS HSE (UK)

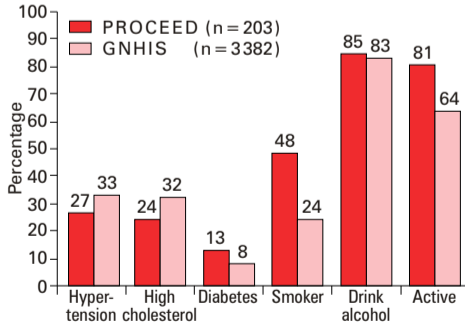


- Proportionately more PROCEED subjects reported having college or higher education (22% versus 10% in Germany; 31% versus 15% in the UK).

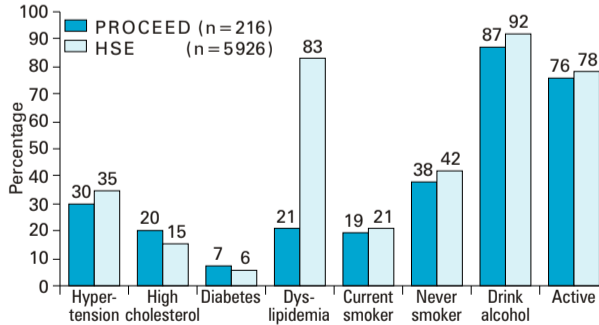
- PROCEED subjects were proportionately less likely to be married or cohabitating in both Germany and the UK.

### HEALTH CONDITIONS AND BEHAVIOR

#### PROCEED VERSUS GNHIS (GERMANY)



#### PROCEED VERSUS HSE (UK)



- PROCEED subjects in Germany and the UK presented similar characteristics to each national survey population in terms of level of alcohol consumption, prevalence of hypertension, prevalence of diabetes.

- In the UK, the prevalence of dyslipidemia (based on self-reported data) was much lower in PROCEED compared to the prevalence in the national survey (based on professionally measured data).

- The German PROCEED cohort had a higher proportion of current smokers compared to GNHIS data (48% versus 24%) and a higher proportion of subjects physically active (81% versus 64%) while the UK PROCEED cohort was very similar to HSE data for these characteristics.

## LIMITATIONS

- In Germany, observed differences could be driven by difference in year of administration of PROCEED questionnaire (2004) and national survey (1998 for German national survey).
- In the UK, the underestimated prevalence of dyslipidemia in PROCEED may be explained by a lack of knowledge of dyslipidemia:
  - Lab values in PROCEED were reported by only 10% of subjects and dyslipidemia was defined by self-reported recollection,
  - In the HSE, dyslipidemia was defined based on professionally measured lab values.

## REFERENCES

- For GNHIS**  
B M Bellach, H Knopf, W Thefeld: Der Bundes Gesundheits survey 1997/98. [The German Health Survey, 1997/98]. *Gesundheitswesen* 1998, 60 Suppl 2: S 59 - S 68.
- For HSE**  
National Centre for Social Research and University College London, Department of Epidemiology and Public Health, Health Survey for England, 2003 [computer file]. Colchester, Essex: UK Data Archive [distributor], March 2005. SN: 5 098.

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