



## New Nutritional Research Indicates College Students Face Obesity, High Blood Pressure, Metabolic Syndrome

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DURHAM, N.H. – Obesity, high blood pressure, high cholesterol, and inactivity: they're not just your father's problems any more, University of New Hampshire research finds. New data on the widely unstudied demographic of college students indicates that this group of 18 – 24-year-olds are on the path toward chronic health diseases. Although limited, national data suggest the trend is not unique to UNH.

The UNH data, collected from more than 800 undergraduates enrolled in a general-education nutrition course, find that at least one-third of UNH students are overweight or obese, 8 percent of men had metabolic syndrome, 60 percent of men had high blood pressure, and more than two-thirds of women are not meeting their nutritional needs for iron, calcium or folate.

"They're not as healthy as they think they are," says UNH lecturer Ingrid Lofgren, who is collecting and analyzing the data with her Nutrition in Health & Well Being co-teachers Joanne Burke and Ruth Reilly, both clinical assistant professors, and lecturer Jesse Morrell.

The researchers, who presented their findings at the recent Experimental Biology Annual Meeting in Washington, D.C., initially asked students to engage in a variety of health-indicator screenings like blood pressure and cholesterol to bring the class alive with interactivity. They soon realized, however, that the size of the class (525 students per semester enroll in the course; 40 percent of UNH undergraduates take the course) gave them a gold mine of health information on a group about which little is known.

"This is a very understudied population. They're very hard to reach," says Reilly, noting that large phone surveys of this age group, such as one conducted by the Centers for Disease Control in 2003, generally do not reach students at college or cell phones.

As part of the course curriculum, students conducted a range of health screenings on themselves, which the instructors say is an effective teaching tool. "Students feel they're invincible; they think they're cholesterol isn't going to be high, that's their dad's," says Burke.

"When you tell students, 'this is your data,' they sit up and pay attention," adds Morrell.

Students completed questionnaires on their lifestyle behaviors and dietary habits, chronicling their smoking, exercise, alcohol consumption, and consumption of fruits and vegetables. Their body mass index (BMI) was calculated from their height and weight, their waist circumference was measured, and they were screened for blood pressure as well as glucose, triglycerides, total cholesterol, and high-density cholesterol. The students also completed a three-day food diary and analyzed their calories, carbohydrates, and nutrient intakes with nutrition software.

Individual results shocked many of the students, and the aggregated data contradicted the notion that college students are at the peak of health. Metabolic syndrome, a cluster of five risk factors (high blood pressure, excess abdominal fat, high blood glucose, high triglycerides, and low HDL or “good” cholesterol) that are predictive of future development of heart disease and diabetes, is particularly prevalent in males. Sixty-six percent of males (compared to 50 percent of females) had at least one risk for metabolic syndrome, and eight percent of males had metabolic syndrome.

“These individuals, if they continue on this trajectory, are going to be much more of a health burden at age 50 than their parents are,” says Burke.

The vast majority of students – 95 percent of women and 82 percent of men – are not meeting nutrient recommendations for fiber. Women’s intake of the important nutrients iron (23 percent meet recommendations), calcium (33 percent meet recommendations) and folate (32 percent meet recommendations) are remarkably low. Twenty-three percent of men and 34 percent of women participated in less than 30 minutes of activity per day.

The good news? “We have very few smokers,” says Reilly. Also, Morrell notes that UNH students may be slightly healthier than their peers; national rates of overweight and obesity in this group are close to 40 percent.

The other good news is that these nutritional benchmarks hit students at a time – and in an environment – when they’re susceptible to change. “Late adolescence is a great time to impart good health behaviors,” says Reilly, noting that most college students are making independent choices about food and activity for the first time in their lives.

“It was a real wake-up call,” says Heather Carmichael, a UNH senior and former Nutrition in Health & Well Being student. “I was a vegan and I thought my diet was superb, but no. I wasn’t getting enough calcium and I had one risk factor for metabolic syndrome. I was shocked.”

The research can also help inform school policy, from portion size education in dining halls to routine blood pressure screenings at health services.

In addition to publishing their results, the faculty team is looking to help other universities – especially those with greater ethnic diversity than UNH – replicate their study. “We’re collecting data that’s useful to the students, to the university, and to us. The project is a win-win for everyone,” says Morrell.

