In a conventional sense, *detox* is referred to as cleansing the body from exogenous toxic substances, such as drugs and alcohol. There are thousands of detox centers around the country aimed at the treatment of drug and alcohol abuse. In this regard, detoxes involve pharmacologic intervention along with psychological support. Detox diets are not a typical treatment at these centers.

In the mainstream media, the concept of detoxification has become trendy and provided a means for marketing schemes to widely promote detox and claim amazing health benefits, most notably weight loss. Since detoxes typically involve diet modification and often calorie restriction, weight loss is a typical result. Detoxes involving water fasts, juice fasts, and limited diets can be referred to as a very low calorie diet (VLCD), defined as a diet less than 800 kcal/day. VLCDs have been shown to result in rapid, substantial weight loss. However, maintaining these diets is very challenging, and weight loss is not maintained. Subsequent weight gain is typical. The sustainability of the weight loss from detoxes is questionable.[4] Another commercially promoted detox is the "Master Cleanse," which consists of a 10-day diet of spicy lemonade.

Current scientific literature is lacking regarding the mechanisms involved in detoxification diets. In addition, there is little research establishing safety, efficacy, indications, and contraindications for detoxes. This article reports on three pilot studies of detoxes: (1) a survey of naturopathic medical student detox experiences; (2) a symptom survey of people currently undergoing a detox; and (3) a phone survey of general public who have used detox.

Methods

NCNM Student Survey

The research team reviewed popular literature, commercial products, and common cultural beliefs surrounding the term *detox*. From this literature, a 60-question survey was developed to obtain a broad overview of the perceptions and experiences with detoxes. Following IRB approval, the survey was administered to naturopathic medical students at the National College of Natural Medicine (NCNM). The electronic survey was easily accessible to NCNM students and allowed us to ensure that each student completed only one survey. The survey was administered anonymously. It was distributed in three ways. First, a schoolwide e-mail detailed the purpose of the study and provided a link to the electronic survey. Second, the team set up computers outside classrooms. Finally, the research team provided a link to the survey on the desktop of library computers. The survey was available to NCNM students for one month.

Nature Cure Class Symptom Survey

As part of the annual Nature Cure class at NCNM, students are required to complete a detox of their choice. Protocols ranged in length from 1 to 7 days. The research team compiled a symptom survey that was distributed by the course instructor, prospective to the detox activity. Students completed one or more questionnaires according to the duration of their detox. Participation in completion of the questionnaire was optional. Names of participants were not obtained. Questionnaires were collected at the end of the week by the research team.

Phone Survey of the Community

Members of the research team conducted phone interviews with people who had experienced at least one detox within the last three years. Members of the research team surveyed acquaintances and members of their community via word of mouth. A questionnaire was given to participants. Answers to the survey were audio recorded and transcribed.

Survey Data Analysis

The quantitative data from each surveyed group were analyzed in a spreadsheet application. 390 students completed the NCNM Student Survey, 13 completed the Nature Cures Symptom Survey, and 13 phone interviews were conducted. The qualitative survey data were compiled into general categories, which were coded to cluster similar experiences under specific headings. For example, types of detoxes were organized to fit in the categories of Kit/Supplement, Juice/Tea, Fast, Dietary changes, and Other. Symptoms elicited by the detoxes were similarly categorized. If the survey was collected while someone was completing a detox, the participant was asked to rate severity of their symptoms. These ratings were not collected for past detoxes.

Results

NCNM Survey

The first pilot study collected people's experience with detoxes. Students at NCNM provided a convenient population who had completed a large number of detoxes, making data readily available. Data were collected from 88% of the NCNM student body, which included 390 male and female students varying in age, with the largest number of students between the ages of 21 and 29 (51%). Characteristics of the respondents were representative of the NCNM population, with 76% female and 83% white (Table 1).

Table 1: Characteristics of Respondents of NCNM Survey

Survey Response		N=390 %
Female		76
Age 21–29		51
Age 30+		44
Ethnicity	Caucasian	83
	Hispanic/Latin	3
	African American	1
	Other	11
Vegetarians		15
Consume >5 servings/day of fruits and vegetables		35
Consume Alcohol		60
Nonsmokers		82
Overweight		15

Survey questions covered knowledge and use of detoxes. Many students had completed more than one detox. Students were asked to report the type, duration, and motivation for up to five detoxes. Participants were also asked to recall symptoms that they experienced during specific types of detoxes.

Several types of detoxes were used frequently among NCNM students. Tea/Juice (28%), Dietary changes (25%), and Kit/Supplements (23%) were used most frequently. Fasting was also popular, with 18% of respondents reporting that they had completed a fast. The remaining 6% of respondents reported use of other unspecified types (Figure 1).

There were many motivations reported for completing a detox. Respondents were allowed to choose as many options as applied. The most frequent motivation was elimination of toxins (87%). Improving energy (59.4%), enhancing immunity