



# The prevalence of herb and dietary supplement use among children and adolescents in the United States: Results from the 2007 National Health Interview Survey

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(NHIS)

## Summary

**Objective:** The purpose of this study is to examine the national prevalence of herb and dietary supplement usage among children and adolescents age 4–17 in the United States, and to identify population factors associated with usage.

**Methods:** Weighted population estimates are derived from the 2007 National Health Interview Child Complementary and Alternative Medicine Supplement (sample  $n = 9417$ ). Wald chi-square tests are used to compare factors associated with herb and dietary supplement use.

**Results:** An estimated 2.9 million children and adolescents used herbs or dietary supplements in 2007. Pediatric herb and supplement use was more common among adolescents and non-Hispanic whites, and positively associated with parental education and household income. Children with activity limitations due to chronic health conditions, long-term prescription use, or relatively heavy use of physician services were also more likely to use herbal supplements. Echinacea and fish oil were most commonly used herbs and supplements.

**Conclusions:** Children in the US appear to use herbs or dietary supplements at a much lower rate than adults. This analysis shows a pattern of moderate and appropriate herb and supplement use in the pediatric population.

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## Introduction

National surveys show that adult use of complementary and alternative medicine (CAM) is increasingly common in the United States,<sup>1–4</sup> and that herbal medicine is the most prevalent form of CAM.<sup>5,6</sup> While many herbal preparations and dietary supplements appear to have good safety profiles,<sup>7,8</sup> some can cause serious adverse reactions<sup>9–11</sup>

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or drug interactions.<sup>12–15</sup> Pediatric use of herbs or dietary supplements has raised particular concern,<sup>16</sup> due to physiological differences between children and adults,<sup>17</sup> dosage issues,<sup>18</sup> and the presence of potentially dangerous additives or adulterants.<sup>19</sup>

The national scope of pediatric herb and supplement use in the US has not been clearly established. Most of the published research relies on convenience samples of specific disease groups (e.g., children with attention deficit disorder,<sup>20</sup> asthma,<sup>21</sup> or cancer<sup>21,22</sup>) and/or care settings (e.g., pediatric clinics,<sup>23–26</sup> children's hospitals,<sup>27</sup> emergency departments<sup>28,29</sup>). The Medical Expenditure Panel Survey (MEPS) includes some CAM questions for children, but published reports aggregate herbs and dietary supplements with a variety of other therapies.<sup>30,31</sup> The National Health and Nutrition Examination Surveys (NHANES) focus on herbal supplements, but published studies are limited to adolescents (age 11–18).<sup>32</sup> The 2007 National Health Interview (NHIS) CAM Survey allows detailed analysis of specific pediatric CAM therapies, including herbs and dietary supplements. The objectives of this study are to compare child and adult rates of herb and supplement use, identify child attributes associated with use, and identify specific herbs and dietary supplements used and conditions treated.

## Methods

### Data source

The National Health Interview Survey (NHIS) is a continuing probability survey of households' representative of the civilian noninstitutionalized population of the US, conducted by the National Center for Health Statistics (NCHS). The NHIS is one of the most comprehensive and current sources of population data on health in the US.<sup>33</sup> This public use database is available for download on the NCHS website at <http://www.cdc.gov/nchs/nhis.htm>.<sup>34</sup>

The NHIS is a cross-sectional household survey. NCHS interviewers conduct face-to-face interviews with an available household member and enter responses into a handheld computer that codes conditional responses and performs real-time consistency checks. Descriptive data on all household members are collected for the Family Core Survey, and one adult and one child (if there is a child in the family) is randomly selected for more detailed questions in the Sample Adult and the Sample Child Core Surveys. Information for the child is obtained from a knowledgeable adult in the household (usually a parent).

Special supplements are administered along with the core surveillance items to address specific policy and population concerns of various federal research entities. The 2007 NHIS/CAM, co-sponsored by the National Center for Complementary and Alternative Medicine (NCCAM, NIH) and the Office of Dietary Supplements (ODS, NIH), is a special supplement to the 2007 Sample Adult ( $N=23,293$ ) and Sample Child ( $N=9,417$ ) surveys. Analyses reported here use data from the Sample Child NHIS/CAM.

### Herb and dietary supplement use variables

In the NHIS Child CAM survey, the parent or other adult proxy for 320 children aged 4–17 (3.4% of the sample) was asked to answer to the following question:

“Now I am going to ask you about some additional health practices for your child. The first practice I'll ask about is herbal supplements, then later I'll ask about vitamins and minerals.

People use herbs and other non-vitamin supplements for their children for a variety of reasons. By herbal supplement we mean pills, capsules or tablets that have been labeled as a dietary supplement. This does NOT include drinking herbal or green tea.

DURING THE PAST 12 MONTHS, has [S.C. name] taken any herbal supplements listed on this card?”

For the parent or other adult proxy who answered yes to the question, a list of 45 herbs and dietary supplements was then shown to each respondent. This group was compared to the 8959 children (95.1% of the sample) who had not used herbs or dietary supplements in the past year.

Subsequent questions dealt with various aspects of herb and supplement use. Proxies for the 320 children who used herbs or dietary supplements during the past year were asked if they had taken any of these preparations in the past month, and if so, which 1 or 2 they had taken most often. Only 170 children (53.1% of users in the sample) reported using herbs or dietary supplements in the previous month and could identify specific preparations taken. Within this group, 77 children reported using these specific herbs or dietary supplements to treat a specific health problem or condition. This relatively low response rate precluded detailed estimates of the preparations taken and conditions treated.

**Table 1** Use of complimentary and alternative medicine (CAM) in past year by children and adults in the US.

	Age 4–17		Age 18 or older		<i>p</i>
	Est. <i>N</i> (1000s)	%	Est. <i>N</i> (1000s)	%	
Used any herbs or dietary supplements in the past 12 months	2850	3.9	38,797	17.4	<.01

National Center for Health Statistics (2008), 2007 NHIS Child Complementary and Alternative Medicine File.

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