

FINANCIAL REPORT OF BIOMEDICAL RESEARCH AND TRAINING IN NUTRITION, FY 2002

THE LEADER IN FEDERALLY SUPPORTED NUTRITION RESEARCH AND TRAINING

In Fiscal Year 2002, the NIH continued to lead all Federal agencies in financial support of nutrition research and training, with a total of \$917 million. This total represents the combined individual contributions of the 18 NIH institutes and three centers that supported biomedical nutrition research and training.

Actual obligations for FY 2002 biomedical nutrition research and training for all NIH institutes and centers (ICs) are shown in Table 1 as amounts and as percentages of their total obligation.

Leading the ICs in total dollars expended in support of nutrition research were NCI, NIDDK and NHLBI, collectively accounting for nearly two-thirds of the total NIH nutrition related spending.

Table 1. Actual Obligations, NIH Biomedical Nutrition Research and Training, as a Percentage of Total ICD Obligations, by NIH Component, FY 2002 (in thousands of dollars)

Institute / Center (IC)	Nutrition Research and Training*	Total IC Obligations**	Nutrition as Percentage of Total IC Obligations
NCI	204,425	4,177,830	4.9
NHLBI	184,367	2,569,794	7.2
NIDCR	10,148	342,292	3.0
NIDDK	203,741	1,560,013	13.1
NINDS	10,150	1,325,193	0.8
NIAID	16,806	2,339,779	0.7
NIGMS	2,340	1,722,890	0.1
NICHD	50,957	1,110,459	4.6
NEI	26,891	580,047	4.6
NIEHS	22,644	644,730	3.5
NIA	55,990	891,282	6.3
NIAMS	3,366	447,682	0.8
NIDCD	2,881	341,260	0.8
NIMH	18,941	1,245,292	1.5
NIDA	5,093	892,639	0.6
NIAAA	9,869	383,174	2.6
NCRR	37,479	1,010,169	3.7
FIC	1,282	56,787	2.3
NINR	5,862	120,217	4.9
NCCAM	42,369	104,334	40.6
NHGRI	1,362	428,248	0.3
TOTAL⁺	\$916,964	\$22,294,111	4.1

* Actual obligations. Source: Human Nutrition Research and Information Management (HNRIM) System database.

** Obligations. Source: NIH Office of Program Planning and Evaluation.

⁺ Total excludes obligations for National Library of Medicine, Office of the Director, and buildings and facilities.

Leading NIH components in terms of the percentage of total IC budget dedicated to nutrition research and training were NCCAM, NIDDK and NHLBI, with 40.6 percent, 13.1 percent and 7.2 percent, respectively, for FY 2002.

TRENDS IN NUTRITION RESEARCH AND TRAINING, 1993-2002

NIH nutrition research and training dollars have increased steadily during the past decade, growing from \$373 million in FY 1993 to \$917 million in FY 2002. Actual obligations for nutrition research and training by NIH component during the past 10 years are shown in Table 2. The trend in dollars has been steadily upward for most ICs.

Table 2. Actual Obligations for Nutrition Research and Training by NIH Component, Fiscal Years 1993-2002 (Thousands of Dollars)

NIH Component	1993 ^a	1994 ^b	1995	1996	1997 ^c	1998	1999 ^d	2000	2001	2002
Total	\$373,251	\$400,701	\$428,687	\$438,813	\$453,306	\$494,443	\$553,519	\$694,909	\$789,269	\$916,964
NIA	18,595	19,942	20,516	20,203	19,226	20,763	26,720	31,380	42,579	55,990
NIAAA	4,303	3,431	3,901	3,992	7,046	7,632	8,089	9,424	7,790	9,869
NIAID	6,322	6,763	7,963	7,873	10,973	12,355	13,907	16,115	17,631	16,806
NIAMS	5,426	5,520	3,998	2,717	4,846	4,569	4,544	4,531	2,984	3,366
NCI	94,326	104,939	112,781	116,567	121,739	119,829	113,223	171,491	184,535	204,425
NICHD	33,118	31,165	32,818	28,823	29,585	28,401	35,029	41,602	45,549	50,957
NIDCD	2,375	2,162	2,150	2,366	2,716	2,514	1,757	1,610	1,478	2,881
NIDCR	3,550	4,164	6,408	6,087	8,225	6,755	9,109	9,261	10,671	10,148
NIDDK	72,714	70,049	75,980	93,322	98,673	105,026	130,115	151,007	182,613	203,741
NIDA	3,028	2,548	2,621	2,878	2,226	1,980	3,450	4,100	4,492	5,093
NIEHS	4,671	4,654	4,826	4,068	5,806	7,078	6,615	10,839	14,286	22,644
NEI	15,538	16,057	16,634	14,218	14,913	15,665	17,438	20,796	23,724	26,891
NIGMS	2,465	2,169	2,503	2,628	2,265	2,120	2,088	2,854	2,326	2,340
NHLBI	67,879	70,545	73,466	75,306	88,943	118,886	124,233	130,491	146,592	184,367
NIMH	10,592	7,760	8,446	7,481	7,158	7,363	7,450	11,782	15,153	18,941
NINDS	1,826	1,777	1,738	1,190	999	4,032	3,870	9,048	10,358	10,150
NINR*	2,988	2,787	3,106	1,851	2,401	2,775	3,434	4,487	5,134	5,862
NCRR	23,524	21,995	22,130	21,626	25,446	26,345	31,759	34,431	35,032	37,479
FIC	10	89	166	97	120	354	382	676	663	1,282
NHGRI	-	-	-	-	-	-	-	-	1,287	1,362
OD	-	22,183	26,535	25,520	-	-	10,305	28,985	34,394	42,369

^a In FY 1993 the three research institutes of ADAMHA were transferred to NIH, and NCNR was made an institute and renamed NINR.

^b In FY 1994 includes funding for the Women's Health Initiative.

^c In FY 1997 Women's Health Initiative transferred to NHLBI.

^d In FY 1999 includes funding for the National Center for Complimentary and Alternative Medicine

As shown in Table 3, total NIH expenditures for nutrition research and training have increased consistently since FY 1993 and have constituted approximately 4 percent of total NIH obligations during that time. This table also shows total NIH biomedical nutrition research and training support in constant, as well as current dollars. For example, nutrition research and training support showed a \$544 million, or 146 percent, increase between FY 1993 and FY 2002 in current (unadjusted) dollars. In constant dollars (i.e., adjusted for inflationary price increases), nutrition research and training support in FY 2002 represented an 80 percent increase over the FY 1993 level.

In FY 2000, the latest year for which complete data for all agencies are available, the NIH led all Federal agencies in financial support of nutrition research and training with a total of \$695 million, as shown in Figure 1. This total represented 84 percent of all Federal expenditures and 99 percent of all DHHS nutrition research and training expenditures in FY 2000.

Table 3. Actual Obligations, NIH Biomedical Nutrition Research and Training, in Current and Constant Dollars, and as a Percentage of Total NIH Obligations FY 1993-2002 (in thousands of dollars)

Fiscal Year	Nutrition Research and Training, Current Dollars	Nutrition Research and Training, Constant Dollars*	Total NIH Obligations	Current Nutrition Dollars as a Percentage of Total NIH Obligations
1993	373,251	373,251	9,919,955	3.8
1994	400,701	385,768	10,579,468	3.8
1995	428,687	398,894	10,901,647	3.9
1996	438,813	398,128	11,471,293	3.8
1997	453,306	397,498	11,979,278	3.8
1998	494,443	422,146	12,777,283	3.9
1999	553,519	455,759	14,710,791	3.8
2000	694,909	548,429	16,843,082	4.1
2001	789,269	597,764	20,068,232	3.9
2002	916,964	670,197	22,294,111	4.1

* Actual obligations. Source: Human Nutrition Research and Information Management (HNRIM) System.

**Based on biomedical R&D price index, FY 1993 = 100 percent.

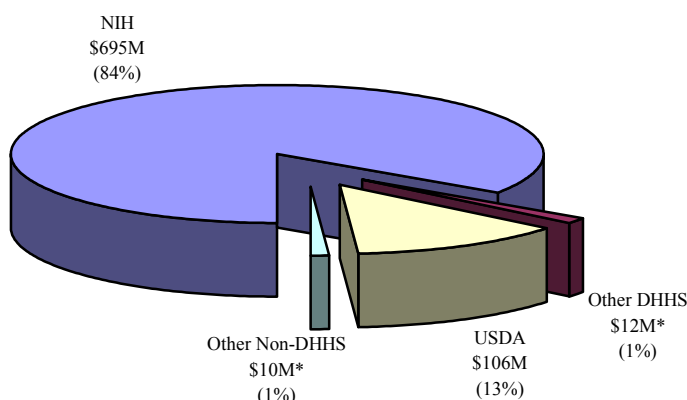
†Total excludes obligations for Office of the Director, National Library of Medicine, and buildings and facilities.

EXPENDITURES BY HNRIM SYSTEM CATEGORY AND INTEREST AREA

The NIH nutrition research support in the HNRIM system classification categories and the number of grants or contracts funded in each category are shown in Table 4. The column labeled "actual obligations" represents the *nutrition* funding for projects in each classification category, not the funding for the classification category per se. For example, a study of

the effects of smoking and diet on coronary heart disease and obesity that was considered to be 60 percent nutrition-related and had a total budget of \$100,000 would contribute \$60,000 toward the actual obligations reported for the area "Cardiovascular Disease and Nutrition" as well as \$60,000 toward the actual obligations reported for the area "Obesity, Anorexia, and Appetite Control." As this example illustrates, a grant or contract may appear in more than one category.

Figure 1. Federal Expenditures in Support of Human Nutrition Research and Training, FY 2000



* Estimate

Source: Human Nutrition Research and Information Management (HNRIM) System database

Thus, if all actual obligations in the 43 categories were summed, the sum would exceed the total nutrition expenditures for that fiscal year. The column labeled "percent of total" represents the nutrition funds expended in a given category in relation to total NIH obligations for nutrition research and training, which totaled \$917 million for FY 2002.

Although NIH nutrition research encompasses all of the classification categories, the largest component is concentrated in the area of Research in the Biomedical and Behavioral Sciences (codes 1 - 25 and 35 - 37). Codes 51 through 56 represent NIH Special Interest Areas. The most frequently assigned nutrition classification codes include "Cancer and Nutrition," "Other Diseases and Nutrition," "Cardiovascular Disease and Nutrition," and "Obesity, Anorexia, and Appetite Control."

Support by Extramural and Intramural Categories

The NIH supports two broad categories of research: extramural and intramural. The extramural programs are responsible for approximately 80-85 percent of the total NIH resources in the form of research grants or

contracts. Through these programs, NIH makes awards of various kinds to institutions throughout the United States and the world. Extramural awards are based on a two-tiered peer-review assessment - one for scientific merit and one for program relevance.

Within the NIH itself, and accounting for approximately 11 percent of its budget, is the intramural program. All of the NIH institutes except NIGMS have an intramural component of laboratory and clinical research programs. More than 2,000 intramural research projects are in progress at all times, making the NIH the largest center for biomedical and behavioral research in the world. Boards of scientific counselors are responsible for assessing the quality and direction of the intramural program, and the NIH Office of the Director provides scientific and policy oversight.

The NIH relies on three major funding mechanisms as the administrative instruments for accomplishing its program goals through the efforts of scientists outside the NIH (i.e., extramurally): grants and cooperative agreements (financial assistance awards) and contracts (acquisition awards). Financial support by NIH of extramural nutrition research and training is provided through all three of these major funding mechanisms. Support of

extramural nutrition research utilizes research project grants, program project grants, center grants, contracts, and cooperative agreements.

All of these may include clinical trials; research resources support; reimbursement agreements; research career development awards; and new, academic, and teacher investigator awards. Extramural training in biomedical and behavioral nutrition research is supported through National Research Service Awards, with training grants awarded to institutions and fellowships awarded to individuals. The intramural nutrition program consists of research projects and training. The actual obligations in biomedical nutrition research and training by category of support for Fiscal Year 2002 are shown in Table 5.

Extramural projects comprised about 95 percent of nutrition related expenditures in Fiscal Years 2002 (\$871 million). Research grants continue to comprise the largest category of support, with \$594 million and 2,477 projects. Program Projects made up the second largest category during this period, with \$82 million and 124 projects. Contracts ranked third, with \$72 million and 141 projects. Centers comprised the fourth largest category of support, with \$50 million (161 projects). The intramural program represented 5 percent of expenditures for nutrition research and training during FY 2002, with funding of \$46 million (147 projects).

Nutrition Research Training

The NIH supports training in biomedical and behavioral nutrition research in both the extramural and the intramural programs. Within the extramural program, two basic mechanisms are used for nutrition training support: institutional awards and individual awards. The institutional awards, commonly called "training grants," are designed to enable institutions to make training awards to individuals selected by them for predoctoral and postdoctoral research training. In FY2002, NIH spent \$9.2 million on 89 training grants in nutrition. The predoctoral and postdoctoral individual National Research Service Awards, called "fellowships," are awarded to provide pre- and postdoctoral research training to individuals to broaden their scientific background and extend their potential for research. Expenditures for fellowships in nutrition were \$2.5 million for 83 fellowships in FY 2002.

**Table 4. Actual Obligations, NIH Biomedical Nutrition Research and Training, by
HNRIM Classification Category, FY 2002
(in thousands of dollars)**

Nutrition Research Classification	Number of Grants and Contracts	Actual Obligations	Percent of Total
01 - Maternal Nutrition	182	46,362	1.7
02 - Infant and Child Nutrition (0-12 years)	334	84,209	3.2
03 - Adolescent Nutrition (13-18 years)	133	34,047	1.3
04 - Adult Nutrition (19-65 years)	224	77,398	2.1
05 - Nutrition of the Elderly (65+ years)	233	99,326	2.2
06 - Cardiovascular Disease and Nutrition	748	262,944	7.1
07 - Cancer and Nutrition	873	262,353	8.3
08 - Other Diseases and Nutrition	792	242,531	7.5
09 - Trauma (Including Burns) and Nutrition	26	3,220	0.2
10 - Infection--Immunology and Nutrition	214	45,444	2.0
11 - Obesity, Anorexia, and Appetite Control	738	215,810	7.0
12 - Genetics and Nutrition	461	133,002	4.4
13 - Nutrition and Function	300	106,947	2.9
14 - Nutrient Interactions	218	47,440	2.1
15 - Other Conditions and Nutrition	213	53,406	2.0
16 - Nutritional Status R&D	180	54,610	1.7
17 - Carbohydrates	285	63,882	2.7
18 - Lipids (Fats and Oils)	616	208,720	5.9
19 - Alcohols	69	14,009	0.7
20 - Proteins and Amino Acids	186	49,315	1.8
21 - Vitamins	470	175,001	4.5
22 - Minerals and Essential Trace Elements	324	81,208	3.1
23 - Water and Electrolytes	123	31,607	1.2
24 - Fiber	13	11,894	0.1
25 - Other Nutrients In Food	49	12,155	0.5
26 - Food Composition R&D	17	3,392	0.2
27 - Bioavailability of Nutrients	23	6,447	0.2
28 - Effects of Technology on Foods and Diets	12	4,594	0.1
29 - Other Research in Food Sciences	14	4,562	0.1
30 - Food Consumption Survey R&D	12	3,899	0.1
31 - Dietary Practices, Food Consumption, & Determinants	301	102,571	2.9
32 - Studies of Methods for Informing & Educating the Public	33	9,033	0.3
33 - Other Research in Nutrition Education	10	2,781	0.1
34 - Effects of Government Policy & Socioeconomic Factors	15	6,137	0.1
35 - Parenteral, Enteral, and Elemental Nutrition	43	9,147	0.4
36 - Dietary Supplements: Nutrient Ingredients	341	108,154	3.2
37 - Dietary Supplements: Botanical & Other Non-nutrient Ingredients	249	73,398	2.4
51 - Prevention and Nutrition	605	228,626	5.8
52 - International Nutrition Research	71	13,544	0.7
53 - Epidemiological Nutrition Research	280	79,955	2.7
54 - Nutrition Education for Professionals	118	15,932	1.1
55 - Nutrition Education for the Public	66	14,603	0.6
56 - Clinical Trials of Nutrients/Nutrition	287	159,416	2.7

* The actual obligations represent the *nutrition* funding for projects in each classification area, not the funding of the classification area per se. A grant or contract may be assigned to more than one of these areas. Thus, summing the expenditures by area will yield a value that exceeds the total expenditures and summing the percent of total will yield a value greater than 100 percent.

** The total expenditure, in thousands of dollars, of the NIH nutrition program was \$916,964 in FY 2002.

**Table 5. Actual Obligations, NIH Biomedical Nutrition Research and Training,
by Category of Support, FY 2002
(in thousands of dollars)**

Funding Mechanism	Item	Breakdown		Total	
		Number	Cost	Number	Cost
Extramural					
Research Grants	Regular	2,266	488,867		
	Clinical Trials	211	104,977		
	Total			2,477	593,844
Program Projects	Regular	120	71,315		
	Clinical Trials	4	10,803		
	Total			124	82,118
Contracts	Regular	100	40,090		
	Clinical Trials	41	32,458		
	Total			141	72,548
Centers	Regular	153	44,215		
	Clinical Trials	8	6,100		
	Total			161	50,315
Training	Training Grants	89	9,195		
	Fellowships	83	2,498		
	Total			172	11,693
	Research Resources Support			106	32,312
	Career Development Awards			229	21,029
	Reimbursement Agreements			16	5,393
	Facilities Renovation/Repair			4	1,556
Subtotal, Extramural				3,430	870,808
Intramural					
	Projects			147	46,156
	Training			0	
Subtotal, Intramural				147	46,156
Total NIH Biomedical Nutrition Research & Training				3,577	916,964