

FINANCIAL REPORT OF BIOMEDICAL RESEARCH AND TRAINING IN NUTRITION, FY 2006

THE LEADER IN FEDERALLY SUPPORTED NUTRITION RESEARCH AND TRAINING

In Fiscal Year 2006, the NIH continued to lead all Federal agencies in financial support of nutrition research and training, with a total of \$1.1 billion. This total represents the combined individual contributions of the 19 NIH institutes and four centers that supported biomedical nutrition

research and training. Actual obligations for FY 2006 biomedical nutrition research and training for 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 NIDDK, NCI 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 2006
(in thousands of dollars)**

Institute / Center (IC)	Nutrition Research and Training*	Total IC Obligations**	Nutrition as Percentage of Total IC Obligations
NCI	228,552	4,754,121	4.8
NHLBI	206,975	2,893,527	7.2
NIDCR	8,816	385,589	2.3
NIDDK	269,293	1,838,511	14.6
NINDS	7,845	1,519,971	0.5
NIAID	11,216	4,274,201	0.3
NIGMS	3,558	1,916,927	0.2
NICHD	58,322	1,252,598	4.7
NEI	14,555	660,340	2.2
NIEHS	26,819	709,555	3.8
NIA	53,980	1,036,559	5.2
NIAMS	8,140	502,954	1.6
NIDCD	3,309	389,623	0.8
NIMH	21,192	1,390,009	1.5
NIDA	2,204	990,405	0.2
NIAAA	15,614	431,726	3.6
NINR	6,684	136,020	4.9
NHGRI	336	481,339	0.1
NIBIB	293	293,954	0.1
NCRR	53,363	1,088,500	4.9
NCCAM	51,727	120,294	43.0
NCMHD	10,524	193,522	5.4
FIC	1,594	65,726	2.4
OD ⁺	2,544	724,831	0.4
TOTAL⁺⁺	1,067,454	28,050,802	3.8

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

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

+Office of the Director (OD) includes Office of Dietary Supplements and Office of Behavioral and Social Sciences Research.

++Total excludes obligations for National Library of Medicine 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 44 percent, 15 percent and 7 percent, respectively, for FY 2006.

TRENDS IN NUTRITION RESEARCH AND TRAINING, 1997-2006

NIH nutrition research and training dollars have

increased steadily during the past decade, growing from \$453 million in FY 1997 to \$1.1 billion in FY 2006. Actual obligations for nutrition research and training by NIH component during the past 10 years are shown in Table 2. Overall, the trend in current dollars has been steadily upward for most ICs. The more recent leveling of nutrition related expenditures reflects the end of the NIH budget doubling period between 1998 and 2003.

Table 2. Actual Obligations for Nutrition Research and Training by NIH Component, Fiscal Years 1997-2006 (Thousands of Dollars)

NIH Component	1997 ^a	1998	1999 ^b	2000	2001	2002	2003 ^c	2004	2005	2006
Total	453,306	494,443	553,519	694,909	789,269	916,964	1,035,343	1,033,304	1,082,475	1,067,454
NCI	121,739	119,829	113,223	171,491	184,535	204,425	228,797	226,990	241,493	228,552
NHLBI	88,943	118,886	124,233	130,491	146,592	184,367	193,795	194,222	204,228	206,975
NIDCR	8,225	6,755	9,109	9,261	10,671	10,148	9,547	9,367	9,336	8,816
NIDDK	98,673	105,026	130,115	151,007	182,613	203,741	231,671	230,750	242,816	269,293
NINDS	999	4,032	3,870	9,048	10,358	10,150	10,139	10,587	6,901	7,845
NIAID	10,973	12,355	13,907	16,115	17,631	16,806	24,608	19,972	13,803	11,216
NIGMS	2,265	2,120	2,088	2,854	2,326	2,340	2,843	3,623	3,543	3,558
NICHD	29,585	28,401	35,029	41,602	45,549	50,957	56,818	50,738	53,628	58,322
NEI	14,913	15,665	17,438	20,796	23,724	26,891	21,032	20,253	15,432	14,555
NIEHS	5,806	7,078	6,615	10,839	14,286	22,644	23,680	23,962	27,694	26,819
NIA	19,226	20,763	26,720	31,380	42,579	55,990	61,970	61,453	62,737	53,980
NIAMS	4,846	4,569	4,544	4,531	2,984	3,366	2,928	4,262	7,359	8,140
NIDCD	2,716	2,514	1,757	1,610	1,478	2,881	2,734	3,316	3,627	3,309
NIMH	7,158	7,363	7,450	11,782	15,153	18,941	18,945	20,015	20,729	21,192
NIDA	2,226	1,980	3,450	4,100	4,492	5,093	4,111	3,318	1,963	2,204
NIAAA	7,046	7,632	8,089	9,424	7,790	9,869	11,663	14,074	16,677	15,614
NINR	2,401	2,775	3,434	4,487	5,134	5,862	7,231	5,187	5,124	6,684
NHGRI	-	-	-	-	1,287	1,362	3,279	226	183	336
NIBIB	-	-	-	-	-	-	343	340	-	293
NCRR	25,446	26,345	31,759	34,431	35,032	37,479	42,913	49,568	53,254	53,363
NCCAM	-	-	10,305	28,985	34,394	42,369	53,301	54,550	55,059	51,727
NCMHD	-	-	-	-	-	-	7,116	8,661	11,141	10,524
FIC	120	354	382	676	663	1,282	2,767	2,264	1,898	1,594
OD	-	-	-	-	-	-	13,111	15,606	23,851	2,544

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

b In FY 1999 includes funding for the National Center for Complimentary and Alternative Medicine.

c Beginning in FY 2003, Office of the Director (OD) includes Office of Dietary Supplements and Office of Behavioral and Social Sciences Research.

As shown in Table 3, total NIH expenditures for nutrition research and training have increased consistently since FY 1997 and have constituted approximately 4 percent of total NIH obligations during that period. 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 \$614 million, or 136 percent, increase between FY 1997 and FY 2006 in current (unadjusted) dollars. In constant dollars (i.e., adjusted for inflationary price increases), nutrition research and training support in FY 2006 represented an 72 percent increase over the FY 1997 level.

In FY 2005, the latest year for which data for other agencies are available, the NIH continued to lead all Federal agencies in financial support of nutrition research and training with a total of \$1 billion, as shown in Figure 1.

Table 3. Actual Obligations, NIH Biomedical Nutrition Research and Training, in Current and Constant Dollars, and as a Percentage of Total NIH Obligations FY 1997-2006 (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
1997	453,306	438,119	11,979,278	3.8
1998	494,443	465,285	12,777,283	3.9
1999	553,519	504,892	14,710,791	3.8
2000	694,909	611,089	16,843,082	4.1
2001	789,269	671,734	20,068,232	3.9
2002	916,964	755,393	22,294,111	4.1
2003	1,035,343	823,950	26,134,505	4.0
2004	1,033,304	792,791	27,486,371	3.8
2005	1,082,475	800,057	27,844,089	3.9
2006	1,067,454	754,918	28,050,802	3.8

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

**Based on biomedical R&D price index, FY 1997 = 100 percent.

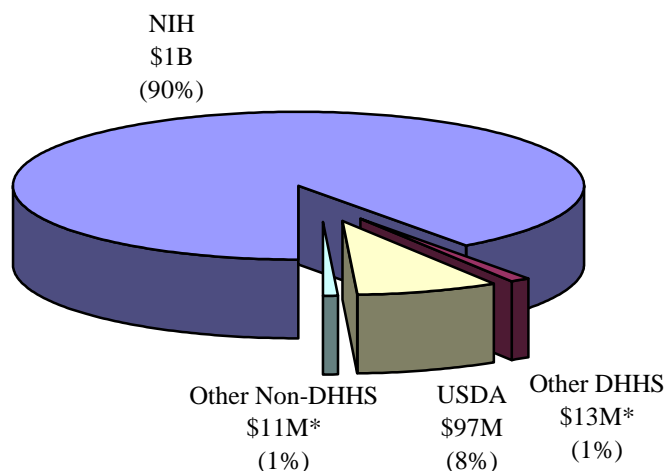
⁺Total excludes obligations for National Library of Medicine and Buildings and Facilities.

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 2005



* 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 \$1.1 billion for FY 2006.

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). The most frequently assigned nutrition classification codes include "Obesity, Anorexia, and Appetite Control," "Other Diseases and Nutrition," "Cancer and Nutrition," "Prevention and Nutrition" and "Cardiovascular Disease and Nutrition."

SUPPORT BY EXTRAMURAL AND INTRAMURAL CATEGORIES

The NIH supports two broad categories of research: extramural and intramural. The extramural programs are responsible for approximately 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 10 percent of its budget, is the intramural program. Nearly all of the NIH institutes 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 2006 are shown in Table 5.

Extramural projects comprised about 94 percent of nutrition related expenditures in Fiscal Year 2006 (\$1.01 billion). Research grants continue to comprise the largest category of support, with \$749 million and 3,042 projects. Program Projects made up the second largest category during this period, with \$67 million and 99 projects. Centers ranked third, with \$60 million and 166 projects. Research Resources Support comprised the fourth largest category of support, with \$47 million (149 projects). The intramural program represented 6 percent of expenditures for nutrition research and training during FY 2006, with funding of \$59 million (153 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 FY2006, NIH spent \$11 million on 116 training grants in nutrition. The predoctoral and postdoctoral individual National Research Service Awards, called “fellowships,” are awarded to provide research training to individuals to broaden their scientific background and extend their potential for research. Expenditures for fellowships in nutrition were \$3.8 million for 116 fellowships in FY 2006.

**Table 4. Actual Obligations, NIH Biomedical Nutrition Research and Training, by
HNRIM Classification Category, FY 2006
(in thousands of dollars)**

Nutrition Research Classification	Number of Grants and Contracts	Actual Obligations	Percent of Total
01 - Maternal Nutrition	230	61,529,438	5.8
02 - Infant and Child Nutrition (0-12 years)	384	116,633,672	10.9
03 - Adolescent Nutrition (13-18 years)	202	60,961,695	5.7
04 - Adult Nutrition (19-65 years)	264	88,653,271	8.3
05 - Nutrition of the Elderly (65+ years)	240	93,531,363	8.8
06 - Cardiovascular Disease and Nutrition	907	299,367,861	28.0
07 - Cancer and Nutrition	1,108	272,466,168	25.5
08 - Other Diseases and Nutrition	1,238	321,575,284	30.1
09 - Trauma (Including Burns) and Nutrition	35	5,387,048	0.5
10 - Infection--Immunology and Nutrition	219	56,876,269	5.3
11 - Obesity, Anorexia, and Appetite Control	1,270	388,024,942	36.4
12 - Genetics and Nutrition	767	211,068,939	19.8
13 - Nutrition and Function	505	163,420,325	15.3
14 - Nutrient Interactions	398	101,240,912	9.5
15 - Other Conditions and Nutrition	257	58,724,616	5.5
16 - Nutritional Status R&D	199	50,223,246	4.7
17 - Carbohydrates	297	77,294,519	7.2
18 - Lipids (Fats and Oils)	653	198,241,570	18.6
19 - Alcohols	46	14,433,191	1.4
20 - Proteins and Amino Acids	192	51,858,386	4.9
21 - Vitamins	470	131,596,976	12.3
22 - Minerals and Essential Trace Elements	328	78,764,617	7.4
23 - Water and Electrolytes	116	24,136,401	2.3
24 - Fiber	33	15,693,118	1.5
25 - Other Nutrients In Food	81	21,439,200	2.0
26 - Food Composition R&D	23	5,105,427	0.5
27 - Bioavailability of Nutrients	49	14,725,092	1.4
28 - Effects of Technology on Foods and Diets	24	7,737,891	0.7
29 - Other Research in Food Sciences	13	2,557,230	0.2
30 - Food Consumption Survey R&D	30	6,936,009	0.6
31 - Dietary Practices, Food Consumption, & Determinants	402	133,613,878	12.5
32 - Studies of Methods for Informing & Educating the Public	79	24,123,953	2.3
33 - Other Research in Nutrition Education	28	6,517,119	0.6
34 - Effects of Government Policy & Socioeconomic Factors	60	20,096,419	1.9
35 - Parenteral, Enteral, and Elemental Nutrition	37	14,144,519	1.3
36 - Dietary Supplements: Nutrient Ingredients	700	180,332,200	16.9
37 - Dietary Supplements: Botanical & Other Non-nutrient Ingredients	476	108,364,968	10.2
51 - Prevention and Nutrition	1,023	288,835,567	27.1
52 - International Nutrition Research	87	19,958,330	1.9
53 - Epidemiological Nutrition Research	358	94,611,396	8.9
54 - Nutrition Education for Professionals	184	34,118,394	3.2
55 - Nutrition Education for the Public	139	45,895,946	4.3
56 - Clinical Trials of Nutrients/Nutrition	478	173,931,243	16.3

* 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 \$1,067,454 in FY 2006.

**Table 5. Actual Obligations, NIH Biomedical Nutrition Research and Training,
by Category of Support, FY 2006
(in thousands of dollars)**

Funding Mechanism	Item	Breakdown		Total	
		Number	Cost	Number	Cost
Extramural					
Research Grants	Regular	2,659	612,331		
	Clinical Trials	383	136,724		
	Total			3,042	749,055
Program Projects	Regular	91	57,181		
	Clinical Trials	8	9,430		
	Total			99	66,611
Contracts	Regular	90	22,868		
	Clinical Trials	30	11,714		
	Total			120	34,582
Centers	Regular	157	55,916		
	Clinical Trials	9	4,157		
	Total			166	60,073
Training	Training Grants	116	11,082		
	Fellowships	116	3,771		
	Total			232	14,853
Research Resources Support				149	47,195
Career Development Awards				319	28,798
Reimbursement Agreements				31	7,022
Subtotal, Extramural				4,158	1,008,189
Intramural					
Projects				153	59,263
Training				0	
Subtotal, Intramural				153	59,263
Total NIH Biomedical Nutrition Research & Training				4,311	1,067,452