

FINANCIAL REPORT OF BIOMEDICAL RESEARCH AND TRAINING IN NUTRITION, FY 2005

THE LEADER IN FEDERALLY SUPPORTED NUTRITION RESEARCH AND TRAINING

In Fiscal Year 2005, 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 2005 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 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 2005
(in thousands of dollars)**

Institute / Center (IC)	Nutrition Research and Training*	Total IC Obligations**	Nutrition as Percentage of Total IC Obligations
NCI	241,493	4,797,731	5.0
NHLBI	204,228	2,922,573	7.0
NIDCR	9,336	389,346	2.4
NIDDK	242,816	1,702,592	14.3
NINDS	6,901	1,529,654	0.5
NIAID	13,803	4,276,433	0.3
NIGMS	3,543	1,931,690	0.2
NICHD	53,628	1,262,273	4.2
NEI	15,432	664,840	2.3
NIEHS	27,694	640,405	4.3
NIA	62,737	1,045,339	6.0
NIAMS	7,359	507,843	1.4
NIDCD	3,627	391,679	0.9
NIMH	20,729	1,403,007	1.5
NIDA	1,963	1,000,056	0.2
NIAAA	16,677	435,503	3.8
NINR	5,124	137,199	3.7
NHGRI	183	485,500	<0.1
NCRR	53,254	1,108,028	4.8
NCCAM	55,059	121,333	45.4
NCMHD	11,141	194,904	5.7
FIC	1,898	66,164	2.9
OD ⁺	23,851	533,673	4.5
TOTAL⁺⁺	1,082,475	27,844,089	3.9

* 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 45 percent, 14 percent and 7 percent, respectively, for FY 2005.

TRENDS IN NUTRITION RESEARCH AND TRAINING, 1996-2005

NIH nutrition research and training dollars have

increased steadily during the past decade, growing from \$439 million in FY 1995 to \$1.1 billion in FY 2005. 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 1996-2005 (Thousands of Dollars)

NIH Component	1996	1997 ^a	1998	1999 ^b	2000	2001	2002	2003 ^c	2004	2005
Total	438,813	453,306	494,443	553,519	694,909	789,269	916,964	1,035,343	1,033,304	1,082,475
NCI	116,567	121,739	119,829	113,223	171,491	184,535	204,425	228,797	226,990	241,493
NHLBI	75,306	88,943	118,886	124,233	130,491	146,592	184,367	193,795	194,222	204,228
NIDCR	6,087	8,225	6,755	9,109	9,261	10,671	10,148	9,547	9,367	9,336
NIDDK	93,322	98,673	105,026	130,115	151,007	182,613	203,741	231,671	230,750	242,816
NINDS	1,190	999	4,032	3,870	9,048	10,358	10,150	10,139	10,587	6,901
NIAID	7,873	10,973	12,355	13,907	16,115	17,631	16,806	24,608	19,972	13,803
NIGMS	2,628	2,265	2,120	2,088	2,854	2,326	2,340	2,843	3,623	3,543
NICHD	28,823	29,585	28,401	35,029	41,602	45,549	50,957	56,818	50,738	53,628
NEI	14,218	14,913	15,665	17,438	20,796	23,724	26,891	21,032	20,253	15,432
NIEHS	4,068	5,806	7,078	6,615	10,839	14,286	22,644	23,680	23,962	27,694
NIA	20,203	19,226	20,763	26,720	31,380	42,579	55,990	61,970	61,453	62,737
NIAMS	2,717	4,846	4,569	4,544	4,531	2,984	3,366	2,928	4,262	7,359
NIDCD	2,366	2,716	2,514	1,757	1,610	1,478	2,881	2,734	3,316	3,627
NIMH	7,481	7,158	7,363	7,450	11,782	15,153	18,941	18,945	20,015	20,729
NIDA	2,878	2,226	1,980	3,450	4,100	4,492	5,093	4,111	3,318	1,963
NIAAA	3,992	7,046	7,632	8,089	9,424	7,790	9,869	11,663	14,074	16,677
NINR	1,851	2,401	2,775	3,434	4,487	5,134	5,862	7,231	5,187	5,124
NHGRI	-	-	-	-	-	1,287	1,362	3,279	226	183
NIBIB	-	-	-	-	-	-	-	343	340	-
NICRR	21,626	25,446	26,345	31,759	34,431	35,032	37,479	42,913	49,568	53,254
NCCAM	-	-	-	10,305	28,985	34,394	42,369	53,301	54,550	55,059
NCMHD	-	-	-	-	-	-	-	7,116	8,661	11,141
FIC	97	120	354	382	676	663	1,282	2,767	2,264	1,898
OD	25,520	-	-	-	-	-	-	13,111	15,606	23,851

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 1996 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 \$644 million, or 147 percent, increase between FY 1996 and FY 2005 in current (unadjusted) dollars. In constant dollars (i.e., adjusted for inflationary price increases), nutrition research and training support in FY 2005 represented an 82 percent increase over the FY 1996 level.

In FY 2003, 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 1996-2005 (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
1996	438,813	438,813	11,471,293	3.8
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

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

**Based on biomedical R&D price index, FY 1996 = 100 percent.

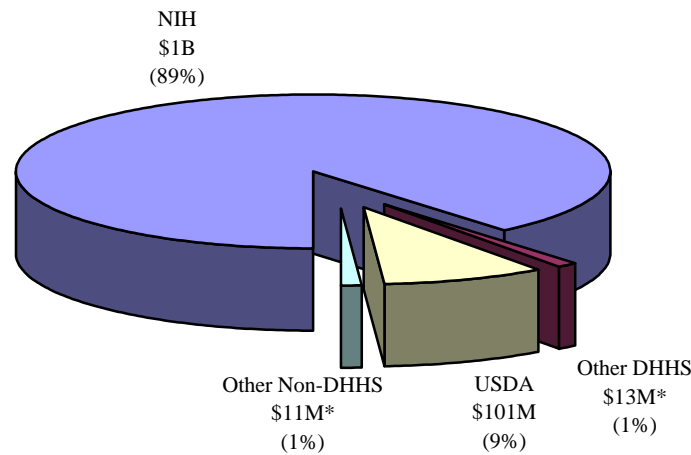
⁺Total excludes obligations for National Library of Medicine and Buildings and Facilities.

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 2003



* 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 2005.

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 2005 are shown in Table 5.

Extramural projects comprised about 95 percent of nutrition related expenditures in Fiscal Year 2005 (\$1.03 billion). Research grants continue to comprise the largest category of support, with \$743 million and 3,012 projects. Program Projects made up the second largest category during this period, with \$71 million and 104 projects. Centers ranked third, with \$62 million and 172 projects. Contracts comprised the fourth largest category of support, with \$52 million (150 projects). The intramural program represented 5 percent of expenditures for nutrition research and training during FY 2005, with funding of \$52 million (152 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 FY2005, NIH spent \$11.8 million on 118 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 \$3.4 million for 107 fellowships in FY 2005.

**Table 4. Actual Obligations, NIH Biomedical Nutrition Research and Training, by
HNRIM Classification Category, FY 2005
(in thousands of dollars)**

Nutrition Research Classification	Number of Grants and Contracts	Actual Obligations	Percent of Total
01 - Maternal Nutrition	209	54,822	5
02 - Infant and Child Nutrition (0-12 years)	358	97,856	9
03 - Adolescent Nutrition (13-18 years)	199	56,539	5
04 - Adult Nutrition (19-65 years)	293	95,640	9
05 - Nutrition of the Elderly (65+ years)	286	108,757	10
06 - Cardiovascular Disease and Nutrition	857	300,266	28
07 - Cancer and Nutrition	1,147	310,349	29
08 - Other Diseases and Nutrition	1,165	319,717	30
09 - Trauma (Including Burns) and Nutrition	36	5,291	<1
10 - Infection--Immunology and Nutrition	219	63,331	6
11 - Obesity, Anorexia, and Appetite Control	1,225	363,874	34
12 - Genetics and Nutrition	707	188,445	17
13 - Nutrition and Function	428	151,297	14
14 - Nutrient Interactions	378	100,617	9
15 - Other Conditions and Nutrition	282	63,862	6
16 - Nutritional Status R&D	150	50,150	5
17 - Carbohydrates	262	59,928	6
18 - Lipids (Fats and Oils)	660	202,821	19
19 - Alcohols	56	18,704	2
20 - Proteins and Amino Acids	191	53,170	5
21 - Vitamins	472	150,235	14
22 - Minerals and Essential Trace Elements	349	92,916	9
23 - Water and Electrolytes	115	27,205	3
24 - Fiber	24	14,497	1
25 - Other Nutrients In Food	79	23,379	2
26 - Food Composition R&D	12	3,476	<1
27 - Bioavailability of Nutrients	39	14,614	1
28 - Effects of Technology on Foods and Diets	15	7,861	<1
29 - Other Research in Food Sciences	14	2,699	<1
30 - Food Consumption Survey R&D	30	8,122	<1
31 - Dietary Practices, Food Consumption, & Determinants	430	145,601	13
32 - Studies of Methods for Informing & Educating the Public	75	21,477	2
33 - Other Research in Nutrition Education	24	8,113	<1
34 - Effects of Government Policy & Socioeconomic Factors	68	20,846	2
35 - Parenteral, Enteral, and Elemental Nutrition	39	14,866	1
36 - Dietary Supplements: Nutrient Ingredients	674	209,150	19
37 - Dietary Supplements: Botanical & Other Non-nutrient Ingredients	475	123,442	11
51 - Prevention and Nutrition	921	284,678	26
52 - International Nutrition Research	97	16,780	2
53 - Epidemiological Nutrition Research	363	96,131	9
54 - Nutrition Education for Professionals	198	38,079	4
55 - Nutrition Education for the Public	128	41,524	4
56 - Clinical Trials of Nutrients/Nutrition	434	186,361	17

* 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 \$1,082,475 in FY 2005.

**Table 5. Actual Obligations, NIH Biomedical Nutrition Research and Training,
by Category of Support, FY 2005
(in thousands of dollars)**

Funding Mechanism	Item	Breakdown		Total	
		Number	Cost	Number	Cost
Extramural					
Research Grants	Regular	2,685	610,796		
	Clinical Trials	327	131,937		
	Total			3,012	742,733
Program Projects	Regular	96	56,202		
	Clinical Trials	8	14,706		
	Total			104	70,908
Contracts	Regular	102	30,070		
	Clinical Trials	48	21,875		
	Total			150	51,945
Centers	Regular	161	56,794		
	Clinical Trials	11	5,653		
	Total			172	62,447
Training	Training Grants	118	11,755		
	Fellowships	107	3,446		
	Total			225	15,201
Research Resources Support				142	50,430
Career Development Awards				286	27,985
Reimbursement Agreements				31	8,622
Subtotal, Extramural				4,122	1,030,271
Intramural					
Projects				152	52,205
Training				0	
Subtotal, Intramural				152	52,205
Total NIH Biomedical Nutrition Research & Training				4,274	1,082,476