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Dataset Integrity Check for EDIC Carotid Intima-Media Thickness (CIMT) Analysis Dataset

As a partial check of the integrity of the EDIC Carotid Intima Media Thickness analysis (EDIC - CIMT) datasets archived in the NIDDK data repository, a set of tabulations was performed to verify that published results from the EDIC-CIMT study can be reproduced using the archived datasets. A small number of analyses were performed to duplicate published results for EDIC subjects and a matched sample of normal subjects reported by The DCCT/EDIC Research Group in 2003 in the *New England Journal of Medicine* (NEJM ,[1]; a copy of this article is included in Appendix A). The results of this integrity check are described below.

Purpose. The intent of this dataset integrity check is to provide confidence that the dataset distributed by the NIDDK repository is a true copy of the study data. Our intent is not to assess the integrity of the statistical analyses reported by study investigators. As with all statistical analyses of complex datasets, complete replication of a set of statistical results should not be expected on a first (or second) exercise in secondary analysis. This occurs for a number of reasons including differences in the handling of missing data, restrictions on cases included in samples for a particular analysis, software coding used to define complex variables, etc. Experience suggests that most discrepancies can ordinarily be resolved by consultation with the study DCC, however this process is labor-intensive for both DCC and Repository staff. It is thus not our policy to resolve every discrepancy that is observed in a dataset integrity check. Thus, we do not attempt to resolve minor or inconsequential discrepancies with published results or discrepancies that involve complex analyses unless staff of the NIDDK Repository suspect that the observed discrepancy suggests that the dataset may have been corrupted in storage, transmission, or processing by repository staff. We do, however, document in footnotes to the dataset integrity check those instances in which our secondary analyses produced results that were not fully consistent with those reported in the target publication.

Datasets. The EDIC-CIMT authors report data on 1,229 subjects with Type 1 diabetes who were enrolled in DCCT and included in the EDIC followup. Carotid intima-media thickness was measured in these subjects in 1994-96 and again in 1998-2000 using B-mode ultrasonography of the internal and common carotid arteries. A primary focus of this article is comparison of the results for the 618 subjects who had been randomly assigned to receive intensive diabetes treatment in DCCT to results for 611 subjects assigned to conventional diabetes treatment. Data for these subjects is contained in the SAS file *EDICmsCuru6.sas7bdat* extracted using the SAS CIMPORT procedure from the file *edicimt6.xpt* supplied by the Data Coordinating Center for EDIC. A second file, *EDxCURU6.sas7bdat*, containing limited data[1] on a matched sample of normal subjects was also extracted from the same source.[2]

Comparison to DCC Documentation. As a partial check of the integrity of these datasets, we verified that the means, standard deviations, and ranges of metric variables in the datasets archived with the repository matched the documentation provided by the DCC. Similar tabulations were performed on nominal variables to insure that the distributions obtained by tabulating the archived data matched those described in the DCC's dataset documentation. As Appendix B shows, these initial analyses found that the results obtained from the archived data exactly match the results reported in the DCC's documentation.

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[1] IMT for common and internal carotid artery, gender, and masked ID.

[2] Analyses reported in this memorandum used a STATA version 8/se dataset translated from these SAS datasets using STAT/Transfer (Cricle Systems, http://www.stattransfer.com).

Sample Characteristics. Table 1 of the 2003 NEJM article on CIMT presents selected characteristics of the experimental and control groups broken down by gender. The archived data were analyzed to produce the same characteristics. Table A compares the published results to those obtained for our analysis of the archived data. It will be seen from Table A that calculations from the archived data exactly replicate the published results with the exception of two trivial differences that may reflect differences in rounding.[3]

CIMT in Normal and EDIC subjects. Figure 1 of the 2003 NEJM publication compares the median, 1st, and 3rd quartiles of the distributions for common and internal carotid artery thickness for EDIC subjects and an age-matched non-diabetic control group. These published figures are reproduced in our Figure 1b. Using the EDIC subjects (from file *EDICmsCuru6.sas7bdat)* and the age-matched normal subjects (from file *EDxCURU6.sas7bdat)* we replicated this analysis. Figure 1a is a box-and-whiskers plot of our results. Please note that the "whiskers" in Figure 1a are **not** included in the published figure (Fig. 1b). Visual inspection reveals that the calculated medians, 1st , and 3rd quartiles appear equivalent to the published results. Significance levels for the Wilcoxon rank-sum tests calculated from the archived data are identical to those reported in the publication.

CIMT univariate associations with risk factors. Table 3 of the 2003 NEJM publication reports univariate associations (unstandardized coefficients and standard errors) between three CIMT measurements and 8 risk factors (Treatment, BMI, Smoking, Systolic Blood Pressure, Hypertension [binary variable], LDL/HDL ratio, log AER, and Hba1c). These analyses included controls for age, sex, the ultrasonography equipment used, and Year 1 intima-media thickness. (Note that the last variable was the variable that paralleled the CIMT dependent variable, i.e., common CIMT, reciprocal of internal CIMT, and combined CIMT). Our Table B compares the results of our analyses to the published results. It will be seen that with the exception of one trivial difference, the results obtained from our analyses of the archived data are identical to the published results.

CIMT mutlivariate associations with risk factors. Table 4 of the 2003 NEJM publication reports results (unstandardized coefficients and standard errors) of mutlivariate linear regression analyses predicting two CIMT measurements (common and combined IMT measurements) as a function of age, sex, Year 1 IMT, systolic blood pressure, treatment, an age-by-treatment interaction variable, and control variables for the various combinations of site and type of ultrasonography equipment used to make the measurements. We repeated these analyses using the archived data. The results are presented in Table C, and they are identical to the published version with two extremely trivial discrepancies.

Conclusion. Replication of a variety of analyses reported by the DCC in its documentation and in the 2003 NEJM article produced no noteworthy discrepancies.

References.

DCCT-EDIC Research Group (2003) Intensive Diabetes Therapy and Carotid Intima-Media Thickness in Type 1 Diabetes Mellitus. *New England Journal of Medicine*, 348(23):2294-2303.

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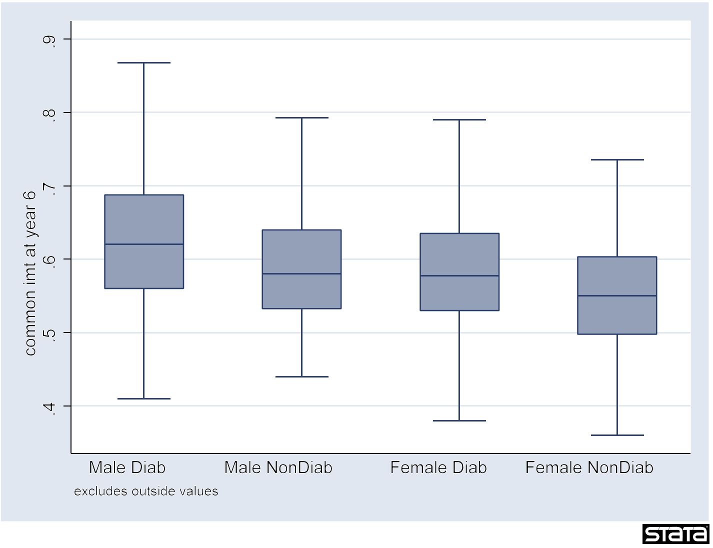
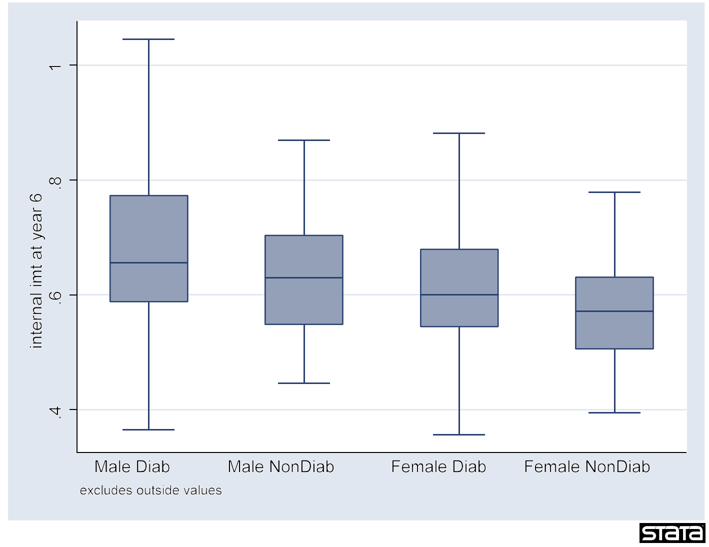
[3] There were a few instances in which data were unavailable in the datasets to document statements made in the text. For example, page 2297 of the NEJM article states that mean glycosylated hemoglobin in the treatment and control groups remained significantly, although minimally, different during the first four years of the EDIC study, but by year 5 they were no longer signifcantly different (7.9% ... vs. 8.0% ..., p =0.075). No year-by-year HBa1c values are included in this analysis dataset.



Common Carotid Artery

(Calculated from archived data)



Internal Carotid Artery

(Calculated from archived data)

FIGURE 1a. Box plots representing the median, second and third quartiles (shaded box), and ranges excluding outliers (whiskers) for intima-media thickness of common and internal carotid arteries *calculated from archived data.* P-values calculated using Wilcoxon rank-sum test are .0004 (common) for both males and females and .0028 and .0001 (internal) for males and females respectively.

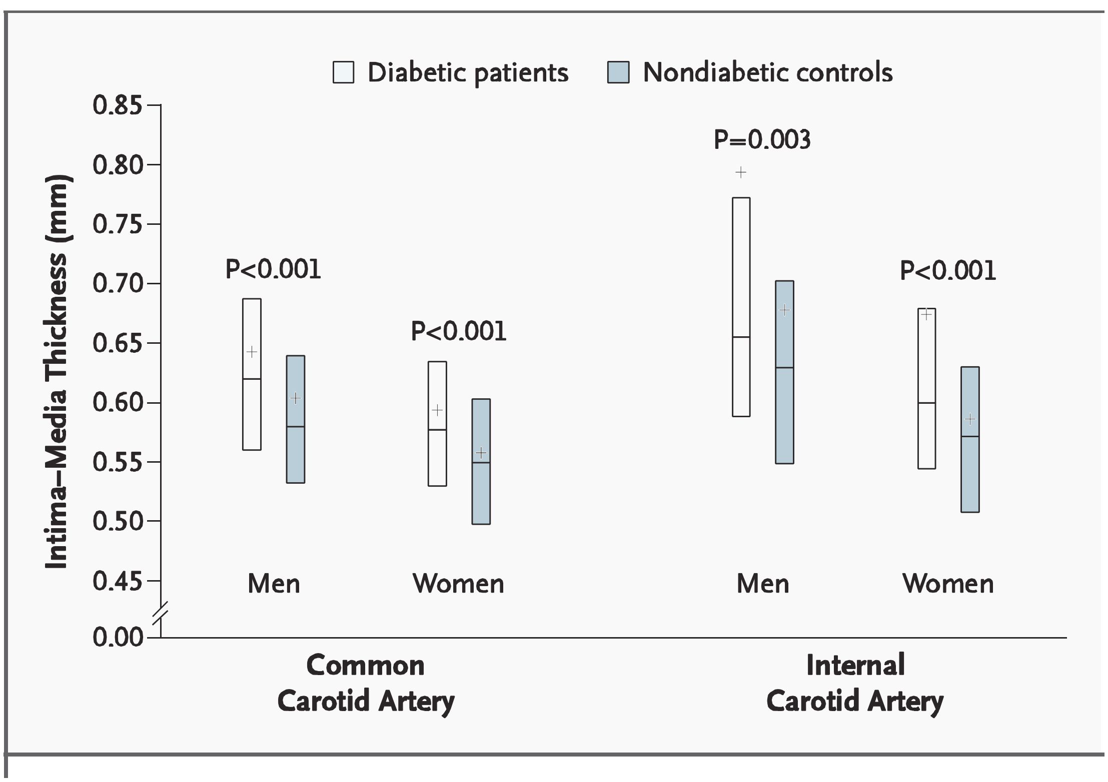


FIGURE 1b. *Published* box plots representing the median, mean (+), second and third quartiles (shaded box) for intima-media thickness of common and internal carotid arteries. Published P-values are "calculated using Wilcoxon rank-sum test."

TABLE A. Comparison of characteritics of sample by gender published in NEJM (2003, Table 1) and values calculated from EDIC CIMT analysis dataset deposited in NIDDK Repository.

CHARACTERISTIC	FEMALES, PUBLISHED				FEMALES, Tabulated from Archived Data			
	Intensive Treatment (N=295)		Conventional Treatment (N=289)		Intensive Treatment (N=295)		Conventional Treatment (N=289)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Demographic, year 1								
Age (yr)	35	7	34	7	35.15593	7.141625	33.97232	7.249947
Current smoker %	20%		19%		20.07%		19.03%	
Duration of Diabetes (yr)	13.9	4.8	14.2	5.2	13.89802	4.817854	14.1286	5.136499
Medical Year 1								
BMI	26.5	4.5	25	3.5	26.47652	4.525977	25.01792	3.451216
Waist:Hip circumference	0.76	0.07	0.76	0.07	0.7592578	0.0744102	0.760481	0.0702378
Ankle:Arm BP < 0.9 (%)	8.80%		8.70%		8.84%		8.65%	
Systolic BP	114	12	114	13	114.1301	12.20347	114.2249	13.11281
Diastolic BP	74	9	72	9	73.50512	8.677487	72.2699	9.485908
Hypertension (%)	10.4%		14%		10.38%		14.04%	
Lipids, year 1 or 2								
Total cholestereol	188	36	188	38	187.6958	35.65963	188.1383	38.07006
HDL cholesterol	59	14	59	14	58.7972	14.3874	59.23759	14.00852
LDL cholesterol	112	29	112	30	112.0035	29.37927	112.1	30.33925
LDL:HDL ratio	2		2		2.029237	0.7722056	1.997175	0.7238223
Triglycerides	83	76	83	76	83.06294	75.84858	82.89362	75.93026
Hyperlipidemia (%)	27.1		26.8		27.10%		26.80%	
AER, year 1 or 2								
Value	22	67	67	330	21.8271	67.33366	67.15217	330.6526
>40mg	6.8		15.7		6.81%		15.66%	
HBa1c								
During DCCT	7.3	0.9	9.1	1.3	7.304381	0.9048686	9.110137	1.345111
Year 1 EDIC	7.9	1.4	8.1	1.4	7.880756	1.363606	8.148239	1.432891
IM Thickness, year 1 or 2								
Common carotid artery	0.566	0.077	0.557	0.076	0.5657740	0.0769705	0.5569723	0.0755307
Internal carotid artery	0.608	0.165	0.628	0.251	0.6084818	0.1646724	0.6276088	0.2506052

Table A, continued

CHARACTERISTIC	MALES, Published				MALES, Tabulated from Archived Data			
	Intensive Treatment (N=323)		Conventional Treatment (N=322)		Intensive Treatment (N=323)		Conventional Treatment (N=322)	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Demographic, year 1								
Age (yr)	36	7	36	7	35.77399	6.72358	35.74224	6.560907
Current smoker %	20%		17%		19.50%		17.45%	
Duration of Diabetes (yr)	13.9	4.8	13.3	4.6	13.98271	4.912048	13.27562	4.573646
Medical Year 1								
BMI	26.7	3.9	26	3.2	26.72371	3.911454	25.98145	3.190197
Waist:Hip circumference	0.88	0.08	0.87	0.09	0.8830098	0.0803522	0.8738495	0.0934564
Ankle:Arm BP < 0.9 (%)	4.6%		6.9%		4.64%		6.85%	
Systolic BP	119	11	120	12	119.3065	11.11552	120.3625	11.85042
Diastolic BP	77	9	77	8	76.89164	9.099725	77.29375	8.457229
Hypertension (%)	22.9%		17.9%		22.88%		17.92%	
Lipids, year 1 or 2								
Total cholestereol	187	35	182	36	187.3714	34.56175	182.4628	36.39514
HDL cholesterol	49	13	50	11	49.27848	12.5922	49.65049	11.47615
LDL cholesterol	119	30	114	32	119.125	29.96183	113.9643	31.79928
LDL:HDL ratio	2.6		2.4		2.577837	0.9515922	2.420564	0.8942188
Triglycerides	96	72	96	79	96.05063	71.51839	96.15534	79.39815
Hyperlipidemia (%)	35.3%		30.0%		35.3%		30.0%	
AER, year 1 or 2								
Value	30	118	43	117	30.02701	117.8683	42.52181	116.9985
>40mg	7.7%		16.5%		7.72%		16.45%	
HBa1c								
During DCCT	7.2	0.9	9	1.1	7.226603	0.8684062	8.967268	1.128859
Year 1 EDIC	7.8	1.2	8.3	1.2	7.847649	1.247079	8.345912	1.215346
IM Thickness, year 1 or 2								
Common carotid artery	0.597	0.082	0.604	0.097	0.5973891	0.0821517	0.6039286	0.0967217
Internal carotid artery	0.668	0.22	0.681	0.268	0.6677754	0.2204556	0.6809653	0.2675956

TABLE B. Comparison of published results and results calculated from archived data: Univariate associations of carotid intima-media thickness with risk factors, adjusted for age, sex, ultrasonography equipment used, and Year 1 intima-media thickness.

CIMT Measurement (Dep. Var) & Risk Factor	PUBLISHED			CALCULATED FROM ARCHIVED DATA		
	Estimate of Coefficient	S.E.	P	Estimate of Coefficient	S.E.	P
Common Carotid Intima-Media Thickness, *commyr6*						
Treatment Group	0.0135	0.0053	0.02	0.0135	0.0053	0.012
Body Mass Index	0.0016	0.0007	0.03	0.0016	0.0007	0.028
Smoking (yes/no)	0.0247	0.0068	<.001	0.0247	0.0068	0.000
Systolic blood pressure	0.0008	0.0002	<.001	0.0008	0.0002	0.001
Hypertension (yes/no)	0.0189	0.0074	0.01	0.0189	0.0074	0.011
Low-density lipoprotein: High-density lipoprotein ratio	0.0072	0.0032	0.03	0.0072	0.0032	0.026
Log albumin excretion rate	0.0068	0.0025	0.006	0.0068	0.0025	0.006
Glycosylated hemoglobin value during DCCT	0.0065	0.0020	0.001	0.0065	0.0020	0.001
Reciprocal of Internal Carotid-Media Thickness, *r_int6*						
Treatment Group	-0.0330	0.0183	0.07	-0.0330	0.0813	0.071
Body Mass Index	-0.0032	0.0025	0.20	-0.0032	0.0025	0.197
Smoking (yes/no)	-0.0822	0.0231	<.001	-0.0822	0.0231	<.001
Systolic blood pressure	-0.0023	0.0008	0.004	-0.0023	0.0008	0.004
Hypertension (yes/no)	-0.1105	0.0258	<.001	-0.1105	0.0258	<.001
Low-density lipoprotein: High-density lipoprotein ratio	-0.0505	0.0113	<.001	-0.0505	0.0113	<.001
Log albumin excretion rate	-0.0212	0.0084	0.01	-0.0212	0.0084	0.011
Glycosylated hemoglobin value during DCCT	-0.0193	0.0067	0.004	-0.0193	0.0067	0.004
Combined Intima-Media Thickness, *comint6a*						
Treatment Group	0.1619	0.0669	0.02	0.1619	0.0669	0.016
Body Mass Index	0.0136	0.0089	0.13	0.0136	0.0089	0.126
Smoking (yes/no)	0.3468	0.0850	<.001	0.3468	0.0850	<.001
Systolic blood pressure	0.0088	0.0029	0.002	0.0088	0.0029	0.002
Hypertension (yes/no)	0.3016	0.0939	0.001	0.3016	0.0939	0.001
Low-density lipoprotein: High-density lipoprotein ratio	0.1427	0.0405	<.001	0.1427	0.0405	<.001
Log albumin excretion rate	0.0912	0.0308	0.003	0.0912	0.0308	0.003
Glycosylated hemoglobin value during DCCT	0.1014	0.0244	<.001	0.1014	0.0244	<.001

NOTE. These multiple regressions modeled Year 6 intima-media thickness as a linear, additive function of the risk factor listed in the row heading controlling for age, sex, Year 1 intima-media thickness, and dummy variables representing the multiple types of ultrasonography equipment used. (The Year 1 intima-media thickness variable used in each regression was the one that paralleled the dependent variable, i.e., (1) common, (2) reciprocal of internal, and (3) combined carotid intima-media thickness [common, r_int, comint1a].)

TABLE C. Multivariate associations of carotid intima-media thickness with various risk factors: Comparison of published results (NEJM, 2003, Table 4) and results calculated from archived data:

CIMT Measurement (Dep. Var)	PUBLISHED			CALCULATED FROM ARCHIVED DATA		
	Estimate of Coefficient	S.E.	P	Estimate of Coefficient	S.E.	P
Common Carotid Intima-Media Thickness, *commyr6*						
Age	0.0029	0.0006	<.001	0.0029	0.0006	<.001
Sex (female vs. male)	-0.0173	0.0055	0.002	-0.0173	0.0055	0.002
Year 1 intima-media thickness	0.6188	0.0361	<.001	0.6188	0.0361	<.001
Smoking (yes vs. no)	0.0265	0.0068	<.001	0.0265	0.0068	<.001
Systolic blood pressure	0.0008	0.0002	0.001	0.0008	0.0002	0.001
Ultrasonagraphy equipment (12 combinations)	---	---	< .001	---	---	---
Treatment group (conventional vs. intensive)	-0.0453	0.0274	0.10	-0.0453	0.0274	0.099
Age X Treatment interaction	0.0017	0.0008	0.03	0.0017	0.0008	0.029
R^2	***40%***			**39.8%**		
Combined Intima-Media Thickness, *comint6a*						
Age	0.0248	0.0071	<.001	0.0248	0.0071	<.001
Sex (female vs. male)	-0.2506	0.0689	<.001	-0.2506	0.0689	<.001
Year 1 intima-media thickness	0.5961	0.0238	<.001	0.5961	0.0238	<.001
Smoking (yes vs. no)	0.3737	0.0851	<.001	0.3737	0.0850	<.001
Systolic blood pressure	0.0092	0.0029	0.001	0.0092	0.0029	0.001
Ultrasonagraphy equipment (12 combinations)	---	---	<.001	---	---	---
Treatment group (conventional vs. intensive)	-0.5433	0.3435	0.12	-0.5433	0.3435	0.114
Age X Treatment interaction	0.0201	0.0096	0.04	0.0201	0.0096	0.036
R^2	***52%***			***52.2%***		

NOTE. Multiple regression models used carotid artery thickness as outcome predicted by the independent variables shown in the table. (The Year 1 intima-media thickness variable used in each regression was the one that paralleled the dependent variable, i.e., (1) common, or (2) combined carotid intima-media thickness [common, comint1a].)

APPENDIX A

DCCT-EDIC Research Group (2003) Intensive Diabetes Therapy and Carotid Intima-Media Thickness in Type 1 Diabetes Mellitus. *New England Journal of Medicine,* 348(23):2294-2303.

ORIGINAL ARTICLE

Intensive Diabetes Therapy and Carotid Intima–Media Thickness in Type 1 Diabetes Mellitus

The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group*

ABSTRACT

BACKGROUND
Cardiovascular disease causes severe morbidity and mortality in type 1 diabetes, although the specific risk factors and whether chronic hyperglycemia has a role are unknown. We examined the progression of carotid intima–media thickness, a measure of atherosclerosis, in a population with type 1 diabetes.

METHODS
As part of the Epidemiology of Diabetes Interventions and Complications (EDIC) study, the long-term follow-up of the Diabetes Control and Complications Trial (DCCT), 1229 patients with type 1 diabetes underwent B-mode ultrasonography of the internal and common carotid arteries in 1994–1996 and again in 1998–2000. We assessed the intima–media thickness in 611 subjects who had been randomly assigned to receive conventional diabetes treatment during the DCCT and in 618 who had been assigned to receive intensive diabetes treatment.

RESULTS
At year 1 of the EDIC study, the carotid intima–media thickness was similar to that in an age- and sex-matched nondiabetic population. After six years, the intima–media thickness was significantly greater in the diabetic patients than in the controls. The mean progression of the intima–media thickness was significantly less in the group that had received intensive therapy during the DCCT than in the group that had received conventional therapy (progression of the intima–media thickness of the common carotid artery, 0.032 vs. 0.046 mm; P=0.01; and progression of the combined intima–media thickness of the common and internal carotid arteries, −0.155 vs. 0.007; P=0.02) after adjustment for other risk factors. Progression of carotid intima–media thickness was associated with age, and the EDIC base-line systolic blood pressure, smoking, the ratio of low-density lipoprotein to high-density lipoprotein cholesterol, and urinary albumin excretion rate and with the mean glycosylated hemoglobin value during the mean duration (6.5 years) of the DCCT.

CONCLUSIONS
Intensive therapy during the DCCT resulted in decreased progression of intima–media thickness six years after the end of the trial.

The writing group of the Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Research Group (David M. Nathan, M.D., John Lachin, Sc.D., Patricia Cleary, M.S., Trevor Orchard, M.D., David J. Brillon, M.D., Jye-Yu Backlund, M.P.H., Daniel H. O'Leary, M.D., and Saul Genuth, M.D.) assumes responsibility for the contents of this article. Address reprint requests to DCCT/EDIC Research Group at Box NDIC/DCCT, Bethesda, MD 20892, or at dnathan@partners.org.

*A complete list of the persons and institutions participating in the DCCT/EDIC Research Group appears in the Appendix.

N Engl J Med 2003;348:2294-303.

Diabetes mellitus is accompanied by a substantial increase in the risk of cardiovascular disease.[1-5] Most epidemiologic and clinical-trial data have derived from the study of type 2 diabetes, in which cardiovascular disease accounts for 70 percent of all deaths.[1-3] Much less is known about cardiovascular disease in type 1 diabetes. Although the absolute risk of cardiovascular disease is lower in patients with type 1 diabetes than in those with type 2 diabetes, owing in part to their younger age, the relative risk, as compared with that of nondiabetic persons of similar age, may be increased by a factor of 10.[4,5] Much of the risk of cardiovascular disease in patients with type 1 diabetes has been attributed to the development of renal disease.[6] In addition to renal disease, autonomic neuropathy, dyslipidemia, and microvascular cardiac disease have been suggested as cardiovascular risk factors.[7] Interestingly, glycemia has not been documented to be a risk factor for heart disease in patients with type 1 diabetes.

During the Diabetes Control and Complications Trial (DCCT), patients with type 1 diabetes were randomly assigned either to receive intensive diabetes therapy, subsequently maintaining a mean glycosylated hemoglobin value of 7.2 percent during the mean follow-up of 6.5 years, or to receive standard therapy, subsequently maintaining a mean glycosylated hemoglobin value of 9 percent.[8] Although intensive therapy reduced the risk of development and progression of microvascular and neuropathic complications by 35 to 76 percent, the incidence of cardiovascular disease events was not significantly different between the two treatment groups.[9] After completion of the DCCT, long-term follow-up of the DCCT cohort, called the Epidemiology of Diabetes Interventions and Complications (EDIC) study,[10] included B-mode ultrasonography to measure the thickness of the intima–media wall of the carotid artery on two occasions. Carotid intima–media thickness is a well-established index of atherosclerosis that correlates with prevalent and incident coronary heart disease[11-14] and stroke.[12,14,15] We analyzed the changes in the intima–media thickness over time and associated risk factors, according to the original intention-to-treat assignment during the DCCT.

METHODS

patients

The 1441 patients enrolled in the DCCT between 1983 and 1989 were 13 to 39 years old, had had type 1 diabetes for 1 to 15 years, and were in generally good health at base line.[8] After a mean of 6.5 years of follow-up, 1375 of the 1425 surviving members volunteered to participate in the EDIC study, an observational follow-up of the DCCT cohort.[10] During the EDIC study, all therapy was provided by the patients' own physicians and intensive therapy was recommended for all patients. A detailed description of the study procedures and base-line characteristics has been published.[10] Carotid ultrasonography was performed between June 1994 and April 1996 (1 to 2 years after the initiation of the EDIC study and approximately 8 years after the beginning of the DCCT; range, 4 to 11). It was repeated between October 1998 and November 2000 in 1229 participants, who are the subjects of this study (Table 1).

control subjects

Healthy age- and sex-matched subjects without diabetes were recruited from each of the 28 EDIC centers to serve as contemporaneous controls to determine carotid intima–media thickening. One group of eight controls from each center was selected in 1994–1996,[16] and a second group of eight was selected in 1998–2000. In 1998–2000, 222 healthy volunteers with a mean (±SD) age of 39±11 years were studied. Fifty percent were female. Mean systolic and diastolic blood pressures were 117±11 and 75±9 mm Hg, respectively, similar to those of the DCCT cohort. The prevalence of smoking, however, was much lower: 5.9 percent, as compared with 16.8 percent in the DCCT cohort ($P<0.001$). The mean glycosylated hemoglobin value was 5.0±0.35 percent.

assessment of carotid intima–media thickness

The measurement of intima–media thickness has been described in detail.[16] A single longitudinal lateral view of the distal 10 mm of the right and left common carotid arteries and three longitudinal views in different imaging planes of each internal carotid artery were obtained. The internal carotid artery was defined as including both the carotid bulb and the 10-mm segment distal to the tip of the flow divider that separates the internal from the external carotid artery. Studies were performed by certified technicians at the clinical centers, recorded on videotapes, and read in a central unit (Tufts University, Boston) by a single reader, who was unaware of the subjects' diagnostic groups, treatment assignments and the time of the studies (year 1 as compared with year 6).

Table 1. Clinical Characteristics of the Epidemiology of Diabetes Interventions and Complications (EDIC) Participants, According to Sex and Treatment Assignment in the Diabetes Control and Complications Trial (DCCT).*

Characteristic	Female Patients		Male Patients	
	Intensive Treatment (N=295)	Conventional Treatment (N=289)	Intensive Treatment (N=323)	Conventional Treatment (N=322)
Demographic, year 1				
Age (yr)	35±7	34±7	36±7	36±7
Current smoker (%)	20	19	20	17
Duration of diabetes (yr)	13.9±4.8	14.2±5.2	13.9±4.8	13.3±4.6
Medical, year 1				
Body-mass index	26.5±4.5†	25.0±3.5	26.7±3.9‡	26.0±3.2
Natural waist:hip circumference	0.76±0.07	0.76±0.07	0.88±0.08	0.87±0.09
Ankle:arm blood pressure <0.9 (%)	8.8	8.7	4.6	6.9
Systolic blood pressure (mm Hg)	114±12	114±13	119±11	120±12
Diastolic blood pressure (mm Hg)	74±9	72±9	77±9	77±8
Hypertension (%)§	10.4	14.0	22.9	17.9
Lipids, year 1 or 2				
Total cholesterol (mg/dl)¶	188±36	188±38	187±35	182±36
HDL cholesterol (mg/dl)¶	59±14	59±14	49±13	50±11
LDL cholesterol (mg/dl)¶	112±29	112±30	119±30‡	114±32
LDL:HDL ratio	2.0	2.0	2.6	2.4
Triglycerides (mg/dl)‖	83±76	83±76	96±72	96±79
Hyperlipidemia (%)**	27.1	26.8	35.3	30.0
Albumin excretion rate, year 1 or 2				
Value (mg/24 hr)	22±67††	67±330	30±118	43±117
>40 mg/24 hr (%)	6.8†	15.7	7.7†	16.5
Glycosylated hemoglobin (%)				
During DCCT	7.3±0.9†	9.1±1.3	7.2±0.9†	9.0±1.1
Year 1 EDIC	7.9±1.4‡	8.1±1.4	7.8±1.2†	8.3±1.2
Intima–media thickness, year 1 or 2 (mm)				
Common carotid artery	0.566±0.077	0.557±0.076	0.597±0.082	0.604±0.097
Internal carotid artery	0.608±0.165	0.628±0.251	0.668±0.220	0.681±0.268

* Plus–minus values are means ±SD. All data are from EDIC year 1 or year 2 unless otherwise noted. Comparisons between intensive-treatment and conventional-treatment groups are based on the chi-square test or Wilcoxon rank-sum test. The body-mass index is the weight in kilograms divided by the square of the height in meters.
† P<0.001 for the comparison of intensive treatment with conventional treatment.
‡ P<0.05 for the comparison of intensive treatment with conventional treatment.
§ Hypertension was defined by a systolic blood pressure of at least 140 mm Hg, a diastolic blood pressure of at least 90 mm Hg, the presence of documented hypertension, or the use of antihypertensive agents.
¶ To convert the values for cholesterol to millimoles per liter, multiply by 0.02586. HDL denotes high-density lipoprotein, and LDL low-density lipoprotein.
‖ To convert the values for triglycerides to millimoles per liter, multiply by 0.01129.
** Hyperlipidemia was defined by an LDL cholesterol level of at least 130 mg per deciliter (3.36 mmol per liter) or by the use of lipid-lowering agents.
†† P<0.01 for the comparison of intensive treatment with conventional treatment.

QUALITY-CONTROL PROCEDURES

Reproducibility analysis of 50 replicate measures of year 1 and year 6 carotid studies resulted in absolute mean differences of 0.03 and 0.02 mm for the year 1 common carotid artery and internal carotid artery, respectively, and 0.03 and 0.04 mm for the year 6 common carotid artery and internal carotid artery, respectively. The respective intraclass correlations between the original and maximal wall thickness and the measurement obtained on rereading were 0.87 and 0.99 for year 1 common and internal carotid arteries and 0.99 and 0.99 for year 6 common and internal carotid arteries.

OTHER PROCEDURES

Each subject in the EDIC study underwent an annual history-taking, physical examination, electrocardiography, and laboratory testing, including measurements of serum creatinine and glycosylated hemoglobin, determined as they were in the DCCT.[8,17] Lipid profiles and four-hour urine collections for the measurement of the albumin excretion rate and creatinine clearance were obtained in alternate years during the EDIC study.[10]

MEASUREMENTS

Base-line covariates were obtained from the year 1 history and physical examination and from the laboratory data (lipid levels measured after an overnight fast and renal-function values) collected in either year 1 or year 2. The maximal intima–media thickness of the common carotid artery was defined as the mean of the maximal value for the near and far walls on both the right and left sides. The internal intima–media thickness was defined as the mean of the maximal value for anterior, lateral, and posterior views on both sides. The combined intima–media thickness was defined as the sum of the standardized intima–media measurements of the common and internal carotid arteries. The standardized intima–media thickness was defined as (variable − mean) ÷ SD.[18] The change in the thickness was defined as the difference between results for year 6 and those for year 1.

STATISTICAL ANALYSIS

Group differences were compared with use of the Wilcoxon rank-sum test for quantitative variables and the chi-square test for categorical variables. A paired t-test was used to test the significance of the change over time. To compare the two treatment groups, we used analysis of covariance of the change in the intima–media thickness (year 6 minus year 1) with the year 1 thickness as an adjusting covariate. To obtain the least-squares means of the change in intima–media thickness, we fitted the model using the change in the thickness as the outcome and adjusting for the year 1 value, age, sex, and the ultrasonography equipment used (12 combinations of ultrasonography equipment were used at 28 clinical centers). A reciprocal transformation of the internal intima–media thickness was used to yield approximately normal residuals.[19] The association of each covariate (listed in Table 1) with each intima–media measure was assessed, with adjustment for the year 1 value, sex, attained age, and the ultrasonography equipment used. To study the risk factors, a multiple linear regression model was fitted with the use of the year 6 intima–media thickness as the outcome and the year 1 thickness as a covariate. The most significant factor for the multivariate association among similar variables (e.g., systolic and diastolic blood pressure) was selected. Only covariates known to be unaffected by the DCCT treatment group were included. All two-way interaction terms were assessed, and those nominally significant at a P level of less than 0.10 were retained.[20] The final model included the ultrasonography equipment used, attained age, sex, the year 1 intima–media thickness, smoking status, systolic blood pressure, treatment group, and the interaction between attained age and treatment group. The overall effect of the DCCT treatment group was assessed with the use of a general linear test with 2 degrees of freedom for both the main effect and the interaction.[21,22]

RESULTS

The clinical characteristics of the EDIC study cohort at year 1, according to sex and treatment assignment during the DCCT, are shown in Table 1. Mean blood pressure and lipid levels were not significantly different between the group that had received intensive therapy during the DCCT and the group that had received conventional treatment. On the other hand, mean glycosylated hemoglobin levels in the two groups remained significantly, albeit minimally, different during the first four years of the EDIC study; by year 5 they were no longer different (7.9 percent in the original intensive-treatment group and 8.0 percent in the conventional-treatment group, $P=0.075$).[23] Albumin excretion rates remained significantly lower in the intensive-

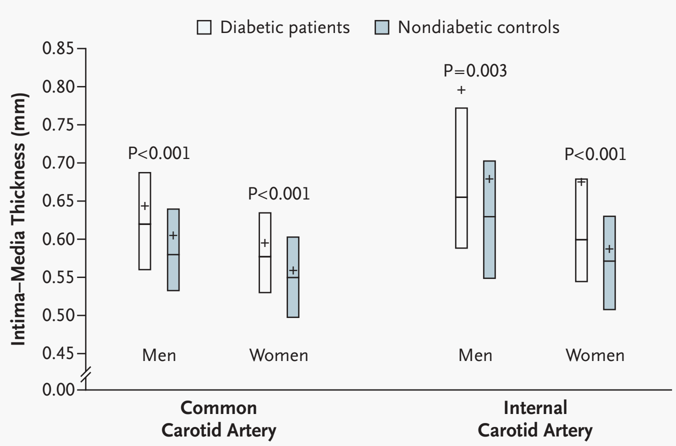


Figure 1. Intima–Media Thickness of the Common and Internal Carotid Arteries at Year 6 in Diabetic Patients and Age-Matched Nondiabetic Control Subjects.

Box plots represent the second and third quartiles of the distribution, the center line the median, and the plus sign the mean. P values were calculated with use of the Wilcoxon rank-sum test.

treatment group than in the conventional-treatment group during the six years of EDIC follow-up, reflecting the previously described long-lasting beneficial effects of intensive therapy on diabetic nephropathy.[8,24] Body-mass index during the EDIC study remained significantly higher in the group that had received intensive treatment during DCCT, as it had been at the end of that study.

The intima–media measurements in the age- and sex-matched 1998–2000 nondiabetic population were similar to published data in healthy nondiabetic subjects, with a mean intima–media thickness of 0.58±0.10 mm for the common carotid artery and a mean of 0.63±0.18 mm for the internal carotid artery.[15,24] Although no significant differences in thickness were demonstrable between the diabetic cohort and nondiabetic controls at year 1,[16] by year 6, the intima–media thickness for the common and internal carotid arteries was significantly greater in the diabetic cohort than in the nondiabetic cohort for each sex, even after adjustment for smoking status (Fig. 1).

There was less progression of the intima–media thickness of the common carotid artery from year 1 to year 6 among the patients who had received intensive treatment during the DCCT than among those who had received conventional treatment. After adjustment for sex, age, the ultrasonography equipment used, and the year 1 intima–media thickness (Table 2), the mean progression was 0.032 mm in the intensive-treatment group and 0.046 mm in the conventional-treatment group, with a difference of 0.013 mm (95 percent confidence interval for the difference, 0.003 to 0.024). The progression of the intima–media thickness of the combined common and internal carotid arteries was also less in the intensive-treatment group, where regression occurred, than in the conventional-treatment group (–0.155 vs. 0.007; a difference of 0.162; 95 percent confidence interval for the difference, 0.031 to 0.293) (Table 2). The differences between treatment groups in the reciprocal values for the intima–media thickness of the internal carotid artery were not significant (P=0.07). There was no significant treat-

Table 2. Least-Squares Mean Change in the Intima–Media Thickness of the Common Carotid Artery and of the Combined Common and Internal Carotid Arteries from Year 1 to Year 6 of the Epidemiology of Diabetes Interventions and Complications Study, According to the Treatment Assignment in the Diabetes Control and Complications Trial.*

Variable	Change in Intima–Media Thickness of Common Carotid Artery		Change in Combined Intima–Media Thickness	
	Least-Squares Mean (95% CI)	P Value	Least-Squares Mean (95% CI)	P Value
	mm		*mm*	
Conventional treatment	0.046 (0.023 to 0.068)		0.007 (–0.277 to 0.292)	
Intensive treatment	0.032 (0.010 to 0.055)		–0.155 (–0.440 to 0.131)	
Difference between treatment groups	0.013 (0.003 to 0.024)	0.01	0.162 (0.031 to 0.293)	0.02

* The change in the intima–media thickness was used as the outcome to fit a general linear model, adjusted for sex, age, ultrasonography equipment used, and the year 1 thickness. CI denotes confidence interval.

ment effect according to sex. Finally, the potential effect of any differences in the use of hypolipidemic or antihypertensive agents between the two treatment groups was analyzed by including terms for medication use in the analyses in Table 2. The results were unchanged.

The intima–media thickness at year 6 of the EDIC study was associated with smoking status, systolic (but not diastolic) blood pressure, the presence or absence of hypertension, total and high-density lipoprotein cholesterol levels (data not shown), the ratio of low-density lipoprotein to high-density lipoprotein cholesterol, urinary albumin excretion rate, and the mean glycosylated hemoglobin level during the DCCT (Table 3). All of the associations were similar in magnitude and direction for the intima–media thickness of the common carotid artery and the internal carotid artery and the combined intima–media thickness and when the change in thickness was substituted for the year 6 thickness. The association of the mean glycosylated hemoglobin value during the DCCT with the year 6 intima–media thickness of the common carotid artery remained significant ($P<0.001$) after adjustment for age, sex, year 1 intima–media thickness of the common carotid artery, and the ultrasonography equipment used.

Since many of the univariate risk factors differed between groups at year 1 of the EDIC study, reflecting the effects of treatment during the DCCT, multivariate regression modeling adjusted only for the covariates not affected by treatment at year 1 of the EDIC study. These models revealed that, for each measure, the benefits of intensive treatment increased with age (Table 4). Furthermore, the overall treatment effect with 2 degrees of freedom was significant for all these measures ($P=0.004$ for the intima–media thickness of the common carotid artery and $P=0.005$ for the combined thickness), including the reciprocal internal intima–media thickness ($P=0.049$) (data not shown). The complete model explained approximately 40 percent of the variation in the intima–media thickness of the common carotid artery and 52 percent of the variation in the combined thickness. Figure 2 shows the difference between the conventional-treatment and

Table 3. Univariate Associations of Carotid Intima–Media Thickness, with Risk Factors Adjusted for Age, Sex, Ultrasonography Equipment Used, and Year 1 Intima–Media Thickness Measurement.*

Risk Factor	Common Carotid Intima–Media Thickness		Internal Carotid Intima–Media Thickness (Reciprocal)		Combined Intima–Media Thickness	
	Estimate of β Coefficient ±SE	P Value	Estimate of β Coefficient ±SE	P Value	Estimate of β Coefficient ±SE	P Value
					mm	
Treatment group (conventional vs. intensive)	0.0135±0.0053	0.02	−0.0330±0.0183	0.07	0.1619±0.0669	0.02
Body-mass index (per unit)	0.0016±0.0007	0.03	−0.0032±0.0025	0.20	0.0136±0.0089	0.13
Smoking (yes vs. no)	0.0247±0.0068	<0.001	−0.0822±0.0231	<0.001	0.3468±0.0850	<0.001
Systolic blood pressure (per mm Hg)	0.0008±0.0002	<0.001	−0.0023±0.0008	0.004	0.0088±0.0029	0.002
Hypertension (yes vs. no)†	0.0189±0.0074	0.01	−0.1105±0.0258	<0.001	0.3016±0.0939	0.001
Low-density lipoprotein:high-density lipoprotein ratio	0.0072±0.0032	0.03	−0.0505±0.0113	<0.001	0.1427±0.0405	<0.001
Log albumin excretion rate	0.0068±0.0025	0.006	−0.0212±0.0084	0.01	0.0912±0.0308	0.003
Glycosylated hemoglobin value during DCCT (per 1 percentage point)	0.0065±0.0020	0.001	−0.0193±0.0067	0.004	0.1014±0.0244	<0.001

* The multiple regression model used the year 6 intima–media thickness as the outcome and fit the covariates one at a time after adjustment for age, sex, ultrasonography equipment used, and year 1 intima–media thickness. The R^2, based on a general linear model (PROC GLM) in which the year 6 intima–media thickness was the outcome, adjusted for age, sex, ultrasonography equipment used, and year 1 intima–media measurement, is 37.76 percent, 39.58 percent, and 50.60 percent for the common carotid, internal carotid, and combined intima–media thickness, respectively. DCCT denotes Diabetes Control and Complications Trial.

† Hypertension was defined by a systolic blood pressure of at least 140 mm Hg, a diastolic blood pressure of at least 90 mm Hg, documented hypertension, or the use of antihypertensive agents.

Table 4. Multivariate Association of Carotid Intima–Media Thickness with Various Risk Factors.*

Risk Factor	Common Carotid Intima–Media Thickness			Combined Intima–Media Thickness		
	Estimate of β Coefficient ±SE	Semipartial R^2 %	P Value	Estimate of β Coefficient ±SE	Semipartial R^2 %	P Value
Age (per year of age)	0.0029±0.0006	1.32	<0.001	0.0248±0.0071	0.49	<0.001
Sex (female vs. male)	−0.0173±0.0055	0.50	0.002	−0.2506±0.0689	0.53	<0.001
Year 1 intima–media thickness	0.6188±0.0361	14.79	<0.001	0.5961±0.0238	24.90	<0.001
Smoking (yes vs. no)	0.0265±0.0068	0.77	<0.001	0.3737±0.0851	0.77	<0.001
Systolic blood pressure (per mm Hg)	0.0008±0.0002	0.61	<0.001	0.0092±0.0029	0.42	0.001
Ultrasonography equipment used (12 combinations)†	—	1.64	<0.001	—	1.92	<0.001
Treatment group (conventional vs. intensive)	−0.0453±0.0274	0.14	0.10	−0.5433±0.3435	0.10	0.12
Interaction between age and treatment group	0.0017±0.0008	0.24	0.03	0.0201±0.0096	0.18	0.04
Overall treatment effect (treatment effect as a function of age)‡	§	0.57	0.004	‖	0.42	0.005
		0.40			0.52	
Total R^2 (%)	40			52		

* The multiple regression model used the year 6 intima–media thickness as the outcome and fit the listed covariates simultaneously.
† Eleven estimates are omitted.
‡ The overall treatment effect was determined by two regression coefficients: treatment group and the interaction between age and treatment group. The use of either coefficient alone did not reflect the overall treatment effect. The overall treatment effect was based on the general linear test with 2 degrees of freedom for the numerator.
§ For the common carotid artery, $\beta=(-0.0453)+(0.0017)\times\text{age}$, and the standard error $=(7.5\times10^{-4})-(4.1\times10^{-5})\times\text{age}+(6.4\times10^{-7})\times\text{age}^2$.
‖ For the combined value, $\beta=(-0.5433)+(0.0201)\times\text{age}$, and the standard error $=(0.1180)-(0.0065)\times\text{age}+(9.2\times10^{-5})\times\text{age}^2$.

intensive-treatment groups in the change in the intima–media thickness of the common carotid artery as a function of attained age. The intensive therapy during 6.5 years of the DCCT resulted in a significantly slower rate of progression of intima–media thickness during the 6 years of the EDIC study (P=0.004).

DISCUSSION

We assessed the long-term effect of intensive treatment of type 1 diabetes, presumably mediated through improved glycemic control, on the thickness of the carotid-artery wall over time. Using a multivariate linear regression model incorporating important covariates that were not affected or confounded by treatment, as well as the interaction between age and treatment group, we found a significant effect of intensive therapy, as compared with conventional treatment, during the DCCT on the subsequent change in the intima–media thickness with age. The intensively treated group had a smaller increase in the thickness with age than did the conventionally treated group. The differences in intima–media thickness between these treatment groups could be due to the less atherogenic lipid profile and decreased level of microalbuminuria seen with intensive therapy during the DCCT. However, even after adjustment for these variables in additional models, intensive therapy (and the lower mean glycosylated hemoglobin value during the DCCT) continued to be associated with a decrease in the progression of the intima–media thickness. The differences in the glycosylated hemoglobin value during the DCCT explained 96 percent of the long-term differences between groups (sum of squares) in the intima–media thickness of the common carotid artery at year 6.

Although the rate of cardiovascular disease is increased among patients with diabetes,[1,5] the role of glycemia in this process remains uncertain.[1,25] Intervention trials achieving variable degrees of glycemic control in patients with type 1 and type 2 diabetes have found either no statistically significant beneficial effect on cardiovascular end points[9,26,27] or a positive effect that was not consistent in all groups and analyses.[28-30] A meta-regression analysis, including predominantly patients with type 2 diabetes and subjects without diabetes, found a progressive relation between initial fasting and postprandial glucose levels and the subsequent occurrence of cardiovascular events over a 12-year period.[31] The increased relative risk extended to subjects with glucose levels below the threshold for the diagnosis of diabetes. These studies have generally focused on cardiovascular disease events. However, several epidemiologic analyses in patients with type 2 diabetes have shown associations between intima–media thickness — as an early indicator of atherosclerosis — and glycemia.[32,33]

Our results demonstrate an association between glycemia and intima–media thickness, a sensitive marker for coronary and cerebral vascular disease, in patients with type 1 diabetes. The explanation for the apparently delayed effect of diabetes interventions on intima–media thickness — at year 1 of the EDIC study there was no effect of intensive therapy and no significant associations between carotid intima–media thickness and the mean glycosylated hemoglobin value during the DCCT[16] — may lie in the putative pathogenic mechanism of atherosclerosis and in the demographics of the DCCT cohort. The accelerated development of atherosclerotic lesions in patients with diabetes may be the result of a gradual accumulation of advanced glycosylation end products.[34,35] Thus, it may take years for atherosclerosis caused by various levels of hyperglycemia to develop, especially in a relatively young population, such as the DCCT cohort.

We[16] and others[36-38] have found the conventional cardiovascular disease risk factors of hypertension, dyslipidemia, and smoking to be related to intima–media thickness in patients with type 1 diabetes. Urinary albumin excretion was also associated with atherosclerosis, as suggested in other studies.[39]

The differences in intima–media thickness that we observed at year 6 between the diabetic cohort and the age- and sex-matched nondiabetic controls confirm and extend the results of several earlier, smaller studies. Increased carotid intima–media thickness has been reported in 105 Japanese patients with type 1 diabetes, as compared with those in age- and sex-matched controls,[40] and in 60 Italian patients with type 1 diabetes.[41] Studies of patients with type 2 diabetes have also demonstrated

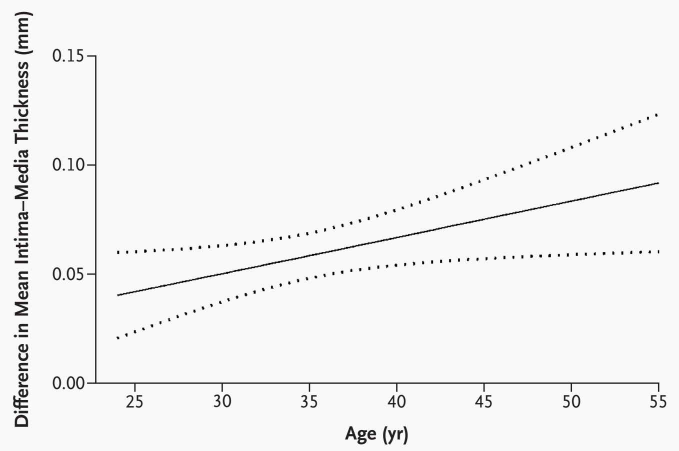


Figure 2. Mean Treatment-Related Difference in the Relation between the Estimated Mean Intima–Media Thickness and Age.

Dotted lines represent 95 percent confidence intervals. The overall difference (conventional treatment minus intensive treatment) was significant (P=0.004).

a difference in intima–media thickness between diabetic patients and nondiabetic subjects[32,42]; however, the relevance of these findings in the generally younger patients with type 1 diabetes who have a lower burden of cardiovascular disease and risk factors for cardiovascular disease is uncertain.

Our study has some limitations. The entire EDIC cohort did not participate in the carotid ultrasonographic measurements. However, the proportion of subjects who did not participate was small (10.6 percent), and the clinical characteristics of the nonparticipants and participants were generally similar. The unequal prevalence of smoking in the EDIC cohort and the age-matched nondiabetic controls could account for some of the differences in carotid intima–media thickness between these two groups; however, analyses that controlled for smoking yielded similar results. Differential use between treatment groups of medications known to ameliorate risk factors for cardiovascular disease and atherogenesis might explain, or confound, these results. However, here again, analyses that controlled for medication use and elevated blood pressure or low-density lipoprotein level yielded the same results. In fact, the more frequent use of such medications by the conventional-treatment group would be expected to decrease the differences in intima–media thickness that we found.

The results for intima–media thickness in the

DCCT cohort, which was carefully selected to exclude patients with several other risk factors for atherosclerosis,[9] might not extend to all patients with type 1 diabetes. However, as noted previously,[43] at base line there were few differences between the DCCT cohort and the unselected population-based cohort with type 1 diabetes in the Wisconsin Epidemiologic Study of Diabetic Retinopathy. Therefore, the current results can probably be applied to the general population of patients with type 1 diabetes.

Finally, although cross-sectional intima–media measurements have been convincingly shown to correlate with the risk of cardiovascular disease events, data to support an association between the progression of intima–media thickness and such events are scarce.[44] The clinical manifestations of atherosclerosis will increase as the DCCT cohort ages,[5,45] increasing the likelihood of detecting a difference in cardiovascular disease event rates between treatment groups, should one exist. Longer follow-up of this cohort will reveal whether the decrease in the progression of intima–media thickness with intensive diabetes therapy translates into a clinically meaningful reduction in cardiovascular disease events.

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APPENDIX

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APPENDIX B

Means, Standard Deviations, and Ranges for Metric Variables and Frequency Distributions for Nominal Variables as (1) reported by the EDIC DCC and (2) calculated from archived data.

ED_CURU6 (edicMS.Curu6 vm 414) Summary Statistics

Variable	Variable Label	Category	n	%	Stat.
Total	Total		1229	.	.
AER	AER Year 1 or 2	Mean (N)	1181	.	40.2029
		STD	.	.	185.8145
		Min	.	.	1.4400
		Max	.	.	5011.200
AER40	AER >= 40 Year 1 or 2	.	48	3.91	.
		0: No	1043	84.87	.
		1: Yes	138	11.23	.
ATT_AGE	Attained Age Year 1	Mean (N)	1229	.	35.1937
		STD	.	.	6.9399
		Min	.	.	19.0000
		Max	.	.	51.0000
ATT_DURN	Attained duration (years) Year 1	Mean (N)	1229	.	13.8114
		STD	.	.	4.8629
		Min	.	.	6.3333
		Max	.	.	26.0833
BMI	BMI Year 1	Mean (N)	1221	.	26.0669
		STD	.	.	3.8445
		Min	.	.	17.0068
		Max	.	.	49.8443
COMDF6	diff (yr6-yr1), common	Mean (N)	1219	.	0.0346
		STD	.	.	0.0999
		Min	.	.	-0.3925
		Max	.	.	1.0100
COMINT1A	Combined IMT Year 1	Mean (N)	1229	.	-0.0000
		STD	.	.	1.6478
		Min	.	.	-3.4963
		Max	.	.	9.5765
COMINT6A	Combined IMT Year 6	Mean (N)	1229	.	-0.0000
		STD	.	.	1.6542
		Min	.	.	-3.0644
		Max	.	.	14.7808
COMMON	Common IMT Year 1	Mean (N)	1229	.	0.5820
		STD	.	.	0.0859
		Min	.	.	0.3700
		Max	.	.	0.9975
COMMYR6	Common at year 6	Mean (N)	1219	.	0.6164

ED_CURU6 (edicMS.Curu6 vm 414) Summary Statistics

Variable	Variable Label	Category	n	%	Stat.
		STD	.	.	0.1172
		Min	.	.	0.3675
		Max	.	.	1.7800
DBP	Diastolic BP Year 1	Mean (N)	1225	.	75.0963
		STD	.	.	9.1742
		Min	.	.	40.0000
		Max	.	.	108.0000
DCCT_HBA	Average HbA1c during the DCCT	Mean (N)	1229	.	8.1442
		STD	.	.	1.3926
		Min	.	.	5.3950
		Max	.	.	13.5750
DF16A	diff (comint6a - 1a)	Mean (N)	1229	.	-0.0000
		STD	.	.	1.3291
		Min	.	.	-6.0109
		Max	.	.	7.5227
GROUP	TREATMENT GROUP	Conventional	611	49.72	.
		Intensive	618	50.28	.
HBA1C	HbA1c at Year 1	Mean (N)	1212	.	8.0568
		STD	.	.	1.3278
		Min	.	.	4.4000
		Max	.	.	15.0000
HDL	HDL Year 1 or 2	Mean (N)	1193	.	54.0109
		STD	.	.	13.9467
		Min	.	.	24.0000
		Max	.	.	121.0000
HLIP	LDL >=130 or medication Year 1 (yes=1)	.	27	2.20	.
		0: No	842	68.51	.
		1: Yes	360	29.29	.
HT	Hypertension Year 1 (yes=1)	.	18	1.46	.
		0: No	1011	82.26	.
		1: Yes	200	16.27	.
INTERN	Internal IMT Year 1	Mean (N)	1196	.	0.6478
		STD	.	.	0.2316
		Min	.	.	0.3820
		Max	.	.	2.5450
INTNYR6	Internal IMT Year 6	Mean (N)	1203	.	0.7348
		STD	.	.	0.3536

ED_CURU6 (edicMS.Curu6 vm 414) Summary Statistics

Variable	Variable Label	Category	n	%	Stat.
		Min	.	.	0.3567
		Max	.	.	2.9457
LA9	Ankle/arm ratio < 0.9 Year 1 (yes=1)	.	2	0.16	.
		0: No	1139	92.68	.
		1: Yes	88	7.16	.
LDL	LDL Year 1 or 2	Mean (N)	1184	.	114.4130
		STD	.	.	30.5049
		Min	.	.	26.0000
		Max	.	.	257.0000
LHRATIO	LDL/HDL ratio Year 1 or 2	Mean (N)	1184	.	2.2680
		STD	.	.	0.8799
		Min	.	.	0.4396
		Max	.	.	5.6333
LOG_AER	Natural logarithm of AER	Mean (N)	1181	.	2.5586
		STD	.	.	1.1256
		Min	.	.	0.3646
		Max	.	.	8.5194
MACH16	Ultrasonography Equipment combinations	Mean (N)	1229	.	19.2474
		STD	.	.	7.0331
		Min	.	.	11.0000
		Max	.	.	34.0000
R_INT	Reciprocal of Internal Year 1	Mean (N)	1196	.	1.6518
		STD	.	.	0.3435
		Min	.	.	0.3929
		Max	.	.	2.6178
R_INT6	reciprocal of internal year 6	Mean (N)	1203	.	1.5295
		STD	.	.	0.3972
		Min	.	.	0.3395
		Max	.	.	2.8037
SBP	Systolic BP Year 1	Mean (N)	1224	.	117.1479
		STD	.	.	12.3779
		Min	.	.	82.0000
		Max	.	.	172.0000
SEX	Sex	Female	584	47.52	.
		Male	645	52.48	.
SMOKING	Current smoking (yes=1) Year 1	.	2	0.16	.
		0: No	994	80.88	.

ED_CURU6 (edicMS.Curu6 vm 414) Summary Statistics

Variable	Variable Label	Category	n	%	Stat.
		1: Yes	233	18.96	.
TCHOL	Total Cholesterol Year 1 or 2	Mean (N)	1192	.	186.3582
		STD	.	.	36.1816
		Min	.	.	87.0000
		Max	.	.	399.0000
TRIG	Triglyceride Year 1 or 2	Mean (N)	1193	.	89.8541
		STD	.	.	75.8828
		Min	.	.	14.0000
		Max	.	.	1110.000
WHRATIO	Waist/hip ratio Year 1	Mean (N)	1207	.	0.8228
		STD	.	.	0.0999
		Min	.	.	0.3631
		Max	.	.	1.8618

```
       log:  G:\EDIC Carotid IMT\1.log
  log type:  text
 opened on:  13 May 2006/7*, 15:31:21
*NOTE: Clock re-set to 2006 because SAS license had expired

. do "C:\DOCUME~1\CFTHOM~1.000\LOCALS~1\Temp\STD00000000.tmp"

. describe

Contains data from G:\EDIC Carotid IMT\edicmscuru6.dta
  obs:         1,229
 vars:            34
 size:       135,190 (99.9% of memory free)
-------------------------------------------------------------------------------
              storage  display     value
variable name   type   format      label      variable label
-------------------------------------------------------------------------------
common          float  %9.0g                  common imt year 1
intern          float  %9.0g                  internal imt year 1
r_int           float  %9.0g                  reciprocal of internal year 1
sex             str1   %1s                    sex
group           str12  %12s                   treatment group
comdf6          float  %9.0g                  diff (yr6-yr1), common
att_age         byte   %8.0g                  attained age year 1
att_durn        float  %9.0g                  attained duration (years) year 1
smoking         byte   %8.0g                  current smoking (yes=1) year 1
sbp             int    %8.0g                  systolic bp year 1
dbp             int    %8.0g                  diastolic bp year 1
bmi             float  %9.0g                  bmi year 1
whratio         float  %9.0g                  waist/hip ratio year 1
la9             byte   %8.0g                  ankle/arm ratio < 0.9 year 1
                                                (yes=1)
tchol           int    %8.0g                  total cholesterol year 1 or 2
trig            int    %8.0g                  triglyceride year 1 or 2
hdl             int    %8.0g                  hdl year 1 or 2
ldl             int    %8.0g                  ldl year 1 or 2
lhratio         float  %9.0g                  ldl/hdl ratio year 1 or 2
aer             float  %9.0g                  aer year 1 or 2
aer40           byte   %8.0g                  aer >= 40 year 1 or 2
hba1c           float  %9.0g                  hba1c at year 1
dcct_hba        float  %9.0g                  average hba1c during the dcct
commyr6         float  %9.0g                  common at year 6
intnyr6         float  %9.0g                  internal imt year 6
r_int6          float  %9.0g                  reciprocal of internal year 6
comint1a        float  %9.0g                  combined imt year 1
comint6a        float  %9.0g                  combined imt year 6
df16a           float  %9.0g                  diff (comint6a - 1a)
hlip            byte   %8.0g                  ldl >=130 or medication year 1
                                                (yes=1)
ht              byte   %8.0g                  hypertension year 1 (yes=1)
mach16          byte   %8.0g                  ultrasonography equipment
                                                combinations
log_aer         float  %9.0g                   natural logarithm of aer
mask_pat        int    %8.0g                  patient id number
-------------------------------------------------------------------------------
Sorted by:
```

```
. summarize

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      common |      1229    .5820098    .0858515        .37      .9975
      intern |      1196    .6478277    .2316232       .382      2.545
       r_int |      1196    1.651753    .3435208   .3929273   2.617801
         sex |         0
       group |         0
-------------+--------------------------------------------------------
      comdf6 |      1219    .0346117    .0998721     -.3925       1.01
     att_age |      1229    35.19365    6.939942         19         51
    att_durn |      1229    13.81143     4.86294   6.333333   26.08333
     smoking |      1227    .1898941    .3923771          0          1
         sbp |      1224    117.1479    12.37795         82        172
-------------+--------------------------------------------------------
         dbp |      1225    75.09633    9.174178         40        108
         bmi |      1221    26.06692     3.84445    17.0068   49.84429
     whratio |      1207    .8228348    .0999408   .3630542   1.861789
         la9 |      1227    .0717196    .2581283          0          1
       tchol |      1192    186.3582    36.18156         87        399
-------------+--------------------------------------------------------
        trig |      1193    89.85415    75.88284         14       1110
         hdl |      1193     54.0109    13.94671         24        121
         ldl |      1184     114.413    30.50492         26        257
     lhratio |      1184    2.268016    .8798865   .4395604   5.633333
         aer |      1181    40.20295    185.8145       1.44     5011.2
-------------+--------------------------------------------------------
       aer40 |      1181    .1168501    .3213777          0          1
       hba1c |      1212    8.056766    1.327781        4.4         15
    dcct_hba |      1229    8.144243      1.3926      5.395     13.575
     commyr6 |      1219    .6163871    .1172314      .3675       1.78
     intnyr6 |      1203    .7348172    .3536264   .3566667   2.945714
-------------+--------------------------------------------------------
      r_int6 |      1203    1.529529    .3971663   .3394762   2.803738
    comint1a |      1229   -2.63e-07    1.647753  -3.496281   9.576523
    comint6a |      1229   -3.95e-07    1.654163   -3.06444   14.78076
       df16a |      1229   -1.35e-07    1.329133  -6.010858   7.522666
        hlip |      1202    .2995008      .45823          0          1
-------------+--------------------------------------------------------
          ht |      1211    .1651528    .3714718          0          1
      mach16 |      1229    19.24736    7.033123         11         34
     log_aer |      1181    2.558564    1.125555   .3646431   8.519431
    mask_pat |      1229    720.4068     417.553          1       1440

. tab1 aer40 group ht hlip la9 smoking

-> tabulation of aer40

  aer >= 40 |
year 1 or 2 |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |      1,043       88.31       88.31
          1 |        138       11.69      100.00
------------+-----------------------------------
      Total |      1,181      100.00

-> tabulation of group

   treatment |
       group |      Freq.     Percent        Cum.
-------------+-----------------------------------
EXPERIMENTAL |        618       50.28       50.28
    STANDARD |        611       49.72      100.00
-------------+-----------------------------------
       Total |      1,229      100.00
```

```
-> tabulation of ht

hypertensio |
   n year 1 |
    (yes=1) |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |      1,011       83.48       83.48
          1 |        200       16.52      100.00
------------+-----------------------------------
      Total |      1,211      100.00

-> tabulation of hlip

  ldl >=130 |
         or |
 medication |
     year 1 |
    (yes=1) |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |        842       70.05       70.05
          1 |        360       29.95      100.00
------------+-----------------------------------
      Total |      1,202      100.00

-> tabulation of la9

  ankle/arm |
ratio < 0.9 |
     year 1 |
    (yes=1) |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |      1,139       92.83       92.83
          1 |         88        7.17      100.00
------------+-----------------------------------
      Total |      1,227      100.00

-> tabulation of smoking

    current |
    smoking |
    (yes=1) |
     year 1 |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |        994       81.01       81.01
          1 |        233       18.99      100.00
------------+-----------------------------------
      Total |      1,227      100.00

.
```

EDxCURU6 (edicMS.Curu6NRM vm 414) Summary Statistics

Variable	Variable Label	Category	n	%	Stat.
Total	Total		222	.	.
COMMYR6	Common IMT at year 6	Mean (N)	214	.	0.5773
		STD	.	.	0.0954
		Min	.	.	0.3600
		Max	.	.	1.0400
INTNYR6	Internal IMT at year 6	Mean (N)	207	.	0.6281
		STD	.	.	0.1824
		Min	.	.	0.3950
		Max	.	.	1.7200
SEX	SEX	Female	112	50.45	.
		Male	110	49.55	.

```
. use "G:\EDIC Carotid IMT\edxcuru6.dta", clear

. describe

Contains data from G:\EDIC Carotid IMT\edxcuru6.dta
  obs:           222
 vars:             4
 size:         3,774 (99.9% of memory free)
-------------------------------------------------------------------------------
              storage  display     value
variable name   type   format      label      variable label
-------------------------------------------------------------------------------
sex             str1   %1s                    sex
commyr6         float  %9.0g                  common imt at year 6
intnyr6         float  %9.0g                  internal imt at year 6
mask_pat        long   %12.0g                 patient id number
-------------------------------------------------------------------------------
Sorted by:

. summarize

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         sex |         0
     commyr6 |       214    .5773403    .0953554        .36       1.04
     intnyr6 |       207    .6281407    .1823886       .395       1.72
    mask_pat |       222    49888.58     27460.5        390      99677

. tab sex

        sex |      Freq.     Percent        Cum.
------------+-----------------------------------
          F |        112       50.45       50.45
          M |        110       49.55      100.00
------------+-----------------------------------
      Total |        222      100.00
```

APPENDIX C

Stata 8/SE Code and Output for Analyses Reported in Memo

```
       log:  C:\EDIC Carotid IMT\2b.log
  log type:  text
 opened on:  23 May 2007, 17:02:32

. do "C:\DOCUME~1\CFTHOM~1.000\LOCALS~1\Temp\STD01000000.tmp"

. use "C:\EDIC Carotid IMT\edicmscuru6.dta", clear

. generate missing=.
(1229 missing values generated)

. sort group

. by group: summarize att_age smoking att_durn bmi whratio la9 sbp dbp ht
tchol hdl ldl lhratio trig missing aer aer40 dc
> ct_hba hba1c common intern if sex=="F"

______________________________________________________________________________
_
-> group = EXPERIMENTAL

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     att_age |       295    35.15593    7.141625         19         50
     smoking |       294    .2006803    .4011922          0          1
    att_durn |       295    13.89802    4.817854   6.333333   26.08333
         bmi |       292    26.47652    4.525977   18.81892   42.10238
     whratio |       285    .7592578    .0744102   .4237288     .95625
-------------+--------------------------------------------------------
         la9 |       294    .0884354    .2844111          0          1
         sbp |       292    114.1301    12.20347         90        162
         dbp |       293    73.50512    8.677487         48        100
          ht |       289    .1038062    .3055381          0          1
       tchol |       286    187.6958    35.65963        108        399
-------------+--------------------------------------------------------
         hdl |       286     58.7972     14.3874         26        106
         ldl |       284    112.0035    29.37927         44        199
     lhratio |       284    2.029237    .7722056   .6333333   5.272727
        trig |       286    83.06294    75.84858         28       1110
     missing |         0
-------------+--------------------------------------------------------
         aer |       279     21.8271    67.33366       1.44     930.24
       aer40 |       279    .0681004    .2523707          0          1
    dcct_hba |       295    7.304381    .9048686   5.498462   11.87118
       hba1c |       291    7.880756    1.363606        5.4         15
      common |       295     .565774    .0769705      .3975      .8575
-------------+--------------------------------------------------------
      intern |       285    .6084818    .1646724     .41375   1.977143

______________________________________________________________________________
_
-> group = STANDARD

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     att_age |       289    33.97232    7.249947         19         49
     smoking |       289    .1903114    .3932277          0          1
    att_durn |       289     14.1286    5.136499   6.416667   25.66667
         bmi |       289    25.01792    3.451216    17.0068   39.60125
     whratio |       281     .760481    .0702378    .391445   1.197566
-------------+--------------------------------------------------------
         la9 |       289    .0865052    .2815962          0          1
         sbp |       289    114.2249    13.11281         82        170
         dbp |       289     72.2699    9.485908         40        100
          ht |       285    .1403509    .3479617          0          1
       tchol |       282    188.1383    38.07006        116        343
-------------+--------------------------------------------------------
```

```
         hdl |       282    59.23759    14.00852         34        121
         ldl |       280       112.1    30.33925         40        204
     lhratio |       280    1.997175    .7238223   .4395604        4.5
        trig |       282    82.89362    75.93026         24       1040
     missing |         0
-------------+--------------------------------------------------------
         aer |       281    67.15217    330.6526       1.44     5011.2
       aer40 |       281    .1565836    .3640561          0          1
    dcct_hba |       289    9.110137    1.345111   5.728919     13.575
       hba1c |       284    8.148239    1.432891        5.3       13.1
      common |       289    .5569723    .0755307        .37      .7825
-------------+--------------------------------------------------------
      intern |       278    .6276088    .2506052       .382       2.37


. by group: summarize att_age smoking att_durn bmi whratio la9 sbp dbp ht
tchol hdl ldl lhratio trig missing aer aer40 dc
> ct_hba hba1c common intern if sex=="M"

_______________________________________________________________________________
_
-> group = EXPERIMENTAL

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     att_age |       323    35.77399     6.72358         19         51
     smoking |       323    .1950464    .3968512          0          1
    att_durn |       323    13.98271    4.912048   6.583333         26
         bmi |       321    26.72371    3.911454   19.05953   49.84429
     whratio |       321    .8830098    .0803522   .6499051   1.337719
-------------+--------------------------------------------------------
         la9 |       323    .0464396    .2107617          0          1
         sbp |       323    119.3065    11.11552         98        152
         dbp |       323    76.89164    9.099725         50        108
          ht |       319    .2288401    .4207461          0          1
       tchol |       315    187.3714    34.56175        100        335
-------------+--------------------------------------------------------
         hdl |       316    49.27848     12.5922         24         97
         ldl |       312     119.125    29.96183         37        257
     lhratio |       312    2.577837    .9515922   .6607143   5.633333
        trig |       316    96.05063    71.51839         25        538
     missing |         0
-------------+--------------------------------------------------------
         aer |       311    30.02701    117.8683       1.44    1694.88
       aer40 |       311    .0771704    .2672917          0          1
    dcct_hba |       323    7.226603    .8684062      5.395   10.73346
       hba1c |       319    7.847649    1.247079        4.4       13.6
      common |       323    .5973891    .0821517      .4025      .9975
-------------+--------------------------------------------------------
      intern |       314    .6677754    .2204556   .3933333      2.445

_______________________________________________________________________________
_
-> group = STANDARD

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     att_age |       322    35.74224    6.560907         20         50
     smoking |       321    .1744548    .3800926          0          1
    att_durn |       322    13.27562    4.573646        6.5   25.66667
         bmi |       319    25.98145    3.190197   18.30577   39.31421
     whratio |       320    .8738495    .0934564   .3630542   1.861789
-------------+--------------------------------------------------------
         la9 |       321    .0685358    .2530576          0          1
         sbp |       320    120.3625    11.85042         90        172
         dbp |       320    77.29375    8.457229         40         99
          ht |       318    .1792453    .3841621          0          1
```

```
       tchol |       309    182.4628    36.39514         87        323
-------------+--------------------------------------------------------
         hdl |       309    49.65049    11.47615         28        103
         ldl |       308    113.9643    31.79928         26        229
     lhratio |       308    2.420564    .8942188   .5172414   5.585366
        trig |       309    96.15534    79.39815         14        924
     missing |         0
-------------+--------------------------------------------------------
         aer |       310    42.52181    116.9985       1.44     1418.4
       aer40 |       310    .1645161    .3713427          0          1
    dcct_hba |       322    8.967268    1.128859      6.284     12.319
       hba1c |       318    8.345912    1.215346        5.5       13.9
      common |       322    .6039286    .0967217         .4   .9966667
-------------+--------------------------------------------------------
      intern |       319    .6809653    .2675956   .4133333      2.545


.
.
end of do-file

. log close
       log:  C:\EDIC Carotid IMT\2b.log
  log type:  text
 closed on:  23 May 2007, 17:02:53
```

```
       log:  C:\EDIC Carotid IMT\2_NEW.log
  log type:  text
 opened on:  29 May 2007, 12:40:24

. do "C:\DOCUME~1\CFTHOM~1.000\LOCALS~1\Temp\STD01000000.tmp"

. use "C:\EDIC Carotid IMT\edicmscuru6.dta", clear

. pause off

. set more off

. generate group2=0

. replace group2=1 if group=="EXPERIMENTAL"
(618 real changes made)

. label define group2 0"STD" 1"EXP"

. label values group2 group2

. tab group group2

   treatment |        group2
       group |       STD        EXP |     Total
-------------+----------------------+----------
EXPERIMENTAL |         0        618 |       618
    STANDARD |       611          0 |       611
-------------+----------------------+----------
       Total |       611        618 |     1,229


. sort group2

. by group2: summarize hba1c

______________________________________________________________________________
_
-> group2 = STD

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
       hba1c |       602    8.252658    1.325006        5.3       13.9

______________________________________________________________________________
_
-> group2 = EXP

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
       hba1c |       610    7.863443    1.302993        4.4         15


. anova hba1c group2, partial

                           Number of obs =    1212     R-squared     =  0.0215
                           Root MSE      = 1.31397     Adj R-squared =  0.0207

                  Source |  Partial SS    df       MS           F     Prob > F
              -----------+----------------------------------------------------
                   Model |  45.8990013     1  45.8990013      26.58     0.0000
                         |
                  group2 |  45.8990013     1  45.8990013      26.58     0.0000
                         |
                Residual |  2089.09551  1210  1.72652521
              -----------+----------------------------------------------------
```

```
                   Total |  2134.99451  1211  1.76300125

.
. by group2: summarize aer

------------------------------------------------------------------------------
-> group2 = STD

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         aer |       591    54.23269    243.3242       1.44     5011.2

------------------------------------------------------------------------------
-> group2 = EXP

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         aer |       590    26.14942    97.30754       1.44    1694.88

. anova aer group2, partial

                           Number of obs =    1181     R-squared     =  0.0057
                           Root MSE      = 185.361     Adj R-squared =  0.0049

                  Source |  Partial SS    df       MS            F     Prob > F
              -----------+----------------------------------------------------
                   Model |  232854.615     1  232854.615       6.78     0.0093
                         |
                  group2 |  232854.615     1  232854.615       6.78     0.0093
                         |
                Residual |  40509024.9  1179  34358.7997
              -----------+----------------------------------------------------
                   Total |  40741879.5  1180  34527.0165

.
. by group2: summarize bmi

------------------------------------------------------------------------------
-> group2 = STD

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       608    25.52346    3.348881    17.0068   39.60125

------------------------------------------------------------------------------
-> group2 = EXP

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       613    26.60596    4.213687   18.81892   49.84429
```

```
. anova bmi group2, partial

                           Number of obs =    1221     R-squared     =  0.0198
                           Root MSE      = 3.80769     Adj R-squared =  0.0190

                  Source |  Partial SS    df       MS           F     Prob > F
              -----------+----------------------------------------------------
                   Model |  357.690827     1  357.690827      24.67     0.0000
                         |
                  group2 |  357.690827     1  357.690827      24.67     0.0000
                         |
                Residual |  17673.6621  1219  14.4984923
              -----------+----------------------------------------------------
                   Total |  18031.3529  1220  14.7797975

.
. generate sample = 1

. label define sample 1"EDIC" 2"NORMALS"

. label values sample sample

. keep sex commyr6 intnyr6 group2 sample

. save edic, replace
file edic.dta saved

.
. use "C:\EDIC Carotid IMT\edxcuru6.dta", clear

. generate sample=2

. generate group2=3

. keep sex commyr6 intnyr6 group2 sample

. summarize commyr6 intnyr6

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     commyr6 |       214    .5773403    .0953554        .36       1.04
     intnyr6 |       207    .6281407    .1823886       .395       1.72

. pause

. save normals, replace
file normals.dta saved

.
. append using edic

. sort sample

. generate sex2 = 1

. replace sex2=2 if sex=="F"
(696 real changes made)

. generate MFsample = (10*sex2)+sample

. label define MFsample 11"Male Diab" 12"Male NonDiab" 21"Female Diab"
22"Female NonDiab"
```

```
. label values MFsample MFsample

. sort MFsample

. by MFsample: summarize commyr6, detail

_______________________________________________________________________________
_
-> MFsample = Male Diab

                     common imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%          .44            .41
 5%     .4916667          .4275
10%          .52          .4325       Obs                 640
25%          .56       .4333333       Sum of Wgt.         640

50%          .62                      Mean           .6398503
                        Largest       Std. Dev.       .124399
75%        .6875         1.1725
90%        .7675         1.1875       Variance       .0154751
95%        .8575         1.2725       Skewness       2.355272
99%       1.0925           1.78       Kurtosis       16.27285

_______________________________________________________________________________
_
-> MFsample = Male NonDiab

                     common imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%         .445            .44
 5%        .4575           .445
10%         .495            .45       Obs                 105
25%        .5325            .45       Sum of Wgt.         105

50%          .58                      Mean           .6006667
                        Largest       Std. Dev.       .102906
75%          .64          .7925
90%          .75          .9025       Variance       .0105897
95%        .7725          .9075       Skewness       1.340702
99%        .9075           1.04       Kurtosis       5.849363

_______________________________________________________________________________
_
-> MFsample = Female Diab

                     common imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%         .415          .3675
 5%        .4525            .38
10%        .4875          .3825       Obs                 579
25%          .53          .3925       Sum of Wgt.         579

50%        .5775                      Mean           .5904519
                        Largest       Std. Dev.      .1028053
75%         .635         1.0325
90%         .695          1.095       Variance       .0105689
95%        .7375           1.22       Skewness       2.434389
99%        .9475       1.513333       Kurtosis       17.91802

_______________________________________________________________________________
_
```

```
-> MFsample = Female NonDiab

                    common imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%           .4            .36
 5%          .44             .4
10%        .4525             .4       Obs                 109
25%        .4975           .405       Sum of Wgt.         109

50%          .55                      Mean             .55487
                        Largest       Std. Dev.      .0818333
75%     .6033334           .735
90%         .655           .765       Variance       .0066967
95%        .7075           .785       Skewness        .410602
99%         .785          .7875       Kurtosis       3.397793


. by MFsample: summarize intnyr6, detail

______________________________________________________________________________
_
-> MFsample = Male Diab

                   internal imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .4563636           .365
 5%     .5083333            .41
10%     .5390909       .4216667       Obs                 635
25%     .5883333            .43       Sum of Wgt.         635

50%     .6557143                      Mean           .7912654
                        Largest       Std. Dev.      .3924986
75%     .7728571           2.66
90%        1.295       2.723333       Variance       .1540551
95%        1.778       2.791667       Skewness       2.606674
99%     2.457143          2.845       Kurtosis       10.11198

______________________________________________________________________________
_
-> MFsample = Male NonDiab

                   internal imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .4654545           .446
 5%     .4733333       .4654545
10%     .5088889       .4672727       Obs                 101
25%       .54875       .4685714       Sum of Wgt.         101

50%          .63                      Mean           .6751811
                        Largest       Std. Dev.      .2154651
75%     .7033333            1.3
90%     .8445455          1.496       Variance       .0464252
95%     1.051667       1.533333       Skewness       2.695484
99%     1.533333           1.72       Kurtosis       11.54883

______________________________________________________________________________
_
```

```
-> MFsample = Female Diab

                   internal imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .4116667       .3566667
 5%     .4655555       .3922222
10%     .4972727       .3945455       Obs                 568
25%         .545           .395       Sum of Wgt.         568

50%           .6                      Mean           .6717105
                        Largest       Std. Dev.      .2920334
75%     .6795833          2.555
90%          .84          2.604       Variance       .0852835
95%         1.27       2.851667       Skewness       4.160493
99%        1.958       2.945714       Kurtosis       24.91521
```

```
_
-> MFsample = Female NonDiab

                   internal imt at year 6
-------------------------------------------------------------
      Percentiles      Smallest
 1%         .408           .395
 5%     .4281818           .408
10%         .455       .4172727       Obs                 106
25%     .5057143       .4241667       Sum of Wgt.         106

50%     .5719643                      Mean           .5833191
                        Largest       Std. Dev.      .1299724
75%     .6308333       .7785714
90%     .7266667         .82125       Variance       .0168928
95%          .75       1.178889       Skewness       2.735027
99%     1.178889           1.33       Kurtosis       15.33789


. graph box commyr6, over (MFsample) nooutsides

. graph export "C:\EDIC Carotid IMT\common.ps", replace
(file C:\EDIC Carotid IMT\common.ps written in PostScript format)

. graph box intnyr6, over (MFsample) nooutsides

. graph export "C:\EDIC Carotid IMT\interal.ps", replace
(file C:\EDIC Carotid IMT\interal.ps written in PostScript format)

. ranksum commyr6  if sex=="M" , by (sample)
```

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test

      sample |      obs    rank sum    expected
-------------+---------------------------------
           1 |      640    245983.5      238720
           2 |      105     31901.5       39165
-------------+---------------------------------
    combined |      745      277885      277885

unadjusted variance  4177600.00
adjustment for ties     -450.34
                     ----------
adjusted variance    4177149.66

Ho: commyr6(sample==1) = commyr6(sample==2)
             z =   3.554
    Prob > |z| =   0.0004

. ranksum commyr6  if sex=="F" , by (sample)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

      sample |      obs    rank sum    expected
-------------+---------------------------------
           1 |      579      206177    199465.5
           2 |      109       30839     37550.5
-------------+---------------------------------
    combined |      688      237016      237016

unadjusted variance  3623623.25
adjustment for ties     -478.28
                     ----------
adjusted variance    3623144.97

Ho: commyr6(sample==1) = commyr6(sample==2)
             z =   3.526
    Prob > |z| =   0.0004

. ranksum intnyr6  if sex=="M" , by (sample)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

      sample |      obs    rank sum    expected
-------------+---------------------------------
           1 |      635    239920.5    233997.5
           2 |      101     31295.5     37218.5
-------------+---------------------------------
    combined |      736      271216      271216

unadjusted variance  3938957.92
adjustment for ties      -31.54
                     ----------
adjusted variance    3938926.38
```

```
Ho: intnyr6(sample==1) = intnyr6(sample==2)
             z =   2.984
    Prob > |z| =   0.0028

. ranksum intnyr6  if sex=="F" , by (sample)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

      sample |      obs    rank sum    expected
-------------+---------------------------------
           1 |      568      198708      191700
           2 |      106       28767       35775
-------------+---------------------------------
    combined |      674      227475      227475

unadjusted variance  3386700.00
adjustment for ties      -39.62
                     ----------
adjusted variance    3386660.38

Ho: intnyr6(sample==1) = intnyr6(sample==2)
             z =   3.808
    Prob > |z| =   0.0001

.
.
end of do-file

. log close
       log:  C:\EDIC Carotid IMT\2_NEW.log
  log type:  text
 closed on:  29 May 2007, 12:41:17
```

```
       log:  C:\EDIC Carotid IMT\3.log
  log type:  text
 opened on:  29 May 2007, 13:45:25

. use "C:\EDIC Carotid IMT\edicmscuru6.dta", clear

. tab1 att_age sex mach16

-> tabulation of att_age

   attained |
 age year 1 |      Freq.     Percent        Cum.
------------+-----------------------------------
         19 |          5        0.41        0.41
         20 |          7        0.57        0.98
         21 |         18        1.46        2.44
         22 |         18        1.46        3.91
         23 |         17        1.38        5.29
         24 |         24        1.95        7.24
         25 |         39        3.17       10.41
         26 |         31        2.52       12.94
         27 |         34        2.77       15.70
         28 |         36        2.93       18.63
         29 |         47        3.82       22.46
         30 |         49        3.99       26.44
         31 |         48        3.91       30.35
         32 |         57        4.64       34.99
         33 |         63        5.13       40.11
         34 |         64        5.21       45.32
         35 |         70        5.70       51.02
         36 |         50        4.07       55.09
         37 |         59        4.80       59.89
         38 |         63        5.13       65.01
         39 |         64        5.21       70.22
         40 |         70        5.70       75.92
         41 |         36        2.93       78.84
         42 |         54        4.39       83.24
         43 |         49        3.99       87.23
         44 |         40        3.25       90.48
         45 |         32        2.60       93.08
         46 |         43        3.50       96.58
         47 |         18        1.46       98.05
         48 |          9        0.73       98.78
         49 |         11        0.90       99.67
         50 |          3        0.24       99.92
         51 |          1        0.08      100.00
------------+-----------------------------------
      Total |      1,229      100.00

-> tabulation of sex

        sex |      Freq.     Percent        Cum.
------------+-----------------------------------
          F |        584       47.52       47.52
          M |        645       52.48      100.00
------------+-----------------------------------
      Total |      1,229      100.00
```

```
-> tabulation of mach16

ultrasonogr |
       aphy |
  equipment |
combination |
          s |      Freq.     Percent        Cum.
------------+-----------------------------------
         11 |        416       33.85       33.85
         12 |         20        1.63       35.48
         13 |         12        0.98       36.45
         14 |          2        0.16       36.62
         21 |        134       10.90       47.52
         22 |        465       37.84       85.35
         23 |          3        0.24       85.60
         24 |         17        1.38       86.98
         31 |         59        4.80       91.78
         32 |         29        2.36       94.14
         33 |         71        5.78       99.92
         34 |          1        0.08      100.00
------------+-----------------------------------
      Total |      1,229      100.00

. summarize comint1a

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    comint1a |      1229   -2.63e-07    1.647753  -3.496281   9.576523

. generate female=1

. replace female=0 if sex=="M"
(645 real changes made)

. xi: regress commyr6 female att_age common i.mach16 i.group
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)
i.group           _Igroup_1-2         (_Igroup_1 for group==EXPERIMENTAL omitted)

      Source |       SS       df       MS              Number of obs =    1219
-------------+------------------------------           F( 15,  1203) =   49.33
       Model |  6.37474413    15  .424982942           Prob > F      =  0.0000
    Residual |  10.3644837  1203  .008615531           R-squared     =  0.3808
-------------+------------------------------           Adj R-squared =  0.3731
       Total |  16.7392278  1218  .013743208           Root MSE      =  .09282

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0203263   .0054858    -3.71   0.000    -.0310892   -.0095634
     att_age |   .0038839   .0004227     9.19   0.000     .0030546    .0047132
      common |   .6483727   .0359613    18.03   0.000     .5778189    .7189265
 _Imach16_12 |  -.0019336   .0212989    -0.09   0.928    -.0437207    .0398535
 _Imach16_13 |    .014837   .0272176     0.55   0.586    -.0385623    .0682363
 _Imach16_14 |  -.0089898   .0658416    -0.14   0.891    -.1381669    .1201873
 _Imach16_21 |   .0206936   .0093139     2.22   0.026     .0024203    .0389669
 _Imach16_22 |   .0207736   .0064478     3.22   0.001     .0081234    .0334239
 _Imach16_23 |    .012152   .0538931     0.23   0.822    -.0935828    .1178869
 _Imach16_24 |   .0366603   .0229984     1.59   0.111    -.0084612    .0817818
 _Imach16_31 |   .0519645   .0130843     3.97   0.000      .026294     .077635
 _Imach16_32 |   .0556884   .0179208     3.11   0.002     .0205288     .090848
 _Imach16_33 |  -.0077796   .0119655    -0.65   0.516    -.0312551     .015696
 _Imach16_34 |   .0346524   .0930373     0.37   0.710     -.147881    .2171859
   _Igroup_2 |   .0134805   .0053391     2.52   0.012     .0030055    .0239555
       _cons |   .0914506    .022263     4.11   0.000      .047772    .1351292
------------------------------------------------------------------------------
```

```
. xi: regress commyr6 female att_age common i.mach16 bmi
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1211
-------------+------------------------------           F( 15,  1195) =   49.02
       Model |  6.34451904    15  .422967936           Prob > F      =  0.0000
    Residual |  10.3101864  1195  .008627771           R-squared     =  0.3809
-------------+------------------------------           Adj R-squared =  0.3732
       Total |  16.6547054  1210  .013764219           Root MSE      =  .09289

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   -.019825   .0055101    -3.60   0.000    -.0306355   -.0090145
     att_age |    .003841   .0004238     9.06   0.000     .0030096    .0046725
      common |   .6401744   .0364886    17.54   0.000     .5685856    .7117632
 _Imach16_12 |  -.0022247   .0213195    -0.10   0.917    -.0440525    .0396031
 _Imach16_13 |   .0155462   .0272383     0.57   0.568     -.037894    .0689865
 _Imach16_14 |  -.0127826   .0659122    -0.19   0.846    -.1420992     .116534
 _Imach16_21 |   .0220228   .0093447     2.36   0.019      .003689    .0403567
 _Imach16_22 |   .0217817   .0064831     3.36   0.001     .0090623    .0345012
 _Imach16_23 |   .0142662   .0539576     0.26   0.792     -.091596    .1201284
 _Imach16_24 |   .0327316   .0230577     1.42   0.156    -.0125064    .0779696
 _Imach16_31 |    .050627   .0130903     3.87   0.000     .0249445    .0763095
 _Imach16_32 |   .0655446   .0182558     3.59   0.000     .0297276    .1013616
 _Imach16_33 |  -.0077387   .0119855    -0.65   0.519    -.0312536    .0157762
 _Imach16_34 |   .0425063   .0930661     0.46   0.648    -.1400848    .2250975
         bmi |   .0015564    .000709     2.20   0.028     .0001653    .0029474
       _cons |   .0631833   .0271649     2.33   0.020     .0098872    .1164795
------------------------------------------------------------------------------

. tab smoking

    current |
    smoking |
    (yes=1) |
     year 1 |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |        994       81.01       81.01
          1 |        233       18.99      100.00
------------+-----------------------------------
      Total |      1,227      100.00
```

```
. xi: regress commyr6 female att_age common i.mach16 smoking
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1217
-------------+------------------------------           F( 15,  1201) =   50.59
       Model |    6.476787    15    .4317858           Prob > F      =  0.0000
    Residual |  10.2497392  1201  .008534337           R-squared     =  0.3872
-------------+------------------------------           Adj R-squared =  0.3796
       Total |  16.7265262  1216  .013755367           Root MSE      =  .09238

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0210664   .0054659    -3.85   0.000    -.0317901   -.0103428
     att_age |    .003843   .0004205     9.14   0.000      .003018    .0046679
      common |   .6441395   .0358473    17.97   0.000     .5738093    .7144697
 _Imach16_12 |  -.0050448   .0212111    -0.24   0.812    -.0466598    .0365701
 _Imach16_13 |   .0126322   .0271009     0.47   0.641    -.0405383    .0658026
 _Imach16_14 |  -.0043128    .065544    -0.07   0.948    -.1329062    .1242807
 _Imach16_21 |   .0203068   .0092737     2.19   0.029     .0021123    .0385012
 _Imach16_22 |    .021174   .0064205     3.30   0.001     .0085774    .0337705
 _Imach16_23 |    .006023   .0536445     0.11   0.911    -.0992244    .1112704
 _Imach16_24 |   .0343538   .0228895     1.50   0.134     -.010554    .0792616
 _Imach16_31 |   .0519145   .0130167     3.99   0.000     .0263765    .0774525
 _Imach16_32 |   .0642687   .0181431     3.54   0.000     .0286731    .0998643
 _Imach16_33 |  -.0061234   .0119106    -0.51   0.607    -.0294914    .0172446
 _Imach16_34 |   .0456194   .0925657     0.49   0.622    -.1359891    .2272279
     smoking |    .024706      .0068     3.63   0.000     .0113649    .0380471
       _cons |   .0976639   .0219509     4.45   0.000     .0545976    .1407302
------------------------------------------------------------------------------

. xi: regress commyr6 female att_age common i.mach16 sbp
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1214
-------------+------------------------------           F( 15,  1198) =   49.98
       Model |   6.4144546    15  .427630306           Prob > F      =  0.0000
    Residual |  10.2495959  1198  .008555589           R-squared     =  0.3849
-------------+------------------------------           Adj R-squared =  0.3772
       Total |  16.6640505  1213  .013737882           Root MSE      =   .0925

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0172562   .0055695    -3.10   0.002    -.0281832   -.0063292
     att_age |   .0037019   .0004235     8.74   0.000     .0028711    .0045327
      common |   .6287043   .0363888    17.28   0.000     .5573114    .7000972
 _Imach16_12 |  -.0032339   .0212279    -0.15   0.879    -.0448818     .038414
 _Imach16_13 |   .0126621   .0271376     0.47   0.641    -.0405804    .0659046
 _Imach16_14 |   .0001412   .0656689     0.00   0.998    -.1286976    .1289801
 _Imach16_21 |   .0190358   .0093021     2.05   0.041     .0007856     .037286
 _Imach16_22 |   .0200352   .0064396     3.11   0.002     .0074011    .0326694
 _Imach16_23 |  -.0129417   .0656959    -0.20   0.844    -.1418334    .1159501
 _Imach16_24 |   .0339671   .0229215     1.48   0.139    -.0110036    .0789378
 _Imach16_31 |   .0491174   .0130341     3.77   0.000     .0235452    .0746896
 _Imach16_32 |   .0631939   .0181697     3.48   0.001     .0275459    .0988418
 _Imach16_33 |    -.00328   .0120157    -0.27   0.785    -.0268541    .0202942
 _Imach16_34 |    .042326   .0926748     0.46   0.648     -.139497    .2241491
         sbp |   .0007769    .000228     3.41   0.001     .0003295    .0012243
       _cons |   .0240473   .0310485     0.77   0.439    -.0368682    .0849627
------------------------------------------------------------------------------
```

```
. tab ht

hypertensio |
   n year 1 |
    (yes=1) |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |      1,011       83.48       83.48
          1 |        200       16.52      100.00
------------+-----------------------------------
      Total |      1,211      100.00

. xi: regress commyr6 female att_age common i.mach16 ht
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1201
-------------+------------------------------           F( 15,  1185) =   49.83
       Model |  6.43167262    15  .428778175           Prob > F      =  0.0000
    Residual |  10.1959203  1185  .008604152           R-squared     =  0.3868
-------------+------------------------------           Adj R-squared =  0.3790
       Total |  16.6275929  1200  .013856327           Root MSE      =  .09276

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   -.019781   .0055463    -3.57   0.000    -.0306626   -.0088994
     att_age |   .0037914   .0004272     8.87   0.000     .0029532    .0046297
      common |   .6424393   .0365143    17.59   0.000     .5707995    .7140791
 _Imach16_12 |  -.0006027   .0218474    -0.03   0.978    -.0434666    .0422612
 _Imach16_13 |   .0098816   .0273026     0.36   0.717    -.0436853    .0634485
 _Imach16_14 |  -.0060716   .0658122    -0.09   0.927    -.1351931    .1230499
 _Imach16_21 |   .0213031   .0093252     2.28   0.023     .0030072    .0395989
 _Imach16_22 |   .0216299   .0064909     3.33   0.001     .0088949    .0343649
 _Imach16_23 |   .0064981   .0538771     0.12   0.904    -.0992071    .1122033
 _Imach16_24 |   .0330635   .0230092     1.44   0.151    -.0120798    .0782069
 _Imach16_31 |   .0509765   .0133773     3.81   0.000     .0247307    .0772222
 _Imach16_32 |   .0709608   .0185459     3.83   0.000     .0345743    .1073473
 _Imach16_33 |  -.0083106    .012036    -0.69   0.490    -.0319248    .0153036
 _Imach16_34 |   .0446289   .0929463     0.48   0.631    -.1377288    .2269865
          ht |   .0189138   .0074194     2.55   0.011     .0043572    .0334704
       _cons |   .1013328   .0223051     4.54   0.000     .0575709    .1450947
------------------------------------------------------------------------------
```

```
. xi: regress commyr6 female att_age common i.mach16 lhratio
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1174
-------------+------------------------------           F( 15,  1158) =   48.14
       Model |  6.17019643    15  .411346428           Prob > F      =  0.0000
    Residual |  9.89485776  1158  .008544782           R-squared     =  0.3841
-------------+------------------------------           Adj R-squared =  0.3761
       Total |  16.0650542  1173  .013695698           Root MSE      =  .09244

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0161527   .0057445    -2.81   0.005    -.0274235   -.0048818
     att_age |   .0038168   .0004306     8.86   0.000      .002972    .0046616
      common |   .6480933   .0366421    17.69   0.000     .5762009    .7199856
 _Imach16_12 |   .0006624   .0223566     0.03   0.976    -.0432015    .0445263
 _Imach16_13 |    .013126   .0271494     0.48   0.629    -.0401415    .0663934
 _Imach16_14 |   -.002412   .0656419    -0.04   0.971    -.1312024    .1263785
 _Imach16_21 |     .02349   .0094199     2.49   0.013     .0050081    .0419719
 _Imach16_22 |   .0220837   .0065475     3.37   0.001     .0092375    .0349298
 _Imach16_23 |   .0175739   .0537552     0.33   0.744    -.0878945    .1230424
 _Imach16_24 |    .036235   .0229157     1.58   0.114    -.0087259    .0811959
 _Imach16_31 |   .0528108   .0133414     3.96   0.000     .0266349    .0789868
 _Imach16_32 |   .0617655   .0184755     3.34   0.001     .0255162    .0980148
 _Imach16_33 |  -.0066781   .0120114    -0.56   0.578    -.0302447    .0168885
 _Imach16_34 |    .043764   .0926226     0.47   0.637    -.1379629    .2254908
     lhratio |   .0072065   .0032408     2.22   0.026      .000848     .013565
       _cons |   .0817288   .0230047     3.55   0.000     .0365932    .1268645
------------------------------------------------------------------------------

. xi: regress commyr6 female att_age common i.mach16 log_aer
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1171
-------------+------------------------------           F( 14,  1156) =   52.20
       Model |  6.38688813    14  .456206295           Prob > F      =  0.0000
    Residual |  10.1029353  1156  .008739563           R-squared     =  0.3873
-------------+------------------------------           Adj R-squared =  0.3799
       Total |  16.4898234  1170  .014093866           Root MSE      =  .09349

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0201135   .0056419    -3.57   0.000     -.031183    -.009044
     att_age |   .0040542    .000438     9.26   0.000     .0031948    .0049135
      common |    .647918   .0369708    17.53   0.000     .5753805    .7204555
 _Imach16_12 |   .0056561   .0226203     0.25   0.803    -.0387254    .0500375
 _Imach16_13 |   .0141489   .0274351     0.52   0.606    -.0396792     .067977
 _Imach16_14 |  -.0074622   .0663219    -0.11   0.910    -.1375869    .1226625
 _Imach16_21 |   .0198999   .0095464     2.08   0.037     .0011696    .0386301
 _Imach16_22 |   .0229753   .0066292     3.47   0.001     .0099687    .0359819
 _Imach16_23 |   .0144552   .0542975     0.27   0.790    -.0920775    .1209879
 _Imach16_24 |   .0342341   .0238684     1.43   0.152    -.0125961    .0810643
 _Imach16_31 |   .0535971   .0137056     3.91   0.000     .0267064    .0804877
 _Imach16_32 |   .0666838   .0183913     3.63   0.000     .0305997    .1027678
 _Imach16_33 |  -.0041419   .0122266    -0.34   0.735    -.0281306    .0198468
 _Imach16_34 |  (dropped)
     log_aer |    .006838   .0024634     2.78   0.006     .0020048    .0116712
       _cons |   .0743348   .0233042     3.19   0.001     .0286116     .120058
------------------------------------------------------------------------------
```

```
. xi: regress commyr6 female att_age common i.mach16 dcct_hba
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1219
-------------+------------------------------           F( 15,  1203) =   49.82
       Model |  6.41369699    15  .427579799           Prob > F      =  0.0000
    Residual |  10.3255309  1203  .008583151           R-squared     =  0.3832
-------------+------------------------------           Adj R-squared =  0.3755
       Total |  16.7392278  1218  .013743208           Root MSE      =  .09265

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.0210048   .0054789    -3.83   0.000     -.031754   -.0102556
     att_age |   .0040788   .0004278     9.53   0.000     .0032394    .0049182
      common |   .6418577    .035959    17.85   0.000     .5713084    .7124071
 _Imach16_12 |  -.0024269    .021258    -0.11   0.909    -.0441338    .0392799
 _Imach16_13 |   .0125992   .0271821     0.46   0.643    -.0407303    .0659288
 _Imach16_14 |    -.00519   .0657284    -0.08   0.937    -.1341451    .1237651
 _Imach16_21 |   .0187276   .0093196     2.01   0.045      .000443    .0370122
 _Imach16_22 |   .0195083   .0064526     3.02   0.003     .0068487     .032168
 _Imach16_23 |   .0097432   .0537855     0.18   0.856    -.0957807    .1152671
 _Imach16_24 |   .0326919   .0229682     1.42   0.155    -.0123702     .077754
 _Imach16_31 |   .0505426   .0130452     3.87   0.000     .0249487    .0761365
 _Imach16_32 |   .0515062   .0179392     2.87   0.004     .0163106    .0867018
 _Imach16_33 |  -.0079338   .0119425    -0.66   0.507    -.0313642    .0154966
 _Imach16_34 |   .0477297   .0928418     0.51   0.607    -.1344201    .2298795
    dcct_hba |   .0064504   .0019504     3.31   0.001     .0026238    .0102771
       _cons |   .0438309   .0276716     1.58   0.113    -.0104591    .0981209
------------------------------------------------------------------------------

.
. xi: regress r_int6 female att_age r_int i.mach16 i.group
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)
i.group           _Igroup_1-2         (_Igroup_1 for group==EXPERIMENTAL omitted)

      Source |       SS       df       MS              Number of obs =    1175
-------------+------------------------------           F( 15,  1159) =   50.98
       Model |  74.7177171    15  4.98118114           Prob > F      =  0.0000
    Residual |  113.240894  1159  .097705689           R-squared     =  0.3975
-------------+------------------------------           Adj R-squared =  0.3897
       Total |  187.958611  1174  .160101032           Root MSE      =  .31258

------------------------------------------------------------------------------
      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .1002709   .0186743     5.37   0.000     .0636316    .1369101
     att_age |  -.0092844   .0014153    -6.56   0.000    -.0120612   -.0065075
       r_int |   .6025237   .0298407    20.19   0.000     .5439758    .6610715
 _Imach16_12 |   .0589797   .0735469     0.80   0.423    -.0853203    .2032796
 _Imach16_13 |  -.0103558   .0916549    -0.11   0.910     -.190184    .1694724
 _Imach16_14 |   .2759279   .2217284     1.24   0.214    -.1591061    .7109619
 _Imach16_21 |  -.1455233   .0323951    -4.49   0.000    -.2090828   -.0819638
 _Imach16_22 |  -.0920186   .0218528    -4.21   0.000    -.1348942   -.0491431
 _Imach16_23 |   .2449747   .1814774     1.35   0.177    -.1110863    .6010358
 _Imach16_24 |   .2102689   .0776939     2.71   0.007     .0578324    .3627054
 _Imach16_31 |  -.1600711   .0458511    -3.49   0.000    -.2500314   -.0701107
 _Imach16_32 |  -.0839313   .0612447    -1.37   0.171    -.2040941    .0362315
 _Imach16_33 |   .0156274   .0404192     0.39   0.699    -.0636757    .0949305
 _Imach16_34 |    .039785    .313257     0.13   0.899    -.5748293    .6543992
   _Igroup_2 |   -.033044   .0183098    -1.80   0.071    -.0689681      .00288
       _cons |   .8857747   .0813134    10.89   0.000     .7262369    1.045313
------------------------------------------------------------------------------
```

```
. xi: regress r_int6 female att_age r_int i.mach16 bmi
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1167
-------------+------------------------------           F( 15,  1151) =   50.81
       Model |  74.7871875    15  4.9858125            Prob > F      =  0.0000
    Residual |  112.946861  1151  .098129332           R-squared     =  0.3984
-------------+------------------------------           Adj R-squared =  0.3905
       Total |  187.734049  1166  .161006903           Root MSE      =  .31326

------------------------------------------------------------------------------
      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .1007205   .0188021     5.36   0.000     .0638302    .1376108
     att_age |  -.0092705   .0014211    -6.52   0.000    -.0120588   -.0064823
       r_int |   .5994659   .0302076    19.84   0.000     .5401978     .658734
 _Imach16_12 |   .0587924   .0737332     0.80   0.425    -.0858741    .2034589
 _Imach16_13 |  -.0107315   .0918701    -0.12   0.907    -.1909832    .1695202
 _Imach16_14 |   .2845011   .2223052     1.28   0.201    -.1516678      .72067
 _Imach16_21 |  -.1471686   .0325398    -4.52   0.000    -.2110125   -.0833247
 _Imach16_22 |  -.0940247   .0220249    -4.27   0.000    -.1372382   -.0508113
 _Imach16_23 |   .2424098   .1819704     1.33   0.183    -.1146211    .5994408
 _Imach16_24 |   .2199578   .0780493     2.82   0.005     .0668229    .3730926
 _Imach16_31 |  -.1562949   .0459454    -3.40   0.001     -.246441   -.0661488
 _Imach16_32 |  -.1011199   .0625137    -1.62   0.106    -.2237735    .0215337
 _Imach16_33 |   .0164203   .0405661     0.40   0.686    -.0631715    .0960121
 _Imach16_34 |   .0221375   .3138101     0.07   0.944    -.5935664    .6378415
         bmi |  -.0031668   .0024555    -1.29   0.197    -.0079845    .0016509
       _cons |   .9561246   .1074759     8.90   0.000     .7452539    1.166995
------------------------------------------------------------------------------

. xi: regress r_int6 female att_age r_int i.mach16 smoking
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1173
-------------+------------------------------           F( 15,  1157) =   52.12
       Model |  75.7763871    15  5.05175914           Prob > F      =  0.0000
    Residual |  112.140407  1157  .096923429           R-squared     =  0.4032
-------------+------------------------------           Adj R-squared =  0.3955
       Total |  187.916794  1172  .160338562           Root MSE      =  .31133

------------------------------------------------------------------------------
      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .1021987   .0186231     5.49   0.000     .0656598    .1387376
     att_age |  -.0091581   .0014095    -6.50   0.000    -.0119235   -.0063927
       r_int |   .6017051    .029725    20.24   0.000     .5433842     .660026
 _Imach16_12 |   .0693564    .073305     0.95   0.344    -.0744691     .213182
 _Imach16_13 |  -.0014611   .0913321    -0.02   0.987    -.1806563     .177734
 _Imach16_14 |   .2606507   .2208847     1.18   0.238    -.1727288    .6940302
 _Imach16_21 |  -.1440584   .0322741    -4.46   0.000    -.2073808    -.080736
 _Imach16_22 |  -.0928139   .0217756    -4.26   0.000     -.135538   -.0500897
 _Imach16_23 |   .2625498    .180762     1.45   0.147    -.0921082    .6172079
 _Imach16_24 |   .2168542     .07738     2.80   0.005     .0650333    .3686751
 _Imach16_31 |  -.1623864   .0456621    -3.56   0.000    -.2519761   -.0727966
 _Imach16_32 |  -.0988774   .0620664    -1.59   0.111    -.2206526    .0228978
 _Imach16_33 |   .0109926   .0402625     0.27   0.785    -.0680031    .0899882
 _Imach16_34 |   .0084515   .3118948     0.03   0.978    -.6034913    .6203943
     smoking |  -.0821664   .0231467    -3.55   0.000    -.1275805   -.0367522
       _cons |   .8811608   .0802173    10.98   0.000     .7237731    1.038548
------------------------------------------------------------------------------
```

```
. xi: regress r_int6 female att_age r_int i.mach16 sbp
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1170
-------------+------------------------------           F( 15,  1154) =   51.26
       Model |  74.8125229    15  4.98750153           Prob > F      =  0.0000
    Residual |  112.271455  1154  .097288956           R-squared     =  0.3999
-------------+------------------------------           Adj R-squared =  0.3921
       Total |  187.083978  1169   .16003762           Root MSE      =  .31191

------------------------------------------------------------------------------
      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .0907798   .0190142     4.77   0.000     .0534736     .128086
     att_age |  -.0086726    .001423    -6.09   0.000    -.0114646   -.0058806
       r_int |   .5913576   .0301305    19.63   0.000      .532241    .6504742
 _Imach16_12 |   .0613502   .0733997     0.84   0.403    -.0826617    .2053621
 _Imach16_13 |   -.000508   .0915384    -0.01   0.996    -.1801083    .1790923
 _Imach16_14 |   .2513968   .2214421     1.14   0.256    -.1830774    .6858711
 _Imach16_21 |  -.1397028   .0323981    -4.31   0.000    -.2032686   -.0761369
 _Imach16_22 |  -.0902275   .0218368    -4.13   0.000    -.1330718   -.0473832
 _Imach16_23 |   .3180355   .2214113     1.44   0.151    -.1163783    .7524492
 _Imach16_24 |   .2191056   .0775456     2.83   0.005     .0669595    .3712517
 _Imach16_31 |   -.152382   .0457297    -3.33   0.001    -.2421047   -.0626594
 _Imach16_32 |  -.0963705   .0621896    -1.55   0.122    -.2183879    .0256469
 _Imach16_33 |   .0029737   .0406229     0.07   0.942    -.0767293    .0826768
 _Imach16_34 |   .0192597   .3124605     0.06   0.951    -.5937945    .6323139
         sbp |  -.0022558   .0007787    -2.90   0.004    -.0037836   -.0007281
       _cons |   1.133093   .1236913     9.16   0.000     .8904075    1.375778
------------------------------------------------------------------------------

. xi: regress r_int6 female att_age r_int i.mach16 ht
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1158
-------------+------------------------------           F( 15,  1142) =   52.12
       Model |  75.7923693    15  5.05282462           Prob > F      =  0.0000
    Residual |  110.721414  1142  .096953953           R-squared     =  0.4064
-------------+------------------------------           Adj R-squared =  0.3986
       Total |  186.513784  1157  .161204653           Root MSE      =  .31137

------------------------------------------------------------------------------
      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .0935015   .0187935     4.98   0.000     .0566279    .1303751
     att_age |  -.0089957    .001423    -6.32   0.000    -.0117877   -.0062038
       r_int |   .5816795   .0302133    19.25   0.000     .5223997    .6409593
 _Imach16_12 |   .0698256   .0753143     0.93   0.354    -.0779444    .2175956
 _Imach16_13 |   .0273101   .0917509     0.30   0.766    -.1527091    .2073294
 _Imach16_14 |   .2614079   .2209168     1.18   0.237    -.1720404    .6948562
 _Imach16_21 |  -.1443392   .0323242    -4.47   0.000    -.2077606   -.0809178
 _Imach16_22 |  -.0914282   .0218991    -4.17   0.000    -.1343951   -.0484613
 _Imach16_23 |   .2765306   .1808576     1.53   0.127    -.0783199    .6313811
 _Imach16_24 |   .2333816   .0775255     3.01   0.003     .0812733      .38549
 _Imach16_31 |  -.1608072     .04683    -3.43   0.001    -.2526898   -.0689247
 _Imach16_32 |  -.1108131   .0632311    -1.75   0.080    -.2348753    .0132492
 _Imach16_33 |   .0136227   .0405314     0.34   0.737    -.0659017    .0931472
 _Imach16_34 |   .0058446   .3119502     0.02   0.985    -.6062152    .6179044
          ht |  -.1105436   .0257697    -4.29   0.000    -.1611048   -.0599824
       _cons |   .9122523   .0810632    11.25   0.000     .7532028    1.071302
------------------------------------------------------------------------------
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. xi: regress r_int6 female att_age r_int i.mach16 lhratio
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1130
-------------+------------------------------           F( 15,  1114) =   50.67
       Model |    73.44539    15  4.89635934           Prob > F      =  0.0000
    Residual |  107.655074  1114  .096638307           R-squared     =  0.4056
-------------+------------------------------           Adj R-squared =  0.3975
       Total |  181.100464  1129  .160407851           Root MSE      =  .31087

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      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .0733276   .0195632     3.75   0.000     .0349427    .1117126
     att_age |  -.0085752   .0014425    -5.94   0.000    -.0114056   -.0057449
       r_int |   .5868884   .0303515    19.34   0.000     .5273358     .646441
 _Imach16_12 |   .0259726   .0773616     0.34   0.737    -.1258183    .1777636
 _Imach16_13 |   .0093707   .0913369     0.10   0.918    -.1698411    .1885825
 _Imach16_14 |   .2327342   .2207614     1.05   0.292    -.2004208    .6658892
 _Imach16_21 |  -.1472336   .0327325    -4.50   0.000    -.2114579   -.0830093
 _Imach16_22 |  -.0957871     .02215    -4.32   0.000    -.1392475   -.0523267
 _Imach16_23 |   .2033737    .180756     1.13   0.261    -.1512868    .5580342
 _Imach16_24 |   .2124408   .0773135     2.75   0.006     .0607443    .3641373
 _Imach16_31 |  -.1731282   .0467967    -3.70   0.000    -.2649479   -.0813085
 _Imach16_32 |  -.0936728   .0631342    -1.48   0.138     -.217548    .0302025
 _Imach16_33 |   .0093383   .0405241     0.23   0.818    -.0701738    .0888505
 _Imach16_34 |   .0108553   .3114316     0.03   0.972    -.6002033    .6219139
     lhratio |  -.0505158   .0112918    -4.47   0.000    -.0726713   -.0283603
       _cons |   .9999382   .0879485    11.37   0.000     .8273748    1.172502
------------------------------------------------------------------------------

. xi: regress r_int6 female att_age r_int i.mach16 log_aer
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1128
-------------+------------------------------           F( 14,  1113) =   54.74
       Model |  75.6338555    14  5.40241825           Prob > F      =  0.0000
    Residual |   109.85243  1113  .098699398           R-squared     =  0.4078
-------------+------------------------------           Adj R-squared =  0.4003
       Total |  185.486286  1127  .164584105           Root MSE      =  .31416

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      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .1026751   .0191671     5.36   0.000     .0650674    .1402828
     att_age |  -.0101061   .0014568    -6.94   0.000    -.0129645   -.0072477
       r_int |    .603463   .0304629    19.81   0.000     .5436919    .6632342
 _Imach16_12 |   .0476967   .0781594     0.61   0.542    -.1056597    .2010531
 _Imach16_13 |   -.006982    .092215    -0.08   0.940    -.1879167    .1739528
 _Imach16_14 |   .2705588   .2228799     1.21   0.225    -.1667534    .7078709
 _Imach16_21 |  -.1394751   .0331948    -4.20   0.000    -.2046065   -.0743437
 _Imach16_22 |  -.0976415   .0224009    -4.36   0.000    -.1415943   -.0536887
 _Imach16_23 |   .2372506   .1824597     1.30   0.194    -.1207531    .5952544
 _Imach16_24 |    .213208   .0804259     2.65   0.008     .0554046    .3710114
 _Imach16_31 |   -.178672   .0477536    -3.74   0.000    -.2723693   -.0849747
 _Imach16_32 |  -.1057546   .0627381    -1.69   0.092    -.2288529    .0173436
 _Imach16_33 |   .0144467   .0412309     0.35   0.726    -.0664525    .0953458
 _Imach16_34 |  (dropped)
     log_aer |  -.0212159   .0083588    -2.54   0.011    -.0376166   -.0048152
       _cons |   .9503666   .0877351    10.83   0.000     .7782218    1.122511
------------------------------------------------------------------------------
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. xi: regress r_int6 female att_age r_int i.mach16 dcct_hba
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1175
-------------+------------------------------           F( 15,  1159) =   51.55
       Model |  75.2161604    15  5.01441069           Prob > F      =  0.0000
    Residual |  112.742451  1159  .097275626           R-squared     =  0.4002
-------------+------------------------------           Adj R-squared =  0.3924
       Total |  187.958611  1174  .160101032           Root MSE      =  .31189

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      r_int6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .1021892   .0186394     5.48   0.000     .0656184      .13876
     att_age |  -.0098271   .0014286    -6.88   0.000      -.01263   -.0070242
       r_int |   .5986047   .0298197    20.07   0.000      .540098    .6571113
 _Imach16_12 |   .0599973   .0733849     0.82   0.414    -.0839847    .2039793
 _Imach16_13 |  -.0023229    .091517    -0.03   0.980    -.1818805    .1772347
 _Imach16_14 |   .2650059   .2212735     1.20   0.231    -.1691355    .6991473
 _Imach16_21 |  -.1397588   .0323994    -4.31   0.000    -.2033269   -.0761908
 _Imach16_22 |  -.0882378   .0218561    -4.04   0.000    -.1311198   -.0453559
 _Imach16_23 |   .2505283   .1810569     1.38   0.167    -.1047076    .6057642
 _Imach16_24 |   .2217413   .0775728     2.86   0.004     .0695424    .3739402
 _Imach16_31 |  -.1578341    .045705    -3.45   0.001    -.2475078   -.0681604
 _Imach16_32 |  -.0724881    .061267    -1.18   0.237    -.1926948    .0477186
 _Imach16_33 |   .0167779   .0403307     0.42   0.677    -.0623515    .0959073
 _Imach16_34 |   .0036484   .3125036     0.01   0.991    -.6094877    .6167846
    dcct_hba |  -.0192702   .0066506    -2.90   0.004    -.0323188   -.0062215
       _cons |   1.048253   .1024059    10.24   0.000     .8473314    1.249175
------------------------------------------------------------------------------

.
. xi: regress comint6a female att_age comint1a i.mach16 i.group
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)
i.group           _Igroup_1-2         (_Igroup_1 for group==EXPERIMENTAL omitted)

      Source |       SS       df       MS              Number of obs =    1229
-------------+------------------------------           F( 15,  1213) =   83.62
       Model |  1708.14757    15  113.876505           Prob > F      =  0.0000
    Residual |  1651.97583  1213  1.36189269           R-squared     =  0.5084
-------------+------------------------------           Adj R-squared =  0.5023
       Total |   3360.1234  1228  2.73625684           Root MSE      =   1.167

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2818155     .06841    -4.12   0.000    -.4160306   -.1476004
     att_age |   .0358637   .0053707     6.68   0.000     .0253269    .0464006
    comint1a |   .6229307   .0234499    26.56   0.000     .5769238    .6689375
 _Imach16_12 |  -.0160058   .2677939    -0.06   0.952    -.5413964    .5093849
 _Imach16_13 |    .143558    .341931     0.42   0.675    -.5272839    .8143999
 _Imach16_14 |   -.476899   .8277285    -0.58   0.565    -2.100837    1.147039
 _Imach16_21 |   .4165039   .1167953     3.57   0.000     .1873608    .6456471
 _Imach16_22 |   .4093933   .0800459     5.11   0.000     .2523496    .5664371
 _Imach16_23 |   .0170888     .67747     0.03   0.980    -1.312054    1.346232
 _Imach16_24 |   .1434964   .2894045     0.50   0.620    -.4242926    .7112854
 _Imach16_31 |   .7790249   .1644053     4.74   0.000     .4564747    1.101575
 _Imach16_32 |   .5736154   .2247631     2.55   0.011     .1326479    1.014583
 _Imach16_33 |  -.0561512   .1503256    -0.37   0.709    -.3510783    .2387759
 _Imach16_34 |   .2680589   1.169672     0.23   0.819    -2.026746    2.562864
   _Igroup_2 |   .1619148   .0668767     2.42   0.016     .0307079    .2931217
       _cons |  -1.459367   .2017774    -7.23   0.000    -1.855238   -1.063496
------------------------------------------------------------------------------
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. xi: regress comint6a female att_age comint1a i.mach16 bmi
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1221
-------------+------------------------------           F( 15,  1205) =   83.09
       Model |  1703.93719    15  113.595812           Prob > F      =  0.0000
    Residual |    1647.465  1205  1.36719087           R-squared     =  0.5084
-------------+------------------------------           Adj R-squared =  0.5023
       Total |  3351.40219  1220  2.74705097           Root MSE      =  1.1693

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2790667   .0688235    -4.05   0.000    -.4140939   -.1440394
     att_age |   .0354009   .0053892     6.57   0.000     .0248277    .0459742
    comint1a |   .6211999   .0237769    26.13   0.000     .5745512    .6678485
 _Imach16_12 |  -.0217364   .2683846    -0.08   0.935    -.5482895    .5048167
 _Imach16_13 |   .1497794   .3426288     0.44   0.662    -.5224359    .8219947
 _Imach16_14 |  -.5131688   .8296524    -0.62   0.536    -2.140893    1.114555
 _Imach16_21 |   .4283582   .1173266     3.65   0.000     .1981711    .6585453
 _Imach16_22 |   .4204775   .0805888     5.22   0.000     .2623674    .5785875
 _Imach16_23 |   .0295191   .6791309     0.04   0.965    -1.302891     1.36193
 _Imach16_24 |   .1039336   .2905713     0.36   0.721    -.4661482    .6740154
 _Imach16_31 |   .7619215   .1647131     4.63   0.000     .4387651    1.085078
 _Imach16_32 |   .6809209   .2292259     2.97   0.003     .2311947    1.130647
 _Imach16_33 |  -.0560198   .1507799    -0.37   0.710      -.35184    .2398005
 _Imach16_34 |   .3582505   1.171466     0.31   0.760    -1.940089    2.656591
         bmi |   .0136236   .0089045     1.53   0.126    -.0038464    .0310936
       _cons |  -1.721668   .3091082    -5.57   0.000    -2.328118   -1.115218
------------------------------------------------------------------------------

. xi: regress comint6a female att_age comint1a i.mach16 smoking
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1227
-------------+------------------------------           F( 15,  1211) =   85.58
       Model |  1727.89824    15  115.193216           Prob > F      =  0.0000
    Residual |   1630.0152  1211  1.34600759           R-squared     =  0.5146
-------------+------------------------------           Adj R-squared =  0.5086
       Total |  3357.91344  1226  2.73891798           Root MSE      =  1.1602

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    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2926308   .0681029    -4.30   0.000    -.4262436   -.1590179
     att_age |   .0354764   .0053348     6.65   0.000       .02501    .0459429
    comint1a |   .6180018   .0233651    26.45   0.000     .5721612    .6638423
 _Imach16_12 |   -.060545    .266397    -0.23   0.820    -.5831958    .4621058
 _Imach16_13 |   .1078741   .3401001     0.32   0.751    -.5593768     .775125
 _Imach16_14 |  -.4127575    .823049    -0.50   0.616    -2.027518    1.202003
 _Imach16_21 |   .4095621    .116158     3.53   0.000     .1816689    .6374553
 _Imach16_22 |   .4111894     .07961     5.17   0.000     .2550005    .5673783
 _Imach16_23 |  -.0686564   .6736154    -0.10   0.919    -1.390239    1.252926
 _Imach16_24 |   .1100034   .2877267     0.38   0.702    -.4544949    .6745016
 _Imach16_31 |   .7784785   .1633732     4.77   0.000     .4579526    1.099004
 _Imach16_32 |   .6685879   .2272428     2.94   0.003     .2227547    1.114421
 _Imach16_33 |  -.0360051   .1494657    -0.24   0.810    -.3292455    .2572353
 _Imach16_34 |   .4052135   1.162405     0.35   0.727    -1.875338    2.685765
     smoking |   .3467508    .085026     4.08   0.000     .1799363    .5135654
       _cons |  -1.424817   .1966439    -7.25   0.000    -1.810618   -1.039017
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. xi: regress comint6a female att_age comint1a i.mach16 sbp
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1224
-------------+------------------------------           F( 15,  1208) =   84.09
       Model |   1710.3266    15  114.021773           Prob > F      =  0.0000
    Residual |  1637.95183  1208  1.35592039           R-squared     =  0.5108
-------------+------------------------------           Adj R-squared =  0.5047
       Total |  3348.27842  1223  2.73775832           Root MSE      =  1.1644

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    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2468538   .0695868    -3.55   0.000    -.3833782   -.1103294
     att_age |   .0340675   .0053745     6.34   0.000     .0235231    .0446118
    comint1a |   .6100464   .0238863    25.54   0.000     .5631831    .6569097
 _Imach16_12 |  -.0338647   .2672531    -0.13   0.899    -.5581964    .4904671
 _Imach16_13 |   .1134562   .3414306     0.33   0.740    -.5564066    .7833191
 _Imach16_14 |  -.3763673   .8266133    -0.46   0.649    -1.998125     1.24539
 _Imach16_21 |   .3961213   .1168203     3.39   0.001     .1669281    .6253145
 _Imach16_22 |   .4008179   .0800311     5.01   0.000     .2438025    .5578334
 _Imach16_23 |  -.3156969   .8268185    -0.38   0.703    -1.937857    1.306463
 _Imach16_24 |   .1069953   .2888517     0.37   0.711    -.4597114     .673702
 _Imach16_31 |   .7428853   .1640323     4.53   0.000     .4210654    1.064705
 _Imach16_32 |   .6590275   .2281141     2.89   0.004     .2114836    1.106571
 _Imach16_33 |  -.0088159   .1511139    -0.06   0.953    -.3052907     .287659
 _Imach16_34 |   .3579205    1.16661     0.31   0.759    -1.930885    2.646726
         sbp |   .0088337   .0028843     3.06   0.002      .003175    .0144925
       _cons |  -2.359786   .3810066    -6.19   0.000    -3.107295   -1.612278
------------------------------------------------------------------------------

. xi: regress comint6a female att_age comint1a i.mach16 ht
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1211
-------------+------------------------------           F( 15,  1195) =   84.34
       Model |  1718.76521    15  114.584347           Prob > F      =  0.0000
    Residual |  1623.55271  1195  1.35862152           R-squared     =  0.5142
-------------+------------------------------           Adj R-squared =  0.5081
       Total |  3342.31792  1210  2.76224621           Root MSE      =  1.1656

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2691377    .069064    -3.90   0.000    -.4046379   -.1336375
     att_age |   .0352848   .0054102     6.52   0.000     .0246702    .0458994
    comint1a |   .6121199   .0238869    25.63   0.000     .5652549    .6589848
 _Imach16_12 |   -.016614   .2745622    -0.06   0.952    -.5552917    .5220637
 _Imach16_13 |   .0542764   .3429383     0.16   0.874    -.6185518    .7271046
 _Imach16_14 |  -.4327996   .8269059    -0.52   0.601    -2.055149    1.189549
 _Imach16_21 |   .4181161   .1168555     3.58   0.000     .1888513    .6473809
 _Imach16_22 |   .4148007   .0804693     5.15   0.000     .2569239    .5726774
 _Imach16_23 |  -.0776101   .6769697    -0.11   0.909    -1.405792    1.250571
 _Imach16_24 |   .0805595    .289477     0.28   0.781    -.4873803    .6484992
 _Imach16_31 |   .7667691   .1680542     4.56   0.000     .4370549    1.096483
 _Imach16_32 |   .7389645   .2324055     3.18   0.002     .2829963    1.194933
 _Imach16_33 |  -.0555555   .1511427    -0.37   0.713    -.3520902    .2409791
 _Imach16_34 |   .3926732   1.167864     0.34   0.737     -1.89862    2.683966
          ht |   .3015655   .0939098     3.21   0.001      .117319     .485812
       _cons |  -1.409794   .1991068    -7.08   0.000    -1.800432   -1.019157
------------------------------------------------------------------------------
```

```
. xi: regress comint6a female att_age comint1a i.mach16 lhratio
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1184
-------------+------------------------------           F( 15,  1168) =   82.73
       Model |   1651.6582    15  110.110547           Prob > F      =  0.0000
    Residual |   1554.5054  1168  1.33091216           R-squared     =  0.5152
-------------+------------------------------           Adj R-squared =  0.5089
       Total |   3206.1636  1183  2.71019747           Root MSE      =  1.1537

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2023621   .0709949    -2.85   0.004    -.3416538   -.0630704
     att_age |   .0342729   .0054224     6.32   0.000     .0236341    .0449117
    comint1a |   .6149021   .0237276    25.92   0.000     .5683487    .6614556
 _Imach16_12 |   .0554611   .2790024     0.20   0.842    -.4919408    .6028629
 _Imach16_13 |   .1015674   .3385868     0.30   0.764    -.5627388    .7658737
 _Imach16_14 |  -.3481088   .8191449    -0.42   0.671    -1.955269    1.259051
 _Imach16_21 |   .4470775   .1172168     3.81   0.000     .2170985    .6770565
 _Imach16_22 |   .4279852   .0805889     5.31   0.000       .26987    .5861003
 _Imach16_23 |   .1297148   .6706828     0.19   0.847    -1.186163    1.445592
 _Imach16_24 |   .1388775   .2862436     0.49   0.628    -.4227316    .7004865
 _Imach16_31 |   .8037816   .1663952     4.83   0.000     .4773147    1.130249
 _Imach16_32 |     .64047   .2300059     2.78   0.005     .1891991    1.091741
 _Imach16_33 |  -.0325852    .149784    -0.22   0.828     -.326461    .2612906
 _Imach16_34 |   .3874341    1.15587     0.34   0.738    -1.880379    2.655248
     lhratio |   .1427372   .0404905     3.53   0.000      .063295    .2221793
       _cons |  -1.695554   .2207387    -7.68   0.000    -2.128643   -1.262465
------------------------------------------------------------------------------

. xi: regress comint6a female att_age comint1a i.mach16 log_aer
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1181
-------------+------------------------------           F( 14,  1166) =   89.17
       Model |   1717.8123    14  122.700878           Prob > F      =  0.0000
    Residual |  1604.52895  1166  1.37609687           R-squared     =  0.5170
-------------+------------------------------           Adj R-squared =  0.5112
       Total |  3322.34124  1180  2.81554343           Root MSE      =  1.1731

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2846422    .070183    -4.06   0.000    -.4223412   -.1469432
     att_age |   .0386176   .0055493     6.96   0.000     .0277299    .0495052
    comint1a |   .6210588   .0239556    25.93   0.000      .574058    .6680596
 _Imach16_12 |   .0563892   .2838482     0.20   0.843    -.5005211    .6132995
 _Imach16_13 |    .129528   .3440059     0.38   0.707    -.5454118    .8044679
 _Imach16_14 |  -.4581916   .8321292    -0.55   0.582     -2.09083    1.174446
 _Imach16_21 |   .4023725   .1194731     3.37   0.001     .1679662    .6367787
 _Imach16_22 |   .4385856   .0820335     5.35   0.000     .2776358    .5995355
 _Imach16_23 |    .043591   .6812057     0.06   0.949    -1.292935    1.380117
 _Imach16_24 |   .1185338    .299729     0.40   0.693    -.4695347    .7066022
 _Imach16_31 |   .8145919   .1719497     4.74   0.000     .4772265    1.151957
 _Imach16_32 |   .6982066   .2301575     3.03   0.002     .2466374    1.149776
 _Imach16_33 |  -.0204787   .1533154    -0.13   0.894    -.3212836    .2803262
 _Imach16_34 |  (dropped)
     log_aer |   .0911715   .0308454     2.96   0.003     .0306528    .1516901
       _cons |  -1.709602   .2269039    -7.53   0.000    -2.154788   -1.264417
------------------------------------------------------------------------------
```

```
. xi: regress comint6a female att_age comint1a i.mach16 dcct_hba
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)

      Source |       SS       df       MS              Number of obs =    1229
-------------+------------------------------           F( 15,  1213) =   85.16
       Model |  1723.52485    15  114.901656           Prob > F      =  0.0000
    Residual |  1636.59855  1213  1.34921562           R-squared     =  0.5129
-------------+------------------------------           Adj R-squared =  0.5069
       Total |   3360.1234  1228  2.73625684           Root MSE      =  1.1616

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |  -.2918761   .0681328    -4.28   0.000    -.4255473    -.158205
     att_age |   .0391487   .0054229     7.22   0.000     .0285094    .0497879
    comint1a |   .6170217   .0234034    26.36   0.000      .571106    .6629374
 _Imach16_12 |  -.0219819   .2665346    -0.08   0.934    -.5449018     .500938
 _Imach16_13 |   .1022553   .3405462     0.30   0.764    -.5658695    .7703802
 _Imach16_14 |  -.4175115   .8239991    -0.51   0.612    -2.034133     1.19911
 _Imach16_21 |   .3853851   .1165439     3.31   0.001      .156735    .6140352
 _Imach16_22 |   .3889286   .0798757     4.87   0.000     .2322187    .5456386
 _Imach16_23 |  -.0129561   .6742471    -0.02   0.985    -1.335776    1.309864
 _Imach16_24 |   .0839424   .2882418     0.29   0.771    -.4815654    .6494502
 _Imach16_31 |   .7625185   .1634818     4.66   0.000       .44178    1.083257
 _Imach16_32 |   .5084211   .2243369     2.27   0.024     .0682898    .9485525
 _Imach16_33 |  -.0615441   .1496213    -0.41   0.681    -.3550894    .2320013
 _Imach16_34 |   .4488394   1.163941     0.39   0.700    -1.834722    2.732401
    dcct_hba |   .1013591   .0243593     4.16   0.000     .0535681    .1491501
       _cons |  -2.300259   .3000063    -7.67   0.000    -2.888848   -1.711671
------------------------------------------------------------------------------

.
. log close
       log:  C:\EDIC Carotid IMT\3.log
  log type:  text
 closed on:  29 May 2007, 13:45:26
```

```
      log:  C:\EDIC Carotid IMT\4.log
 log type:  text
opened on:  29 May 2007, 14:56:52

. use "C:\EDIC Carotid IMT\edicmscuru6.dta", clear

. generate female=1

. replace female=0 if sex=="M"
(645 real changes made)

. generate standard_age = 0

. replace standard_age = att_age if group=="STANDARD"
(611 real changes made)

. tab1 att_age sex female mach16 smoking

-> tabulation of att_age

   attained |
 age year 1 |      Freq.     Percent        Cum.
------------+-----------------------------------
         19 |          5        0.41        0.41
         20 |          7        0.57        0.98
         21 |         18        1.46        2.44
         22 |         18        1.46        3.91
         23 |         17        1.38        5.29
         24 |         24        1.95        7.24
         25 |         39        3.17       10.41
         26 |         31        2.52       12.94
         27 |         34        2.77       15.70
         28 |         36        2.93       18.63
         29 |         47        3.82       22.46
         30 |         49        3.99       26.44
         31 |         48        3.91       30.35
         32 |         57        4.64       34.99
         33 |         63        5.13       40.11
         34 |         64        5.21       45.32
         35 |         70        5.70       51.02
         36 |         50        4.07       55.09
         37 |         59        4.80       59.89
         38 |         63        5.13       65.01
         39 |         64        5.21       70.22
         40 |         70        5.70       75.92
         41 |         36        2.93       78.84
         42 |         54        4.39       83.24
         43 |         49        3.99       87.23
         44 |         40        3.25       90.48
         45 |         32        2.60       93.08
         46 |         43        3.50       96.58
         47 |         18        1.46       98.05
         48 |          9        0.73       98.78
         49 |         11        0.90       99.67
         50 |          3        0.24       99.92
         51 |          1        0.08      100.00
------------+-----------------------------------
      Total |      1,229      100.00

-> tabulation of sex

        sex |      Freq.     Percent        Cum.
------------+-----------------------------------
          F |        584       47.52       47.52
          M |        645       52.48      100.00
------------+-----------------------------------
      Total |      1,229      100.00
```

```
-> tabulation of female

     female |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |        645       52.48       52.48
          1 |        584       47.52      100.00
------------+-----------------------------------
      Total |      1,229      100.00

-> tabulation of mach16

ultrasonogr |
       aphy |
  equipment |
combination |
          s |      Freq.     Percent        Cum.
------------+-----------------------------------
         11 |        416       33.85       33.85
         12 |         20        1.63       35.48
         13 |         12        0.98       36.45
         14 |          2        0.16       36.62
         21 |        134       10.90       47.52
         22 |        465       37.84       85.35
         23 |          3        0.24       85.60
         24 |         17        1.38       86.98
         31 |         59        4.80       91.78
         32 |         29        2.36       94.14
         33 |         71        5.78       99.92
         34 |          1        0.08      100.00
------------+-----------------------------------
      Total |      1,229      100.00

-> tabulation of smoking

    current |
    smoking |
    (yes=1) |
     year 1 |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |        994       81.01       81.01
          1 |        233       18.99      100.00
------------+-----------------------------------
      Total |      1,227      100.00

. tab standard_age group

standard_a |    treatment group
        ge | EXPERIMEN   STANDARD |     Total
-----------+----------------------+----------
         0 |       618          0 |       618
        19 |         0          2 |         2
        20 |         0          4 |         4
        21 |         0         12 |        12
        22 |         0         11 |        11
        23 |         0         12 |        12
        24 |         0         11 |        11
        25 |         0         19 |        19
        26 |         0         12 |        12
        27 |         0         16 |        16
        28 |         0         18 |        18
        29 |         0         23 |        23
        30 |         0         24 |        24
        31 |         0         29 |        29
        32 |         0         26 |        26
        33 |         0         32 |        32
        34 |         0         37 |        37
        35 |         0         35 |        35
```

```
         36 |         0         25 |        25 
         37 |         0         27 |        27 
         38 |         0         31 |        31 
         39 |         0         36 |        36 
         40 |         0         33 |        33 
         41 |         0         21 |        21 
         42 |         0         17 |        17 
         43 |         0         22 |        22 
         44 |         0         19 |        19 
         45 |         0         19 |        19 
         46 |         0         23 |        23 
         47 |         0          5 |         5 
         48 |         0          2 |         2 
         49 |         0          7 |         7 
         50 |         0          1 |         1 
-----------+----------------------+----------
      Total |       618        611 |     1,229 


. 
. xi: regress commyr6  att_age female common   smoking sbp i.mach16 i.group 
standard_age
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)
i.group           _Igroup_1-2         (_Igroup_1 for group==EXPERIMENTAL omitted)

      Source |       SS       df       MS              Number of obs =    1214
-------------+------------------------------           F( 18,  1195) =   43.90
       Model |  6.63335152    18  .368519529           Prob > F      =  0.0000
    Residual |   10.030699  1195   .00839389           R-squared     =  0.3981
-------------+------------------------------           Adj R-squared =  0.3890
       Total |  16.6640505  1213  .013737882           Root MSE      =  .09162

------------------------------------------------------------------------------
     commyr6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     att_age |    .002898   .0005655     5.12   0.000     .0017886    .0040074
      female |  -.0173285   .0055193    -3.14   0.002    -.0281571   -.0064999
      common |   .6188239   .0361165    17.13   0.000      .547965    .6896827
     smoking |   .0264995   .0067896     3.90   0.000     .0131786    .0398205
         sbp |   .0007859   .0002262     3.47   0.001      .000342    .0012297
 _Imach16_12 |  -.0027271    .021081    -0.13   0.897    -.0440869    .0386327
 _Imach16_13 |   .0093079   .0269086     0.35   0.729    -.0434854    .0621012
 _Imach16_14 |  -.0035408    .065193    -0.05   0.957    -.1314463    .1243647
 _Imach16_21 |   .0182094   .0092161     1.98   0.048     .0001278     .036291
 _Imach16_22 |   .0198324   .0063798     3.11   0.002     .0073156    .0323491
 _Imach16_23 |  -.0139867   .0651245    -0.21   0.830    -.1417577    .1137844
 _Imach16_24 |   .0330591   .0227124     1.46   0.146    -.0115015    .0776196
 _Imach16_31 |   .0523112   .0129314     4.05   0.000     .0269404     .077682
 _Imach16_32 |    .063157   .0179973     3.51   0.000     .0278471    .0984668
 _Imach16_33 |  -.0040103   .0119274    -0.34   0.737    -.0274113    .0193907
 _Imach16_34 |   .0407773   .0918423     0.44   0.657    -.1394127    .2209673
   _Igroup_2 |  -.0453358   .0274286    -1.65   0.099    -.0991494    .0084779
standard_age |   .0016708   .0007658     2.18   0.029     .0001682    .0031733
       _cons |   .0458005   .0339261     1.35   0.177    -.0207608    .1123618
------------------------------------------------------------------------------
```

```
. xi: regress comint6a att_age female comint1a smoking sbp i.mach16 i.group
standard_age
i.mach16          _Imach16_11-34      (naturally coded; _Imach16_11 omitted)
i.group           _Igroup_1-2         (_Igroup_1 for group==EXPERIMENTAL omitted)

      Source |       SS       df       MS              Number of obs =    1224
-------------+------------------------------           F( 18,  1205) =   73.23
       Model |  1749.20792    18  97.1782177           Prob > F      =  0.0000
    Residual |   1599.0705  1205  1.32702946           R-squared     =  0.5224
-------------+------------------------------           Adj R-squared =  0.5153
       Total |  3348.27842  1223  2.73775832           Root MSE      =   1.152

------------------------------------------------------------------------------
    comint6a |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     att_age |   .0248306   .0070657     3.51   0.000     .0109681     .038693
      female |  -.2506305    .068871    -3.64   0.000    -.3857509   -.1155102
    comint1a |   .5961027   .0237805    25.07   0.000      .549447    .6427584
     smoking |   .3737255   .0850475     4.39   0.000      .206868    .5405831
         sbp |   .0092447   .0028583     3.23   0.001     .0036368    .0148525
 _Imach16_12 |  -.0355505   .2650695    -0.13   0.893    -.5555995    .4844985
 _Imach16_13 |   .0623412   .3381598     0.18   0.854    -.6011062    .7257886
 _Imach16_14 |  -.4062006   .8195354    -0.50   0.620    -2.014075    1.201674
 _Imach16_21 |   .3805554   .1156115     3.29   0.001     .1537332    .6073776
 _Imach16_22 |   .3942891   .0791939     4.98   0.000     .2389158    .5496624
 _Imach16_23 |  -.3276037   .8186496    -0.40   0.689    -1.933741    1.278533
 _Imach16_24 |   .0866714   .2858837     0.30   0.762    -.4742138    .6475565
 _Imach16_31 |   .7781128   .1624906     4.79   0.000     .4593169    1.096909
 _Imach16_32 |   .6571976   .2256722     2.91   0.004     .2144434    1.099952
 _Imach16_33 |  -.0144065    .149784    -0.10   0.923     -.308273    .2794599
 _Imach16_34 |   .3404988   1.154707     0.29   0.768    -1.924961    2.605959
   _Igroup_2 |  -.5433027   .3435357    -1.58   0.114    -1.217297    .1306918
standard_age |   .0201343   .0095873     2.10   0.036     .0013246    .0389439
       _cons |  -2.226797   .4143702    -5.37   0.000    -3.039765    -1.41383
------------------------------------------------------------------------------

.
. log close
       log:  C:\EDIC Carotid IMT\4.log
  log type:  text
 closed on:  29 May 2007, 14:56:58
```

HYPERLIPIDEMIA RE-CHECK

```
       log:  C:\EDIC Carotid IMT-Latest\Hyperlipedemia_fix.log
  log type:  text
 opened on:  26 Jul 2007, 05:14:59

. use "C:\EDIC Carotid IMT-Latest\edicmscuru6.dta", clear

. do "C:\DOCUME~1\CFTHOM~1.000\LOCALS~1\Temp\STD02000000.tmp"

. use "C:\EDIC Carotid IMT-Latest\edicmscuru6.dta", clear

. sort group

. by group: tab sex hlip, row
```

```
-> group = EXPERIMENTAL

+-----------------+
| Key             |
|-----------------|
|    frequency    |
| row percentage  |
+-----------------+

           |     ldl >=130 or
           |   medication year 1
           |        (yes=1)
       sex |         0          1 |     Total
-----------+----------------------+----------
         F |       210         78 |       288 
           |     72.92      27.08 |    100.00 
-----------+----------------------+----------
         M |       207        113 |       320 
           |     64.69      35.31 |    100.00 
-----------+----------------------+----------
     Total |       417        191 |       608 
           |     68.59      31.41 |    100.00 
```

```
-> group = STANDARD

+-----------------+
| Key             |
|-----------------|
|    frequency    |
| row percentage  |
+-----------------+

           |     ldl >=130 or
           |   medication year 1
           |        (yes=1)
       sex |         0          1 |     Total
-----------+----------------------+----------
         F |       208         76 |       284 
           |     73.24      26.76 |    100.00 
-----------+----------------------+----------
         M |       217         93 |       310 
           |     70.00      30.00 |    100.00 
-----------+----------------------+----------
     Total |       425        169 |       594 
           |     71.55      28.45 |    100.00 


.
end of do-file

. log close
       log:  C:\EDIC Carotid IMT-Latest\Hyperlipedemia_fix.log
  log type:  text
 closed on:  26 Jul 2007, 05:16:39
```