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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 2 1985

Dr. David Weil
Environmental Criteria and Assessment Office
U.S. EPA
Research Triangle Park, N.C.

Dear David:

I am Enclosing my latest memorandum in response to Richard Royall's questions about the consistency of the blood lead blood pressure relationship in the NHANES II data.

In addition to these results, which show that lead is significant as a preditor of blood pressure even when dummy variables for all of the PSUs are used, and that the coefficient is less affected when alternative dummy variables that represent location with less collinearity with lead are used instead of PSU, my August 21st memo used a proportionate hazard model with and without blocking. The blocking case calculates the regression separately in each of the 64 PSUs and then averages the results, computing the significance of that lead coefficient using a Mantel Haenzsel approach to summing the log liklihoods. It showed that lead was significant as a predictor of blood pressure with or without the blocking, and that the result using the 64 PSUs gave a coefficient only 20% lower than the coefficient obtained treating the sample as a whole. If Dr. Royall does not have this memo I would appreciate your sending it to him.

Sincerely,

Joel Schwartz

OCT 2 1985

Subject: Response to Richard Royall's questions on the blood lead -blood pressure relationship in NHANES II

From: Joel Schwartz
Office of Policy Analysis

To: David Weil
Environmental Criteria and Assessment Office

This memo is in response to Dr. Royall's comments to you regarding the NHANES II analysis. Dr. Royall basic question was whether the blood lead-blood pressure relationship in NHANES II showed internal consistency, and he proposed a number of different models and wished the analysis to be discussed with respect to those models. I believe that I did use his second model as well as his first in my previous memo, but I will start from scratch to avoid confusion.

Dr. Royall has phrased his questions formally, in terms of a series of models, and I will respond in a similar fashion. My first response is that I do not believe that any of those models are exactly the correct one, since they omit an important factor that I discussed at some length in my previous memo, and which has considerable bearing on the outcome. This factor is measurement error. To deal with it more formally than I did previously consider the following model, which is similar to the first model Dr. Royall discussed, except for incorporating the effect of measurement error. I will first discuss the impact of measurement error in the framework of this model and them go on to the more complex models he raised.

MODEL TYPE 1

Let Y represent the outcome, X the independent variable of interest, Z the covariates. Let $X = x + u$, where x is the true

value of blood lead, and u the measurement error. Numerous authors have shown that in this case the regression coefficient is biased downward, as is its t-statistic (1). Thus the model is

$$E(Y_i) = A + B(X_i) + C(Z_i) \qquad (1)$$

and the regression coefficient B is biased, with, in the simple bivariate case

$$B = b\left(1 - \frac{Var(u)}{Var(x)+Var(u)}\right) \qquad (2)$$

where b is the coefficient that would result if x rather than X were used in model 1.

Moreover, if there is also measurement error in the dependent variable, then the error term variance is also inflated. Since Var(B) is proportional to Var(e), this measurement error will not bias the regression coefficient, but will bias the t-statistic.

The implications of this are that measurement error in Y and X leads to bias in B and its significance level in model 1. The multivariate equations are more complicated in form, but not in substance than (2), however, errors in measuring the Z's can produce both positive and negative effects on B. Fortunately, the most important covariates, body mass index and age, are very accurately determined, and the impacts of the other variables can be determined empirically.

When we looked at the coefficient of lead using only age, race, and body mass index as variables, and compared it to the results using the selected nutritional and other variables significant at the 0.05 level, or the ones significant at the 0.15 level, or the intermediate results, the coefficient of blood lead changed by less than 10% among all of the regressions (1st seated systolic, 1st seated diastolic, 2nd seated systolic, 2nd seated diastolic, recumbent systolic, recumbent diastolic), indicating

little sensitivity to those variables.

Part of the bias due to the measurement error can be quantified, because the 1100 blind quality control samples allow the computation of Var(u). Supercarp is a program that will do regression analysis on survey data accounting for the stratified nature of the data, and will also take into account the measurement error if the variance is known. In my August 21 memo to David Weil, I enclosed the results of using that program, and the variance of the QC data. As equation (2) suggests, the coefficient of blood lead increases by about 20% after accounting for this error, and the t-statistic also increases. The results are shown in the appendix in the back. This only accounts for part of the measurement error bias since blood lead is an imprecise measure of the toxicologically active soft tissue lead, however I have no good estimates for this factor.

Supercarp will not allow estimates of the effect of measurement error in the dependent variable, however. To indicate the magnitude of this effect, however, I regressed the first seated blood pressure measurement on the second seated measurement. The R^2 of this regression is only 0.6432, indicating that there is a significant further downward bias in the t-statistic that needs to be at least recognized. This low value of explained variance somewhat overstates the noisyness of blood pressure measurements because the first measurement was taken upon first entering the medical examination center, and seeing all the white coats and equipment. Medical experience suggests that this would result in a slight increase in both the mean blood pressure and its variance, which would reduce the R^2 of the regression. Nevertheless, the results show that between the actual measurement error in blood pressure, and the real fluctuation in blood pressure form hour to hour, (which is clearly measurement error in this context) blood pressure is a quite noisy variable.

I am going through this somewhat lengthy discussion because

of the simple fact that bias in the regression coefficient and significance level in this first stage of the analysis has important implications for the more complicated models. In particular, introducing variables collinear with blood lead will increase the bias in the regression.

Dr. Royall has already indicated that our search of many alternative variables and model specifications within the context of model (1) shows considerable internal consistency within this specification. Additional examination of internal consistency within this model was performed by looking at age subgroups, as described in my memo to CASAC, by using principle component analysis on the Z variables, and repeating the stepwise analysis described in our paper, by excluding persons on hypertensive medication, etc. I believe that the consistency within this model is well established, and next turn to Dr. Royall's second model.

MODEL TYPE 2

The second set of models to be considered are :

$$E(Y_{ij}) = A_i + BX_{ij} + CZ_{ij} \qquad (3)$$

where $X = x + u$

and again B is biased downward. In this scenario, the A_i represent groups formed in various ways to control for factors by class variables rather than continuous variables. These class variables can be of two types, either they themselves represent a factor known or suspected of being related to blood pressure that is better modeled categorically than continuously , or they may be proxies for some known or unknown unmeasured factors. I have also used this model to examine the internal consistency of the evidence, using several different classes.

I have described in previous memorandum the results of using

age as a classification variable. Inserting dummy variables for age subgroups has no impact on the lead coefficient. Inserting dummy variables for the time period in the survey has no impact either. The same results obtained for seasonal dummies.

Dupont has stated that the results are different when the classification variable represents location. The use of location as a classification variable creates some difficulty, however, since location is collinear with lead. This will, particularly in the context of a model with substantial measurement error (the instrument measurement error variance accounts for 16% of the variance of lead, and the inexactitude of blood lead accounting for toxicologically active soft tissue lead probably accounts for a similar fraction of the variance of lead) create a substantial increase in the bias of B.

There is one further problem. The NHANES II survey was stratified by picking several health outcomes, and , using NHANES I data, finding within each region the demographic factors that best predicted that outcome. All candidate PSU's were then classified into superstrata based on similarities in their predicted mean levels of those medical outcomes. The medical outcomes chosen were prevalence of hypertension, infant mortality rate, prevalence of high serum cholesterol levels, prevalence of heart disease, and prevalence of cancer. These are discussed in the Plan And Design of the NHANES II Survey. Thus the PSU's were chosen so that dummy variables for them represent more of the variation in blood pressure than would be the case in a random survey. This increases the collinearity of the PSUs with the outcome variable.

It is possible (although unlikely, given the broad range of potential variables investigated), that location represents some risk factor that is omitted and is correlated with blood lead. It is possible to investigate this possibility by finding classification variables that explain location while minimizing,

to the extent possible, their collinearity with blood lead. I will report the results of a number of such classification schemes, including using the 64 PSU's in the NHANES survey, and empirically demonstrate that the blood lead -blood pressure relationship is not due to a confounding with location. I will also show that the impact of a classification scheme on the blood lead coefficient is proportional to its collinearity with lead, and not to its accuracy in explaining location, thereby indicating that the impact on lead is due to insufficient within site variation and not omitted variable bias. I will use the results for all men over 20 years old in this analysis. (Since supercarp only allows 50 independent variables it cannot be used in this analysis.)

One factor that makes it easier to separate out the two possibilities is that, as I mentioned in my previous memo, PSU is not the same as location. WHile a stand was set up in a given location, the sample persons were drawn from a considerable distance around that location, sometimes from 100 miles away. The variable size on the NHANES II tape codes each examined person with a degree of urbanization level from 1 to 8, where 1 means that they lived in a city of over 3 million, 7 that they live in a town of 2500-10,000 people, and 8 that they live in a rural area, and not even in a town. A univariate scan of the NHANES data shows that each PSU contains people with a range of urbanization levels, in fact PSUs in cities of over 1 million people have sampled individuals who live in rural areas. As I also noted previously, some PSU's contain more than one urban location, (i.e. New Haven and Hartford), and, because the sample was designed to be representative, large metropolitan areas had more than one stand (There were 5 in the New York metropolitan area). Because of this we can consider various alternative forms of model 2 to represent the locational factor and see what impact they have on the blood lead coefficient. All regressions were run in weighted least squares, since SURREGR cannot be used when the stratifica-

tion is entered as variables.

My first choice of the A_i's to explore the consistency of the blood pressure relationship is to use the Strata in the NHANES II survey. These strata represent the same basic geographic areas, the same size of county, of demographic profile etc., and are therefore a good measure of locational and demographic factors. The two PSU's in each strata are supposed to be similar on these characteristics, and the use of strata minimizes the collinearity with lead. The results are shown in table 2 in the appendix. For systolic blood pressure the coefficient was 4.64 and the t-statistic was 4.732 compared to baseline values of 5.232 and 5.505 respectively. For diastolic blood pressure lead has a coefficient of 2.262, and t-statistic of 3.498, compared to a baseline value of 2.956 and a t-statistic of 4.724. Thus accounting for location and stratification in this manner has very little impact on the blood lead-blood pressure relationship.

The next consistency check was made by further refining the locational dummies. The NHANES data contains a variable for whether or not each examined person lived inside the central city of the SMSA where they resided, if they resided in an SMSA. I split each strata into two substrata, one containing all persons living inside the central city, the other for persons not living inside the central city of an SMSA. This gives 64 dummy variables to use as the A_i in equation (3). However, 11 of the substrata were empty, because there was no central city in the strata. Since this approach does not lump people residing in rural areas and living in cities together, as the Dupont approach does, it would appear to be a more precise subcategorization of strata to account for location then their use of PSU. It is also less collinear with lead. The results are shown in table 3 of the appendix. For systolic blood pressure the coefficient is 4.7 and the t-statistic is 4.753, for diastolic blood pressure the coefficient is 2.44 and the t-statistic is 3.735. Again, these are little changed from the results in the basecase (equation

(i)).

A different approach to forming the subgroups to use as the A_i in equation 3 is to subdivide each of the 4 regions of the country into the 8 different degree of urbanization categories. This is less precise than the Dupont categories in identifying specific geographical locations, but more precise in identifying the urbanization level in which the subject resides. The results of this analysis, shown in table 4, gives a coefficient of lead of 5.22 for systolic, with a t-statistic of 5.34, and a coefficient of lead for diatolic blood pressure of 3.18, with a t-statistic of 4.89. This indicates that the reduction in the blood lead coefficient from controlling for PSU's is not due to their representing urbanization.

The remaining tests of the consistency focus on representing precise geographical locations with less collinearity with lead then using the 64 psu's. If they also show little impact on lead, then we can conclude that the reduction in the lead coefficient when using the 64 PSU's is due to its collinearity with lead interacting with the measurement error, and not due to its representing a genuine ommitted factor.

Two approaches were taken to this consistency test. First, since 48 of the PSU's represented cities or counties with populations over 100,000, and the others represented more difuse rural areas without any concentration of people in one central location, and with populations drawn from up to 100 miles away from the site of the examination stand, dummy variables were created for just those 48 more localized psu's. The remaining rural areas were represented by 4 regional dummy variables. Thus A_i represent 52 subgroups. The results of this analysis are shown in table 5. For systolic blood preasure lead had a coefficient of 4.15 and a t-statistic of 4.19. For diastolic blood pressure lead had a coefficient of 2.16 and a t-statistic of 3.28. Using 48 PSU's represents exactly the same level of control for those urban

locations as the 64 PSU approach, and for the rural areas the difference is small. However the difference in collinearity with lead is significant, because all of the time and seasonal variation in lead is not removed.

A final consistency check was done using all of the 64 PSU's. However, to obtain more precision on exact location, use of the same water supply, etc., the PSU's were split. Those persons coded as residing in completely rural areas, or in towns of between 2500 and 10,000 in population, who clearly do not reside in the cities where the stands were located were excluded from the categories. They were all subdivided into four regional rural locations. This categorization provides a finer measure of location than using the 64 PSU's as representative of location, but again has lower collinearity with lead. 11 psu's were not independent of the remaining variables presumably because they consisted primarily of rural locations. Thus the total number of categories was 57. The results are shown in table 6. For systolic the coefficient of lead was 5.28 with a t-statistic of 5.32, for diastolic blood pressure, the coefficient of lead was 2.65, with a t-statistic of 4.02.

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Table 7 shows the results of using the 64 PSU's as categorization variables. For systolic blood pressure the coefficient of lead is 3.30 with a t-statistic of 3.33, for diastolic it is 1.41 with a t-statistic of 2.15. This represents a reduction of 37% for the systolic coefficient and a reduction of 52% for diastolic blood pressure. Both coefficients remain statistically significant.

↑ for males 21-74

CONCLUSIONS

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Comparing all of these results suggests that:

-lead is still significant as a predictor of blood pressure when model 2 is used and the A_i represent PSU, although the magnitude is reduced by

1/3 to 1/2.

-When alternative subcategorizations of the sample are used which are more specific for urbanization or location, but less collinear with lead, the impact of using model 2 on the lead coefficient is substantially reduced or eliminated.

-Even when almost all of the PSU's are used as variables but the collinearity is reduced by dealing differently with the rural areas, the impact of model 2 is minimal.

-The relationship between blood lead and blood pressure in the NHANES II data is consistent, and robust under both a wide range of alternative model specifications and a wide range of alternative classification schemes. It is also consistent with the result of other general population surveys.

-The reduction in regression coefficient from using the classification scheme that is most collinear with lead seems to be due to the collinearity, rather then the representation of location and urbanization.

REFERENCES

1. W.G. Chochran Technometrics 10,637 1968

TABLE 1

RESULTS OF BASELINE ANALYSIS AFTER CORRECTING FOR MEASUREMENT ERROR

.GRESSION COEFFICIENTS - DEPENDENT VARIABLE IS BP2DIA

.RIABLE	COEFFICIENT	STANDARD ERROR	T-STATISTIC
ITERCPT	8.9215230D+01	3.1480411D+01	2.8339919D+00
EYRS	8.5179156D-01	1.0894348D-01	7.8186558D+00
ESQ	-8.0111895D-03	1.1681387D-03	-6.8580808D+00
II	7.2849918D-01	9.2730583D-02	7.8560833D+00
GZINC	-3.6633675D+01	8.8970814D+00	-4.1174936D+00
GVITC	1.1480018D+00	3.1589729D-01	3.6340982D+00
.BSQ	4.3278731D-03	7.2320342D-04	5.9843094D+00
CHOL	3.5014183D+00	1.5948060D+00	2.1955136D+00
OKNUM	-5.6466130D-02	2.3875944D-02	-2.3649801D+00
.LCIUM	1.6846338D-06	8.3832945D-07	2.0095128D+00
ETVITC	-9.9106581D-03	3.2752592D-03	-3.0259156D+00
NC	3.3071074D-01	9.4888104D-02	3.4852708D+00
MOGLOB	1.2372121D-01	2.8875438D-02	4.2846521D+00
RICEPR	1.2142064D-02	5.3527929D-03	2.2683604D+00
AMHYPER	2.2039796D+00	3.9217988D-01	5.6198182D+00
OFFEE	-2.3803678D-01	9.4315350D-02	-2.5238392D+00
EIGHT	1.4564105D+01	3.2050318D+00	4.5441374D+00
YPERMED	5.4619252D+00	8.4050559D-01	6.4983806D+00
.CE	2.6210951D+00	8.6263038D-01	3.0384915D+00
	3.6376986D+00	1.1602883D+00	3.1351680D+00

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GRESSION COEFFICIENTS - DEPENDENT VARIABLE IS BP2SYS

RIABLE	COEFFICIENT	STANDARD ERROR	T-STATISTIC
TERCPT	6.3811359D+01	1.7701916D+01	3.6047712D+00
EYRS	-4.7275936D-01	1.6341380D-01	-2.8930198D+00
ESQ	9.1906898D-03	1.7899688D-03	5.1345530D+00
I	1.2797492D+00	7.8843626D-02	1.6231486D+01
GZINC	-8.3776212D+00	2.5976941D+00	-3.2250222D+00
BSQ	8.4716657D-03	1.3558794D-03	6.2480968D+00
LCIUM	2.6327408D-06	1.2264931D-06	2.1465598D+00
FFEE	-3.8811590D-01	9.5377448D-02	-4.0692628D+00
MHYPER	3.3360347D+00	6.4388941D-01	5.1810678D+00
IGHT	1.8481922D+01	6.2587973D+00	2.9529510D+00
PERMED	8.6698445D+00	1.4178121D+00	6.1149462D+00
	6.0841298D+00	1.7029155D+00	3.5727726D+00

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TABLE 2

REGRESSION RESULTS SUBCATEGORIZING ON STRATA

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	42	4816026404	114667295	20.215	0.0001
ERROR	2216	12570140704	5672446		
C TOTAL	2258	17386167108			

ROOT MSE	2381.690	R-SQUARE	0.2770
DEP MEAN	128.270	ADJ R-SQ	0.2633
C.V.	1856.773		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	69.669024	13.517554	5.154	0.0001
AGEYRS	1	-0.467125	0.154801	-3.018	0.0026
AGESQ	1	0.009049477	0.001700945	5.320	0.0001
BMI	1	1.273142	0.087264	14.586	0.0001
LOGZINC	1	-8.983279	2.136954	-4.204	0.0001
ALHSQ	1	0.008925774	0.001299349	6.869	0.0001
CALCIUM	1	.00000222671	.00000118297	1.882	0.0599
COFFEE	1	-0.340072	0.104939	-3.241	0.0012
FAMHYPER	1	3.253691	0.689177	4.721	0.0001
HEIGHT	1	17.670201	4.964062	3.560	0.0004
HYPERMED	1	8.423290	1.272749	6.618	0.0001
LL	1	4.643092	0.983153	4.723	0.0001
LOC1	1	-1.867091	2.462489	-0.758	0.4484
LOC2	1	-1.754628	2.513575	-0.698	0.4852
LOC3	1	7.628028	2.566929	2.972	0.0030
LOC4	1	4.401316	2.305211	1.909	0.0564
LOC5	1	-0.995434	2.603146	-0.382	0.7022
LOC6	1	-2.999698	2.763960	-1.085	0.2779
LOC7	1	6.479525	2.694921	2.404	0.0163
LOC8	1	1.286806	2.383631	0.540	0.5894
LOC9	1	4.557120	2.607180	1.748	0.0806
LOC10	1	2.358493	2.594702	0.909	0.3635
LOC11	1	0.703654	2.414058	0.291	0.7707
LOC12	1	3.523361	2.454088	1.436	0.1512
LOC13	1	7.128818	2.772353	2.571	0.0102
LOC14	1	-4.445573	2.477844	-1.794	0.0729
LOC15	1	0.839914	2.620637	0.320	0.7486
LOC16	1	-1.782319	2.715365	-0.656	0.5116
LOC17	1	1.030004	2.307656	0.446	0.6554
LOC18	1	7.043275	2.617896	2.690	0.0072
LOC19	1	3.650958	2.699450	1.352	0.1764
LOC20	1	0.755070	2.529495	0.299	0.7653
LOC21	1	3.711074	2.679642	1.385	0.1662
LOC22	1	-1.213803	2.467882	-0.492	0.6229
LOC23	1	-2.087329	2.512583	-0.831	0.4062
LOC24	1	3.954312	3.195376	1.238	0.2160
LOC25	1	-0.517636	2.468198	-0.210	0.8339
LOC26	1	6.993977	2.622417	2.667	0.0077
LOC27	1	-5.234867	2.559811	-2.045	0.0410

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC28	1	-2.201571	2.315475	-0.951	0.3418
LOC29	1	3.816476	2.596570	1.470	0.1418
LOC30	1	10.391274	2.627499	3.955	0.0001
LOC31	1	2.138785	2.576270	0.830	0.4065

EP VARIABLE: BP2DIA

OURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
ODEL	50	2425512773	48510255	21.640	0.0001
ROR	2202	4936109609	2241648		
TOTAL	2252	7361622382			

ROOT MSE	1497.214	R-SQUARE	0.3295
DEP MEAN	82.334860	ADJ R-SQ	0.3143
C.V.	1818.444		

/ARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > ITI
INTERCEP	1	84.780959	31.907511	2.657	0.0079
AGEYRS	1	0.838602	0.101692	8.250	0.0001
AGESQ	1	-0.00790779	0.001103976	-7.163	0.0001
BMI	1	0.768682	0.073688	10.432	0.0001
.06ZINC	1	-33.081782	8.846927	-3.739	0.0002
.06VITC	1	1.194129	0.264748	4.510	0.0001
ALBSU	1	0.004716455	0.000849976	5.582	0.0001
.SCHOL	1	2.723858	1.096896	2.483	0.0131
SMOKNUM	1	-0.046723	0.016483	-2.835	0.0046
CALCIUM	1	.00000143821	7.452J0E-07	1.930	0.0537
DIETVITC	1	-0.0099379	0.002651983	-3.747	0.0002
ZINC	1	0.292206	0.095258	3.068	0.0022
HEMOGLOB	1	0.115033	0.021609	5.323	0.0001
TRICEPH	1	0.010384	0.004035374	2.573	0.0101
CHHYPER	1	2.051442	0.434356	4.723	0.0001
COFFEE	1	-0.214494	0.068643	-3.125	0.0018
WEIGHT	1	13.157620	3.156060	4.169	0.0001
HYPERMED	1	5.453748	0.804722	6.777	0.0001
RACE	1	2.698115	0.839400	3.214	0.0013
.0C1	1	-0.044370	1.582574	-0.028	0.9776
.0C2	1	2.805284	1.596267	1.757	0.0790
.0C3	1	6.208475	1.627223	3.815	0.0001
.0C4	1	5.852086	1.461687	4.004	0.0001
.0C5	1	1.006459	1.656593	0.608	0.5436
.0C6	1	-0.436394	1.747412	-0.250	0.8028
.0C7	1	2.262472	1.699021	1.332	0.1831
.0C8	1	-0.485133	1.505122	-0.322	0.7472
.0C9	1	5.396829	1.647645	3.275	0.0011
.0C10	1	4.241301	1.643598	2.580	0.0099
.0C11	1	2.621625	1.513940	1.732	0.0835
.0C12	1	-0.088071	1.555594	-0.057	0.9549
.0C13	1	6.399910	1.759493	3.637	0.0003
.0C14	1	-3.251645	1.566737	-2.075	0.0381
.0C15	1	5.211291	1.650436	3.158	0.0016
.0C16	1	-1.995103	1.715198	-1.163	0.2449
.0C17	1	5.291024	1.462253	3.618	0.0003
.0C18	1	4.270204	1.651600	2.585	0.0098
.0C19	1	2.401707	1.722482	1.394	0.1634
.0C20	1	0.801268	1.598171	0.501	0.6162

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VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
.DC21	1	8.823672	1.701812	5.185	0.0001
.DC22	1	0.799969	1.572544	0.509	0.6110
.DC23	1	0.661668	1.599907	0.414	0.6792
.DC24	1	-2.095327	2.016868	-1.039	0.2990
.DC25	1	-2.333477	1.555897	-1.500	0.1338
.DC26	1	5.744529	1.655480	3.469	0.0005
.DC27	1	0.459729	1.613468	0.285	0.7757
.DC28	1	2.625975	1.470188	1.786	0.0742
.DC29	1	2.659320	1.639291	1.622	0.1049
.DC30	1	1.943221	1.657719	1.172	0.2412
.DC31	1	1.139151	1.628297	0.700	0.4843
.L	1	2.262086	0.646757	3.498	0.0005

TABLE 3

REGRESSION RESULTS SUBCATEGORIZING ON STRATA AND INSIDE CENTER CITY

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	63	5140996695	81601535	14.627	0.0001
ERROR	2195	12245270413	5578711		
C TOTAL	2258	17386167108			

ROOT MSE	2361.929	R-SQUARE	0.2957
DEP MEAN	128.270	ADJ R-SQ	0.2755
C.V.	1841.368		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

L30C7 =
L30C8 =
L30C14 =
L30C15 =
L30C17 =
L30C18 =
L30C21 =
L30C24 =
L30C29 =
L30C32 =
L30C51 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	68.488410	13.491441	5.076	0.0001
AGEYRS	1	-0.479498	0.154807	-3.097	0.0020
AGESQ	1	0.009119984	0.001701348	5.360	0.0001
BMI	1	1.268633	0.087376	14.519	0.0001
LOGZINC	1	-8.987072	2.141638	-4.197	0.0001
ALBSU	1	0.008951855	0.001303348	6.868	0.0001
CALCIUM	1	.00000218742	.00000117783	1.857	0.0634
COFFEE	1	-0.361922	0.104886	-3.451	0.0006
FAMHYPER	1	3.223187	0.688140	4.684	0.0001
HEIGHT	1	18.471226	4.959886	3.724	0.0002
HYPERMED	1	8.595105	1.272764	6.753	0.0001
LL	1	4.700478	0.988896	4.753	0.0001
L30C1	1	-2.260648	2.944936	-0.768	0.4428
L30C2	1	2.373382	3.336112	0.711	0.4769
L30C3	1	-1.853332	3.590935	-0.516	0.6058
L30C4	1	-0.316857	4.135512	-0.077	0.9389
L30C5	1	1.012355	3.095904	0.327	0.7437
L30C6	1	-0.101985	3.550481	-0.029	0.9771
L30C7	0	0	.	.	.
L30C8	0	0	.	.	.

TEH 0412442

DUP050453494

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
L3UC9	1	12.149189	4.237276	2.867	0.0042
L3UC10	1	1.906804	2.917754	0.654	0.5135
L3UC11	1	-7.368333	3.515234	-2.096	0.0362
L3UC12	1	5.726328	3.268072	1.752	0.0799
L3UC13	1	6.131882	3.376025	1.816	0.0695
L3UC14	0	0	.	.	.
L3UC15	0	0	.	.	.
L3UC16	1	-0.055318	5.017810	-0.011	0.9912
L3UC17	0	0	.	.	.
L3UC18	0	0	.	.	.
L3UC19	1	3.704883	2.677407	1.384	0.1666
L3UC20	1	-0.294975	5.848697	-0.050	0.9598
L3UC21	0	0	.	.	.
L3UC22	1	-0.952005	3.194103	-0.298	0.7657
L3UC23	1	-8.802907	4.488539	-1.961	0.0500
L3UC24	0	0	.	.	.
L3UC25	1	-3.163652	4.530297	-0.698	0.4850
L3UC26	1	1.381097	4.523497	0.305	0.7602
L3UC27	1	-2.328236	3.607616	-0.645	0.5188
L3UC28	1	-3.706169	2.851969	-1.300	0.1939
L3UC29	0	0	.	.	.
L3UC30	1	1.583756	4.424912	0.358	0.7204
L3UC31	1	-0.455278	2.828234	-0.161	0.8721
L3UC32	0	0	.	.	.
L3UC33	1	-1.261529	3.069559	-0.408	0.6831
L3UC34	1	-4.501399	2.920231	-1.541	0.1234
L3UC35	1	13.061922	2.920326	4.473	0.0001
L3UC36	1	5.368302	2.392717	2.244	0.0250
L3UC37	1	-3.644485	3.430882	-1.062	0.2882
L3UC38	1	-5.474004	3.413408	-1.604	0.1089
L3UC39	1	6.544478	2.672878	2.448	0.0144
L3UC40	1	1.338989	2.364101	0.566	0.5712
L3UC41	1	2.046265	2.826447	0.724	0.4692
L3UC42	1	3.646332	3.772082	0.967	0.3338
L3UC43	1	4.258766	2.647042	1.609	0.1078
L3UC44	1	2.132916	2.823109	0.756	0.4500
L3UC45	1	8.461001	3.656456	2.314	0.0208
L3UC46	1	-4.355443	2.457719	-1.772	0.0765
L3UC47	1	0.923967	2.599005	0.356	0.7222
L3UC48	1	-2.148418	2.888266	-0.744	0.4571
L3UC49	1	1.117551	2.288853	0.488	0.6254
L3UC50	1	7.101540	2.596437	2.735	0.0063
L3UC51	0	0	.	.	.
L3UC52	1	0.918305	2.592103	0.354	0.7232
L3UC53	1	3.744371	2.659077	1.409	0.1591
L3UC54	1	-1.311848	2.879526	-0.456	0.6487
L3UC55	1	-0.351050	2.651909	-0.132	0.8947
L3UC56	1	4.064654	3.169238	1.283	0.1998
L3UC57	1	0.097044	2.578218	0.038	0.9700
L3UC58	1	8.685578	2.807633	3.094	0.0020
L3UC59	1	-6.764829	2.905920	-2.328	0.0200
L3UC60	1	-0.868813	2.708784	-0.321	0.7484
L3UC61	1	3.895643	2.575244	1.513	0.1305
L3UC62	1	13.175531	2.834553	4.648	0.0001

TEH 0412443

SAS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
L30C03	1	8.757046	3.974039	2.204	0.0277

TEH 0412444

DUP050453496

DEP VARIABLE: BP2DIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	71	2513232282	35397638	15.923	0.0001
ERROR	2181	4848390100	2223012		
C TOTAL	2252	7361622382			

ROOT MSE	1490.977	R-SQUARE	0.3414
DEP MEAN	82.334860	ADJ R-SQ	0.3200
C.V.	1810.87		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC7	=
LOC8	=
LOC14	=
LOC15	=
LOC17	=
LOC18	=
LOC21	=
LOC24	=
LOC29	=
LOC32	=
LOC51	=

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	81.580182	31.900054	2.557	0.0106
AGEYRS	1	0.836176	0.102391	8.167	0.0001
AGESQ	1	-0.00791101	0.001109707	-7.129	0.0001
BMI	1	0.787347	0.073987	10.642	0.0001
LOGZINC	1	-31.470860	8.858652	-3.553	0.0004
LOGVITC	1	1.120961	0.265899	4.218	0.0001
ALBSU	1	0.004594211	0.0008501289	5.404	0.0001
LSCHOL	1	2.623909	1.100844	2.384	0.0172
SMOKNUM	1	-0.044498	0.016595	-2.681	0.0074
CALCIUM	1	.00000141999	7.45091E-07	1.906	0.0568
DIETVITC	1	-0.00936215	0.00266636	-3.511	0.0005
ZINC	1	0.275308	0.095292	2.889	0.0039
HEMOGLOB	1	0.107809	0.021845	4.935	0.0001
TRICEPR	1	0.009802622	0.004031703	2.431	0.0151
FAMHYPER	1	1.997015	0.435643	4.584	0.0001
COFFEE	1	-0.242506	0.068658	-3.532	0.0004
HEIGHT	1	12.543104	3.168506	3.959	0.0001
HYPERMED	1	5.538864	0.808625	6.850	0.0001
RACE	1	2.678836	0.860587	3.113	0.0019
LOC1	1	0.204898	1.922952	0.107	0.9152

TEH 0412445

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC2	1	3.528081	2.112252	1.670	0.0950
LOC3	1	2.347012	2.286035	1.026	0.3051
LOC4	1	4.107644	2.617271	1.569	0.1167
LOC5	1	-1.332936	1.986312	-0.671	0.5023
LOC6	1	-0.838516	2.252151	-0.372	0.7097
LOC7	0	0	.	.	.
LOC8	0	0	.	.	.
LOC9	1	4.325147	2.679770	1.614	0.1067
LOC10	1	3.400402	1.855309	1.833	0.0670
LOC11	1	3.121902	2.224206	1.404	0.1606
LOC12	1	1.906322	2.078394	0.918	0.3586
LOC13	1	5.328420	2.162627	2.464	0.0138
LOC14	0	0	.	.	.
LOC15	0	0	.	.	.
LOC16	1	2.536859	3.180028	0.798	0.4251
LOC17	0	0	.	.	.
LOC18	0	0	.	.	.
LOC19	1	2.342772	1.716400	1.365	0.1724
LOC20	1	-0.565588	3.699304	-0.158	0.8742
LOC21	0	0	.	.	.
LOC22	1	2.349635	2.080821	1.148	0.2509
LOC23	1	-6.219597	2.844026	-2.187	0.0289
LOC24	0	0	.	.	.
LOC25	1	-3.409819	2.820922	-1.208	0.2270
LOC26	1	3.873407	2.860592	1.354	0.1759
LOC27	1	1.522771	2.283420	0.667	0.5049
LOC28	1	1.798946	1.822060	0.987	0.3236
LOC29	0	0	.	.	.
LOC30	1	1.966350	2.807666	0.700	0.4838
LOC31	1	-1.199736	1.795045	-0.668	0.5040
LOC32	0	0	.	.	.
LOC33	1	-0.475261	1.959833	-0.243	0.8084
LOC34	1	2.315901	1.864456	1.242	0.2143
LOC35	1	8.405352	1.865474	4.506	0.0001
LOC36	1	6.233191	1.523227	4.092	0.0001
LOC37	1	4.059329	2.179607	1.862	0.0627
LOC38	1	-0.102771	2.166807	-0.047	0.9622
LOC39	1	2.217988	1.692283	1.311	0.1901
LOC40	1	-0.464230	1.499151	-0.310	0.7568
LOC41	1	5.752304	1.794521	3.205	0.0014
LOC42	1	6.236168	2.393249	2.606	0.0092
LOC43	1	2.386374	1.662283	1.436	0.1513
LOC44	1	-1.446632	1.800639	-0.803	0.4218
LOC45	1	7.619927	2.313230	3.294	0.0010
LOC46	1	-3.216473	1.560670	-2.061	0.0394
LOC47	1	5.187175	1.643671	3.156	0.0016
LOC48	1	-3.095045	1.831385	-1.690	0.0912
[illegible]	1	5.313633	1.456496	3.648	0.0003
LOC50	1	4.229185	1.645195	2.571	0.0102
LOC51	0	0	.	.	.
LOC52	1	0.918367	1.645127	0.558	0.5767
LOC53	1	8.790658	1.695461	5.185	0.0001
LOC54	1	-0.391382	1.827334	-0.214	0.8304
LOC55	1	2.394237	1.696038	1.412	0.1582

TEH 0412446

DUP050453498

SAS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC56	1	-2.050622	2.008956	-1.021	0.3075
LOC57	1	-2.130704	1.633938	-1.304	0.1924
LOC58	1	6.218680	1.782799	3.488	0.0005
LOC59	1	-0.132016	1.840211	-0.072	0.9428
LOC60	1	3.298981	1.719522	1.919	0.0552
LOC61	1	2.703266	1.632646	1.656	0.0979
LOC62	1	1.859202	1.794386	1.036	0.3003
LOC63	1	6.850650	2.513787	2.725	0.0065
LL	1	2.443193	0.654193	3.735	0.0002

TABLE 4

REGRESSION RESULTS SUBCATEGORIZING ON REGION AND DEGREE OF URBANIZATION

SAS

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	41	4597799913	112141461	19.441	0.0001
ERROR	2217	12788367195	5768321		
C TOTAL	2258	17386167108			

ROOT MSE	2401.733	R-SQUARE	0.2645
DEP MEAN	128.270	ADJ R-SQ	0.2508
C.V.	1872.398		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC17 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	66.193932	13.474574	4.913	0.0001
AGEYRS	1	-0.453878	0.156504	-2.900	0.0038
AGESQ	1	0.009095806	0.001718458	5.293	0.0001
BMI	1	1.269371	0.087963	14.431	0.0001
LOGZINC	1	-8.565174	2.156266	-3.972	0.0001
ALBSU	1	0.009311152	0.00136819	7.128	0.0001
CALCIUM	1	.00000236951	.00000119309	1.986	0.0472
COFFEE	1	-0.353227	0.105660	-3.343	0.0008
FAMHYPER	1	3.237436	0.694207	4.664	0.0001
HEIGHT	1	17.447637	4.977586	3.505	0.0005
HYPERMED	1	9.134530	1.280989	7.131	0.0001
LL	1	5.215524	0.976702	5.340	0.0001
LOC1	1	1.301681	1.634368	0.796	0.4259
LOC2	1	-2.054040	2.303587	-0.892	0.3726
LOC3	1	-5.640242	3.592573	-1.570	0.1166
LOC4	1	-2.242364	2.044459	-1.097	0.2728
LOC5	1	-0.040604	4.064251	-0.010	0.9920
LOC6	1	10.320259	7.066484	1.460	0.1443
LOC7	1	7.752211	3.680378	2.106	0.0353
LOC8	1	1.281438	1.828629	0.701	0.4835
LOC9	1	4.898643	2.190028	2.237	0.0254
LOC10	1	3.574425	2.132136	1.676	0.0938
LOC11	1	2.229195	1.915307	1.164	0.2446
LOC12	1	-3.127611	2.378921	-1.315	0.1887
LOC13	1	3.594051	4.235027	0.849	0.3962
LOC14	1	-3.660663	3.015480	-1.214	0.2250
LOC15	1	8.200051	3.078787	2.663	0.0078
LOC16	1	4.213463	1.682965	2.504	0.0124
LOC17	0	0	.	.	.
LOC18	1	-3.639667	1.936825	-1.879	0.0603

TEH 0412449

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC19	1	-0.349734	2.916220	-0.120	0.9046
LOC20	1	-3.680524	2.779290	-1.324	0.1856
LOC21	1	2.096323	2.826463	0.742	0.4584
LOC22	1	1.408897	2.855259	0.493	0.6218
LOC23	1	0.759819	2.701628	0.281	0.7785
LOC24	1	0.775258	1.468037	0.528	0.5975
LOC25	1	-7.154788	2.316479	-3.089	0.0020
LOC26	1	-3.190030	1.994076	-1.600	0.1098
LOC27	1	-0.798340	1.896115	-0.421	0.6738
LOC28	1	0.760701	2.659208	0.286	0.7749
LOC29	1	-1.960534	4.202921	-0.466	0.6409
LOC30	1	5.245297	2.454497	2.137	0.0327
LOC31	1	-1.418137	2.874465	-0.493	0.6218

DEP VARIABLE: BP2DIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	49	80644.145	1645.799	14.283	0.0001
ERROR	2203	253853	115.231		
C TOTAL	2252	334497			

ROOT MSE	10.734552	R-SQUARE	0.2411
DEP MEAN	82.494452	ADJ R-SQ	0.2242
C.V.	13.01245		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC17 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	97.923307	34.627925	2.828	0.0047
AGEYRS	1	0.789753	0.109816	7.192	0.0001
AGESQ	1	-0.00742647	0.001153988	-6.435	0.0001
BMI	1	0.640662	0.077107	8.309	0.0001
LOGZINC	1	-34.361386	9.879975	-3.550	0.0004
LOGVITC	1	0.561096	0.284318	1.973	0.0486
ALBSQ	1	0.0033672B	0.0009042316	3.724	0.0002
LSCHOL	1	3.744377	1.191830	3.142	0.0017
SMOKNUM	1	-0.045078	0.018467	-2.441	0.0147
CALCIUM	1	8.25418E-07	8.09161E-07	1.020	0.3078
DIETVITC	1	-0.0078974	0.003040004	-2.598	0.0094
ZINC	1	0.310774	0.105302	2.951	0.0032
HEMOGLOB	1	0.085848	0.022177	3.871	0.0001
TRICEPR	1	0.011741	0.004359B89	2.693	0.0071
FAMHYPER	1	2.051327	0.471363	4.352	0.0001
COFFEE	1	-0.226337	0.079159	-2.859	0.0043
HEIGHT	1	12.796897	3.403347	3.760	0.0002
HYPERMED	1	4.889610	0.758129	6.450	0.0001
RACE	1	2.357143	0.863127	2.731	0.0064
LOC1	1	2.343059	1.151455	2.035	0.0420
LOC2	1	-0.748307	1.585534	-0.472	0.6370
LOC3	1	-3.781676	2.268292	-1.653	0.0986
LOC4	1	-0.791438	1.396501	-0.567	0.5710
LOC5	1	2.314672	2.596493	0.891	0.372B
LOC6	1	13.436675	5.450635	2.465	0.0138
LOC7	1	3.807950	2.323768	1.639	0.1014
LOC8	1	-0.339619	1.244300	-0.273	0.7849
LOC9	1	3.199818	1.598289	2.002	0.0454
LOC10	1	0.988530	1.556813	0.634	0.5260
LOC11	1	-0.780973	1.269551	-0.615	0.5385

TEH 0412451

DUP050453503

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC12	1	1.436919	1.612615	0.891	0.3730
LOC13	1	3.260541	2.541900	1.283	0.1997
LOC14	1	-4.055265	1.905113	-2.129	0.0334
LOC15	1	2.637949	1.926464	1.369	0.1710
LOC16	1	0.538309	1.059855	0.508	0.6116
LOC17	0	0	.	.	.
LOC18	1	-1.084488	1.371457	-0.791	0.4292
LOC19	1	-3.409608	2.339372	-1.457	0.1451
LOC20	1	1.638151	2.097935	0.781	0.4350
LOC21	1	2.072950	1.994483	1.039	0.2988
LOC22	1	2.179375	2.079842	1.048	0.2948
LOC23	1	2.454317	1.609199	1.525	0.1274
LOC24	1	1.315596	0.965733	1.362	0.1732
LOC25	1	-1.576354	1.671195	-0.943	0.3457
LOC26	1	-0.482681	1.530028	-0.315	0.7524
LOC27	1	0.483355	1.347999	0.359	0.7199
LOC28	1	2.293939	2.025452	1.133	0.2575
LOC29	1	4.149099	3.197372	1.298	0.1945
LOC30	1	4.901924	1.780905	2.752	0.0060
LOC31	1	-2.498878	1.737091	-1.439	0.1504
LL	1	3.013737	0.685731	4.395	0.0001

TABLE 5

REGRESSION RESULTS SUBCATEGORIZING ON THE 48 URBAN PSUs AND REGION

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	61	5198170504	85215910	15.424	0.0001
ERROR	2189	12094235109	5525005		
C TOTAL	2250	17292405613			

ROOT MSE	2350.533	R-SQUARE	0.3006
DEP MEAN	128.265	ADJ R-SQ	0.2811
C.V.	1832.554		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC24 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	72.355550	13.518903	5.352	0.0001
AGEYRS	1	-0.534019	0.154293	-3.461	0.0005
AGESQ	1	0.009853689	0.001694417	5.815	0.0001
BMI	1	1.230943	0.087268	14.105	0.0001
LOGZINC	1	-7.938313	2.168657	-3.660	0.0003
ALBSQ	1	0.008733535	0.001306987	6.682	0.0001
CALCIUM	1	.00000207336	.00000117447	1.765	0.0776
COFFEE	1	-0.392364	0.104305	-3.762	0.0002
FAMHYPER	1	2.957627	0.689364	4.290	0.0001
HEIGHT	1	17.306958	4.949642	3.497	0.0005
HYPERMED	1	8.590758	1.259848	6.819	0.0001
LL	1	4.153181	0.992303	4.185	0.0001
LOC1	1	-4.087719	2.485963	-1.644	0.1003
LOC2	1	-5.779067	2.558405	-2.259	0.0240
LOC3	1	-0.723204	3.180829	-0.227	0.8202
LOC4	1	0.980444	2.372720	0.413	0.6795
LOC5	1	-0.921357	2.848283	-0.323	0.7464
LOC6	1	-0.043432	3.668946	-0.012	0.9906
LOC7	1	-0.871655	3.411119	-0.256	0.7983
LOC9	1	-4.667432	3.700078	-1.261	0.2073
LOC10	1	-0.649751	2.578581	-0.252	0.8011
LOC11	1	-2.848136	3.264356	-0.872	0.3830
LOC12	1	-8.571792	3.391798	-2.527	0.0116
LOC13	1	-3.343950	3.378777	-0.990	0.3224
LOC16	1	-1.524402	2.784546	-0.547	0.5841
LOC19	1	-6.479085	3.658658	-1.771	0.0767
LOC20	1	-10.437877	3.009551	-3.468	0.0005
LOC21	1	4.604720	3.046181	1.512	0.1308
LOC22	1	-6.965148	2.807904	-2.481	0.0132
LOC23	1	-4.606820	3.225554	-1.428	0.1534

TEH 0412454

SAS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC24	0	0	.	.	.
LOC25	1	-3.430385	3.102062	-1.106	0.2689
LOC27	1	-8.498893	2.830421	-3.003	0.0027
LOC28	1	-1.639064	2.266217	-0.723	0.4696
LOC30	1	-8.844433	3.514942	-2.516	0.0119
LOC31	1	-15.124843	3.481284	-4.345	0.0001
LOC32	1	-9.528033	3.213581	-2.965	0.0031
LOC33	1	-3.128230	2.958639	-1.057	0.2905
LOC34	1	-0.751404	3.466808	-0.217	0.8284
LOC35	1	10.643567	2.645312	4.024	0.0001
LOC36	1	3.488299	2.753578	1.267	0.2054
LOC37	1	-4.812966	3.092389	-1.556	0.1198
LOC38	1	-8.238452	2.996408	-2.749	0.0060
LOC41	1	-8.149014	3.451426	-2.361	0.0183
LOC42	1	2.100280	4.013163	0.523	0.6008
LOC43	1	-19.024361	3.327071	-5.718	0.0001
LOC44	1	-6.771305	3.368256	-2.010	0.0445
LOC45	1	-6.668082	4.904991	-1.359	0.1741
LOC48	1	-7.440588	3.662072	-2.032	0.0423
LOC49	1	-4.079035	2.343488	-1.741	0.0819
LOC51	1	0.098962	3.088352	0.032	0.9744
LOC52	1	0.303510	3.111017	0.098	0.9223
LOC53	1	-12.406882	3.546940	-3.498	0.0005
LOC54	1	-8.371903	3.184630	-2.629	0.0086
LOC55	1	-10.788197	2.905704	-3.713	0.0002
LOC57	1	-8.787723	2.823270	-3.113	0.0019
LOC59	1	-6.331115	3.110599	-2.035	0.0419
LOC60	1	-10.547497	3.024758	-3.487	0.0005
LOC63	1	-2.667094	3.629691	-0.735	0.4625
LOC64	1	-13.783164	3.350348	-4.114	0.0001
R1	1	3.635769	2.014020	1.805	0.0712
R2	1	8.956461	2.585666	3.464	0.0005
R3	1	-0.690675	1.604291	-0.431	0.6669

TEH 0412455

DEP VARIABLE: BP2DIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	69	2509833211	36374394	16.357	0.0001
ERROR	2181	4850093603	2223793		
C TOTAL	2250	7359926814			

ROOT MSE	1491.239	R-SQUARE	0.3410
DEP MEAN	82.340136	ADJ R-SQ	0.3202
C.V.	1811.072		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC24 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	90.110799	32.039433	2.812	0.0050
AGEYRS	1	0.827253	0.102018	8.109	0.0001
AGESQ	1	-0.00776924	0.001105338	-7.029	0.0001
BMI	1	0.752460	0.074537	10.095	0.0001
LOGZINC	1	-33.529186	8.894478	-3.770	0.0002
LOGVITC	1	1.053905	0.265399	3.971	0.0001
ALBSQ	1	0.004504224	0.0008538185	5.275	0.0001
LSCHOL	1	2.727746	1.104813	2.469	0.0136
SMOKNUM	1	-0.049479	0.016543	-2.991	0.0028
CALCIUM	1	.00000124755	7.46150E-07	1.672	0.0947
DIETVITC	1	-0.00962747	0.00267727	-3.596	0.0003
ZINC	1	0.308196	0.095657	3.222	0.0013
HEMOGLOB	1	0.107621	0.022130	4.863	0.0001
TRICEPR	1	0.011475	0.004067018	2.821	0.0048
FAMHYPER	1	2.011404	0.437681	4.596	0.0001
COFFEE	1	-0.232094	0.068974	-3.365	0.0008
HEIGHT	1	12.683363	3.175072	3.995	0.0001
HYPERMED	1	5.476364	0.800810	6.839	0.0001
RACE	1	2.406955	0.865635	2.781	0.0055
LL	1	2.164772	0.659640	3.282	0.0010
LOC1	1	-3.803491	1.587160	-2.396	0.0166
LOC2	1	2.410796	1.636063	1.474	0.1408
LOC3	1	-0.051390	2.033760	-0.025	0.9798
LOC4	1	5.155247	1.513018	3.407	0.0007
LOC5	1	-4.616265	1.825042	-2.529	0.0115
LOC6	1	-2.358595	2.338970	-1.008	0.3134
LOC7	1	2.958403	2.169954	1.363	0.1729
LOC9	1	3.132462	2.351937	1.332	0.1830
LOC10	1	2.378140	1.644982	1.446	0.1484
LOC11	1	1.288447	2.073994	0.621	0.5345

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SAS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC12	1	-4.084281	2.160339	-1.891	0.0588
LOC13	1	6.230369	2.155754	2.890	0.0039
LOC16	1	-6.701734	1.772034	-3.782	0.0002
LOC19	1	-1.339098	2.350473	-0.570	0.5689
LOC20	1	-6.257740	1.918880	-3.261	0.0011
LOC21	1	8.715519	1.943633	4.484	0.0001
LOC22	1	-1.174121	1.791030	-0.656	0.5122
LOC23	1	-0.212882	2.061718	-0.103	0.9178
LOC24	0	0	.	.	.
LOC25	1	-3.558478	1.971832	-1.805	0.0713
LOC27	1	-1.170224	1.802606	-0.649	0.5163
LOC28	1	5.079448	1.477977	3.437	0.0006
LOC30	1	-0.304483	2.247313	-0.135	0.8922
LOC31	1	-4.587965	2.223667	-2.063	0.0392
LOC32	1	-2.444392	2.040891	-1.198	0.2312
LOC33	1	-2.136172	1.964117	-1.088	0.2769
LOC34	1	1.089232	2.207841	0.493	0.6218
LOC35	1	5.317464	1.687560	3.151	0.0016
LOC36	1	4.604197	1.760865	2.615	0.0090
LOC37	1	1.087214	1.977653	0.550	0.5825
LOC38	1	-0.664088	1.917515	-0.346	0.7291
LOC41	1	5.203076	2.196839	2.368	0.0180
LOC42	1	6.213957	2.550701	2.436	0.0149
LOC43	1	1.679657	2.116607	0.794	0.4275
LOC44	1	1.463585	2.142136	0.683	0.4945
LOC45	1	2.338762	3.144179	0.744	0.4571
LOC48	1	-2.219954	2.330605	-0.953	0.3409
LOC49	1	-1.217420	1.488952	-0.818	0.4137
LOC51	1	-0.119289	1.975348	-0.060	0.9519
LOC52	1	2.135378	1.989576	1.073	0.2833
LOC53	1	1.428221	2.270144	0.629	0.5293
LOC54	1	-3.692559	2.023713	-1.825	0.0682
LOC55	1	-3.988783	1.848118	-2.158	0.0310
LOC57	1	-6.959078	1.806496	-3.852	0.0001
LOC59	1	0.551986	1.976910	0.279	0.7801
LOC60	1	-5.299429	1.923478	-2.755	0.0059
LOC63	1	4.966930	2.309486	2.151	0.0316
LOC64	1	0.100974	2.129802	0.047	0.9622
R1	1	2.166997	1.280944	1.692	0.0908
R2	1	0.335719	1.644273	0.204	0.8382
R3	1	2.238645	1.024385	2.185	0.0290

TEH 0412457

DUP050453509

TABLE 6

REGRESSION RESULTS SUBCATEGORIZING ON 64 PSUs, REGION, AND RURAL

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	67	4992970986	74521955	13.227	0.0001
ERROR	2183	12299434627	5634169		
C TOTAL	2250	17292405613			

ROOT MSE	2373.645	R-SQUARE	0.2887
DEP MEAN	128.265	ADJ R-SQ	0.2669
C.V.	1850.573		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC7	=
LOC14	=
LOC24	=
LOC29	=
LOC39	=
LOC40	=
LOC47	=
LOC50	=
LOC56	=
LOC61	=
LOC62	=

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	65.374153	13.584557	4.812	0.0001
AGEYRS	1	-0.461425	0.156217	-2.954	0.0032
AGESQ	1	0.009205219	0.001713552	5.372	0.0001
BMI	1	1.242552	0.088476	14.044	0.0001
LOGZINC	1	-8.026202	2.173628	-3.692	0.0002
ALBSQ	1	0.009154252	0.001321977	6.925	0.0001
CALCIUM	1	.00000231483	0.0000011892	1.947	0.0517
COFFEE	1	-0.374631	0.105570	-3.551	0.0004
R1	1	2.400295	1.673263	1.434	0.1516
R2	1	5.014009	1.533798	3.269	0.0011
R3	1	0.999802	1.346131	0.743	0.4577
FAMHYPER	1	3.051307	0.694157	4.396	0.0001
[illegible]	1	17.094703	4.975816	3.436	0.0006
HYPERMED	1	8.807996	1.277676	6.894	0.0001
LL	1	5.278643	0.992348	5.319	0.0001
LOC1	1	-4.433160	2.466832	-1.797	0.0725
LOC2	1	-3.064360	2.978472	-1.036	0.3005
LOC3	1	-3.924669	3.312823	-1.185	0.2363
LOC4	1	3.901681	2.438448	1.600	0.1097
LOC5	1	-1.306356	2.839384	-0.460	0.6455

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC6	1	1.498124	3.852679	0.389	0.6974
LOC7	0	0	.	.	.
LOC8	1	7.836022	4.912750	1.595	0.1108
LOC9	1	1.866110	3.354133	0.556	0.5780
LOC10	1	1.042936	2.594115	0.402	0.6877
LOC11	1	-2.216595	2.958188	-0.749	0.4538
LOC12	1	-2.271771	3.217297	-0.706	0.4802
LOC13	1	1.852487	2.763384	0.670	0.5027
LOC14	0	0	.	.	.
LOC15	1	-0.778497	10.553056	-0.074	0.9412
LOC16	1	-0.179709	4.722347	-0.038	0.9696
LOC17	1	-7.613019	8.370221	-0.910	0.3632
LOC18	1	-1.007999	6.704026	-0.150	0.8805
LOC19	1	-3.633382	3.586385	-1.014	0.3105
LOC20	1	-7.042641	3.503316	-2.010	0.0445
LOC21	1	6.825518	2.954145	2.310	0.0210
LOC22	1	-4.460508	2.767758	-1.612	0.1072
LOC23	1	-5.068283	4.200153	-1.207	0.2277
LOC24	0	0	.	.	.
LOC25	1	-0.984681	3.084200	-0.319	0.7496
LOC26	1	22.502340	11.343460	1.984	0.0474
LOC27	1	-7.440641	2.846732	-2.614	0.0090
LOC28	1	-0.416829	2.580871	-0.162	0.8717
LOC29	0	0	.	.	.
LOC30	1	-1.170762	3.779271	-0.310	0.7568
LOC31	1	-9.575931	2.894487	-3.308	0.0010
LOC32	1	-7.664178	3.143454	-2.438	0.0148
LOC33	1	-3.254559	2.951402	-1.103	0.2703
LOC34	1	0.765196	3.415460	0.224	0.8227
LOC35	1	9.563207	3.410091	2.810	0.0050
LOC36	1	3.327703	3.062170	1.087	0.2773
LOC37	1	-6.562144	3.442459	-1.906	0.0568
LOC38	1	-6.623244	3.363090	-1.969	0.0490
LOC39	0	0	.	.	.
LOC40	0	0	.	.	.
LOC41	1	-3.217319	3.543578	-0.908	0.3640
LOC42	1	4.111935	4.762865	0.863	0.3880
LOC43	1	-13.491988	2.957887	-4.561	0.0001
LOC44	1	-1.529880	2.765709	-0.553	0.5802
LOC45	1	-1.335794	4.547289	-0.294	0.7690
LOC46	1	6.405042	6.486205	0.987	0.3235
LOC47	0	0	.	.	.
LOC48	1	-5.608656	4.203918	-1.334	0.1823
LOC49	1	-6.379495	3.566426	-1.789	0.0738
LOC50	0	0	.	.	.
LOC51	1	2.778660	2.991757	0.929	0.3531
LOC52	1	2.834462	3.018698	0.939	0.3479
LOC53	1	-10.054094	3.477534	-2.891	0.0039
LOC54	1	-7.697902	3.156158	-2.439	0.0148
LOC55	1	-8.337394	3.534064	-2.359	0.0184
LOC56	0	0	.	.	.
LOC57	1	-7.537152	2.995358	-2.516	0.0119
LOC58	1	-1.044363	3.890216	-0.268	0.7884
LOC59	1	-6.219761	3.240003	-1.920	0.0550

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC60	1	-11.259665	3.294249	-3.418	0.0006
LOC61	0	0	.	.	.
LOC62	0	0	.	.	.
LOC63	1	2.866219	3.061715	0.936	0.3493
LOC64	1	-1.702663	4.420435	-0.385	0.7001

DEP VARIABLE: BP2DIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	75	2447828728	32637716	14.451	0.0001
ERROR	2175	4912098086	2258436		
C TOTAL	2250	7359926814			

ROOT MSE	1502.809	R-SQUARE	0.3326
DEP MEAN	82.340136	ADJ R-SQ	0.3096
C.V.	1825.124		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC7	=
LOC14	=
LOC24	=
LOC29	=
LOC39	=
LOC40	=
LOC47	=
LOC50	=
LOC56	=
LOC61	=
LOC62	=

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	95.765610	32.159641	2.978	0.0029
AGEYRS	1	0.867135	0.103272	8.397	0.0001
AGESQ	1	-0.008814186	0.001117208	-7.288	0.0001
BMI	1	0.739255	0.075043	9.851	0.0001
LOGZINC	1	-35.899095	8.928973	-4.021	0.0001
LOGVITC	1	1.081755	0.267497	4.044	0.0001
ALBSQ	1	0.004326288	0.000861741B	5.020	0.0001
LSCHOL	1	2.829980	1.114731	2.539	0.0112
SMOKNUM	1	-0.043105	0.016691	-2.583	0.0099
CALCIUM	1	.00000149894	7.538449E-07	1.988	0.0469
DIETVITC	1	-0.010122	0.002697159	-3.753	0.0002
ZINC	1	0.332334	0.095999	3.462	0.0005
HEMOGLOB	1	0.112025	0.022033	5.084	0.0001
TRICEPR	1	0.012494	0.00407175	3.069	0.0022
R1	1	-0.330441	1.065643	-0.310	0.7565
R2	1	0.008171034	0.977594	0.008	0.9933
R3	1	0.747141	0.860097	0.869	0.3851
FAMHYPER	1	2.016104	0.439866	4.583	0.0001
COFFEE	1	-0.223805	0.069604	-3.215	0.0013
HEIGHT	1	13.483942	3.186144	4.197	0.0001

TEH 0412462

SAS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
HYPERMED	1	5.477315	0.810305	6.760	0.0001
RACE	1	2.381505	0.873612	2.726	0.0065
LL	1	2.654365	0.660066	4.021	0.0001
LOC1	1	-3.356863	1.572889	-2.134	0.0329
LOC2	1	0.574513	1.889662	0.304	0.7611
LOC3	1	-0.240291	2.115490	-0.114	0.9096
LOC4	1	4.776787	1.550275	3.081	0.0021
LOC5	1	-4.192329	1.816242	-2.308	0.0211
LOC6	1	-3.688911	2.449688	-1.506	0.1322
LOC7	0	0	.	.	.
LOC8	1	2.434456	3.115066	0.782	0.4346
LOC9	1	2.906957	2.127667	1.366	0.1720
LOC10	1	1.467349	1.650909	0.889	0.3742
LOC11	1	-0.498996	1.874863	-0.266	0.7901
LOC12	1	-4.681147	2.049621	-2.284	0.0225
LOC13	1	5.383479	1.762746	3.054	0.0023
LOC14	0	0	.	.	.
LOC15	1	-2.364345	6.689447	-0.353	0.7238
LOC16	1	-3.105707	2.991905	-1.038	0.2994
LOC17	1	6.468677	5.303025	1.220	0.2227
LOC18	1	-1.035347	4.258952	-0.243	0.8080
LOC19	1	0.231697	2.302636	0.101	0.9198
LOC20	1	-2.849105	2.223486	-1.281	0.2002
LOC21	1	10.064613	1.876449	5.364	0.0001
LOC22	1	0.294028	1.761979	0.167	0.8675
LOC23	1	0.009908102	2.667064	0.004	0.9970
LOC24	0	0	.	.	.
LOC25	1	-2.057180	1.955411	-1.052	0.2929
LOC26	1	23.018455	7.199935	3.197	0.0014
LOC27	1	-2.706265	1.807997	-1.497	0.1346
LOC28	1	3.720434	1.673669	2.223	0.0263
LOC29	0	0	.	.	.
LOC30	1	1.604863	2.404821	0.667	0.5046
LOC31	1	-5.223668	1.846540	-2.829	0.0047
LOC32	-1	-5.409674	1.992452	-2.715	0.0067
LOC33	1	-1.625269	1.956613	-0.831	0.4063
LOC34	1	0.005843911	2.170516	0.003	0.9979
LOC35	1	3.654107	2.168076	1.685	0.0921
LOC36	1	2.949586	1.953181	1.510	0.1312
LOC37	1	2.666316	2.191323	1.217	0.2238
LOC38	1	-1.383630	2.140374	-0.646	0.5181
LOC39	0	0	.	.	.
LOC40	0	0	.	.	.
LOC41	1	3.438536	2.255394	1.525	0.1275
LOC42	1	6.367388	3.017909	2.110	0.0350
LOC43	1	1.053155	1.880436	0.560	0.5755
[illegible]	1	0.714494	1.756426	0.407	0.6842
LOC45	1	1.690730	2.913145	0.580	0.5617
LOC46	1	5.227510	4.116614	1.270	0.2043
LOC47	0	0	.	.	.
LOC48	1	-0.472285	2.669741	-0.177	0.8596
LOC49	1	-1.209290	2.259735	-0.535	0.5926
LOC50	0	0	.	.	.
LOC51	1	1.412911	1.912230	0.739	0.4601

TEH 0412463

DUP050453515

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC52	1	3.576612	1.924065	1.859	0.0632
LOC53	1	2.805592	2.213778	1.267	0.2052
LOC54	1	-2.292586	2.001040	-1.146	0.2520
LOC55	1	-5.086244	2.240254	-2.270	0.0233
LOC56	0	0	.	.	.
LOC57	1	-7.238970	1.910150	-3.790	0.0002
LOC58	1	1.742074	2.471952	0.705	0.4810
LOC59	1	-1.816415	2.056325	-0.883	0.3772
LOC60	1	-4.975886	2.049323	-2.382	0.0173
LOC61	0	0	.	.	.
LOC62	0	0	.	.	.
LOC63	1	4.240625	1.944810	2.180	0.0293
LOC64	1	2.904017	2.806842	1.035	0.3010

TABLE 7

REGRESSION RESULTS SUBCATEGORIZING ON 64 PSUs

DEP VARIABLE: BP2SYS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	73	5740213435	78633061	14.753	0.0001
ERROR	2185	11645953672	5329956		
C TOTAL	2258	17386167108			

ROOT MSE	2308.670	R-SQUARE	0.3302
DEP MEAN	128.270	ADJ R-SQ	0.3078
C.V.	1799.846		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC24 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	67.801299	13.459680	5.037	0.0001
AGEYRS	1	-0.565090	0.151338	-3.734	0.0002
AGESQ	1	0.010194	0.001662603	6.131	0.0001
BMI	1	1.261290	0.085567	14.740	0.0001
LOGZINC	1	-7.601723	2.135764	-3.559	0.0004
ALBSU	1	0.009424836	0.001296598	7.269	0.0001
CALCIUM ✓	1	0.0000020816	.00000115475	1.803	0.0716
COFFEE	1	-0.318386	0.103200	-3.085	0.0021
FAMHYPER	1	2.812202	0.677257	4.152	0.0001
HEIGHT	1	16.612281	4.863655	3.416	0.0006
HYPERMED	1	8.477544	1.239433	6.840	0.0001
LL	1	3.301055	0.990175	3.334	0.0009
LOC1	1	0.041722	3.260839	0.013	0.9899
LOC2	1	-0.934327	3.270443	-0.286	0.7751
LOC3	1	3.401003	3.824728	0.889	0.3740
LOC4	1	5.589074	3.113671	1.795	0.0728
LOC5	1	3.358593	3.528196	0.952	0.3412
LOC6	1	4.535491	4.175169	1.086	0.2775
LOC7	1	13.064950	3.485059	3.749	0.0002
LOC8	1	8.335066	3.204914	2.601	0.0094
LOC9	1	9.142392	3.759337	2.432	0.0151
LOC10	1	3.720626	3.278576	1.135	0.2566
LOC11	1	11.015632	3.347383	3.291	0.0010
LOC12	1	5.035230	3.420601	1.472	0.1412
LOC13	1	10.655592	3.442474	3.095	0.0020
LOC14	1	-7.826950	3.324632	-2.354	0.0186
LOC15	1	7.442165	3.676317	2.024	0.0431
LOC16	1	2.109233	3.506463	0.602	0.5476
LOC17	1	7.588225	3.288883	2.307	0.0211
LOC18	1	9.611263	4.003717	2.401	0.0165

TEH 0412466

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC19	1	1.966037	4.036879	0.487	0.6263
LOC20	1	-2.183103	3.481594	-0.627	0.5307
LOC21	1	13.145301	3.536705	3.717	0.0002
LOC22	1	1.962049	3.297655	0.595	0.5519
LOC23	1	3.896323	3.648046	1.068	0.2856
LOC24	0	0	.	.	.
LOC25	1	4.915158	3.502077	1.372	0.1702
LOC26	1	15.436734	3.742411	4.125	0.0001
LOC27	1	-3.715187	3.462446	-1.073	0.2834
LOC28	1	3.160922	3.044671	1.038	0.2993
LOC29	1	8.235830	3.497497	2.355	0.0186
LOC30	1	4.646054	3.565097	1.303	0.1926
LOC31	1	-1.369820	3.524119	-0.389	0.6975
LOC32	1	4.170954	3.277421	1.273	0.2033
LOC33	1	0.930469	3.654108	0.255	0.7990
LOC34	1	3.927950	3.966418	0.990	0.3221
LOC35	1	14.617494	3.407168	4.290	0.0001
LOC36	1	8.129764	3.396033	2.394	0.0168
LOC37	1	-0.698877	3.748942	-0.186	0.8521
LOC38	1	-3.244779	3.616096	-0.897	0.3696
LOC39	1	1.239625	4.208452	0.295	0.7684
LOC40	1	-3.517102	3.512601	-1.001	0.3168
LOC41	1	5.768743	3.525316	1.636	0.1019
LOC42	1	6.923611	4.452663	1.555	0.1201
LOC43	1	-5.399054	3.399578	-1.588	0.1124
LOC44	1	6.896920	3.446343	2.001	0.0455
LOC45	1	6.951604	4.914404	1.415	0.1573
LOC46	1	6.080282	3.663690	1.660	0.0971
LOC47	1	-0.694005	3.630037	-0.191	0.8484
LOC48	1	-3.683191	4.215238	-0.874	0.3823
LOC49	1	-0.471809	3.171166	-0.149	0.8817
LOC50	1	9.588839	3.419646	2.804	0.0051
LOC51	1	8.533111	3.554428	2.401	0.0164
LOC52	1	8.873071	3.576940	2.481	0.0132
LOC53	1	-3.753241	3.959169	-0.948	0.3432
LOC54	1	0.120315	3.642583	0.033	0.9737
LOC55	1	-2.527665	3.397001	-0.744	0.4569
LOC56	1	6.204024	3.568551	1.739	0.0823
LOC57	1	-0.345092	3.331026	-0.104	0.9175
LOC58	1	4.660817	3.565541	1.307	0.1913
LOC59	1	-1.821816	3.707542	-0.491	0.6232
LOC60	1	-5.959308	3.633195	-1.640	0.1011
LOC61	1	3.103852	3.761297	0.825	0.4093
LOC62	1	22.252666	3.772603	5.898	0.0001
LOC63	1	11.040994	3.659777	3.017	0.0026

DEP VARIABLE: BP2DIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	81	2767030997	34160877	16.141	0.0001
ERROR	2171	4594591385	2116348		
C TOTAL	2252	7361622382			

ROOT MSE	1454.767	R-SQUARE	0.3759
DEP MEAN	82.334860	ADJ R-SQ	0.3526
C.V.	1766.891		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LOC24 =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
INTERCEP	1	91.571616	31.322787	2.923	0.0035
AGEYRS	1	0.795972	0.099642	7.988	0.0001
AGESQ	1	-0.00745437	0.001079794	-6.904	0.0001
BMI	1	0.754919	0.072813	10.780	0.0001
LOGZINC	1	-33.749507	8.680942	-3.888	0.0001
LOGVITC	1	1.166078	0.259828	4.488	0.0001
ALBSQ	1	0.005160703	0.000822091	6.128	0.0001
LSCHOL	1	3.066205	1.082218	2.833	0.0047
SMOKNUM	1	-0.045059	0.016179	-2.785	0.0054
CALCIUM	1	.00000124473	7.29423E-07	1.706	0.0881
DIETVITC	1	-0.010104	0.00261529	-3.863	0.0001
ZINC	1	0.307324	0.093361	3.292	0.0010
HEMOGLOB	1	0.103736	0.021672	4.787	0.0001
TRICEPR	1	0.010531	0.003983413	2.644	0.0083
FAMHYPER	1	1.928219	0.427949	4.506	0.0001
COFFEE	1	-0.176898	0.067543	-2.619	0.0089
HEIGHT	1	12.012304	3.101684	3.873	0.0001
HYPERMED	1	5.447130	0.785475	6.935	0.0001
RACE	1	2.313058	0.847916	2.728	0.0064
LOC1	1	-1.865459	2.083514	-0.895	0.3707
LOC2	1	1.996755	2.089065	0.956	0.3393
LOC3	1	1.871282	2.434629	0.769	0.4422
LOC4	1	4.619544	1.982062	2.331	0.0199
LOC5	1	-2.522967	2.255400	-1.119	0.2634
LOC6	1	-2.935837	2.652586	-1.107	0.2685
LOC7	1	3.087847	2.209733	1.397	0.1624
LOC8	1	-0.472729	2.032864	-0.233	0.8161
LOC9	1	3.115882	2.380512	1.309	0.1907
LOC10	1	1.634609	2.087562	0.783	0.4337
LOC11	1	1.199201	2.104089	0.570	0.5688

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|
LOC12	1	-4.207915	2.184058	-1.927	0.0542
LOC13	1	6.370782	2.186118	2.914	0.0036
LOC14	1	-9.465587	2.114091	-4.477	0.0001
LOC15	1	4.721035	2.329536	2.027	0.0428
LOC16	1	-5.247493	2.224797	-2.359	0.0184
LOC17	1	7.865467	2.083457	3.775	0.0002
LOC18	1	2.775204	2.534989	1.095	0.2737
LOC19	1	0.506580	2.571404	0.197	0.8438
LOC20	1	-4.578305	2.204171	-2.077	0.0379
LOC21	1	10.575113	2.248004	4.704	0.0001
LOC22	1	0.481606	2.121348	0.227	0.8204
LOC23	1	1.561243	2.335039	0.669	0.5038
LOC24	0	0	.	.	.
LOC25	1	-1.686605	2.262252	-0.746	0.4560
LOC26	1	8.387190	2.372930	3.535	0.0004
LOC27	1	-1.570416	2.193282	-0.716	0.4741
LOC28	1	4.699876	1.944870	2.417	0.0158
LOC29	1	3.769419	2.214999	1.702	0.0889
LOC30	1	-0.662597	2.271761	-0.292	0.7706
LOC31	1	-4.607921	2.240998	-2.056	0.0399
LOC32	1	-2.523908	2.076483	-1.215	0.2243
LOC33	1	-0.297006	2.376168	-0.125	0.9005
LOC34	1	0.635677	2.512479	0.253	0.8003
LOC35	1	7.146046	2.172020	3.290	0.0010
LOC36	1	4.112652	2.162444	1.902	0.0573
LOC37	1	2.992614	2.378774	1.258	0.2085
LOC38	1	-0.837167	2.301453	-0.364	0.7161
LOC39	1	-2.938789	2.661993	-1.104	0.2697
LOC40	1	-3.835082	2.225110	-1.724	0.0849
LOC41	1	5.279755	2.235648	2.362	0.0183
LOC42	1	5.983930	2.819057	2.123	0.0339
LOC43	1	1.579630	2.152129	0.734	0.4630
LOC44	1	1.366813	2.185779	0.625	0.5318
LOC45	1	2.262867	3.124524	0.724	0.4690
LOC46	1	2.326378	2.321088	1.002	0.3163
LOC47	1	3.069204	2.299046	1.344	0.1792
LOC48	1	-0.716505	2.677985	-0.268	0.7891
LOC49	1	0.399083	2.025009	0.197	0.8438
LOC50	1	3.145493	2.169989	1.450	0.1473
LOC51	1	1.670666	2.259760	0.739	0.4598
LOC52	1	3.983018	2.282294	1.745	0.0811
LOC53	1	3.364091	2.520341	1.335	0.1821
LOC54	1	-1.901782	2.312267	-0.822	0.4109
LOC55	1	-2.446444	2.161831	-1.132	0.2579
LOC56	1	-3.465830	2.262999	-1.532	0.1258
LOC57	1	-5.137598	2.114033	-2.430	0.0152
LOC58	1	1.278072	2.262350	0.565	0.5722
LOC59	1	-0.068179	2.344557	-0.029	0.9768
LOC60	1	-5.855321	2.303563	-2.542	0.0111
LOC61	1	-2.052673	2.386426	-0.860	0.3898
LOC62	1	1.865147	2.386043	0.782	0.4345
LOC63	1	4.889396	2.315751	2.111	0.0349
LL	1	1.407711	0.655646	2.147	0.0319

TEH 0412469