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# Disability and Worklife
# The Case of Spinal Cord Injury

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In this paper we present the results of an econometric study of the workforce participation of spinal cord injury (SCI) patients. The study was conducted using data from the National Spinal Cord Injury Database maintained by the University of Alabama at Birmingham. The data set is unique in that it contains health, sociological and economic data on a large cohort over a long time period.

The use of a database that includes an objective, medical measure of physical condition reduces the problems inherent in using data based on self-reported disability such as the *Panel Study of Income Dynamics* (PSID), *The Current Population Survey* (CPS) and the *Survey of Income and Program Participation* (SIPP). These problems include the implicit assumption that a medical impairment is a disability, direction of causality, lack of comparability across subjects and the use of a claim of disability by healthy individuals to retire early (Baldwin and Johnson, 2001;Hale, 2001; Kirchner, 1996; Skoog and Toppino, 1999). Though these biases are well known and have been extensively studied in the literature on disability and work, forensic economists continue to use these data to construct worklife tables.

We also answer a question not before directly addressed in the return-to-work literature: if a disabled individual can find work, how does that individual's worklife differ from that of the able-bodied. This question is of critical importance not only for forensic studies but also for policy makers considering changes in social programs that provide support and retraining for the disabled. Only with knowledge of worklife, can social policies be made in a cost-benefit construct.

We find that SCI patients are far more likely to work than has been suggested by studies performed using the SIPP and CPS. Our research shows that paraplegics, who are classified under SIPP and CPS as severely disabled, have a workforce participation rate far higher than previous studies. However, even less severely afflicted SCI patients, including those currently working with the possible exception of those with professional degrees, have significantly reduced work lives. This finding rebuts the proposition that accommodating disability restores the ability to fully participate in the workforce.

**Previous Research**

A threshold challenge to all studies of the effects of physical limitations on work is differentiating impairment from disability. An inability to lift heavy weights above one's head would be disabling for a construction worker but vocationally irrelevant for a computer programmer.

Studies of the effects of injury characteristics on return to work found in the vocational rehabilitation, spinal cord injury and traumatic injury literatures tend to use data with more precise data on type of impairment (DeVivo, et al 1982; Kraus, 1992; Krause and Anson, 1996; Crisp, 1990) than those found in the economics literature. These data sets, however, have frequently been too small or specialized for statistical inference to the general population (eg. Wehman, et al, 1994) and the studies have not generally focused on the questions that most interest forensic economists. Finally, studies of labor force reentry reported in the rehabilitation literature, while informative, do not provide guidance regarding the duration of post injury employment. This leaves unanswered the key question of whether programs to train and place the disabled in jobs fully restore their human capital.

Forensic economists have studied workforce participation of the disabled using data from the Current Population Survey (CPS) and the Survey of Income and Program Participation (SIPP). The CPS and SIPP rely on self-reported rather than objectively measured limitations on activities of daily living or ability to work and classify disability and degree of disability on the basis of the type and amount of government aid payments rather than some measure of ability to work. As Kirchner has noted, there has been a tendency for researchers to let the available data drive the analysis, however inappropriate to the task the data may be.

There is also an inherent bias towards over-reporting disability by those who do not work due to the moral hazard created by government transfer programs (Better, et al, 1979; Wall, et al 1977). Two specific factors that create a bias toward over reporting disability are the loss of federally provided health insurance and the difficulty of reestablishing disabled status if the return to work is unsuccessful in the long run. Another problem with the classification of disability is that early retirement and participation in a disability program can be due to an occupational limitation rather than the inability to work (e.g. railroad employees, military). Further, since the payments under these programs can be substantial, there is a strong disincentive for payment recipients to reenter the workforce.

There is also a bias towards underreporting disability by those who are employed. An employed individual adequately coping with a biomedical limitation may not consider himself "disabled." Hence we have a problem of the denominator of the employment rate calculation inflated and the numerator deflated. Given the demonstrable biases in the data, one can infer little from its analysis.

A common criticism of the use of worklife studies to project outcomes for an individual is that the broad categories presented in the studies are of limited usefulness is assessing an individual. Specifically problematic in studies of the effects of disability on worklife is that factors found important in the rehabilitation literature such as age at injury, time since injury, marital status and medical indicia of disability are not considered in the economic literature.

Finally, in spite of the demonstrated importance of this factor in estimating worklife of the non-disabled, previous forensic studies do not differentiate on the basis of whether or not the individual is in the workforce at the time of the evaluation. This shortcoming limits the usefulness of current disability-oriented WLE tables such as the *New Worklife Expectancy Tables* (Gamboa, 1998). Current workforce status is an important predictor of worklife and there is no a priori reason to believe that it is any less important for the "disabled" than for the able bodied.

**The Data**

Since 1989 the National Spinal Cord Injury Statistical Center (NSPISC) has collected data on SCI patients from the eighteen regional Model Spinal Cord Injury Care Systems located throughout the United States. These data include information on injury severity, hospitalization and inpatient rehabilitation period, post-discharge rehabilitation and mortality. Included in the data set are data on age at injury, education, sex, race and marital status and employment status. Injury severity ranges from no neurological impairment and paraplegia and paraplegia with minimal deficit to complete tetraplegia. The data cover the time period 1989 to 1999.

The data that we used are a subset of a larger sample that is medically focused and does not contain information on work status. Sequential information is available for many patients who returned periodically for evaluation or treatment. As of September 2000, the database contained records for 98,110 annual evaluations of 20,143 subjects.

The variation of employment rates of patients in the SCI database by age and employment status in the previous period is shown in Figure 1. This figure includes a few data points for evaluations that were three or more years after the injury (two or more years for the previous year's employment status). After age 20 until about 55 years of age, roughly 85 percent of those employed in one period remain employed in the next. After age 55, that percentage begins to drop sharply. This result does not differ dramatically from findings for the able-bodied. Beyond age 20, approximately 10 percent of those who are unemployed in one period find employment in the next, This percentage drops steadily as age increases. Combined, these trends define the trend of the overall employment rate, which peaks at age 27 at about 36% and falls steadily thereafter. Clearly, employment status is a very strong predictor of the status in the next period.

Variation in the employment rate by age and disability status is illustrated in Figure 2. As expected, employment rates are lower for tetraplegics than for paraplegics and lower for those with complete compared to incomplete deficits. Employment rates peak in the late 20's and decline thereafter.

**The Models**

The data consist of records for individuals at given points in time. The data set includes a variable indicating whether the subject is employed in the competitive labor market at the time of the evaluation. The structure of the model is a cross-sectional time series.

Since the dependent variable is binary, the assumptions necessary for the use of linear regression analysis are violated. Therefore, we use logistic regression to estimate the probability of employment given a set of medical and demographic characteristics. The logistic model takes the form:

$$P(work) = \frac{1}{1 + e^{-Z}}$$

Where Z is the linear combination of explanatory variables X1,…Xu,

$$Z = B_0 + \sum_{i=1}^{n} B_i X_i .$$

The percent of the population employed, categorized by age, sex and race was matched to each record. A trend variable is included as well as a five year, phased-in dummy for the passage of the Americans with Disabilities Act (ADA) and a variable that measures the ratio of average Social Security Disability Payment to average wage.

We initially model probability of employment pooling all non-student study participants. This corresponds with the literature in SCI return-to-work studies and previous econometric studies of worklife. We then separated the data into two groups according to workforce participation in the prior period. The first group is those that worked in the last period and the second is those that did not work in the last period.

Since the duration between evaluations is not always fixed, in the second method we limit our data to those observations for which there is an evaluation in the previous year. This definition of last period employment status is consistent with that typically used in worklife expectancy tales. Our definition differs from the standard, however, in that we do not differentiate between those that are in the labor force and unemployed and those that are not in the labor force. Both are classified as not in the labor force.

**Econometric Results**

The model was tested using variables indicating degree of injury, current age, age at time of evaluation, years since injury, sex, race, education, national unemployment rate, marital status and whether or not the patient was employed at the time of the evaluation. The measure of degree of impairment is cumulative, in other words an paraplegic classified as ASIA A (most severe) is also classified as ASIA B and C. This scheme allows us to measure the marginal effect of increasingly severe injury within the general categories of paraplegia and tetraplegia.

Also considered potentially relevant were time trend, measured as the number of years past 1970, the passage and implementation of the Americans with Disabilities Act (ADA) and the degree to which disability benefits programs replaced earnings. Because the employment rate increases at first with age, then declines, we incorporated age, age squared, and age cubed. We also tested interactions between age, education and ADA effect and severity of injury. The data used to estimate the model was restricted to ages 25 to 65 and to subjects who were not students. Variables that were insignificant were dropped, except for age, since we felt that if this variable were relevant in one model it would be relevant in all.

Our results for the pooled model are presented in Table 1. Our results are consistent with previous studies on return-to-work of SCI patients. Generally, the more severe the injury the less likely that the patient is to find work. Education offsets impairment and returns to education are substantial. Uneducated tetraplegics are particularly unlikely to find employment and marriage is associated with a higher likelihood of successfully finding work and SCI patients with professional degrees are no less likely to be employed than the able-bodied.

Like previous researchers (James, et al, 1993), we find that African American SCI patients are 25% less likely to find work than Latino and Asian patients and about 50% less likely than whites even though, unlike previous studies, we have incorporated a race-specific measure of unemployment into our analysis.[1] We also find that employment after SCI is sensitive to economic conditions as measured by the percentage of the population cohort employed. This result has not been, to the best of our knowledge, previously reported.

Work status prior to injury has a strong effect on subsequent likelihood of working. Those who were employed or in school when injured are twice as likely to be employed than the unemployed and homemakers. Finally, we found that the Americans with Disabilities Act (ADA) had increased the likelihood of employment by three percentage points, a 20% increase in the likelihood of employment. All variables were significant at better than the 1% level.

It is well known that the probability of an individual working in a subsequent period is highly correlated with their current workforce and employment status. Most worklife expectancy tables, therefore, are constructed so as to consider the current period status. To estimate this conditional worklife expectancy, we estimated models for two groups, those currently employed and those not currently employed.

The results for both models are shown in Table 2. For those who are currently unemployed, years of education, disability status, and age are all highly relevant as to the likelihood that they will be employed next year – even more relevant than to those who are currently employed. More education increases the likelihood of employment next year. Disability status is less important for those currently employed than for those who were unemployed. This is logical because if an SCI patient has found a job, that job probably accommodates their impairment and is likely to continue.

Our results are consistent with our expectations and the unconditional model results reported above. Of note is the magnitude and sign of the intercepts indicating the high likelihood of remaining in the same state from period to period. Education remains the most important factor in getting or keeping a job though it is less important, as expected, for the latter. Those working are not affected by changes in economy-wide unemployment implying that the physically impaired are not the "last hired and first fired." Disability benefits have the expected effect of discouraging the unemployed from

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securing work but the magnitude of the effect is surprisingly strong. If, for example, benefits as a percent of average wage were to move up ten percentage points from 38% to 48%, the probability of employment for an SCI patient currently not employed decreases by 1.4 percentage points, from 4.7% to 3.3%, which is a 30% decline. All variables are of the expected sign and all are significant at better than the 1% level except for age.

Education remains the key factor for effectively competing in the labor force and our research shows that likelihood of employment increases with education. We found that high school, college and doctorate or professional degrees all increase likelihood of work while a master's degree variable was not significant at the margin. As expected, the more severe the injury the less the likelihood of employment for those in or out of the labor force. Unlike previous studies, we found sex to be insignificant. This is probably because we used sex-specific rates of employment which capture the lower likelihood that a woman will be in the labor force and employed than a male of comparable age and education.

The effect of race is troubling. Disabled non-whites have a significantly lower probability of finding and keeping a job then do whites. Previous research has also found this effect. Consistent with prior research, we find that probability of working increases with time since injury and age, to a point, at which time it levels and then falls. Age has a typically non-linear effect and employment falls steeply with the advent of the typical retirement age. Similarly, as the time since the accident approaches five years, the probability of working increases. This is likely due to the time required to complete physical and vocational rehabilitation. For this reason, we truncated at five the "years since injury" variable.

## Estimating Worklife

Worklife is the sum over human life span of the annual probabilities of being alive and being in the workforce. As we define it in this exercise, probability of being employed given one is alive and in the workforce is also included.

Accurate estimates of worklife are critical for both policy analysis and estimate of economic loss in litigation. It is not possible to analyze the benefits of programs and policies designed to assist the physically impaired reenter the competitive labor market absent some measure of the duration of employment. Similarly, to the extent that income support programs that are difficult to reenter once left, such as SSDI and Medicaid, discourage labor market reentry, policy makers must know the magnitude of the costs of these moral hazards in order to redesign the programs.

Forensic economists are frequently called upon to compare lifetime income "before and after" a disabling incident. As discussed earlier, the data on which economists have relied to make these estimates is ill suited to that purpose and imparts bias to their estimates.

Life expectancy is reduced by SCI, the degree of reduction depending on the severity of the injury and the completeness of the paraplegia or tetraplegia. Estimates of worklife for policy analysis purposes must incorporate the reduction in life expectancy whereas those used for forensic purposes frequently do not. Therefore, we compute worklife using both normal and reduced life expectancy.

To compute life expectancy, standard statistical and actuarial methods (e.g. Strauss, DeVivo and Shavelle, 2000; Strauss, Shavelle, DeVivo and Day, 2000) were applied to a database of 30,000 persons with spinal cord injury.[2] Briefly, we constructed a set of person-years for the 18,872 persons injured since 1973 who are not ventilator dependent, identified variables associated with survival by using logistic regression, and then used the model to compute age-specific mortality rates for any given profile of disability. These rates were used to construct a life table, which gives the life expectancy, and the chance of living any number of additional years.

We estimated the annual probabilities of employment using both sets of models. The estimation procedure using the grouped model is straightforward; we simply changed the time dependent variables in the equation for each incremental year of life and calculated the probability of working. This probability was multiplied by the probability of being alive (either normal or SCI specific) and the products were then summed over life span.

Using the two-state model is more complex. The logit equations yield probabilities of future employment given the prior year employment status and the demographic characteristics and medical data that were used as explanatory variables in the model. The probability of full employment next year is computed as,

$$p = f(X) = 1/(1+e^{-(a + a1\ X1 + a2\ X2 + ...)})$$ if the person is currently employed, or

$$p = g(X) = 1/(1+e^{-(b + b1\ X1 + b2\ X2 + ...)})$$ if the person is currently unemployed.

Where X1, X2, etc. are the explanatory variables X and a, a1, a2, etc. are model coefficients for employed persons and b, b1, b2, etc. are model coefficients for unemployed persons.

After the current year, the employment status is no longer known. However, our equations can still be used by multiplying the probability estimated with each equation by the probability of the corresponding employment status from the previous period. For example, suppose an individual is currently employed. The probability of employment next year can be computed as

$$p_1 = f(X_1).$$

Where, $X_t$ is the set of explanatory variables during year t.

The probability of employment during the second year is

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[2] The

The database and methods are described in "The Model Spinal Cord Injury Care Systems' Data Collection Syllabus for the National Spinal Cord Injury Database," presented by The National Spinal Cord Injury Statistical Center, The University of Alabama at Birmingham, Birmingham, Alabama, November 1995.

$$p_2 = p_1 f(X_2) + (1-p_1) g(X_2),$$

and, during year t,

$$p_t = p_{t-1} f(X_t) + (1-p_{t-1}) g(X_t).$$ [3]

**Results**

For our illustrations, we assume that subject is a thirty-year-old, married white male who was a student when injured eight years ago. We further assume that the ratio of Social Security Disability Income to average annual wage is 35% and the unemployment rate is 5%.

We model worklife expectancy using both normal life expectancy and our estimate of the reduced life expectancy resulting from the SCI. Clearly, the more accurate estimate is

[3] We found that the probabilities using the working, not working and work status unknown models tend to converge in the "out" years in almost all scenarios. In some scenarios, the not working and work status unknown probabilities cross and then converge.

that with the reduced life expectancy. However, in forensic applications such as estimating lost income, the analyst must use a normal life expectancy to properly evaluate the magnitude of loss. For this reason and because the use of normal life expectancy allows us to isolate the effect on employment, this presentation is important.

Our estimates are presented in Tables 3,4 and 5.

With a normal life expectancy, we find that the difference in expected between the able-bodied and SCI victims declines markedly with education and is economically insignificant for those with professional degrees. For the relatively uneducated, on the other hand, the difference is dramatic ranging from 50% to 78%. The return on education is dramatic, a four-year investment in education increases worklife by ten years and the additional years to receive a professional degree or Ph.D. increases worklife by an additional six years.

Current work status is, not surprisingly, a more important predictor of worklife for SCI victims than for the general public. Someone with SCI who is currently employed has an approximately 30% to 50% longer expected worklife than someone who is unemployed. This suggests that job placement is almost as important as education in making SCI victims economically productive and that policies that discourage return to work have very substantial indirect costs. The life expectancy effects are predictable; people with SCI have substantially reduced life expectancy in all but the least severe cases and that reduction in life expectancy reduces the economic payoff from education and job placement significantly.

**Comparison of Worklife Estimates to Previous Research**

In the forensic literature, the only published worklife tables for the disabled are those produced by Vocational Econometrics, Inc. (Gamboa, 1998). These tables were developed from workforce participation information from the CPS and life expectancy tables published in Richards (1999). Like ours, Gamboa's tables differ somewhat from the standard worklife presentation in that the "worklife" incorporates both probabilities of being in the workforce and being employed. This difference is unimportant for our purposes. The Gamboa tables also do not differentiate on the basis of current employment status and are based on normal, not reduced, life expectancy.

Gamboa classifies subjects as "severely disabled" or "not severely disabled" on the basis of the CPS disability criteria. He estimates worklife for these groups for three educational levels, 12 years, 13 to 15 years and 16 years or more. This classification system groups together all individuals with a college degree or greater so the educational classes do not correspond directly to ours.

For our subject, the Gamboa estimates of worklife would be 2.7 and 22 years for a severely and not severely disabled high school graduate and 5.3 years and 25.7 years for corresponding college graduates. The Gamboa worklife estimates for the "severely disabled" are approximately one-third of our estimates for an ASIA B tetraplegic high school graduate estimate of 6.14 years and college graduate of 18.03 years. Gamboa's estimated worklife for a not severely disabled college graduate or higher education is within a half year of our estimate for an ASIA D Paraplegic with a bachelor's degree. His estimate for a not severely disabled high school graduate, 22 years, is 30% to 80% higher than our estimate for a similarly educated D Paraplegic.

**Conclusions:**

Our findings on probability of working are consistent with the literature in disability research. The likelihood of finding work indeed increases with education and is benefited from a stable marriage. The more severe the injury, the less likely an individual is to find work and, if found, the less likely to remain employed. We find that the employment prospects for the physically impaired are effected by the state of the overall job market and that the disabled are not the last hired and first fired. African Americans with SCI are even less likely to find work their than white counterparts than their able-bodied counterparts. We find that ADA has improved the prospects for employment of SCI victims.

Our work extends the previous research on return-to-work after SCI by providing a basis for estimating how long an injured individual is likely to work thereby providing an empirical basis for cost – benefit analyses. The results of our modeling estimating worklife on the basis of current status provides a vehicle for performing cost-benefit analysis of employment placement programs.

Our results differ substantially from the conclusions reached by Vocational Econometrics. Except in the extreme cases, we find that SCI patients will have significantly more years of productive work than does VEI though we agree that severe disability can have a profound effect on worklife. It appears to us that one of the causes of this discrepancy is that VEI underestimates the impact of education on the ability of the physically impaired to work. This may result from the well-known problems with the CPS data that they used to perform their analysis.

Unfortunately, we cannot completely resolve the issue of the effects of income support programs on likelihood of working. Though our results suggest that these programs provide a strong disincentive to work for those currently not working, we did not have income support information on the individuals in database,

We believe that our findings can be extended to forms of disability other than SCI though this extension should be done with caution given the unique nature of the health problems associated with living with SCI. At the very least, our results strongly rebut Gamboa's findings regarding disability and work.

**Figure 1**
**Employment Rate by Age and Last Year's Employment Status**

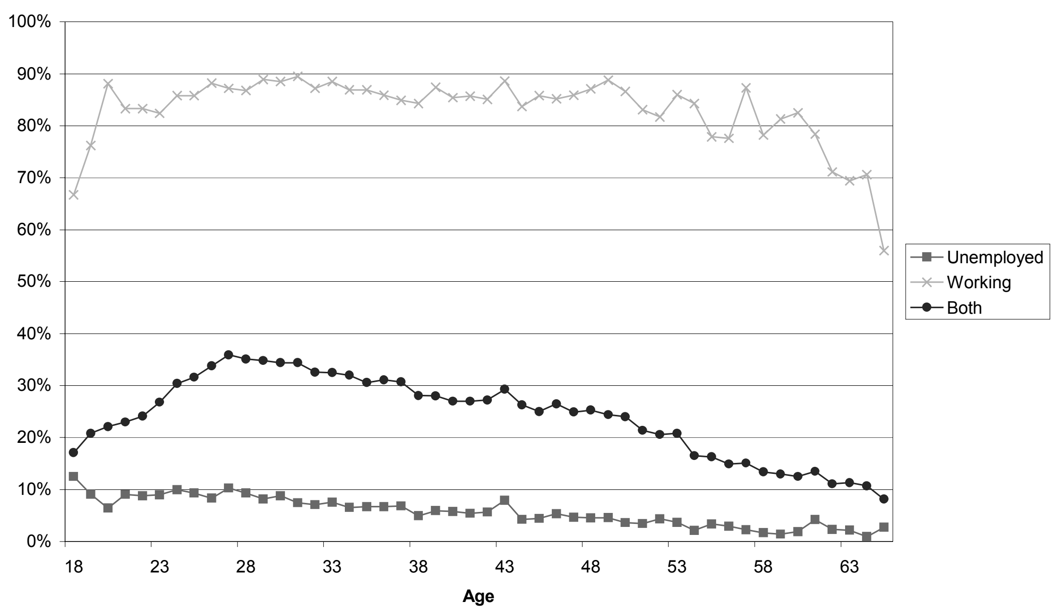

**Figure 2**
**Employment Rate by Age and Disability**

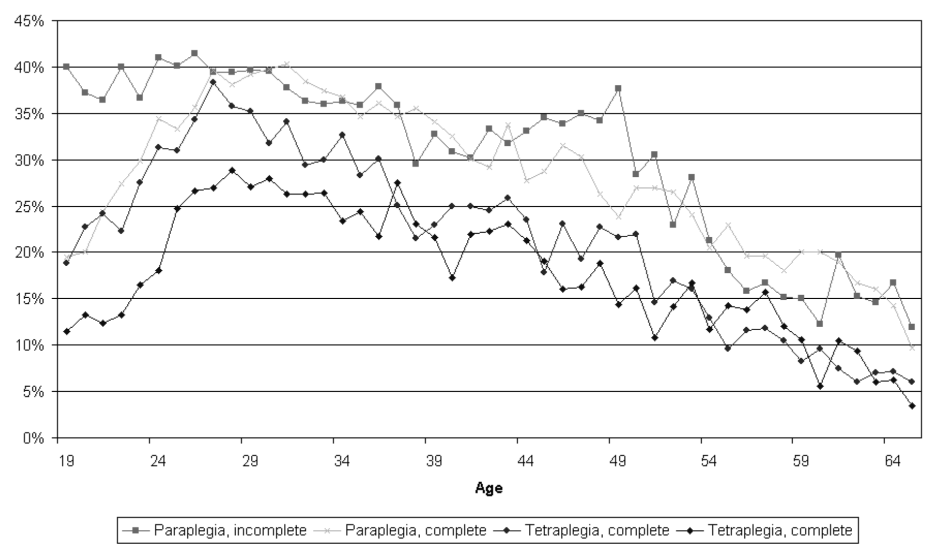

**Table 1**
**Regression Results – Combined Model**

| Variable | Coeff | s.e. | Chi-Square | Pr > ChiSq | Mean |
|---|---|---|---|---|---|
| Intercept | -2.935 | 0.15 | 402 | 0.00 | 1 |
| High School Grad | 1.030 | 0.04 | 665 | 0.00 | 0.61 |
| Bachelor's Degree | 2.404 | 0.05 | 2705 | 0.00 | 0.15 |
| Professional / Ph.D | 3.279 | 0.10 | 1154 | 0.00 | 0.01 |
| ASIA C Paraplegic | -0.216 | 0.04 | 33 | 0.00 | 0.39 |
| ASIA D Tetraplegic | -0.293 | 0.04 | 43 | 0.00 | 0.51 |
| ASIA C Tetraplegic | -0.596 | 0.04 | 191 | 0.00 | 0.38 |
| Violent Cause of Injury | -0.188 | 0.04 | 24 | 0.00 | 0.17 |
| Non HS Grad Tetraplegic | -0.267 | 0.04 | 37 | 0.00 | 0.24 |
| Black | -0.286 | 0.06 | 24 | 0.00 | 0.19 |
| White | 0.471 | 0.05 | 96 | 0.00 | 0.72 |
| Single | -0.426 | 0.03 | 219 | 0.00 | 0.37 |
| Widowed, Separated, Divorced | -0.455 | 0.03 | 230 | 0.00 | 0.25 |
| Years Since Injury | 0.200 | 0.01 | 620 | 0.00 | 3.8 |
| Age | -0.019 | 0.00 | 101 | 0.00 | 37 |
| Age Squared | -0.001 | 0.00 | 31 | 0.00 | 101 |
| Phased Dummy for ADA | 0.217 | 0.03 | 59 | 0.00 | 0.30 |
| Unemployed at Injury | -0.806 | 0.04 | 386 | 0.00 | 0.17 |
| Employed as Percent of Population | 1.205 | 0.14 | 77 | 0.00 | 0.82 |

## Table 2
## Conditional Models of Probability of Working

| | Working Last Year | | | | Not Working Last Year | | | |
|---|---|---|---|---|---|---|---|---|
| Working | 8,389 | 86% | | | 2,210 | 7% | | |
| Not Working | 1,407 | 14% | | | 30,927 | 93% | | |
| Total | 9,796 | | | | 33,137 | | | |
| Variable | Coeff | s.e. | Chi-Square | Pr > ChiSq | Coeff | s.e. | Chi-Square | Pr > ChiSq |
| Intercept | 0.840 | 0.253 | 11 | 0.00 | -1.590 | 0.669 | 6 | 0.018 |
| High School Grad | 0.369 | 0.107 | 12 | 0.00 | 0.874 | 0.081 | 116 | 0.000 |
| Bachelor's Degree | 1.013 | 0.117 | 74 | 0.00 | 2.057 | 0.094 | 477 | 0.000 |
| Professional / Ph.D | 1.652 | 0.258 | 41 | 0.00 | 2.871 | 0.190 | 228 | 0.000 |
| ASIA B Paraplegic | -0.149 | 0.073 | 4 | 0.04 | | | | |
| ASIA D Tetraplegic | | | | | -0.175 | 0.071 | 6 | 0.014 |
| ASIA C Tetraplegic | -0.388 | 0.080 | 24 | 0.00 | -0.311 | 0.087 | 13 | 0.000 |
| Non HS Grad Tetraplegic | | | | | -0.338 | 0.088 | 15 | 0.000 |
| Black | -0.454 | 0.153 | 9 | 0.00 | | | | |
| White | 0.295 | 0.127 | 5 | 0.02 | 0.468 | 0.067 | 49 | 0.000 |
| Single | -0.227 | 0.076 | 9 | 0.00 | -0.230 | 0.058 | 16 | 0.000 |
| Widowed, Separated, Divorced | -0.348 | 0.078 | 20 | 0.00 | -0.223 | 0.063 | 13 | 0.000 |
| Years Since Injury | 0.120 | 0.028 | 18 | 0.00 | | | | |
| Age | 0.004 | 0.005 | 1 | 0.46 | -0.042 | 0.003 | 170 | 0.000 |
| Age Squared | -0.001 | 0.000 | 21 | 0.00 | | | | |
| Phased Dummy for ADA | | | | | 0.271 | 0.070 | 15 | 0.000 |
| Benefits as Percent of Earnings | | | | | -3.606 | 1.648 | 5 | 0.029 |
| Unemployed at Injury | -0.48 | 0.105 | 21 | 0.00 | -0.359 | 0.073 | 24 | 0.000 |
| Employed as Percent of Population | | | | | 1.108 | 0.259 | 18 | 0.000 |

**Table 3**
**Current Status Unknown**

| | Normal LE | | |
|---|---|---|---|
| | HS | BA | Prof |
| Par D | 13.81 | 25.23 | 31.82 |
| Par B | 12.12 | 23.61 | 30.65 |
| Tet D | 11.53 | 23 | 30.2 |
| Tet B | 6.14 | 18.03 | 26.1 |
| Normal | 27.98 | 31.55 | 33.58 |

| | SCI LE | | |
|---|---|---|---|
| | HS | BA | Prof |
| Par D | 13.19 | 23.94 | 29.96 |
| Par B | 10.77 | 20.55 | 26.06 |
| Tet D | 10.63 | 20.91 | 27.02 |
| Tet B | 5.13 | 14.6 | 20.34 |
| Normal | 27.98 | 31.55 | 33.58 |

**Table 4**
**Not Currently Working**

| | Normal LE | | |
|---|---|---|---|
| | HS | BA | Prof |
| Par D | 11.92 | 22.86 | 29.93 |
| Par B | 10.68 | 25.51 | 28.94 |
| Tet D | 10.09 | 20.88 | 28.48 |
| Tet B | 5.27 | 16.32 | 25.59 |
| Normal | 26.05 | 30.49 | 32.8 |
| | SCI LE | | |
| | HS | BA | Prof |
| Par D | 11.34 | 21.66 | 28.15 |
| Par B | 9.39 | 18.68 | 24.5 |
| Tet D | 9.22 | 18.92 | 25.39 |
| Tet B | 4.32 | 13.09 | 18.92 |
| Normal | 26.05 | 30.49 | 32.8 |

**Table 5**
**Currently Working**

| | Normal LE | | |
|---|---|---|---|
| | HS | BA | Prof |
| Par D | 17.81 | 29.14 | 37.13 |
| Par B | 16.53 | 28.09 | 35.61 |
| Tet D | 16.91 | 28.36 | 36.72 |
| Tet B | 11.07 | 27.03 | 33.77 |
| Normal | 28.08 | 31.55 | 33.67 |

| | SCI LE | | |
|---|---|---|---|
| | HS | BA | Prof |
| Par D | 16.97 | 27.42 | 34.55 |
| Par B | 14.56 | 23.81 | 29.8 |
| Tet D | 15.48 | 25.29 | 31.92 |
| Tet B | 9.53 | 18.65 | 24.72 |
| Normal | 28.08 | 31.55 | 33.67 |