

**Socioeconomic Status and Health:**  
**Why is the Relationship Stronger for Older Children?**

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The relationship between socioeconomic status and health is one of the most robust and well documented findings in social science. However, the reasons for the relationship are less clear since plausible causal mechanisms run in both directions. Case, Lubotsky, and Paxson (2002) look at children in order to find the “origins of the gradient”, since the health of children may be assumed to have relatively little impact on their own socioeconomic status. They show that the well-known cross-sectional relationship between SES and health exists in childhood and is more pronounced among older than among younger children. Since poor health in childhood is likely to affect adult well-being directly through its effects on health, and indirectly through its effects on other forms of human capital accumulation, it is important to try to address the causes of SES-related gradients in health status among children.

However, in a cross-section it is not possible to distinguish between two different possible mechanisms underlying a steepening gradient. On the one hand, it is possible that low-SES children are less able to respond to a given health shock, so that the negative effects of health shocks persist and accumulate over time. This model would imply that low-SES children are in need of better medical care, or better access to care, so that they can respond to health shocks in the same way as higher- SES children.

On the other hand, it is possible that low-SES children respond to health shocks in a way that is similar to high-SES children, but are just subject to more shocks. This model implies that SES-related gradients can be reduced by addressing the reasons why low-SES children are more likely to be subject to health shocks. For example, low-income children are more likely to have accidents, and to suffer from nutrition-related disorders such as diabetes. This distinction is important for policy because it implies that it may be productive to spend social resources on measures designed to reduce the arrival rate of health shocks as well as continuing to improve children’s access to palliative medical care.

We examine these hypotheses using a panel of data on Canadian children from the National Survey of Children and Youth (NLSCY). We confirm that the results of Case et al. hold

using a sample of Canadian children, despite the existence of universal health insurance coverage for doctor and hospital services in Canada. We find that the gradient steepens in cross-section, and that this result is robust to controls for cohort effects. However, we find little evidence that the long-term effects of health shocks on future health are different for high-SES and low-SES children, even though in the short run, low-SES children suffer greater health losses than high-SES children after the arrival of a health shock. Instead, we provide evidence which suggests that the cross-sectional relationship between health, family income (or maternal education), and age arises primarily because low income children are more likely to be subject to health shocks.

The rest of the paper proceeds as follows: Section 1 provides some background regarding the relationship between SES and health. Sections 2 and 3 provide an overview of the data and methods. Results appear in Section 4, and Section 5 offers some concluding remarks.

## **1. Background Regarding the Relationship Between SES and Health**

There is a vast literature documenting the relationship between socio-economic status and health (see Marmot and Wilkinson, 1999 for a review). However, it has been difficult to determine whether the relationship exists primarily because health affects socioeconomic status, whether socioeconomic status has a direct impact on health, or whether both are affected by some third factor (such as rate of time preferences, c.f. Fuchs (1982)). Deaton and Paxson (1999a,b) emphasize the difficulty of inferring a causal relationship from aggregate cross-country or cross-state data, as has been done in many previous studies. Smith (1998) proposes that it may be difficult to find a single correct answer to this question of causality since SES may affect health in childhood, while the direction of causality may run the other way among adults. Deaton and Paxson (1999b) present some evidence regarding the SES-health relationship among U.S. adolescents, while Power and Matthew (1997) and Ford *et al.* (1994) have investigated health-SES gradients among adolescents in the United Kingdom and in Scotland, respectively.

All but Ford *et al.* find the expected positive relationship.

However, other than Case, Lubotsky and Paxson (CLP), we know of no other study that examines the way that the relationship between SES and health changes with age among children. In a related study, Currie and Hyson (1999) ask whether the long run impact of low birthweight differs with socioeconomic status in a cohort of British children born in 1958. They found that while low birthweight had a persistent negative impact on a range of outcomes, there was little evidence that its effects varied with socioeconomic status, though low-SES children were more likely to suffer from low birthweight to begin with. Similarly, we will show that the health shocks we examine are more common among low-SES children and have persistent negative effects, but that they do not appear to have differential effects by SES.

There is a great deal of evidence that low-SES children are more likely to suffer negative health shocks than high-SES children. For example, Newacheck *et al.* (1994) show that poor children are more likely than better-off children to suffer from a wide array of chronic conditions, while the Institute of Medicine (1999) reports that low-SES children are more likely to suffer from virtually all types of accidental injuries than higher-SES children, accidents being the leading cause of morbidity and death among children.

There is also a good deal of evidence that ill health in childhood affects adult health and SES through multiple pathways. For example David Barker and his collaborators (c.f. Eriksson *et al.* 2001; Forsen *et al.* 1999) emphasize the link between nutrition in the prenatal period and later disease. Marmot and Wadsworth (1997) review the literature linking these and many other child health outcomes to health in adulthood. Case, Fertig, and Paxson (2003) present an analysis of the various pathways using the 1958 British cohort data.

Beyond the direct connection between poor health in childhood and health in adulthood, poor health in childhood could affect adult well-being through its impact on educational attainment. Grossman and Kaestner (1997) provide a summary of this literature, and conclude that school missed because of ill health accounts for some but not all of the effect. Currie

(2000) provides a review of literature linking anthropometric measures of child health to cognitive deficits. Given this literature, it is plausible that educational attainment may also be limited in some cases by the direct effects of poor health on cognitive functioning.

The extent to which the existence of public health insurance mitigates the effects of SES on health is an unresolved issue. The famous Black report in Great Britain concluded that the relationship between SES and health became more pronounced following the introduction of National Health Insurance, but it is possible that the differential would have widened even further in the absence of National Health. Similarly, previous research using Canadian data indicates that there is a significant relationship between health and household income even though Canadians have universal health insurance (c.f. Curtis *et al.*, 2001).

Currie (1995) shows that recent expansions of U.S. public health insurance programs to previously ineligible children narrowed socio-economic gaps in the utilization of medical care and health among children, although significant SES-related gaps remain even among children with common insurance status. Hence, the available evidence indicates that while public health insurance narrows SES-related gaps in health status, it does not eliminate them. It is, therefore, of interest to examine the way that the gradient varies with child age in this sample of Canadian children.

## **2. Data**

We use data from the National Longitudinal Survey of Children and Youth (NLSCY). The NLSCY is a Canadian national longitudinal data set which surveyed children ages 0-11 and their families beginning in 1994. Follow up surveys were conducted in 1996 and 1998. The initial sample consisted of 22,831 children in 1994. We restrict our sample to those children who were surveyed in each of the three survey years (14,169 children).

The NLSCY collects detailed information on the health and demographics of the child. While the older children are asked a small number of questions, the majority of the survey,

including the questions used in our analysis, is answered by the person most knowledgeable about the child (the PMK). Demographic, labor force, income, and health information are also collected for the PMK and the spouse of the PMK. In most cases (92%) the PMK is also the child's mother. However, the PMK need not be the mother and need not be the same person in each survey. Because of this potential complication, we determine the education level of the mother using information about the PMK and the spouse of the PMK in all three survey years. We measure mother's education as follows: when the child's mother is also the PMK or the child's mother is the spouse of the PMK we use this information to calculate the mother's education. When no biological mother is present in the family in any of the three survey years we use the next closest female parent figure as the basis for calculating the mother's education. We then include dummy variables for the female parent figure being other than the biological mother, and/or for the PMK being other than the biological mother in all our analyses.

We use total household income as our measure of income. In cases where the household income is not reported, the NLSCY imputes household income from individual income sources or, in a small number of cases, from other demographic information. We therefore have a measure of household income for every child in our sample. We include a dummy variable for the imputation of household income in all our analyses. We also re-estimated all our analyses omitting individuals for whom income had been imputed in order to be sure that there was nothing peculiar about the income imputation process. Our analyses are robust to these checks.

The NLSCY contains a rich set of health related questions. The primary measure is the PMK-reported health status of the child. The PMK is asked to rate the health of the child on a scale of 1 to 5, with 1 being poor and 5 being excellent. In some of our analyses, we define poor health as the bottom three measures on this scale. We also use information on whether the child has ever been diagnosed with chronic conditions (these include allergies, asthma, heart disease, bronchitis, epilepsy, cerebral palsy, kidney troubles, mental troubles, learning disabilities, psychological disabilities, and a category for other chronic conditions), information on whether

the child was hospitalized at any point in the past year, and whether the child is limited in the types of activity he or she can do. Since asthma is by far the most common chronic condition, we examine the incidence of asthma separately in some of our analyses.

It is likely that all self-reported measures of health status suffer from some biases (c.f. Baker, Stabile, and Deri, 2001), and some of these biases may vary with socio-economic status. For example, mothers who are in poor health themselves may both have lower income and be more likely to report that their child is in ill health. Or, children of higher SES may be more likely to be diagnosed given that they have chronic conditions. Similarly, mothers may vary in their assessment of whether a child has activity limitations or is need of doctor visits or even hospitalization. We take an agnostic view about which measures of child health are “best” and examine the full range of available measures.

Table 1 shows means for the main variables used in our analysis across the three survey years. The average age of the children in the sample was 4.9 years in 1994. Household income, in 1998 dollars (Canadian), averaged \$50,000. Twelve percent of children were reported to be in poor health. Eleven percent of the children reported suffering from asthma, and 26 percent reported having some chronic conditions. The incidence of poor health and activity limitations remain fairly constant across the survey years, while the incidence of asthma increases slightly as the children age and the use of medical services falls. However, the likelihood that the child has any chronic condition increases with age, as one might expect if chronic conditions represent cumulative, permanent health shocks. We present more detailed information on the NLSCY and the questions used in a data appendix which is available from the authors on request.

### **3. Methods**

We present a conceptual framework to better understand how the gradient may steepen with age despite low-SES children recovering from a health shock at the same rate as high-SES children in the long-run. The health status of children is assumed to evolve over time as follows.

Children are born with an initial health stock,  $H_0$ . Children receive shocks to their health in the form of chronic conditions, diseases requiring hospitalization, or other shocks. SES contributes to the ability of a family to both detect and treat a chronic condition in the short run. In the longer-run, the effects of the bad health shock dissipate and the health of a child can be partially restored. We assume that while children can come close to returning to health stock  $H_0$ , they do not completely return to their original level. This conceptual model is consistent with models which treat health as a depreciating stock (c.f. Grossman, 2000), which must remain above a minimum level for survival, and which can be augmented by investment on the part of the individual (or family).

In this simple model, two things differentiate the health of low-SES children from the health of high-SES children. First, low-SES children may not deal with bad health shocks as effectively as high-SES children in the short-run. This may be due to information problems, or to resource constraints which cause delays in treatment or less effective treatment. Second, low-SES children may receive more health shocks than high SES children. This may be due to differences in lifestyle and/or environmental factors such as poor housing quality, lack of preventative care, inadequate nutrition, etc. The effects of a past negative health shock will not necessarily be mitigated by SES, since after a certain amount of time, low-SES children respond and begin to restore their health in the same way as high-SES children do. However, the health status of low-SES children will remain lower than the health status of higher-SES children because they receive more new health shocks over time than do higher-SES children. The higher arrival rate of health shocks will also result in a steepening of the SES-health relationship as children age. Figure 1 shows the stylized time-pattern of the health stock for low and high-SES children.

In order to test the implications of our model, we begin by graphing the relationship between health measures, age, and SES. To obtain these figures, we pool data from the three waves of the survey. Figure 2 shows the distribution of poor health by age and whether income



is above or below the Canadian low income cutoff (which is calculated by Statistics Canada and is based on income, location of residence, and family composition). The incidence of poor health is higher at every age for those children below the low-income cutoff. Although we do not show the incidence of poor health by maternal education, the patterns are similar in that children with more highly educated mothers have a lower incidence of poor health at all ages. While there is a good deal of variation in the incidence of poor health among low-income children, it does appear that the gap between low and high income children widens with age, particularly in later ages, consistent with the hypothesis of a steepening gradient. It also appears that this is due primarily to increases in poor health among low-income children, since there is little evidence of an increase in poor health by age among higher income children.

Figure 3 shows the number of new chronic conditions by the age of the child in 1998. New chronic conditions are conditions which were not reported in 1994 but which were reported by 1998. The number of new health conditions is higher at all ages for low SES than high SES children, and there appears to be a large divergence in new conditions both at early and later ages. Three of the most prevalent conditions explain most of the U-shaped pattern for low-SES children. At early ages the incidence of new cases of allergies and bronchitis is much higher for low-SES children than for high-SES children before levelling off. At later ages the incidence of new cases of asthma and bronchitis is much higher for low-SES children than high-SES children. New diagnoses of asthma initially fall for both low and high-SES children and then pick up again for low-SES children after about age 12. Since low-SES children also have more conditions at every age in 1994, the number of health conditions is higher at every age for low-SES children than high-SES children. Hospitalizations (not shown) are also consistently higher for low-income children, and again decline over time. Similarly, activity limitations (not shown) are higher for low-income children, and while the pattern is not as clear as it is for poor self-reported health, the relationship does appear to steepen slightly with age. In summary, these graphs are consistent with the model presented above in that they show both a steepening

gradient and a higher incidence of bad health shocks for lower-income children.<sup>1</sup>

In order to investigate these relationships in a multivariate context, we first estimate models pooling the three waves of data in an attempt to replicate the results of Case et al. in the Canadian context. Estimates obtained from these regression models will be qualitatively similar to those obtained using cross-sectional data, since we make no attempt to use the panel nature of the data in these initial estimations (though we do correct the standard errors for clustering due to repeated observations on the same child). These regressions take the following form:

$$(1) \text{ health}_{it} = \alpha + \delta \ln(\text{inc})_{it} + \gamma \text{edu}_i + \beta \text{age}_{it} + \lambda X_{it} + v_{it}$$

where *health* is a measure of child health measured on a 1-5 scale from poor to excellent.  $\ln(\text{inc})$  is log family income, *edu* is a set of dummies for mother's education (less than high school, high school, some college, college), *age* is a complete set of age dummies, *t* is a set of time dummies, and *birth* is a set of birth year cohort dummies.

We focus on family income and maternal education as two key indicators of SES. We estimate the model separately at four different age ranges. The age and cohort dummies are intended to capture both changes in child behavior with age within the age range, and factors such as changes in the availability of treatments that might affect different cohorts differently. The vector *X* includes the log of family size, a dummy variable for the sex of the child, a dummy variable for having a PMK that is not the biological mother, a dummy variable for having a female PMK, a dummy variable for having two parents in the household, a dummy variable for having imputed family income, and the mother's age at birth. These variables are intended to capture other characteristics of the family which could affect child health. The subscript *i* denotes the individual child.

Case et al. (2002) suggest that estimation of (1) should yield evidence of a health-SES

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<sup>1</sup> We have also graphed residuals from linear probability models which regress the new chronic conditions measure on all of the variables included in our multivariate models, except for income. The result is very similar to Figure 3.

gradient that increases with child age. That is, the coefficients on income and maternal education should be negative and significant, and the coefficients on income in particular should become increasingly negative as the children age. Following Case et al. we estimate this model using ordered probits, and then show that we obtain very similar results using linear probability models in which the dependent variable is whether the child is in poor health.

We next exploit the panel nature of the data by estimating models of the following form:

$$2) \quad health98_i = \alpha + \beta shock94_i + \delta \ln(inc)_i + \phi inc * shock94_i + \gamma edu_i + \lambda X_i + \epsilon_i$$

where *health98* is a measure of child health in 1998, *shock94* denotes a health shock of differing types in 1994, *inc* is the average of family income over the three cycle years, and the other variables are defined as above. This specification allows us to test directly for differential effects of past health shocks by SES.<sup>2</sup>

#### 4. Results

Estimates of equation (1) are presented in Table 2. For comparative purposes we reproduce the findings from Case et al. in the first half of the table. The first panel reports the coefficients on family income from an ordered probit on self-assessed health including several covariates but excluding mother's education. The protective effect of income rises with child age in this sample of Canadian children in a very similar way to that shown in Case et al.. For example, in the first specification (without maternal education) the key coefficient on log income falls by .140 as they move from 0 to 3 year olds to 13 to 15 year olds. In the comparable model estimated using our data set, the same coefficient falls by .121.

The second panel includes controls for mother's education. Once education is included in the model, our gradient actually steepens somewhat more rapidly than that estimated by Case et al.. Thus, the fact that Canadian children have universal health insurance appears to have little effect on the steepening of the SES-health gradient. We also re-run the above specifications

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<sup>2</sup> Here we correct the standard errors for clustering at the household level.

including cohort dummy variables. The inclusion of the cohort dummies makes almost no difference to our estimated coefficients, and, in fact, the coefficients on income are unchanged. Estimates from both our data and Case et al. suggest that the marginal effects from linear probability models using a dichotomous poor health measure are also extremely similar. A doubling of income results in a 4 percentage point increase in the probability that a child is in excellent or very good health (for ages 0-3) in Case et al. and a 3 percentage point increase in our data. Again the protective effect of income increases with child age with a doubling of income leading to a 6.4 percentage point increase in the probability that a child is in excellent or very good health by ages 13-15. We report the results from linear probability models in the bottom line of Table 2.

Estimates of equation (2) are presented in Table 3. These models exploit the panel nature of the data by examining the temporal effects of health shocks. The first column of Table 3 reports estimates using poor health in 1998 as the dependent variable and examining the effect of past health shocks by including a dummy variable for whether the child had a health condition in 1994. The coefficient on this variable is positive and statistically significant. It is also quite large, suggesting that having a chronic condition in 1994 increases the probability that a child is reported to be in poor health in 1998 by 11 percentage points. Log family income is negative and significant suggesting that higher income lowers the probability of reporting poor health, even conditional on having a long-standing chronic condition. Since we observe three measures of household income for each child, we take the log of average household income over the three years as a proxy for permanent income. We have also estimated the model using one or more years of income data as individual controls and the results are robust to the measure of income used. Mother's education is also negative and significant<sup>3</sup>.

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<sup>3</sup> We re-estimated all specifications including province fixed effects. Our results are not sensitive to including these effects.

The model shown in column (2) includes an interaction term between the health condition in 1994 and family income, so that we can see if the effects of a past health shock differ with income. This interaction is not statistically significant suggesting that SES does not affect the extent to which a past health shock affects the child's health today. We repeat these analyses using mother's education as the measure of SES (not reported here) and find qualitatively similar results, including the interaction effect.

The estimates in the first two columns of Table 3 suggest that the long-term effects of these shocks do not differ by SES. Both rich and poor children appear to suffer long-term negative consequences from chronic conditions. We have also estimated specifications which interact the effect of a new current chronic condition with SES<sup>4</sup>. Here the interaction between SES and a new chronic condition is significant suggesting that, initially, low-SES children are harder hit by chronic conditions than high-SES children.

In order to explore the robustness of this pattern to alternative measures of health, we estimate similar models using both narrower and broader measures of health shocks. Specifically, we first focus on a diagnosis of asthma as a narrower and more specific measure of a health shock. Asthma is the leading chronic disease of children in industrialized countries. Asthma is also the biggest cause of hospitalisation and health related absenteeism among children (Millar and Hill, 1998). Left untreated, the long-term costs and consequences of asthma are severe (Ungar and Coyte, 2001). As a broader measure of a health shock, we combine chronic conditions and hospitalizations. This broader measure allows for the fact that children may suffer long-term consequences from acute conditions, such as illness or accidents, as well as from chronic conditions.

Estimates using an indicator equal to one if the child had asthma are presented in columns (3) and (4) of Table 3. The model shown in column (3) indicates that having been diagnosed with asthma by 1994 has a significant negative effect on reported health status in

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<sup>4</sup> See Currie and Stabile (2002) for these results.

1998. Column (4) confirms that there is no relationship between income and the effect of a health shock in 1994. We repeated the analysis including interactions between mother's education and the asthma indicators rather than the interactions with income, and got very similar estimates.

Columns (5) and (6) of Table 3 present estimates which use both whether a child had a chronic condition and whether a child was hospitalized in the past year as a measure of a health shock. The qualitative pattern of estimates is virtually identical to that found with just chronic conditions and with asthma. While negative health shocks in 1994 affect the probability of being in poor health in 1998, there is no differential effect by SES. We also tried limiting chronic conditions to only the most severe conditions and found virtually identical results<sup>5</sup>.

We have estimated similar models for the incidence of very low birthweight, defined as birthweight less than 1500 grams. Only 0.8% of our sample children were very low birthweight. We found that while very low birthweight increased the probability that a child was in poor health in 1998 significantly (by six percent), the main effect of very low birthweight became statistically insignificant (though larger) when we included an interaction between very low birthweight and log income or maternal education. Hence, we are unable to say definitively whether the effect of very low birthweight is mitigated by SES.

In summary, the pattern of the steepening gradient holds in Canada, despite the fact that there is universal health insurance coverage for doctor and hospital services, and is robust to the inclusion of cohort effects. However, while low-SES children may suffer more from bad health shocks in the short-term, there is no evidence that this disadvantage persists. Over the longer-term, both high-SES and low-SES children recover to the same extent from a given shock. However, low-SES children suffer from more new health conditions at each age than do higher-SES children. Thus, the worsening gradient observed in the cross-section is likely due to the higher arrival rate of shocks, rather than to a lower recovery rate for SES children.

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<sup>5</sup> These conditions include asthma, kidney disease, cerebral palsy, heart disease/condition, and epilepsy.

Finally, since much of the gap in the "arrival rates" of new chronic conditions is accounted for by respiratory diseases such as allergies, bronchitis, and asthma, one possibility is that low-SES children are more likely to suffer from the effects of parental smoking. In order to take a preliminary look at this possibility, we have re-estimated all of our models including a control for whether or not the PMK smoked in 1994. While this variable is highly significant in all of our models, its inclusion did not change any of our findings regarding the steepening gradient between SES and health.

## **5. Discussion and Conclusions**

Case, Lubotsky, and Paxson study U.S. children, while we study a panel of Canadian children. Given the fact that Canadian children have universal health insurance, it is interesting to speculate on the extent to which our results might apply to American children. It is unfortunately not possible to do a similar investigation using a panel of U.S. children. As Case, Lubotsky, and Paxson note, the sample sizes available in the National Longitudinal Survey of Youth Child-Mother file are too small to support this type of analysis in part because the relevant questions were not asked to all children.<sup>6</sup> However, the fact that our estimates of the steepening gradient in the cross section are very similar to those obtained by CLP using U.S. data suggests that our findings are likely to apply to U.S. children.

The main implication of our findings is that the health of low SES children worsens with age, not so much because they lack the resources to respond to health shocks (though we do find evidence that they respond more slowly) but because they are subject to more shocks. This implies that policies that focus only on reducing gaps in access to palliative care, such as expansions of public health insurance, are unlikely to fully close the SES-related gap in health.

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<sup>6</sup> Questions about chronic conditions were only asked to children who answered affirmatively to several questions about activity limitations. It appears that high SES children were more likely to make it through these screens, and hence to be asked about chronic conditions. The question about general health status was asked only to children six and older, limiting our ability to analyze it in this panel context. In contrast, in the NLSCY, all children were asked about chronic conditions and health status.

Rather, it is important to understand and address the reasons for a higher arrival rate of health shocks among low-SES children.



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**Table 1: Means**

	Cycle1	Cycle 2	Cycle 3
Age	4.93 (3.55)	6.91 (3.55)	8.85 (3.55)
Household Income (CAN \$)	50330 (33178)	50538 (33972)	57169 (39128)
PMK Female (* 100 in %)	0.93 (0.26)	0.92 (0.27)	0.93 (0.25)
2 Parent Family (* 100 in %)	0.86 (0.34)	0.85 (0.36)	0.83 (0.38)
Mom More than High School (* 100 in %)	0.58 (0.49)	0.58 (0.49)	0.58 (0.49)
Household Size	4.14 (1.11)	4.21 (1.09)	4.25 (1.09)
Mom Age at Birth	27.68 (4.85)	27.68 (4.85)	27.68 (4.85)
Poor Health (* 100 in %)	0.12 (0.33)	0.12 (0.33)	0.13 (0.33)
Asthma (* 100 in %)	0.11 (0.31)	0.14 (0.34)	0.14 (0.35)
Activity Limitation (* 100 in %)	0.03 (0.18)	0.04 (0.18)	0.04 (0.21)
GP Visit (* 100 in %)	2.78 (4.25)	2.06 (3.14)	1.76 (2.90)
Hospital (* 100 in %)	0.07 (0.26)	0.05 (0.21)	0.04 (0.18)
Chronic Condition (* 100 in %)	0.26 (0.44)	0.31 (0.46)	0.32 (0.47)
# Observations	14162	14162	14162

Note: Standard deviations in parenthesis

**Table 2: The Steepening of the Gradient in the U.S. and Canada**

Health Status Ordered Probits (1=excellent, 5=poor)								
	Case, Lubotsky, and Paxson (2002)				NLSCY (2003)			
Ages	0-3	4-8	9-12	13-17	0-3	4-8	9-12	13-15
# Observations	51448	54067	64746	59069	8961	17260	10446	3507
<b><i>Without Mom's Education</i></b>								
Log of Average Income	-0.183**	-0.244**	-0.286**	-0.323**	-0.151**	-0.216**	-0.259**	-0.272**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.026)	(0.019)	(0.024)	(0.040)
<b><i>With Mom's Education</i></b>								
Log of Average Income	-0.114**	-0.156**	-0.187**	-0.218**	-0.132**	-0.182**	-0.215**	-0.254**
	(0.008)	(0.008)	(0.008)	(0.009)	(0.027)	(0.020)	(0.025)	(0.041)
Mom's Education= 12 Years	-0.136**	-0.169**	-0.170**	-0.170**				
	(0.018)	(0.018)	(0.017)	(0.017)				
Mom's Education>12 Years	-0.244**	-0.322**	-0.336**	-0.319**				
	(0.021)	(0.020)	(0.019)	(0.019)				
Mom More than High School					-0.073**	-0.135**	-0.163**	-0.067
					(0.031)	(0.022)	(0.028)	(0.046)
Health Status Linear Probability Models (Poor Health =1)								
Log of Average Income	---	---	---	---	-0.030**	-0.040**	-0.044**	-0.064**
					(0.007)	(0.005)	(0.007)	(0.011)

Notes on NLSCY regressions: Standard errors are in parentheses. Other variables included in the regressions are: year effects, log of family size, dummy variables for single age, sex, a dummy indicating that the PMK is not the biological mother, a dummy indicating that the PMK is female, a dummy indicating that the child belongs to a two parent household, mother's age at the birth of the child and an indicator for the method of imputation for income used. The linear probability models include controls for mother's education as well as the other controls listed above. \* denotes that the coefficient is significant at the 10% level. \*\* denotes that the coefficient is significant at the 5% level.

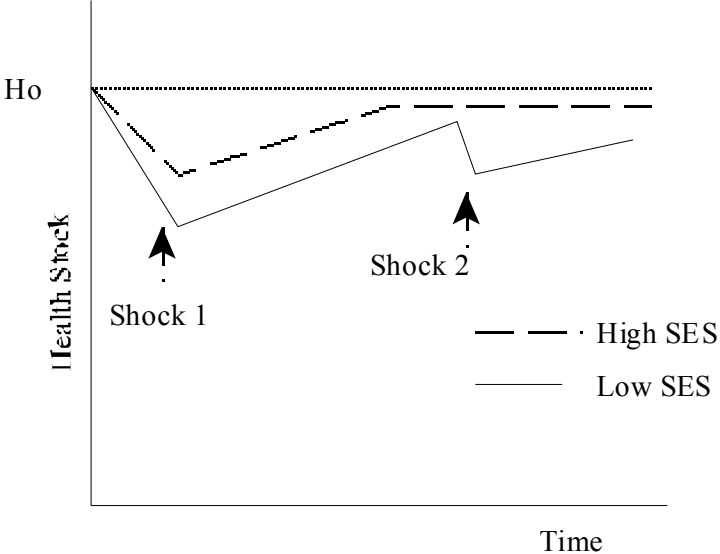
For details of the specifications for the Case, Lubotsky and Paxson results, please see Case, Lubotsky and Paxson (2002) Table 2.

**Table 3 – Effects of Earlier Health Conditions on Poor Health Today**

<i>Explanatory Variables</i>	-1-	-2-	-3-	-4-	-5-	-6-
Chronic Condition in 1994	0.108** (0.008)	0.257* (0.138)	---	---	---	---
Asthma in 1994	---	---	0.136** (0.012)	0.357* (0.209)	---	---
Chronic Condition or Hospitalization in 1994	---	---	---	---	0.100** (0.007)	0.276** (0.129)
Log of Average Income	-0.055** (0.007)	-0.052** (0.007)	-0.055** (0.007)	-0.053** (0.007)	-0.054** (0.007)	-0.049** (0.007)
Mom More than High School	-0.030** (0.007)	-0.030** (0.007)	-0.030** (0.007)	-0.030** (0.007)	-0.030** (0.007)	-0.030** (0.007)
<i>Interactions</i>						
Log of Average Income * Chronic Condition in 1994		-0.014 (0.013)		-0.021 (0.019)		-0.016 (0.012)
R <sup>2</sup>	0.033	0.033	0.029	0.029	0.032	0.032
# Observations	13789	13789	13789	13789	13789	13789

Notes: Standard errors are in parentheses. Dependent variable is whether the child is in poor health in 1998. Other variables included in the regressions are: log of family size, dummy variables for single age, sex, a dummy indicating that the PMK is not the biological mother, a dummy indicating that the PMK is female, a dummy indicating that the child belongs to a two parent household, mother's age at the birth of the child and an indicator for the method of imputation for income used. \* denotes that the coefficient is significant at the 10% level. \*\* denotes that the coefficient is significant at the 5% level.

Figure 1: Changes in the Health Stock Over Time by SES



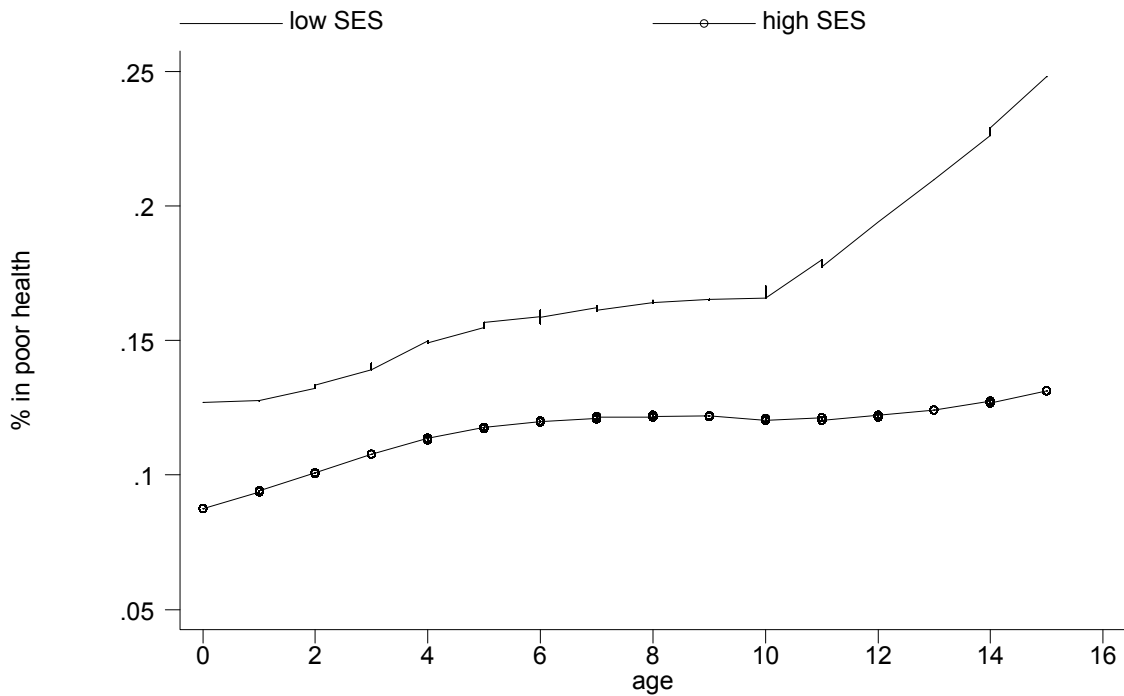


Fig. 2 Percent of Children in Poor Health by Age and SES

Source: 1994-1998 NLSCY. Low SES is determined by the Statistics Canada low income cutoff. Graphs are smoothed using the locally weighted scatterplot smoother in Stata

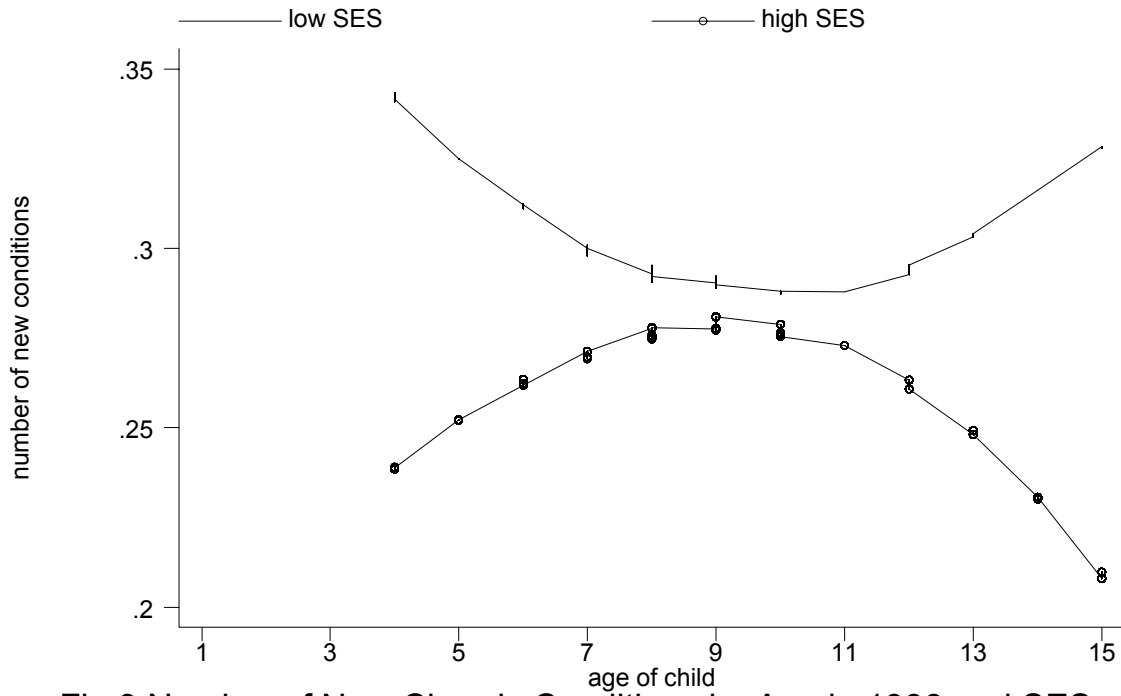


Fig.3 Number of New Chronic Conditions by Age in 1998 and SES

Source: 1994-1998 NLSCY. Low SES is determined by the Statistics Canada low income cutoff. Graphs are smoothed using the locally weighted scatterplot smoother in Stata