Measuring socioeconomic position in health research

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Objective: In this article we review different measures of socioeconomic position (SEP) and their uses in health-related research.

Areas of agreement: Socioeconomic circumstances influence health.

Areas of controversy: Generally, poorer socioeconomic circumstances lead to poorer health. This has generated a search for generic mechanisms that could explain such a general association. However, we propose that there is a greater variation in the association between SEP and health than is generally acknowledged when specific health outcomes are investigated. We propose that studying these variations provide a better understanding of the aetiological mechanisms relating specific diseases with specific exposures.

Areas to develop research: Using different indicators of SEP in health research can better capture these variations and is important when evaluating the full contribution of confounding by socioeconomic conditions. We propose that using an array of SEP indicators within a life course framework also offers considerable opportunity to explore causal pathways in disease aetiology.

Keywords: socioeconomic position/health inequalities/health research

Introduction

Societies develop and maintain systems of social stratification along multiple dimensions. One of the most important is stratification according to socioeconomic conditions. Others include ethnicity and gender. Such systems of stratification determine, in part, which resources and goods are distributed to and accumulated over time by different social groups. Unequal distribution of resources and social goods lead to different degrees of economic, political, social and cultural advantage among groups, which may then be translated into differences in health.

There is ample evidence that socioeconomic conditions influence health outcomes (we consider ‘health outcomes’ as all possible results
from exposure to factors causing changes in health states, as well as those resulting from preventive or therapeutic interventions). Most often poorer socioeconomic circumstances leads to poorer health, although it is important to stress that this general tendency hides important heterogeneity. In some cases, health outcomes are equally distributed across all socioeconomic groups (e.g. leukaemia). In other cases, such as for melanoma, greater risk is experienced by the more affluent groups, although the nature and magnitude of these associations has changed over time. For example, men aged 30–69 years with higher incomes had a higher risk of melanoma, due to sun exposure most likely during holiday trips, whereas melanoma risk was highest among poor older men, aged 70 plus, which could be due to greater sun exposure among manual agricultural workers many years earlier (Fig. 1). In 1960s, smoking, and consequently lung cancer, in some western societies was more prevalent among the socially advantaged but has now become more prevalent among the disadvantaged. Understanding the causes of this heterogeneity provides the most precise understanding of the mechanisms through which systems of social stratification distribute certain exposures across social groups, which in turn generate social differences in health. In this article we will review the different ways of measuring socioeconomic conditions, and how to use these indicators to inform and understand this dimension of the social production of health across place and time.
Measuring socioeconomic position

**Socioeconomic position (SEP)**

*Origins and working definition of SEP*

There are numerous ways to describe and measure socioeconomic conditions. Terms, such as social class, social stratification, social or socioeconomic status (SES) are used, often interchangeably, despite their different theoretical bases and, therefore, interpretations. In this article, we use ‘socioeconomic position’ (SEP) to refer to the socially derived economic factors that influence what positions individuals or groups hold within the multiple-stratified structure of a society.6,7 This term deliberately encompasses concepts with different historical and disciplinary origins, which will briefly be reviewed here.

For a detailed account of the theoretical and historical background of measures of social stratification the reader should refer to other sources.8–10 These concepts have also been elaborated for health researchers elsewhere.6,7 Here, we present a brief introduction to illustrate the different origins of some of the indicators described below and to present the working definition of SEP adopted in this article.

Many of the concepts underlying the use of SEP in epidemiological research have their origin in the work of two social theorists, Karl Marx and Max Weber. According to Marx, SEP was entirely determined by ‘social class’, whereby an individual is defined by his/her relation to the ‘means of production’ (e.g. factories, land). Social class and class relations, are characterized by the inherent conflict between exploited workers and the exploiting owners who control the means of production. According to Marx, this was a purely structural relation that was exogenous to any individual, and was at the heart of the capitalist system of appropriating surplus production that lead inherently to exploitation and alienation of workers. We are aware of two classifications used in epidemiological research based on adaptations of Marx’s theory of social class to the current working class relations, called Erik Olin Wright’s classification9 and another one developed in South America.11

In contrast to Marx, Weber suggested that society is hierarchically stratified along many dimensions (importantly, but not only along social class lines) that create groups whose members share a common position with similar life possibilities. These ‘life chances’ are actively created by individuals, through their ability to beneficially trade their education, skills and attributes for social advantage in the marketplace. Weber’s ideas on social stratification are behind the use of multiple indicators such as education, occupation and income as measures of these dimensions. Weber places more emphasis on human agency in actively creating life chances, whereas Marx has a more structural
approach that highlights the imposition of life chances on those who find themselves accidentally by birth or other exigencies in different social classes.

We include both Marxian and Weberian views in understanding the relationship between socioeconomic circumstances and health. Briefly, social and structural relations between groups within a society are largely based on material circumstances determined by the relations these groups have with systems of economic production. Advantaged groups control resources (whether material, economic, political, social or cultural) in a way that excludes, dominates and exploits those in the less advantageous positions. This relation with economic production is an important determinant of specific lifestyles and behaviours within each group, which become embodiments of the location of each group in the social structure. This framework of unequal distribution and control over resources that may result in a social patterning of exposures which act at different stages of the life course is a useful way of understanding how exposures result in unequal distribution of disease in different groups within a society. It is thus important to highlight that, although measured at the individual level, SEP is at least partly determined by structural relations between groups within a society. For example, the level of education attained by an individual is constrained by educational opportunities available in a particular society, and by family background circumstances.

The research goals of measuring SEP: monitoring aetiology and confounding

There are different reasons why there might be interest in measuring SEP in health research, and so it is important to tailor the choice of SEP indicators to the objectives of the study.

The most obvious purpose in measuring SEP is to describe and monitor the social distribution of a disease in order to inform health policy, to monitor changes over time or across different geographical regions, social groups and to evaluate whether policy targets to diminish health inequalities have been reached. For descriptive purposes any measure of SEP will capture and describe health inequalities if these exist. The main limitation will often be obtaining health data according to a particular indicator of SEP. Monitoring health inequalities poses additional challenges. In this situation the indicator of SEP should measure the same construct and have the same meaning across time, across different countries, among different age and ethnic groups and for both genders.

A recent evaluation of the British governmental target to decrease health inequalities by 10% with respect to their difference with the
national average (1997–99 as baseline figure) showed that the objectives to reduce infant mortality and life expectancy in the worst fifth of local authorities was not reached. In fact, the governmental evaluation showed that the gap in infant mortality had actually increased. Similarly, the gap in life expectancy between UK as a whole and the fifth of local authorities with the lowest life expectancy had increased by 2% in men and 5% in women.

The second purpose for measuring SEP relates to explaining the causal mechanisms through which SEP generates health differences. For example, in industrialized societies, the higher incidence of breast cancer among wealthier and better educated women contrasts with the worse survival among poorer women with lower education. In these societies, women of higher SEP have fewer children and have them later in life, partly explaining the increased risk of developing breast cancer in this group. Investigating socioeconomic differentials in tumour progression can help in explaining the worse survival among women with poorer socioeconomic background. A Danish study found that breast cancers associated with higher risk (defined by greater size, presence of lymph nodes, high histological grade and oestrogen receptor negative) were more common among women with shorter education, lower disposable income and with residence in rural areas. Thus, different causal mechanisms can explain the apparently contradictory health differentials in breast cancer incidence and breast cancer survival.

The life course framework offers considerable opportunity to explore causal pathways. Establishing whether the social distribution of a disease occurs at different time periods using indicators that reflect accumulation of life course social disadvantage; or, examining whether one particular measure of SEP relates more closely to an outcome, can point to the temporal nature of exposures related to this health outcome. For example, stomach cancer is more strongly associated with childhood than adulthood SEP, pointing to exposures occurring during childhood. In addition, stomach cancer has a particularly strong association with number of siblings. This has led to the idea that there is an important time period of exposure to an infectious agent, in this case, *Helicobacter pylori*, which increases the risk of stomach cancer when exposure occurs during early infancy and childhood. These examples highlight the importance of using different indicators of SEP, in this case to evaluate timing of exposure, and to investigate particular causal mechanisms.

The third purpose of measuring SEP in health-related research is to statistically adjust for socioeconomic circumstances when another exposure is the main focus of interest. Many exposures and diseases are socially patterned, thus there is a need to control for socioeconomic
circumstances in order to obtain the ‘independent’ effect of the exposure of interest. In this context, it is crucial to fully account for confounding effects due to socioeconomic conditions, with an even more important need for a comprehensive measure of socioeconomic circumstances. Composite indicators, which capture several aspects of SEP will be useful in this situation, as the researcher is not specifically interested in the effect of each component of the index, only in its control as a confounder. It is also important in this situation for the indicator(s) to relate to the time period when exposure to important confounding factors may occur. For example, not accounting for the life course social patterning of β-carotene exposure may have led to the erroneous conclusion that β-carotene was a protective factor for coronary heart disease (CHD).16

**Indicators of SEP**

It is not useful or theoretically compelling to search for a single ‘best’ indicator of SEP. Each indicator will emphasize a particular aspect of social stratification, which may be more or less relevant to different health outcomes and at different stages in the life course.17 On the other hand, most SEP indicators are, to different degrees, correlated with each other, because they all measure aspects of the underlying socioeconomic stratification. Table 1 presents a list, with a brief explanation, of the main indicators used to measure SEP at the individual and area level in health research. More detailed explanations of each indicator can be found in other publications.7,18–20

**Individual-level indicators**

**Education**

Most individual-level indicators used in health research measure some type of individual resource or asset. *Education* is frequently used as a generic indicator of SEP in epidemiological studies and it is thought to capture the knowledge-related assets of an individual.6 Within the life course framework, education measures the transition from childhood SEP to one that will be the individual’s own. The level of educational attainment by an individual captures the aspects of social opportunities for education, and parent’s choices and constraints over how they can influence their children’s socioeconomic circumstances, as education will be a strong determinant of the individual’s future employment and income.6,21 Reverse causality (where the disease determines the exposure) could partly explain an association between education and
Table 1  Indicators of SEP used in health research measured at the individual level

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Usually used as categorical measuring the levels achieved; also as a continuous variable measuring the total number of years of education</td>
</tr>
<tr>
<td>Income</td>
<td>Indicator that, jointly with wealth, directly measures the material resources component of SEP. Usually measured as household gross income per number of persons dependable on this income</td>
</tr>
<tr>
<td>Wealth</td>
<td>Includes income and all accumulated material resources</td>
</tr>
<tr>
<td>Occupation-based indicators</td>
<td></td>
</tr>
<tr>
<td>Erikson and Goldthorpe Class Schema</td>
<td>Groupings of occupations based on specific characteristics of employment relations such as type of contractual agreement, independence of work, authority delegation, etc. Not a hierarchical classification</td>
</tr>
<tr>
<td>UK National Statistics Socio-Economic Classification†</td>
<td>Based on the same principles as the Erikson and Goldthorpe scheme. Creates non-hierarchical groups</td>
</tr>
<tr>
<td>Wright’s Social Class Scheme</td>
<td>Based on Marxist principle of relation to the means of production. Not a hierarchical classification</td>
</tr>
<tr>
<td>Cambridge Social Interaction and Stratification scale</td>
<td>Based on patterns of social interaction in relation to occupational groups</td>
</tr>
<tr>
<td>Occupational-based census classification</td>
<td>E.g. Edwards US census classification, there are several examples of these based on country-specific socioeconomic classifications</td>
</tr>
<tr>
<td>Other indicators</td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>Lack of employment</td>
</tr>
<tr>
<td>Housing</td>
<td>Housing tenure, household amenities, housing characteristics, broken window index, social standing of the habitat</td>
</tr>
<tr>
<td>Overcrowding</td>
<td>Calculated as the number of persons living in the household per number of rooms available in the house (usually excluding kitchen and bathrooms)</td>
</tr>
<tr>
<td>Composite indicators</td>
<td>At individual (usually measured as a score that adds up the presence or absence of several SEP indicators) or at area level</td>
</tr>
<tr>
<td>Proxy indicators</td>
<td>These are not strictly indicators of SEP but they can be strongly correlated with SEP and when more appropriate information is not available they may be useful in describing social patterning. Some cases may provide insight into the mechanism that explains the underlying association of SEP and a particular health outcome. However, they may be associated with the health outcome through independent mechanisms not related to their correlation with SEP</td>
</tr>
</tbody>
</table>

*Also known as British Occupational based Social Class.
†Current official indicator of SEP in the UK, also known as NS-SEC scheme.
health, because ill-health in childhood may limit educational attendance and/or attainment and predispose to adult disease, generating ‘health selection’, although this reverse causation is potentially more important for adult SEP measures such as occupation or income, where poor health that is not caused by socioeconomic conditions causes loss of income or employment. A recent Swedish study showed that height at 18, a marker of nutrition and health development, influenced achieved education. The main advantages of education are that it is relatively easy to measure in self-administered questionnaires and response rates to educational questions tend to be high. It can be obtained from everybody independently of age or working circumstances.

**Occupation-based indicators**

Indicators based on occupation are widely used, particularly in the UK where social stratification has traditionally been conceptualized in terms of someone’s occupation and is recorded systematically on all death certificates. There is a long list of indicators based on occupation, but not all have been updated and some are unlikely to capture today’s occupational structure. In many societies the decrease in manual occupations with concomitant increase in low-level service occupations has altered the stratification that occupation generates in terms of SEP, and so classifications such as manual and non-manual worker may lose some of their meaning in economies which include a large number of low-paid non-manual service jobs. In addition, women in industrialized societies have moved into the labour force in increasing numbers and their job stratification may not be well characterized with schemes more suited to male job classifications. Unemployed people are often excluded in occupation-based classifications resulting in underestimation of socioeconomic differentials. Other groups commonly excluded are retired individuals, people whose work is inside the home (mainly affecting women), students and people working in unpaid, informal or illegal jobs.

Different occupational schemes measure particular aspects of SEP, but they all include the generic mechanisms that associate SEP with health. In addition, occupation-based indicators will also capture more specific job-related factors, such as exposure to certain toxic or physical working conditions. Occupation (parental or own adult) is strongly related to income and therefore any association between occupation-based SEP and health may indicate a direct relationship between material resources and health. Occupations also reflect social standing or status and may be related to health outcomes because of certain privileges—such as easier access to and better quality of health
care, access to education and more salubrious residential facilities—that are more easily achieved for those of higher standing.

Income and wealth

*Income and wealth* are the SEP indicators that most directly measure material circumstances. Although the possession of money *per se* is unlikely to directly affect most health outcomes, the way in which money and assets are used to provide health-promoting environments (work, residential), allow consumption of health-enhancing commodities (food, exercise) and facilitate access to health services, have an important effect on health. However, despite widespread use in economics, measures of consumption are rarely used in epidemiological studies. In health research, income is interpreted as primarily influencing health through a direct effect on material resources that influence more proximal factors in the causal chain, such as behaviours. For example, income allows access to better quality material resources such as food and shelter and better, easier or faster access to services, some of which have a direct (health services, leisure activities) or indirect (education) effect on health. Higher income can also provide social standing and self-esteem and facilitate participation in society. Finally, the association between income and health outcomes can be due to reverse causality, where people with poor health suffer a loss of income. This can be particularly important for certain outcomes, such as mental health.

Income is the SEP indicator that can change most on a short-term basis, although this dynamic aspect is rarely taken into account in epidemiological studies and its effect on health may accumulate over the life course. Household rather than individual income might be more relevant to estimate health-relevant disposable income for the individuals of that household. However, this assumes an even distribution of income according to needs within the household, which may or may not be true. For income to be comparable across households, family size or the number of people dependent on the reported income should be collected. Ideally, we have to be able to collect information on disposable income, as this reflects what individuals or households can actually spend, and account for prices to calculate what a disposable income is really worth, but we usually measure gross income. Questions about income should include money received from jobs, social security, retirement annuities, unemployment benefits, public assistance, interest dividends, income from rental properties, child support and informal income. Information on some of these may be difficult to obtain, and study participants may not want to disclose all information. In addition, the amount of debt, secured and unsecured,
will also affect the level of disposable income, thus, it should be taken into account when measuring income.

There is evidence that personal income is a sensitive issue and people may be reluctant to provide such information, although this may have been overstated, and may vary in different countries, birth cohorts or by gender. However, relative to educational attainment and occupation, income is likely to be a more ‘sensitive’ indicator with respect to participants’ willingness to disclose this information accurately. There are sophisticated methods for eliciting accurate income information particularly for in-person interviews, but these will increase the cost and time to collect the data. Ideally, life course income should be measured but obtaining such lifetime income trajectories is difficult in practice and may best be done using population registries of the type that exist in Nordic countries. Finally, income can be measured as a relative indicator establishing levels of poverty, for example, the percentage above or below the official poverty level in a given year.

Another indicator that specifically measures material resources is wealth. Wealth includes, in addition to income, financial and physical assets such as the value of housing, cars, investments, inheritance and pension rights. Income captures the resources that are available at particular periods of time, whereas wealth measures the accumulation of these resources. The relative importance of wealth versus income changes over the life course (wealth being more important at older age owing to the accumulation of assets over time and the impact of retirement on income) or in population subgroups (for example, for a given level of income, black and Hispanic households have less wealth than white households in the US). As with income, the main effects of wealth on health are likely to be indirect, through its conversion into consumption.

Occupation, education and income are the most traditional indicators of SEP and have proved very useful in describing and evaluating health inequalities. However, if considered in isolation they provide only a partial view of socioeconomic inequalities in health. Additional indicators of SEP, summarized in Table 1 have been described elsewhere. They provide additional information either by measuring other aspects of SEP and/or capturing SEP at different points in the life course which can be useful in better describing the social distribution of a disease and in pointing to specific mechanisms explaining the development and maintenance of health inequalities.

**Area-level indicators**

Area-level indicators of SEP are used when the object of analysis is not the individual but a geographical area SEP. A whole body of research
conceptualizes place as the unit of analysis and among others, evaluates the geographical distribution of socioeconomic inequalities in health.\textsuperscript{33} This is the case in the evaluation of health policies and provision of health services which are specifically implemented and delivered through places. However, a broader view of place provides a much richer potential to understanding disease processes. Studying place as a unit of analysis will describe and account the people that live in it, its history, class, the accumulation of capital in the place, all factors that will ultimately shape health.\textsuperscript{33} Area-level indicators of SEP have also been used to specifically determine the effect that area socioeconomic circumstances have on a health outcome beyond individual SEP. Finally, area-level SEP indicators can be used as proxies for individual-level SEP when individual measures are not available (e.g. for reasons of confidentiality data from census is only provided at aggregated levels). It is important to keep these distinctions in mind, because in the latter case, the area-level SEP indicator is a proxy for a missing individual-level measure. Similar indicators are used in both cases but the interpretation and the methodological issues involved in each situation differ.

Area-level indicators of SEP can be obtained by aggregating individual-level measures of SEP, such as proportion of unemployed, proportion in blue-collar or manual occupations, proportion with higher education, average income, and so forth, aggregated to the appropriate area level (for example, census tract, county, constituencies, census ward). It is also possible to create composite measures using aggregates of several individual-level indicators. Also called ‘deprivation indices’ have been widely used in the UK to characterize areas on a continuum from deprived to affluent. In the UK, geographical variations in deprivation have important policy implications, as they serve to allocate public resources to areas. The most well-known indices of deprivation are the Townsend Deprivation Index which includes the proportion of unemployed, households with no car, households that are not owner occupied and of households with overcrowding (more than one person per room).\textsuperscript{34} Other similar indices are the Carstairs deprivation index\textsuperscript{35} and the Jarman or Underprivileged Area score.\textsuperscript{36} The Breadline Britain Index\textsuperscript{37} is a consensual measure of poverty, combining survey with census data and using weights to account for the different probability that subgroups in the population will experience a particular type of deprivation. The Breadline Britain index is based on the proportions of: unemployed, people with no car, non-owner occupied households, lone-parent households, households with persons with long-term illness and unskilled and semi-skilled manual occupations (social class IV and V) in an area. A version of the index without the health component can be derived and is preferable
for research examining health-related outcomes. This modified version has been found to have a close relationship with the geography of mortality in Britain. A new version of the Breadline Britain index comparable over four decades and measuring two levels of wealth (and absolute poverty) will be released in the near future by the Rowntree Foundation. Finally, the Index of Multiple Deprivation combines six domains (income, employment, health and disability, educational skills and training, housing and geographical access to services) and was designed to measure various aspects of deprivation in small geographical areas (ward level).

When area-level measures of SEP are used as proxies for individual-level indicators, the estimate of the association with SEP and the health outcomes is likely to be an underestimate of the true individual-level effect, because of measurement error arising from giving all individuals in an area the same score. However, it is recognized that associations could be biased in either direction. In addition, using area measures for individuals relies on the area indicators measuring the same construct as the individual-level variable, which may not be the case. In addition, if area characteristics have an independent effect on health outcomes, and area measures are used as proxy for the individual level, the association of individual SEP with the health outcome may be overestimated because it incorporates the area-level effect.

Area-level measures of SEP are specifically needed when the goal is to investigate whether socioeconomic aspects of the place where a person lives, over and above individual socioeconomic circumstances, affect that person’s health. There have been numerous studies of such ‘area effects’, mainly in the United States but also elsewhere, with most studies finding a relatively small (in comparison with individual-level variables) independent neighbourhood effect on various health outcomes and health behaviours. Discussion of methodological and conceptual issues relating to the estimation of area-level effects can be found elsewhere.

Life course SEP

A life course approach to chronic diseases is particularly relevant in understanding how socioeconomic circumstances influence health, as it investigates the long-term effects on health and chronic disease risk of physical and social hazards during gestation, childhood, adolescence, young adulthood and later adult life. It attempts to explicitly incorporate time of exposure and can be conceptualized at the individual level, across generations, and through population disease trends.
At the individual level, the indicators of SEP, measured at different stages of the life course, can be useful in examining how socioeconomic conditions operating at different stages of life influence disease risk to create the observed adult inequalities in health. Combinations of the indicators described in the first part of this chapter allow construction of a lifelong measure of an individual’s SEP. Some indicators are only valid at specific ages; for example, education is mostly completed by young adulthood, whereas own occupation can only occur after the age of 16 in rich countries. The same indicator can be measured at different times during the life course; for example, father’s occupation characterizes childhood SEP, and first, longest and last occupation characterize adult SEP. Wealth may be particularly appropriate to capture SEP among older people. Figure 2 illustrates potential measures of SEP throughout the life course.

There are several theoretical models that help conceptualize how life course exposures influence disease risk. The ‘critical period model’ argues that an exposure during a particular time window has lasting effects that result in higher disease risk. Barker’s formulation of the foetal origins hypothesis is an example of this model, which has subsequently been modified to include later-life effect modifiers: low birth weight (reflecting poor intrauterine nutrition, which programme an individual’s metabolism for a life of thrift) combined with later life obesity or accelerated growth (indicating the reality of a life of plenty—in terms of energy dense foods) seems to carry the highest adult CHD risk. In addition to critical periods, there may be ‘sensitive periods’ when an exposure has a particularly marked but not unique effect. For example, infancy may be a particularly sensitive

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**Fig. 2** Examples of indicators measuring life course SEP (adapted from Galobardes et al.)

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![Life course socioeconomic trajectory](image_url)
period for the effect of dietary salt intake on future intake of salty food and high blood pressure, but the liking for a high salt diet may also develop at other times in the life course. Other life course models state that effects ‘accumulate over the life course’. Under this model, likelihood of poorer health increases with the patterning, duration or number of times somebody is exposed to poorer SEP over the life course. Understanding the specific life course model that affects a particular disease outcome may be important, because this indicates the appropriate timing of any preventive intervention.

A systematic review found that childhood socioeconomic circumstances have various health effects independent of adult SEP, but the contribution of childhood and adulthood SEP was specific to disease outcomes. Poor socioeconomic circumstances during childhood were particularly important in determining higher risk of stomach cancer, probably reflecting the relevant time in the life course when infection to *H. pylori* took place. Childhood SEP contributed, together with socioeconomic conditions in adult life, to determining mortality from CHD, lung cancer and respiratory-related deaths. For these outcomes, the relative contribution of child versus adult circumstances varied by country of study, which may reflect different life course cumulative exposure to smoking. Worse childhood socioeconomic circumstances not only contribute to a higher risk of death due to CHD; they also determine a higher risk of developing CHD and, at least in women, seem to correlate with higher levels of atherosclerosis at pre-clinical phases of the disease. This indicates that childhood socioeconomic circumstances affect not only survival but also the exposures that increase the risk of incident CHD.

Current research shows that the most likely model explaining life course SEP in CHD is the cumulative effects model where additive effects of SEP throughout childhood and adulthood increase the risk of adult CHD. Accumulation of risks throughout life can be due to clustered and temporally linked exposures. For example, children from lower socioeconomic backgrounds are more likely to be of low birth weight, have poorer diets, be more exposed to passive smoking and to infectious agents and have fewer educational opportunities. Exposures may also form chains of risk, where coming from a family background of low SEP leads to low educational attainment which in turn will increase the probability of working in an occupation with a high risk of toxic exposures and of having low income.

In summary, despite unsolved challenges, the life course approach offers a useful framework for describing and understanding the social patterning of exposures and diseases at the individual and population level. A life course framework is perhaps the best way to achieve the research purposes related to SEP and health listed above—to describe
and monitor inequalities, to contribute to understanding aetiology and to allow control for socioeconomic confounding.

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