Stockholm Research Reports in Demography | no 2019:26

The Influence of Health in Early Adulthood on Male Fertility

Kieron Barclay and Martin Kolk

ISSN 2002-617X | Department of Sociology

Stockholm University
Demography Unit

The Influence of Health in Early Adulthood on Male Fertility

Kieron Barclay[a,b] and Martin Kolk[b,c,d]

[a]Max Planck Institute for Demographic Research; [b]Stockholm University Demography Unit, Department of Sociology; [c]Stockholm University Centre for Cultural Evolution; [d]Institute for Future Studies, Stockholm

Abstract: Despite the large literature examining socioeconomic predictors of fertility and the influence of reproductive history on post-reproductive mortality, previous research has not offered a population-level perspective on how male health in early adulthood is related to subsequent fertility. Using Swedish population registers and military conscription data, we study how body mass index (BMI), physical fitness and height are associated with total fertility and parity transitions by 2012 amongst 405,427 Swedish men born 1965-1972, meaning we observe fertility up to age 40 or older. Applying linear regression as well as sibling fixed effects, we find that our anthropometric measures are strong predictors of later fertility, even after accounting for educational attainment and cumulative income up to age 40. Men with a `normal' BMI and in the highest decile of physical fitness have the most children by the end of our follow-up period. Men who were already obese at ages 17-20 had a relative probability of childlessness almost twice as high as men who had a `normal' BMI at ages 17-20, and men in the bottom decile of physical fitness had a relatively probability of childlessness almost 50% higher than men in the top decile of physical fitness. These patterns were at least as strong in our models applying the sibling fixed effects design. We find that the association between male height and fertility is curvilinear in models estimated without sibling fixed effects, but only men in the lowest decile of height have lower fertility in sibling comparison models. Further analyses show that the strong associations between our anthropometric measures and male fertility persist even amongst men who married. We discuss the implications of our findings for fertility in high-income countries in light of secular increases in the prevalence of overweight/obesity.

Keywords: fertility; cohort fertility; male fertility; anthropometrics; BMI; physical fitness; height; Sweden; population register data.

Stockholm Research Reports in Demography 2019:26

ISSN 2002-617X

INTRODUCTION

Demographers have long been interested in the health-fertility nexus, where research has examined how health influences fecundity and childbearing, and how reproductive history affects post-reproductive health. In this study we examine how several anthropometric measures recorded in early adulthood and related to male health are associated with later childbearing outcomes, a topic that has received surprisingly little attention (Homan et al., 2007). Our measures include body mass index (BMI), physical fitness, and height, and as such capture dimensions of health that are strong predictors of health and mortality in later adulthood (e.g. see Blair et al., 1995; Stulp and Barrett, 2016; Stokes and Preston, 2016). BMI and physical fitness have been shown to have strong associations with aspects of male sexual and reproductive health that have a strong bearing on male fecundity, including sexual function (Cheng and Ng, 2007), healthy endocrine balance (Kahn and Brannigan, 2017), and various important semen parameters such as sperm count and sperm function (Jensen et al., 2004; Hammoud et al., 2008). Likewise, our anthropometric measures have been shown to have direct and indirect associations with the search for a sexual and childbearing partner. BMI, physical fitness, and height influence perceptions of physical attractiveness (Pawlowski et al., 2000a), and have also been shown to influence socioeconomic attainment (Lundborg et al., 2014). Furthermore, in modern Western societies certain body types attract stigma (Puhl and Heuer, 2009), and people may also wish to avoid partnering with somebody who has visible poor health.

A careful understanding of the population-level relationship between health and fertility is very important. Average levels of health and fitness measured in early adulthood have been decreasing over the past several decades, with an increasing prevalence of being overweight or obese, and lower rates of physical activity across almost all OECD countries. For example, in 1971 7.8% of men aged 17-18 in Sweden were obese or overweight, rising to 19.5% in 1995 (Rasmussen et al., 1999), and 25.3% in 2014 (Eriksson et al., 2018). A detailed understanding of the relationship between BMI, physical activity and fertility is critical for understanding how the secular trends of rising overweight and obesity and declining physical fitness may influence future fertility in Sweden and other high-income countries. Although female cohort fertility in Sweden has remained stable at approximately 2 children per woman for the past century (Andersson et al., 2009; Jalovaara et al., 2018), recent data for men has shown a decrease in total number of children and an increase in the proportion who are childless at age 45 (Jalovaara et al., 2018). Of Swedish men born 1965-1969, 22% were childless at age 45, while only 4% had more than 4 or more children by that age. It is therefore particularly important to understand how health in early adulthood is related to the probability of childlessness.

Part of the challenge of studying the relationship between health in early adulthood and later fertility is objectively measuring health. This is particularly difficult at a population-scale, as relatively few men have contact with the health care system in early adulthood. In this study we exploit information from military conscription registers in Sweden to examine how height, physical fitness, and BMI, measured at ages 17-20, are related to later fertility. We follow men born 1965-1972 in order to study how our measures of health are related to entry into parenthood, parity transitions, and total number of children by the end of our follow-up period in 2012, meaning we observe fertility up to at least age 40. Furthermore, we examine how childlessness and total number of children varies by whether the men that we study had ever been married by age 40, using ever married status as an indicator of successful partnership formation independent of fertility. Given previous research on how health influences socioeconomic attainment, we also take account of how educational attainment and cumulative income may mediate the relationship between BMI, physical fitness, height and subsequent fertility. In addition to analyses on the full cohorts of men born 1965-1972, we also apply sibling fixed effects to a subset of brothers in order to adjust for unobserved family background factors that may confound the relationship between health in early adulthood and later fertility.

Theoretical Channels from Health to Male Fertility. In this section we consider pathways by which health in early adulthood might be related to later childbearing. We first consider the literature examining how BMI, physical fitness, and height are associated with aspects of physiological health that have been linked to fecundity, and particularly to infertility.

We also review the literature concerning how male BMI, physical fitness, and height are associated with various dimensions of attractiveness as a potential romantic and childbearing partner. In contemporary Nordic countries, never partnering is the dominant pathway to childlessness for men (Jalovaara and Fasang, 2017; Saarela and Skirbekk, 2019). Studies have shown that BMI, physical fitness, and height influence female perceptions of male physical attractiveness. Furthermore, a number of studies have shown that these anthropometric measures are linked to socioeconomic attainment, which is itself strongly associated with partnering and childbearing. This is particularly true in a Scandinavian context in which more socioeconomically successful men have higher fertility (e.g. Jalovaara et al., 2018; Kolk and Barclay, 2019; Kolk, 2019). While the physiological mechanisms linking our anthropometric measures to fecundity may be universal, it is important to emphasise that the link between BMI, physical fitness, and height to socioeconomic attainment, and particularly physical attractiveness, have been shown to be socioculturally contingent (Pisanski and Feinberg, 2013). Given the context that our own data are drawn from, we focus on the previous literature that has examined these associations in modern Sweden or comparable high-income Western contexts.

It is also possible that we may see associations between fertility and our anthropometric measures due to confounding by unmeasured characteristics such as ethnicity or other cultural traits that might jointly influence both health behaviours and fertility preferences. Here we review the literature on these different potential pathways in some detail. This section is followed by a review of previous literature examining how BMI, physical fitness, and height are associated with various dimensions of fertility and partnering.

Physiological Health and Fecundity. Research suggests that men account for half of all infertility in couples (Gibson and Hammoud, 2017). We expect that the link between health and fecundity, detailed below, should affect fertility even amongst men who have formed stable partnerships.

Previous research has shown that being overweight or obese is linked to abnormal fluctuations in sex hormones, subnormal sperm counts, as well as sexual dysfunction (Hammoud et al., 2008). Research has robustly demonstrated that obesity is negatively related to sexual functioning (Kolotkin et al., 2012). Overweight and obese men are at greater risk of suffering from impaired spermatogenesis, lower sperm count, lower sperm motility, lower circulating testosterone levels, and poor libido (Cabler et al., 2010; Stokes et al., 2015). Some studies report that three quarters of men who report erectile dysfunction are overweight or obese (Feldman et al., 2000). These various dimensions of male sexual physiology are directly related to the ability to conceive children, providing a potentially important explanation for any association between BMI and fertility. Although much less common amongst men, being underweight is also associated with lower sexual function (Cheng and Ng, 2007). If a man's partner is also obese, subfertility issues are typically worse (Ramlau-Hansen et al., 2007).

Cardiovascular fitness is also related to sexual function, including net of BMI. Higher levels of physical fitness are generally associated with healthy sexual hormone balance, higher sperm counts, higher sperm motility, and a lower likelihood of erectile dysfunction (Rosen et al., 2005; Agostini et al., 2011; Vaamonde et al., 2012; Jóźków and Rossato, 2017). Sedentary behaviours are associated with lower sexual function on the aforementioned dimensions (Gaskins et al., 2015). Nevertheless, experiments have shown that more extreme levels of physical activity, meaning high intensity cardiovascular exercise continued over an extensive period of time, can have a negative effect on various semen parameters and endocrine balance (Safarinejad et al., 2009). However, a relatively small proportion of the population consistently engage in high intensity exercise behaviors, meaning that for the sake of our study, higher levels of physical fitness can generally be considered positive for male fecundity.

Net of genetic predispositions, adult height in low-income contexts is generally considered to be an important marker of health status as well as nutritional conditions and the disease environment during childhood, though this association between health and height is more ambiguous in high-income contexts (Deaton, 2007; Stulp and Barrett, 2016). We may presume that taller men in Western populations may have better than average health (Deaton, 2007), since low height in adulthood is often associated with developmental disorders, and this may also be reflected in sexual function. Men at the very extreme top end of the height distribution may also have health problems (Stulp and Barrett, 2016). However, height as a marker of sexual health has not received much attention in the literature and it does not obviously speak to sexual function beyond its correlation with general health status.

In a general sense, we also note that poor health may make having a large number of children physically straining or physiologically stressful. Men with below average physical health may settle for a smaller number of children than men of average health. This might be particularly true for men with severe health conditions that may have a major negative impact on their life.

Desirability as a Potential Romantic and Childbearing Partner. BMI, physical fitness, and height have all been shown to be associated with partner choice. Men who are taller, stronger, and more physically fit are generally perceived as more physically attractive by women (Tovée et al., 1999; Pawlowski et al., 2000a; Sell et al., 2017), and therefore men with those attributes are likely to have more partnering opportunities (Rhodes et al., 2005). Overall, we expect most of our effects to be more pronounced at the extreme ends of our distributions (i.e. very low height, very low fitness, and very low or very high BMI). Poor health may be particularly disadvantageous for childbearing if it coexists with other relatively less desirable personal and socioeconomic factors. Over the past decade the phenomenon whereby disadvantaged males are less likely to follow normative family formation pathways has received increasing attention, highlighted at its most extreme by media coverage of ‘involuntary celibates’, and poor health may be one of many different explanations for this phenomenon.

Beyond immediate physical attractiveness, a healthy lifestyle may in itself serve as an important dimension of male attractiveness and affect female preferences for having children or forming a childbearing partnership. Buss and Barnes (1986) found that being ‘healthy’ was considered one of the most highly desired traits in a partner, with woman putting a higher priority on health than men, and women ranking health higher than both physical attractiveness and socioeconomic traits. Furthermore, a healthy lifestyle may be associated with both union stability and successful repartnering (Ortega et al., 2010). A literature in evolutionary human biology links female preferences to certain anthropometric measures as signals of higher reproductive potential in men with such traits (Fan et al., 2005; Hönekopp et al., 2007).

In modern Western societies, being overweight or obese can also carry stigma (Puhl and Heuer, 2009). Population representative surveys find that people associate being overweight or obese with being lazy, having a lack of motivation and self-discipline, and being incompetent (Roehling, 1999; Puhl and Brownell, 2001). The perception that being overweight or obese is associated with 'laziness', whether true at the individual-level or not, means that body mass is a readily available visual cue perceived as signaling something important about an individual's underlying nature (Jutel, 2005). Whether body mass or physical fitness are related to traits such as self-discipline or not, they will nevertheless serve as signals for these traits if there is a prevailing norm that there is a real association, and this is likely to influence one's desirability as a potential childbearing partner.

Although there is relatively little research examining how health influences subsequent fertility, there is more research examining how entrance into cohabitation and marriage is influenced by antecedent health status. The influence of health on entry into partnership is important for understanding fertility because childbearing is more likely in stable unions. Studies using data from the US have shown that men with higher levels of physical fitness are more likely to marry, though levels of cardiovascular decrease after marriage (Ortega et al., 2010). Being overweight or obese, or especially short, has also been found to be associated with a lower likelihood of entrance into marriage in the US (Gortmaker et al., 1993; Fu and Goldman, 1996; Murray, 2000; Cai, 2007). In this study we examine the relationship between fertility and BMI, physical fitness, and height for never-married and ever-married men separately. Due to the difficulty involved in identifying cohabiting men without children in the Swedish population registers, the never-married category also includes a substantial share of men who have formed one or more cohabiting relationships. However, the ever-married category only includes men who have formed at least one serious partnership.

Pathways Through Socioeconomic Status. As described above, previous research has shown that anthropometric traits are related to partnership formation. Beyond direct effects of BMI, physical fitness, and height on perceptions of attractiveness, there is evidence that these anthropometric measures influence socioeconomic achievement (Magnusson et al., 2006; Case and Paxson, 2008; Jæger, 2011; Lundborg et al., 2014). As socioeconomic status is an important mediator of partnership desirability for men, this might have an important effect on the probability of entering a partnership. Given the costs of raising children in contemporary high-income societies, the resources that typically accompany higher socioeconomic status should make having more children more affordable. Although the income-fertility relationship varies across contexts (Jones et al., 2010), higher levels of income and education are associated with higher fertility and a lower probability of being childless for men in Sweden (Chudnovskaya, 2017; Jalovaara et al., 2018; Kolk, 2019). Due to the importance of education and income as potential mediators for the relationship between BMI, physical fitness, and height on fertility, we conduct analyses where we adjust for educational attainment as well as cumulative income between ages 18 and 40.

Voluntary Childlessness. Although we have emphasised the importance of physiological capability and desirability as a potential partner above, a non-trivial proportion of men choose not to have children. For example, some men simply do not want to have children because they want to prioritise a more independent life (Schytt et al., 2014). However, a high proportion of men in Sweden who are childless at ages 36 to 40 report that they would like to have children, but have not been able to because of lack of a partner or infertility problems (Schytt et al., 2014). As noted before, poor health status may lead some men to choose to be childfree as childrearing under such circumstances may be psychologically or physiologically stressful, though whether it can be considered 'voluntary' in such cases is debatable. However, it should be noted that a substantial share of the population actively chooses voluntary childlessness, and childlessness is not necessarily related to poor health, low fecundity, low income, or inability to find a partner.

Selection. A potentially important driver of a correlation between health and fertility is selection and confounding. An association between health and fertility might be driven by factors jointly related to health status and health behaviours as well as fertility and partnership formation behaviors, including various factors in the family of origin such as socioeconomic status (Case et al., 2005; Jalovaara et al., 2018; Kolk, 2019), fertility (Murphy, 2013; Kolk, 2014; Barclay and Myrskylä, 2014), religiosity (Rønsen, 2004), or inherited dimensions of parental health. For example, children raised in socioeconomically disadvantaged households are overrepresented amongst those who are obese, amongst those who are childless, as well as amongst those who have four or more children in Sweden (Jalovaara et al., 2018). It is therefore critical to adjust for this childhood factor that predicts both our key independent variable as well as our outcome variable. The most powerful tool that we employ to try and minimise confounding by such factors is to compare brothers to brothers in a sibling comparison analysis. Sibling comparison analyses allow us to adjust for all factors that are shared by brothers, including family values and expectations regarding exercise and diet, the neighborhood environment, similar school environments, household resources, and genes to the extent that they overlap (average 50%) between brothers. This approach is therefore a powerful tool for adjusting for selection processes driving health status and later fertility.

Previous Research on BMI, Physical Fitness, Height and Male Fertility. Most previous research on the relationship between health and male fertility is in the biomedical and reproductive health literature, with a particular focus on infertility. However, a small number of studies have examined how BMI is related to later male childbearing. A study by Jokela et al. (2007) on 1,298 Finnish men and women found that those who were underweight, overweight, and particularly those who were obese, had lower fertility than those with a 'normal' BMI over a two-decade follow-up. A study using data on 12,073 American men and women from the National Longitudinal Survey of Youth also found that individuals underweight or obese at ages 17-24 had lower overall fertility, and obese men were more likely to be childless by age 47, with part of these associations explained by the fact that underweight and obese men were less likely to have married (Jokela et al., 2008). A study using data on Danish couples (N=47,835) found that subfecundity, measured by a time-to-pregnancy (TTP) of 12 months or longer, was more common if both the husband and wife were obese (Ramlau-Hansen et al., 2007). Several other studies that focus on BMI and fertility amongst women also show that underweight and obese women have lower fertility (Frisco and Weden, 2013; Jacobsen et al., 2013; Jacobs et al., 2017; He et al., 2018).

There is also literature examining the relationship between height and fertility. A 2016 review of the literature found that in modern Western societies, men of average height had the highest fertility, and men in the tails of the height distribution had lower fertility (Stulp and Barrett, 2016). This curvilinear relationship between male height and fertility has been consistently documented in both the United States and Finland (Clark and Spuhler, 1959; Damon and Thomas, 1967; Scott and Bajema, 1981; Byars et al., 2010; Stulp et al., 2012; Silventoinen et al., 2013; Stulp et al., 2014), though a study in Poland found a strong positive association (Pawlowski et al., 2000b), and a study using data from the UK found no association between height and reproductive success (Nettle, 2002). However, it should be noted that these patterns differ across contexts that do not fit the Western, educated, industrialized, rich and democratic mould (Sear, 2006, 2010). We are not aware of any studies examining the relationship between physical fitness and fertility using representative survey data or a population-level perspective.

Data and Methods

Data. In this study we use Swedish population register data to examine the relationship between various anthropometric measures and different dimensions of male fertility. To our knowledge, we provide the first estimates for the relationship between BMI, physical fitness, height and fertility based upon population-level data rather than survey data. By using population registers we are able to capture the full population of men born in the cohorts that we study, including institutionalised individuals, which is a clear improvement over previous research that has either been based on convenience samples or randomised samples with modern levels of survey non-response. This large data also allows us to study less common dimensions of fertility, such as higher parity transitions, for which it would not be possible to obtain stable estimates from survey data.

Register data with monthly event histories of vital events are available from 1968 to 2012. Using the personal identification number common to all residents of Sweden, we combine data from military conscription registers, fertility registers, educational registers, and tax registers. Linkage quality is virtually perfect for fertility, education, and income. As the vital events are based on birth records, we can only link fathers to children that are known by the authorities, though these represent over 99% of all births (SCB, 2011), partly because of rigorous paternity investigations by the social services. As such our data are superior to self-reported information which can be problematic, and particularly so for assessing male fertility. We use the Swedish Multigenerational Register to link individuals to their parents, which allows us to link them to their siblings for our sibling fixed effects analyses. We also use this information on the sibling group to construct variables for sibling group size and birth order, both of which have been linked to the anthropometric measures that we study as well as fertility (Jelenkovic et al., 2013; Myrskylä et al., 2013; Barclay and Myrskylä, 2014; Morosow and Kolk, 2019). Note that although we only have data on the anthropometric outcome measures for men because only men were conscripted in Sweden, the multigenerational register that we use includes information on both men and women. We define our population (N=405,427) as all men born in Sweden from 1965 to 1972, who neither died nor emigrated from Sweden before the end of our follow-up period in 2012, and whose siblings were also born in Sweden. This also provides a sub-sample of 75,905 brothers in 36,512 families for our sibling comparison analyses. We define a sibling group through a shared biological mother and father.

Age at Measurement of Fertility. With data up to 2012 we are able to observe fertility for these cohorts up to age 40 or later. For example, for the 1972 cohort we observe fertility up to age 40, while for the 1965 cohort we observe fertility up to age 47. This assures that we have a highly complete count of fertility, missing an average of approximately 6% of births for these birth cohorts. We observe virtually all fertility for our 1965 cohort, whereas we miss more fertility for our 1972 cohort. In several robustness checks we examine whether the relationship between our anthropometric measures and fertility vary according to whether we examine those born 1965-1972, 1965-1967, and those born in 1965 alone.

Anthropometric Measures. Each of our anthropometric measures are taken from the military conscription registers. Sweden had universal military conscription for most of the 20th century, in which all men were obliged to spend approximately one year with the military, typically at ages 18-20. To assess eligibility, and more importantly to select people into various branches

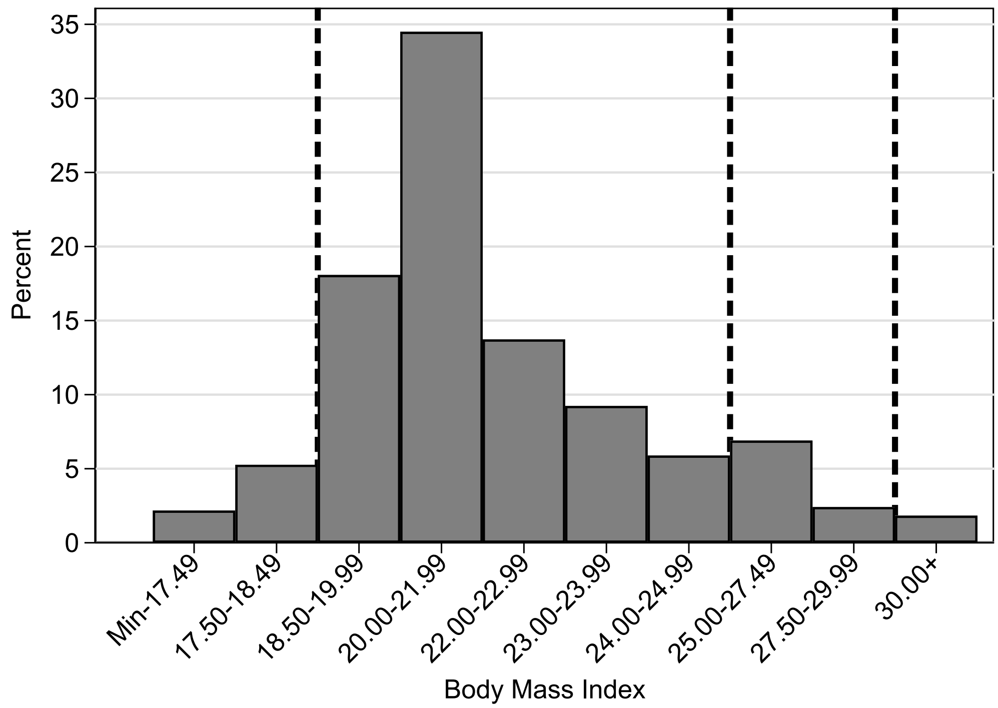

FIGURE 1. Distribution of body mass index at ages 17-20 amongst men born in Sweden, 1965-1972.

and jobs within the military, all men in Sweden had to participate in a one to two day examination before the beginning of their conscription. During these tests, men were subject a battery of tests to assess their suitability for the armed forces, and to determine their assignment. All of our anthropometric measures were recorded at ages 17-20.

Body Mass Index. We use measures of height and weight to calculate body mass index (BMI)[1] at the time of conscription test. We categorise BMI into eleven different categories. Although this breakdown of BMI is not common in the literature, this categorization allow us to discern differences in fertility within the major four categories of BMI that might otherwise be masked. We use the following 11 categories:

· Underweight ($\leq$17.49)
· Underweight (17.50-18.49)
· Normal (18.50-19.99)
· Normal (20.00-21.99)
· Normal (22.00-22.99)
· Normal (23.00-23.99)
· Normal (24.00-24.99)

· Overweight (25.00-27.49)
· Overweight (27.50-29.99)
· Obese ($\geq$30.00)
· Missing

An individual may have missing information on BMI because we are missing information on either their height, weight, or both. The distribution of BMI can be seen in Figure 1.

Physical Fitness. Our measure for physical fitness is based upon a measure of maximal working capacity, measured in watts (*fysisk arbetsförmåga i watt*). The distribution of the raw score in watts can be seen in Figure 2. Maximal working capacity (MWC) is measured as the maximum resistance attained in watts when riding on a stationary bike during a time period of 5 to 10 minutes, and is closely related to maximal oxygen uptake ($V0_2$max), also known as maximal aerobic capacity. The correlation between these two variables has been reported in the literature as approximately 0.9 (Patton et al., 1982). A stationary bike is one of the most effective ways of measuring aerobic fitness. Since a measure of MWC in watts is not intuitively easy to interpret, we split this measure into deciles. We also include a category for missing information. The vertical lines in Figure 2 mark the dividing line between each physical fitness decile.

Height. Height is measured in centimetres. For our analyses we split height into deciles. We also include a category for missing information. The distribution of height can be seen in Figure 2. The mean height and range in centimeters each decile is as follows: 1 (168, 138–171); 2 (173, 172–174); 3 (175, 175–176); 4 (177, 177–178); 5 (179, 179–179); 6 (180, 180–181); 7 (182, 182–183); 8 (184, 184–185); 9 (187, 186–188); 10 (191, 189–218). The vertical lines in Figure 2 mark the dividing line between each height decile.

Weight. Weight is measured in kilograms. For our analyses we split weight into deciles. We also include a category for missing information. Weight is primarily included in our models as a control variable.

Mediating Variables.

Educational Attainment. Information on educational attainment is derived from administrative registers. We use eight categories: primary (<9 years), primary (9 years), secondary (10–11 years), secondary (12 years), tertiary (13–15 years), tertiary, but not including postgraduate qualifications (15+ years), and postgraduate qualifications (approximately 16–20 years). The final, eighth, category indicates whether the variable for education has a missing value. The information is based on highest educational attainment by 2012, the latest point in our data.

[1] BMI $= \frac{mass_{kg}}{height_m^2}$

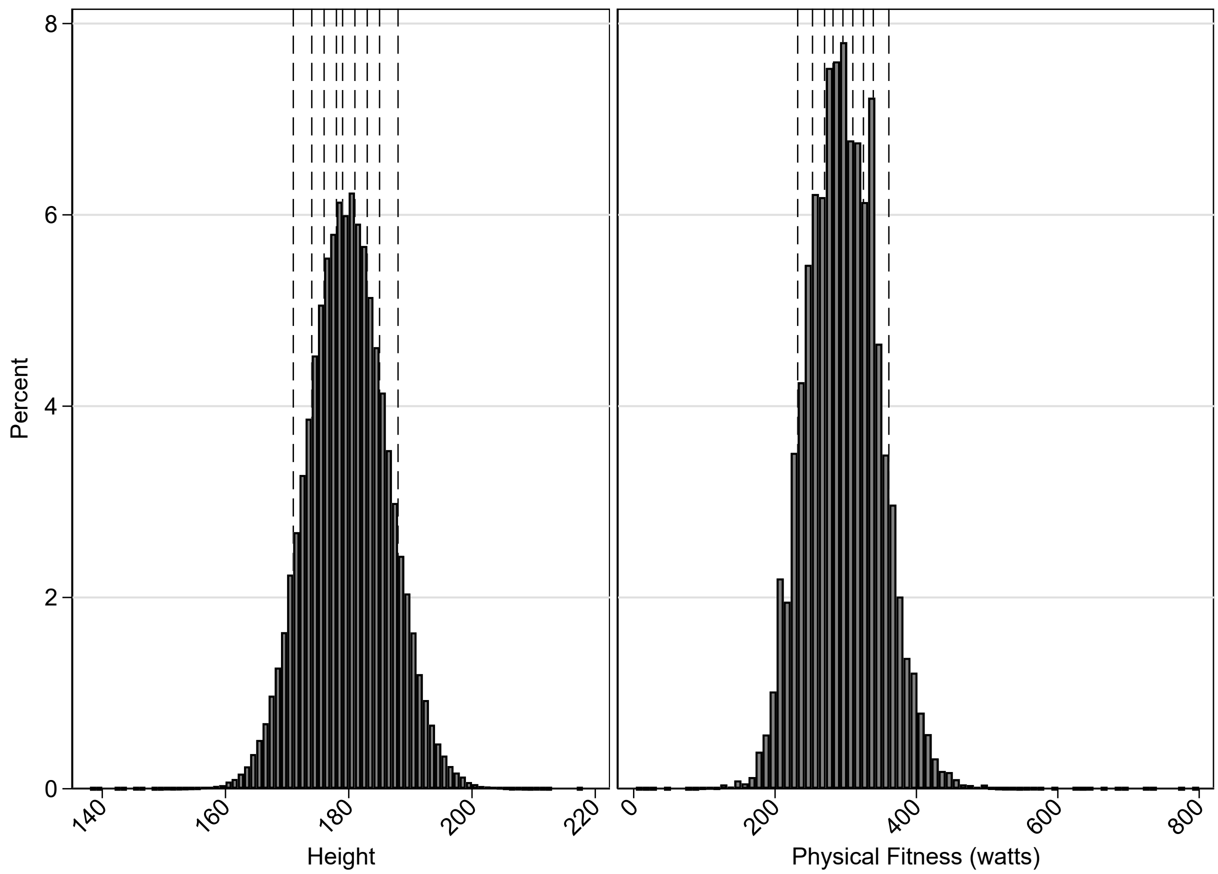

FIGURE 2. Distribution of height and physical fitness at ages 17-20 amongst men born in Sweden, 1965-1972. Note: the dashed vertical lines mark the dividing point between deciles.

Primary and secondary attainment will mostly take place before the military conscription tests where our anthropometric measures were taken, while tertiary education is attained after measurement.

Cumulative Income. We take data on income from the Swedish tax registers. The measure of income that we use takes into account gross salary, income from business activities, and work-related remuneration such as sickness benefit. After adjusting for the consumer price index measure of inflation provided by Statistic Sweden, we sum up the total income earned between the ages of 18 and 40 as a measure of cumulative income. We then split this measure of cumulative income into deciles.

Marital Status. As part of our analyses we examine whether the association between our various anthropometric measures and fertility varies according to whether the men in our population had ever married by age 40. This is a binary variable that indicates whether the men had ever married at any point up to age 40, and ignores any subsequent change to marital status due to divorce or being widowed. We use this variable as a basic indicator of whether the men had been able to find a romantic partner without conditioning on childbearing. We also conduct additional sensitivity analyses using a variable that indicates that an individual had been married for at least five years before any divorce or widowhood.

Statistical Analyses.

Descriptive Analyses. We first present descriptive statistics for the level of fertility by BMI, physical fitness, and height. We decompose completed fertility into the contribution of men based on their eventual parity for different levels of BMI, physical fitness, and height. This is done by multiplying the proportion of men with a given parity, with the given parity (e.g. if 40% of all men with a BMI of 20.00-21.99 have two children, they contribute 0.8 to the completed fertility of men with BMI 20.00-21.99). This equals the average fertility of that group when summed up for all parities. We also report the percent of men at each parity by the end of our follow-up period.

Regression Analyses. In addition to descriptive statistics, we also conduct a number of regression analyses to examine how our anthropometric measures are associated with total number of children as well as parity transitions. The populations of our models for parity transition n are the population with at least a final parity of $n-1$, and these models have a similar interpretation as the parity progression ratio. The parity progression ratio is the proportion of women with a certain number of children who go on to have at least one more child. To study parity transitions, we apply linear probability models. In the results section we report the percentage point difference in the estimated probability of experiencing that parity transition, but we also transform the estimates from these linear probability models to reflect the magnitude of the point estimate relative to the mean probability of experiencing the transition. For example, if 20% of men are childless, and obesity is associated with an increase in the predicted probability of childlessness of 0.10, we report this result as a relative difference of 50% ($0.10/0.20 \cdot 100$).

We present linear regressions where we use all men in the population, as well as fixed effects models in which we only analyse variance between full biological siblings. The latter class of models requires at least two brothers in each family, that they were both born in the 1967-1972 cohort window that we study, and that they differ on either our anthropometric measures or completed fertility. For each fertility outcome that we analyse, whether that is total number of children, or a given parity transition, we present the results from four different models:

$$y_i = \beta_1 BMI_i + \beta_2 Fitness_i + \beta_3 Height_i + \beta_4 Weight_i + \beta_5 BirthYear_i + \alpha + \varepsilon_i \tag{1}$$

$$y_i = \beta_1 BMI_i + \beta_2 Fitness_i + \beta_3 Height_i + \beta_4 Weight_i + \beta_5 BirthYear_i + \beta_6 BO_i + \beta_7 Size_i + \beta_8 Edu_i + \beta_9 Inc_i + \alpha + \varepsilon_i \tag{2}$$

$$y_{ij} = \beta_1 BMI_{ij} + \beta_2 Fitness_{ij} + \beta_3 Height_{ij} + \beta_4 Weight_{ij} + \beta_5 BirthYear_{ij} + \alpha_j + \varepsilon_{ij} \tag{3}$$

$$y_{ij} = \beta_1 BMI_{ij} + \beta_2 Fitness_{ij} + \beta_3 Height_{ij} + \beta_4 Weight_{ij} + \beta_5 BirthYear_{ij} + \beta_6 BO_{ij} + \beta_7 Edu_{ij} + \beta_8 Inc_{ij} + \alpha_j + \varepsilon_{ij} \tag{4}$$

where y denotes our outcome variable, whether that is total number of children, or a binary variable for a parity transition, such as going from $1 \rightarrow 2$ children, for an individual i, with constant α and error term ε. Our key anthropometric measures are body mass index, BMI, split into the 11 categories described above, physical fitness, $Fitness$, split into deciles, and height, $Height$, also split into deciles. In Model 1 we control for weight, $Weight$, split into deciles, and birth cohort, $BirthYear$, using individual-year dummy variables. $(1965, 1966, ..., 1972)$. In Model 2 we control for weight and birth year, and introduce additional control variables for birth order, BO $(1, 2, ..., 6+)$, completed sibling group size, $Size$ $(1, 2, ..., 6+)$, as well as two variables that may mediate the association between our anthropometric measures and fertility by age 40, which are educational attainment, Edu, and cumulative income, Inc, described in greater detail above. Models 3 and 4 parallel Models 1 and 2 respectively in terms of the control variables that are included, but introduce a sibling fixed effect, denoted by α_j, and the estimates are calculated for each individual i in sibling group j. Note that sibling group size is not included in Model 4 as it is constant within each sibling group.

In practice, these sibling fixed effects models are estimated as within-sibling group deviations from the means, averaged across all sibling groups. That is to say, the estimates are based upon the relationship between variation in our anthropometric measures around the within-group mean in each sibling group and variation in fertility around the within-group mean level of fertility. Our sibling comparison models allow us to hold constant all factors that are shared by siblings, including parental educational level and parental income, but also factors such as parental behaviour and personality. Such factors are likely to be important in shaping the general household milieu in regards to attitudes towards health, eating behaviours, and exercise. These models will also adjust for shared ethnic, regional, school (as long as shared between brothers), and other socialized differences within sibling groups, and will adjust for genetic similarity to the extent that this is shared among brothers (on average 50% of genes). These models therefore allow us to examine the importance of our anthropometric measures for fertility net of important shared genetic and environmental factors that influence body mass, physical fitness, and height as well as fertility preferences.

Since we consider partnership formation a potentially important pathway for explaining the relationship between our anthropometric measures and fertility, we also conduct complementary analyses where we examine entry into marriage at any point between ages 18 and 40 by BMI, physical fitness, and height. The models that we fit are the same as Models 1 to 4 above, with the exception that y denotes a binary variable for ever marrying between ages 18 and 40.

We include BMI, physical fitness, and height in our models simultaneously rather than estimating separate models for each measure since these different dimensions of health are interrelated. BMI is a function of height and weight, and therefore we must estimate parameters for BMI alongside height and weight in order to understand whether body mass has an association with fertility net of height and weight. Furthermore, physical fitness and body mass are interrelated. For example, trained athletes may have an overweight BMI due to unusually high levels of lean muscle mass (Jonnalagadda et al., 2004), and estimating parameters for BMI alongside physical fitness will allow us to tease these two dimensions of health apart.

RESULTS

Descriptives. Figure 3 shows the number of children that Swedish men born 1965-1972 have by 2012 by different levels of height, physical fitness, and BMI, and the contribution to fertility by men of different parities. The mean level of fertility for these men by 2012 was 1.65. Men who had two children contribute the largest single share to overall male fertility, followed by men who had three children. Detailed information on descriptive statistics for fertility, BMI, physical fitness, and height can be found in the Supplementary Information in Tables S1, S2, S3, and S4.

Panel A of Figure 3 shows that men in the lowest decile for height had 1.53 children, while men in the top decile had 1.67 children. Men in height deciles 4 to 9 had almost indistinguishable fertility, ranging from 1.69-1.72, so it is only really men in the bottom two deciles who have lower fertility, or men who are missing information on height, who have only 1.32 children by the end of our follow-up period

The pattern by levels of physical fitness shown in Panel B of Figure 3 demonstrates clearly higher fertility amongst men with higher levels of cardiovascular fitness. Men in the lowest decile of physical fitness have 1.50 children, while men in the top decile have 1.85 children, and there is a monotonic increase in fertility from the lowest to the highest decile.

Levels of fertility by BMI show that men with a 'normal' BMI have the highest fertility, ranging from 1.64-1.77 across our five categories for 'normal' BMI. Obese men had the lowest fertility, having an average of 1.16 children by the end of our follow-up period. Men who were in the lower category of overweight (BMI=25.00-27.49) had 1.62 children, while men in the higher category of overweight (BMI=27.50-29.99) had 1.39 children. Men who were in the lower category of underweight (BMI≤17.49) had 1.34 children, while men in the higher category of underweight (BMI=17.50-18.49) had 1.51 children.

Figure 4 shows the percent of men at each parity by the end of their reproductive years. Although this conveys a similar body of information to that shown in Figure 3, this also illustrates the percentage of men who were childless. In the full population, 23% of men were childless. Panel A of Figure 4 shows that men in deciles 5 to 9 for height had the lowest probability of childlessness, at approximately 20%, while 27.7% of men in the bottom decile, and 21.7% of men in the top decile, were childless. Panel B shows that 30% of men in the bottom decile of physical fitness were childless, and the percent of childlessness decreases monotonically with increasing physical fitness; only 15% of men in the top decile of physical fitness were childless. Panel C shows that men in the middle categories of a 'normal' BMI had the lowest percentage of childlessness, at less than 19%, while 35% men in the lower category of being underweight

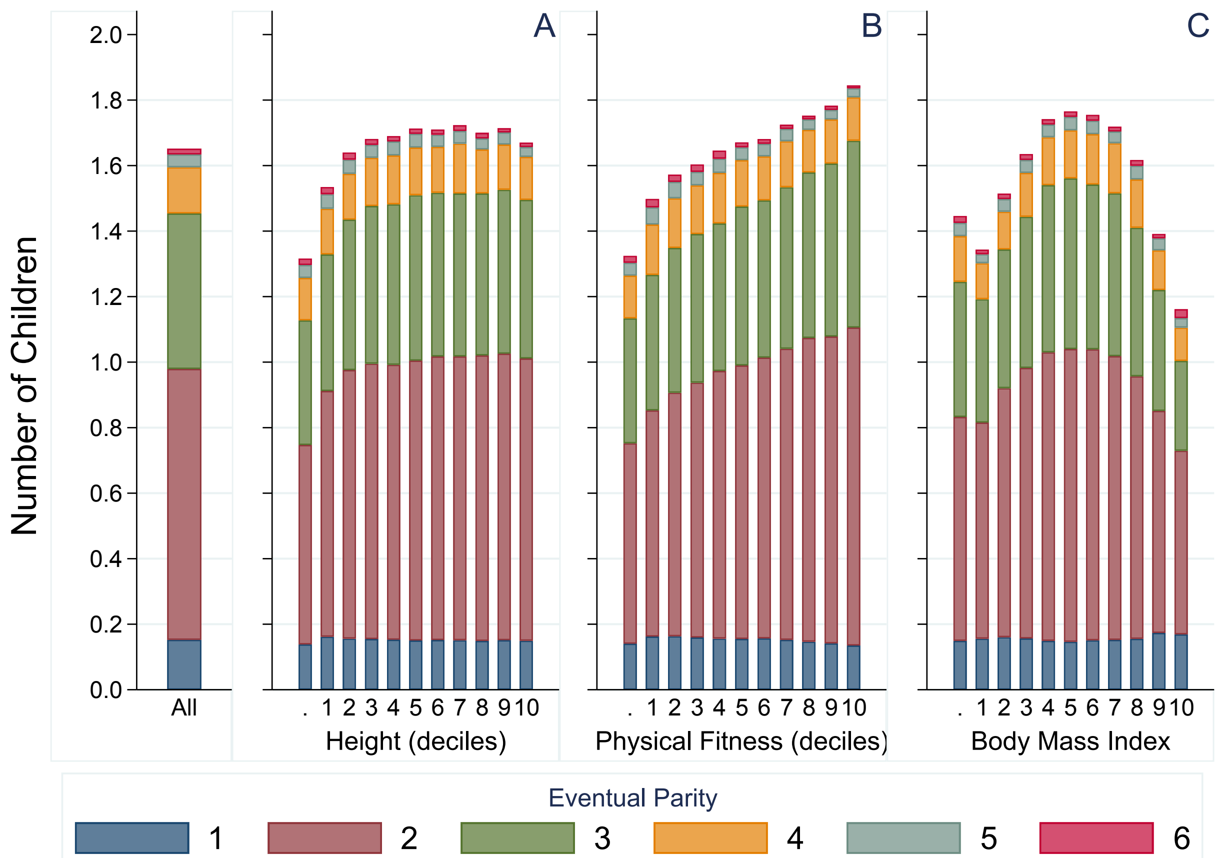

FIGURE 3. Contribution to fertility by parity by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1972.

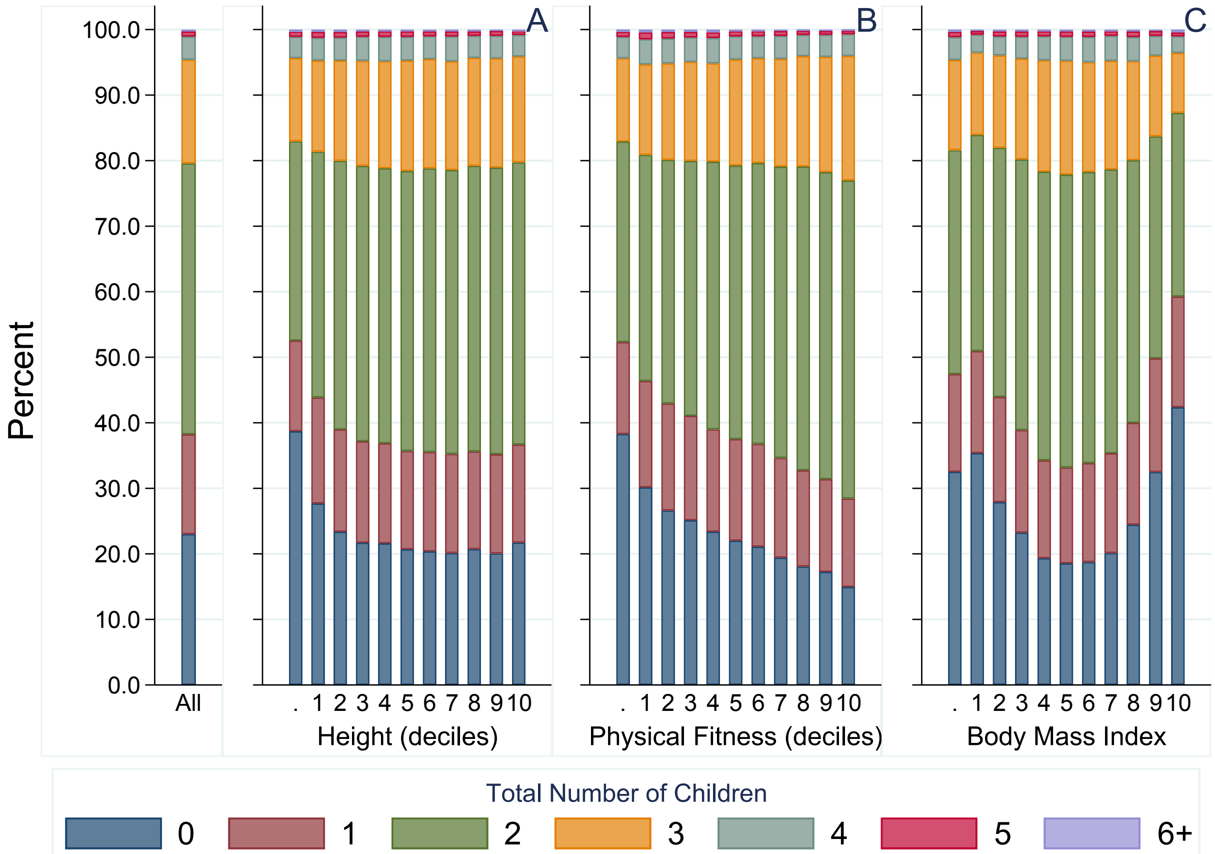

FIGURE 4. Parity distribution by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1972.

were childless, and 42% of obese men were childless. This cross-tabulation of our data therefore indicates very strong relationships between fertility and both physical fitness and BMI, while for height the main difference is between men in the lowest decile and all of the rest.

Total Number of Children. Figure 5 shows the results from regression models examining the relationship between different levels of height, physical fitness, and BMI and total number of children. In these analyses the reference categories are a ‘normal’ BMI (BMI=20.00-21.99), and the highest deciles for physical fitness and height. We choose these reference categories as they would typically be considered the healthiest manifestations of each anthropometric measure. Full results tables can be seen in the Supplementary Information in Tables S5 and S6.

Models 1 and 2 are based on the full population of men born 1965-1972. Model 1 includes controls for birth year and weight deciles, while Model 2 includes additional controls for birth order, completed sibling group size, educational attainment, and cumulative income by age 40. Models 3 and 4 include the same control variables as Models 1 and 2 respectively, but are estimated using sibling fixed effects upon a subsample of brothers. The confidence intervals are considerably wider in these sibling comparison analyses as these are based upon a subsample of 75,905 brothers. Please note that we omit confidence intervals for the estimates of the 'missing' category, as these distort the scale of the graph and are not the focus of our study. As a supplementary analysis we also examine years of education and log income as outcome variables in relation to our anthropometric measures, and those results can be seen in the Supplementary Information in Figures S1, and S2, and Tables S7, S8, S9, and S10.

The results for height, shown in Panel A of Figure 5, show that, relative to men in the tallest decile, men in deciles 2 to 9 had higher fertility in both Models 1 and 2, by approximately 0.05 to 0.1 children. Remarkably, controlling for factors expected to at least partially mediate the relationship between height and fertility, educational attainment and cumulative income, makes very little difference to the estimates. Men in the highest and lowest decile for height have statistically significantly lower fertility. This pattern is consistent with previous research showing a curvilinear relationship between height and fertility. However, the results from our sibling comparison Models 3 and 4 show that fertility is only statistically significantly lower amongst men in the lowest decile for height, having approximately 0.15 fewer children by age 40 than men in the tallest decile.

Panel B of Figure 5 shows the results for physical fitness. Overall the patterns are very consistent across Models 1 to 4, despite the anticipated importance of mediating factors such as educational attainment and cumulative income, as well as potentially confounding factors in the shared home environment that might have been expected to influence fertility preferences and behaviour as well as physical fitness. Consistent with the descriptives shown in Figure 3, men in the highest decile of physical fitness at ages 17-20 clearly have the highest fertility, and men in the lowest decile of physical fitness have the lowest fertility. Remarkably, there is a monotonic decrease in fertility with each lower level of physical fitness. Compared to men in the top decile of physical fitness, men in the lowest decile are estimated to have 0.27 fewer children in Model 2, and 0.32 fewer children in Model 4.

The results for BMI are shown in Panel C of Figure 5. Consistent with Figure 3, men with a 'normal' BMI have the highest fertility, while men who were underweight, overweight, or obese at ages 17-20 have statistically significantly and substantively lower fertility. In general the results across Models 1 to 4 are very consistent with one another. Men who were in the lower category of underweight at ages 17-20 had 0.22 fewer children in Model 2 than men with a 'normal' BMI of 20.00-21.99, while men in the higher category of overweight at ages 17-20 had 0.34 fewer children in Model 2. The results are clearly strongest for men who were obese at ages 17-20, however. In Models 1 and 2 these obese men are estimated to have had 0.5-0.6 fewer children than the reference category, while the estimated differences are even larger in our sibling comparison models, where these men are estimated to have had 0.84 fewer children in Model 3. This is a large difference given that the mean number of children for men in these cohorts by age 40 was 1.65 - men who were obese in early adulthood have approximately half as many children towards the end of their reproductive years.

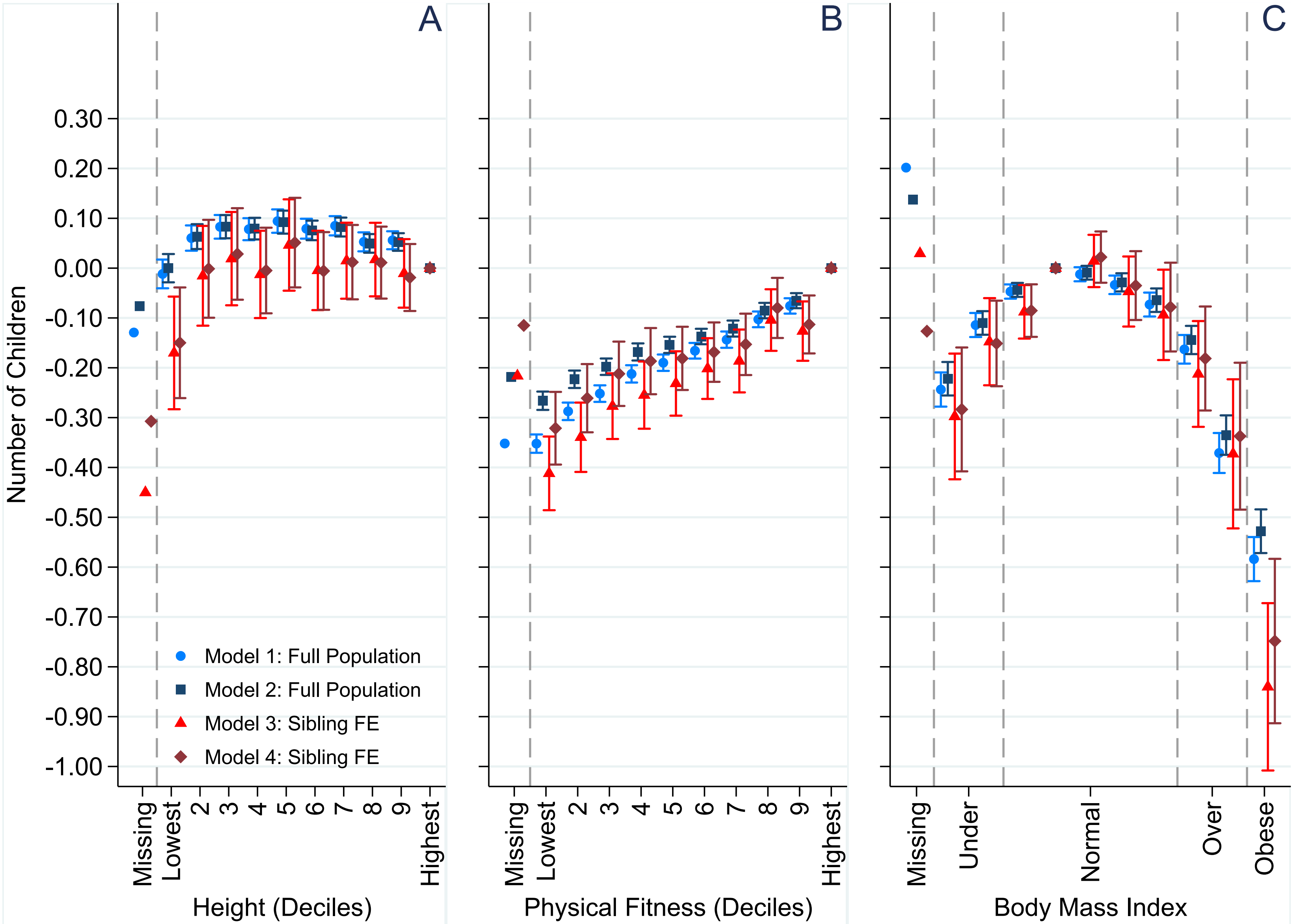

FIGURE 5. Total number of children by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

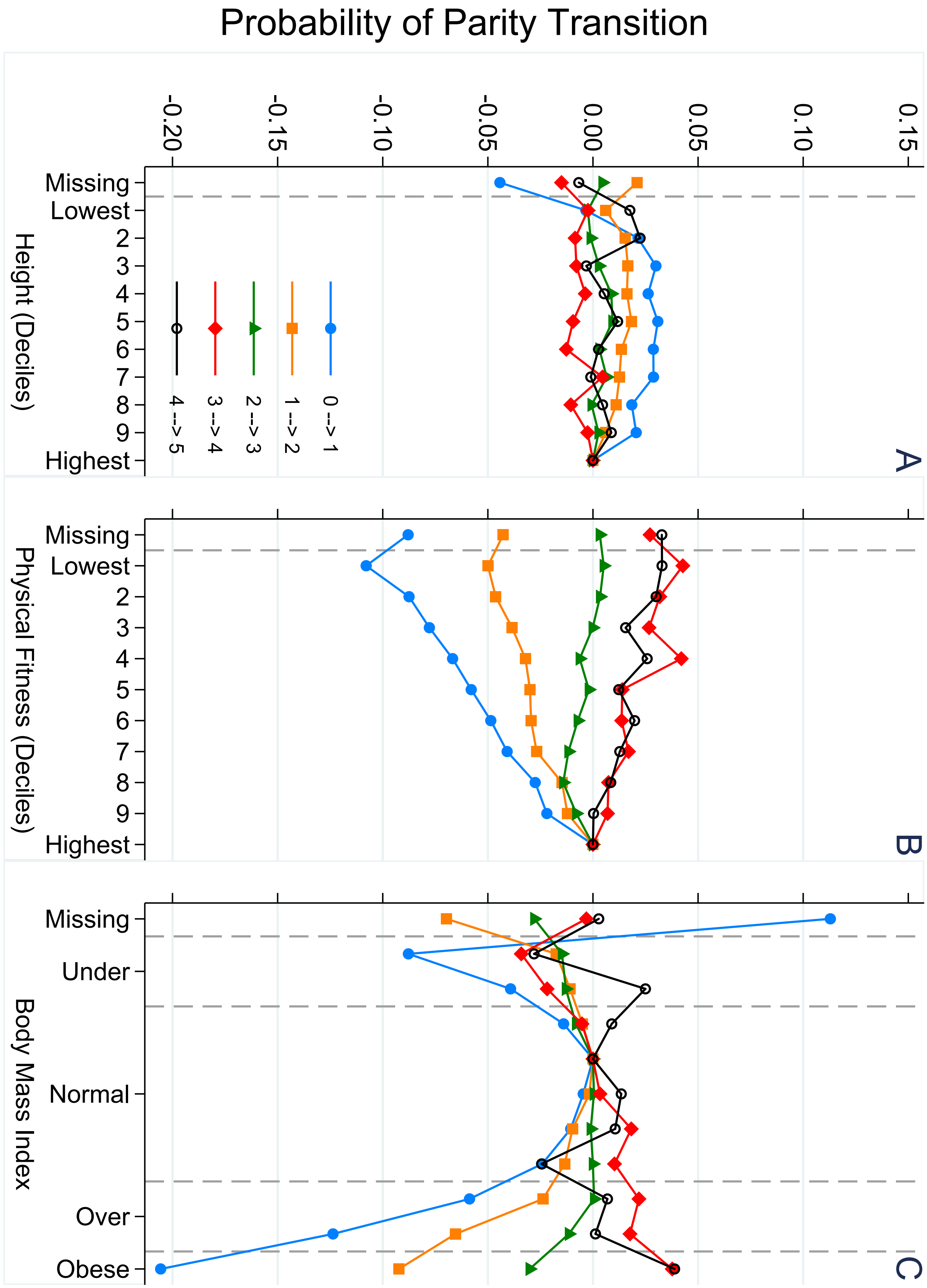

FIGURE 6. Parity progressions by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1972.

Parity Progression. Figure 6 shows the results from Model 2, based on the full population of men, examining how our various anthropometric measures are associated with different parity transitions in the full population, without the application of sibling fixed effects. Full tables of results can be found in the Supplementary Information in Tables S11, S12, and S13. We apply linear probability models where the estimates can be interpreted as percentage point differences in the probability of the outcome relative to the reference category, conditional on the other covariates. The results examining how height is related to parity transitions shows that height shows relatively little association with parity transitions amongst men who already have children. However, the transition from being childless to having at least one child does seem to vary by height in men. Compared to the tallest decile of men, men in deciles 2 to 9 seem to be slightly more likely to make the transition from childlessness to being a parent. For example, the estimated difference in the probability of becoming a parent between men in height decile 10 and height decile 5 is 0.031, which is a 4.4% difference relative to the baseline probability of 0.73. Men in the lowest decile have a similar probability of making the transition to parenthood as men in the highest decile. Men in the top decile of height also seem to have a lower probability of making the transition from $1 \rightarrow 2$ children than shorter men.

The association between physical fitness and parity transitions shows that men with the best cardiovascular fitness at ages 17-20 have a much higher probability of making the transition from being childless to being a parent, and going from $1 \rightarrow 2$ children. Figure 6 shows a remarkable pattern where men with lower levels of physical fitness in early adulthood are monotonically less likely to become a parent or to make the transition from $1 \rightarrow 2$ children. Given that 23.0% of men born in Sweden between 1965 and 1972 were childless by 2012, the least physically fit men in early adulthood had a predicted probability of being childless 46.9% higher than men who were the most physically fit in early adulthood (percentage point difference: 0.108), even after adjusting for educational attainment and cumulative income. However, we observe a different pattern for higher parity transitions. Indeed, for parity transitions $3 \rightarrow 4$ and $4 \rightarrow 5$, men in lower deciles of physical fitness have a higher probability of making the parity transition, even after adjusting for educational attainment as well as cumulative income. However, as shown in Figures 3 and 4 these higher parities make only a small contribution to overall fertility as they are so uncommon in contemporary Sweden.

The estimates for the association between BMI and parity transitions show that there is relatively little differentiation between men at different levels of a ‘normal’ BMI in terms of parity transitions. Men who had an underweight BMI at ages 17-20 have a lower predicted probability of making almost all parity transitions, but the one that stands out most clearly is that they have a lower probability of entering fatherhood. Men in the lower underweight category had an estimated probability of 0.088 of being childless relative to the reference category of men with a 'normal' BMI, which is a 38.2% difference relative to the baseline. Men who were overweight at ages 17-20 were also less likely to become a father or to make the transition from $1 \rightarrow 2$ children. Men who were obese in early adulthood were by far the least likely to make the transition to parenthood, with an estimated probability of childlessness of 0.206 relative to the reference category, which is a 89.4% difference relative to the baseline. Obese men were also far less likely to make the transition from $1 \rightarrow 2$ children, and less likely to make the transition from $2 \rightarrow 3$ children. However, the point estimates show that obese men had a higher probability of making the transition from $3 \rightarrow 4$ and $4 \rightarrow 5$ children.

We also conduct these parity progression analyses using fixed effects, and those results can be seen in Supplementary Tables S14, S15, and S16.

Moderation by Marital Status. The results from the preceding analyses show that height, but particularly physical fitness and BMI, are all clearly associated with fertility amongst men in Sweden. Although we speculated that such patterns might be largely mediated by socioeconomic status, the fact that the associations largely persist even despite our adjustment for a detailed measure of educational attainment as well as cumulative income by age 40, suggests that this may not be the case. Indeed, the results from Models 2 and 4, where we include adjustment for adult socioeconomic attainment, suggest that a different explanation may account for the relationship between fertility and our anthropometric measures. In this section we examine the interaction between our anthropometric measures and a binary variable for whether these men had ever married by age 40.

Entrance into Marriage. Figure 7 shows the relationship between the three anthropometric measures and the probability of every marrying by age 40 using the same four model specifications as in previous analyses. In our data, 50% of the men in the cohorts that we study had ever married by age 40. Full results tables can be found in the Supplementary Information in Tables S17 and S18.

Panel A shows that across Models 1 to 4, it is only the men in the lowest decile of height who were significantly less likely to have ever married by age 40. In the sibling comparison analyses in Model 4 the estimated probability of marrying by age 40 was -0.042 for men in the bottom decile for height relative to men in the top decile, which is an 8.5% difference relative to the baseline probability. However, in the analyses without sibling fixed effects the difference relative to the baseline is closer to 3%.

The results for physical fitness, seen in Panel B, continue to show a clear advantage for men in the highest decile of fitness. The results from Models 2 and 4, both of which include controls for education and cumulative income, both show that men in the bottom decile for physical fitness had an estimated probability of ever marrying 0.07 lower than men in the top decile,

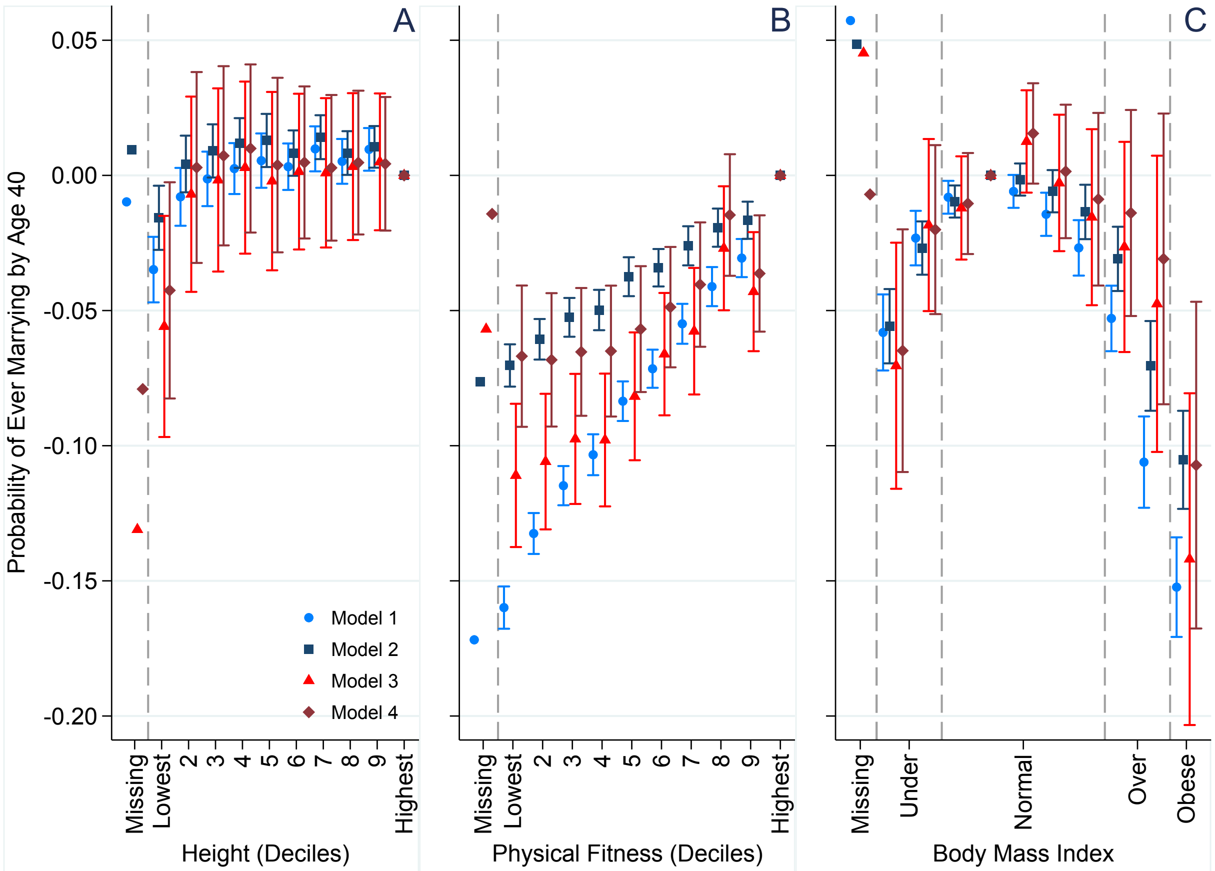

FIGURE 7. Linear regression: ever marrying by age 40 by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

which is a difference of 14% relative to the baseline. Without adjusting for mediating education and income, the difference is over 20% lower in Model 3, using fixed effects, and over 30% lower in Model 1, relative to the baseline probability.

Panel C shows that BMI is also clearly related to the probability of ever marrying for Swedish men. Men who were in the lower category of underweight at ages 17-20 had, relative to men with a 'normal' BMI, an estimated probability of marrying 0.065 lower, while for men who were obese, it was 0.107 lower even in our most conservative estimates. These differences are approximately 13% and 21% relative to the baseline probability. The results from our analyses therefore show that health in early adulthood is strongly related to ever marrying, and this provides a powerful indication that these anthropometric measures are related to desirability as a potential partner. Although marriage is more common in high socioeconomic status groups

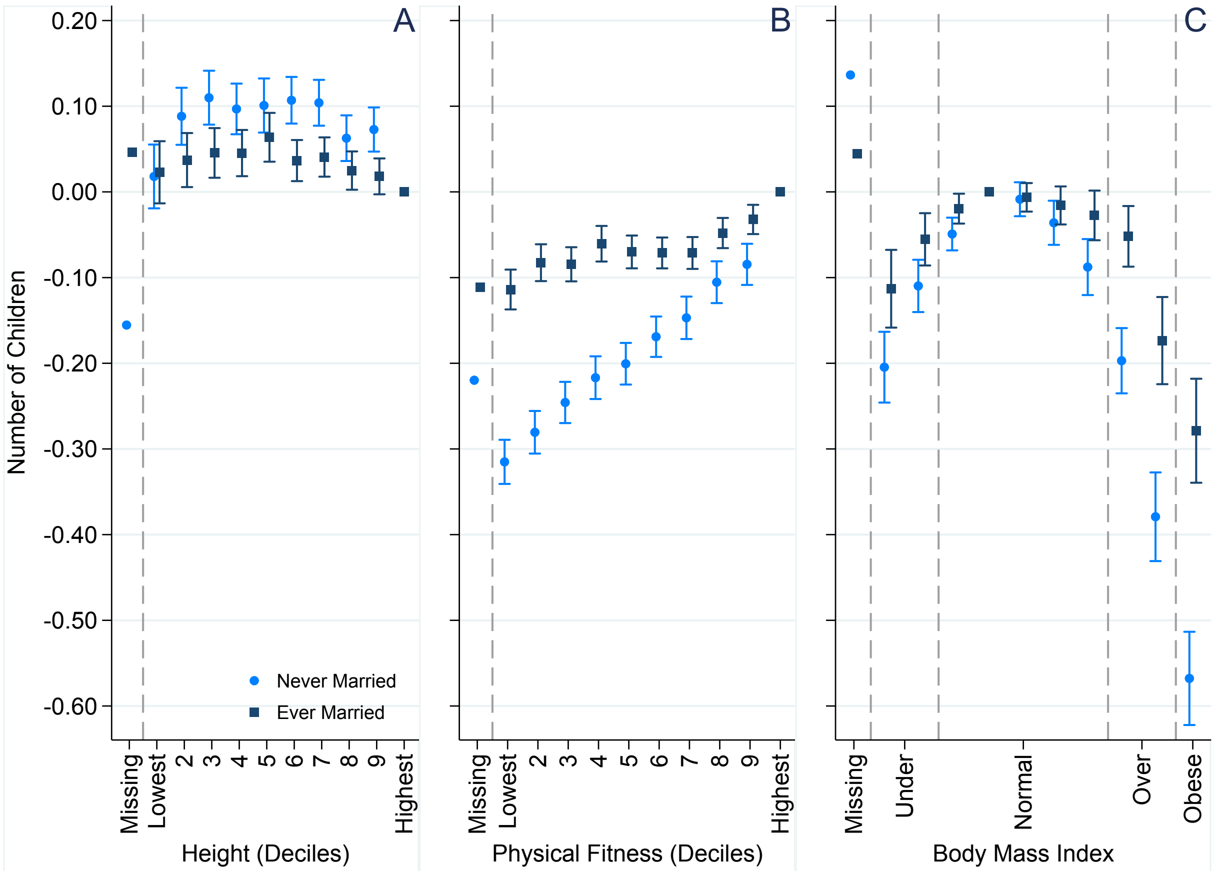

FIGURE 8. Linear regression: total number of children by having ever married by age 40, men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

in contemporary Sweden, these results show that there is a clear association between our anthropometric measures and entrance into marriage even net of family background, educational attainment, and cumulative income measured up to age 40.

Total Number of Children. We now return to our fertility analyses, examining how the patterns differ between men who ever married or not by age 40. By conditioning on having married, we assume that we hold the 'desirable partner' pathway between health and fertility constant, since these men have at least managed to form a stable partnership. We therefore assume that any remaining association between health and fertility amongst men who have ever married must at least partially reflect relative differences in fecundity since childbearing within marriage is normative in Sweden.

Figure 8 shows the results from models stratified by the 'ever married' variable, adjusting for the control variables included in Model 2. The results for height show that relative to men in the tallest decile, men in deciles 2 to 9 had more children regardless of whether they married by age 40 or not, but the point estimates indicate that these differences were almost twice as large for men who never married. The results for physical fitness, however, show a much more pronounced pattern, where men who never married by age 40 have lower fertility, and the gap begins to widen clearly below decile 8. Men in decile 1 who never married by age 40 had 0.30 fewer children than men in decile 10, while men in decile 1 who had married by age 40 had 0.10 fewer children. Thus, less physically fit men have fewer children even conditional on having developed a stable relationship. Panel C shows the results for BMI, and it is clear that although the pattern is stronger amongst men who never married, it is also clearly visible for men who did marry at some point before age 40. Even amongst those who had ever married, obese men had almost 0.30 fewer children than men with a 'normal' BMI. We have also conducted these analyses using the sibling comparison design. Those estimates are shown in Supplementary Figure S3, and are qualitatively very consistent with the results shown in Figure 8. Full results tables can be found in the Supplementary Information in Tables S19 and S20.

Childlessness. Finally, we extend our analyses to examine the interaction between the three anthropometric measures and being every married by age 40 for the probability of being childless. We focus on this particular parity transition (the inverse of $0 \rightarrow 1$), because entering parenthood is a fundamentally different life course transition from higher parity transitions. Furthermore, since an important aim of these analyses by marital status is to examine whether there are residual effects of health on fertility even conditional on having formed a stable partnership (i.e. holding the 'desirable partner' pathway between health and fertility constant), childlessness is a particularly informative outcome to examine as a potential indicator of infecundity. In our data and cohorts, 6.6% of men who ever married were childless, while 40.1% of men who never married were childless, showing that marriage is a powerful mediator of childbearing even in Sweden where a high proportion of births occur outside of marriage.

Figure 9 shows the results from these analyses using the full population, with the control variables included in Model 2. The interaction with the 'ever married' variable is much more pronounced for being childless than for the total number of children. The results for height, shown in Panel A, indicate that there are almost no differences in the probability of being childless amongst men who had ever married by age 40, but amongst men who never married, those in deciles 2 to 9 for height had a lower probability of being childless. These estimates therefore indicate that height is not related to fecundity, and that the relationship between height and fertility is primarily driven by how male height affects success in the partner market.

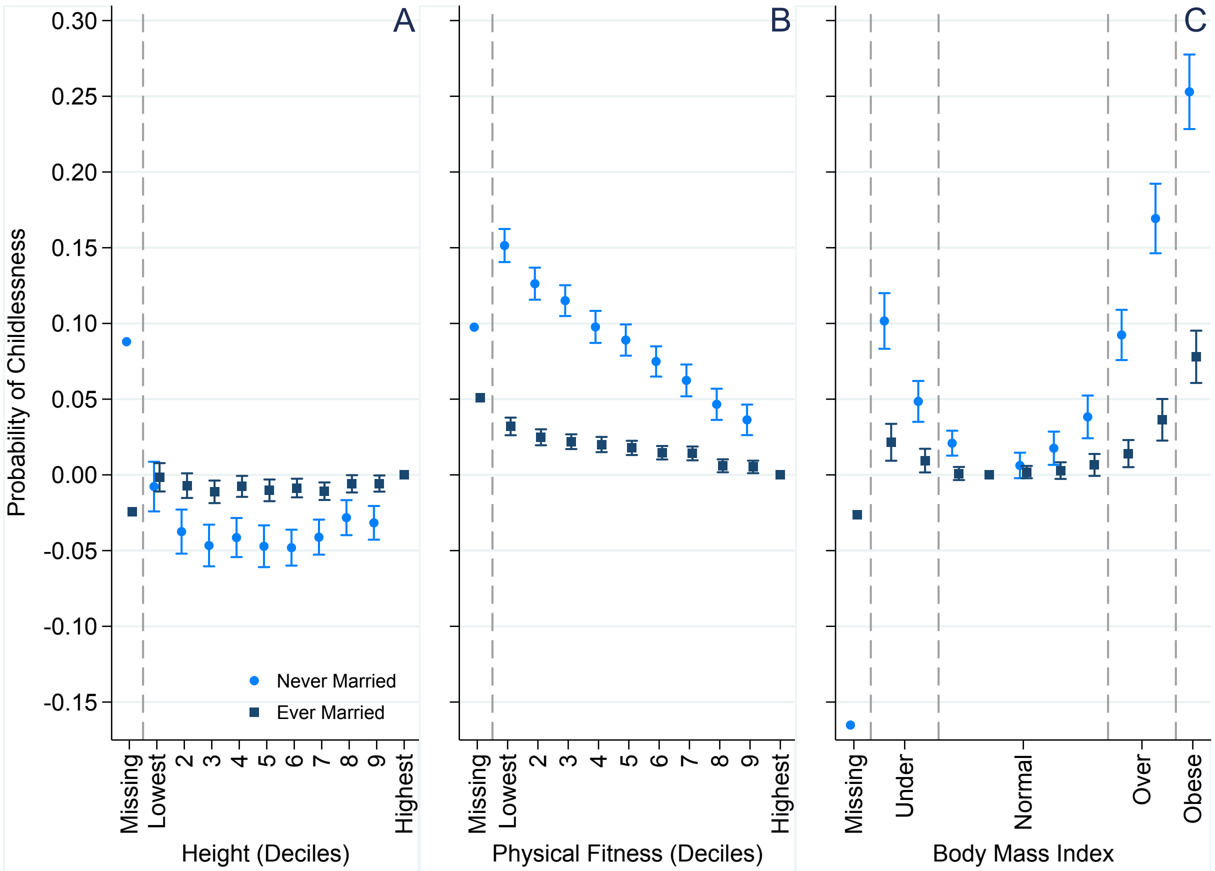

FIGURE 9. Linear regression: probability of childlessness by having ever married by age 40, men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

Panel B shows the results for physical fitness. There is a clear gradient by physical fitness amongst both those who ever, or never, married by age 40, but that the probability of childlessness is much higher amongst less physically fit men who had never married. Amongst men who ever married, the estimated probability of childlessness is 0.032 amongst men in the bottom decile of physical fitness in comparison to men in the top decile, which translates into a difference over 50% higher relative to the baseline probability. The relative probability of childlessness is at least 20% higher amongst men in decile 7 or below compared to men in decile 10. This suggests that the relationship between physical fitness and childbearing may be very significantly mediated by fecundity.

The results for BMI are shown in Panel C. The probability of being childless is much higher for men who were underweight, overweight, or obese at ages 17-20 if they had never married by age 40 than if they had married by age 40, but again, we see clear patterns even amongst men who had ever married. There are few if any differences amongst men with a ‘normal’ BMI. However, men in the lower category of underweight who had ever married had an estimated probability of childlessness 35% higher than men with a ‘normal’ BMI relative to the baseline, and for men who were obese, the difference was over 120% higher relative to the baseline probability. Even for men in the lower category of overweight, the estimated probability of childlessness compared to men with a ‘normal’ BMI was over 20% higher relative to the baseline. These very large differences suggest that body mass at ages 17-20 may have a strong effect on later fecundity since we know that the higher probability of childlessness is not due to never-partnering in this population of men who had married. The persistence of an association between our anthropometric measures and childlessness even amongst married men suggests that health in early adulthood may affect the physiological capacity for childbearing even amongst men who managed to form stable partnerships. We have also conducted these analyses using the sibling fixed effects, and those estimates are shown in Supplementary Figure S4. The results from the sibling comparison are qualitatively similar to the results shown in Figure 9. Full results tables can be found in the Supplementary Information in Tables S21 and S22.

Robustness Checks. We have also conducted additional analyses where we condition on men having been married for a continuous period of at least five years. Those results are qualitatively very similar to the patterns presented above, and can be found in Tables S25, S26, S27, and S28.

In further robustness checks we examine whether the associations that we observe between our anthropometric measures and fertility would vary by birth cohort, since this determines our age at measurement. We focus on two groups, those born in 1965 and those born 1965-1967. Figures S5, S6, S7, S8, and S9 show that the patterns documented above are extremely similar if we focus on fertility measured at ages 45 or older, where the fraction of unobserved fertility is approximately 2%. Figures S10 and S11 show the results from regression analyses corresponding to Models 1 and 2 using the full population for those born in 1965 and those born 1965-1967. As can be seen, these results are very similar to those documented in Figure 5, which is not surprising given that we adjust for age at measurement in our regression models by controlling for birth cohort. These robustness checks strongly suggest that we would observe the same pattern of results if we had been able to observe all of our men born 1965-1972 to at least age 45, where male fertility is largely complete.

DISCUSSION

Using population register data, we have examined how several anthropometric measures, height, physical fitness, and BMI, measured at ages 17-20, are associated with fertility for men in Sweden. We find remarkably strong patterns in our data. We observe a clear monotonic pattern where men who were less physically fit have substantially lower fertility, with the least fit men having 0.27 fewer children and a relative probability to be childless over 50% higher than the most fit men. The results for BMI were even more striking: underweight, overweight, or obese at ages 17-20 also have substantially lower fertility, and were more likely to be childless, with men who were obese having 0.52 fewer children and a predicted probability to be childless almost 90% higher than men with a 'normal' BMI, even after adjusting for educational attainment and cumulative income. In the full population of Swedish men born 1965-1972, the results for the relationship between height and later fertility show a curvilinear pattern where both the tallest and shortest men have lower fertility, consistent with previous research (Stulp et al., 2012), though our sibling comparison analyses suggest that it is only the shortest men who have lower fertility. It may be the case that health factors related to both growth and fecundity confound the relationship between height and fertility.

We suggested that there are two primary channels by which height, physical fitness, and BMI should influence later fertility, which were fecundity and desirability as a potential partner, with the latter channel also allowing for indirect pathways such as the effects of health on socioeconomic attainment, which is itself strongly associated with fertility. To test whether the association was mediated by socioeconomic attainment, we adjusted for educational attainment and cumulative income by age 40, but this made very little difference to the results, despite the fact that educational attainment and cumulative income were independently very strongly associated with the fertility outcomes in our results. Although height, physical fitness, and BMI have been shown to influence socioeconomic attainment, which is itself strongly associated with fertility (Jalovaara et al., 2018), our results suggest that our anthropometric measures influence fertility by a channel other than socioeconomic attainment. This is particularly clear in our sibling comparison analyses: even after comprehensively adjusting for all early life factors shared by brothers, the relationship between our anthropometric measures and fertility persists in both direction and magnitude. These results lead us to believe that the association between our anthropometric measures and subsequent fertility is not being driven by confounding.

As an indirect way of examining whether the association between height, physical fitness, BMI and fertility is related to how these anthropometric factors influence overall desirability as a potential partner, we examined how the patterns differed by marital status. Men who have ever married have in some fundamental way demonstrated that they can develop a long-term relationship and that at least one woman has been willing to countenance a long-term commitment to that man, for at least a limited period of time. Although our anthropometric measures are strongly associated with entrance into marriage, we also find that the relationship between physical fitness, BMI and fertility persists both amongst both never- and ever-married men. We are therefore confident that the observed relationship between BMI, physical fitness, height and fertility is not simply attributable to never-partnering. Our findings suggest that BMI and physical fitness do influence desirability as a potential partner, but they also strongly suggestive that BMI and physical fitness influence fecundity: the probability of childlessness was much higher amongst those with worse health, even amongst the men who had married.

We believe that the results from this study may have important implications for understanding a large related literature examining how reproductive history affects the post-reproductive health of mothers and fathers. Previous research has shown that childless men and women, as well as those with many children, tend to have higher mortality (see Högnäs et al., 2017, for a review and meta-analysis). Although previous research on the relationship between reproductive history and post-reproductive health has included careful adjustment for socioeconomic confounding (e.g. see Barclay et al., 2016), research on this topic has generally not controlled for health in early adulthood. Given the strong association between physical fitness, obesity and mortality (Blair et al., 1995; Stokes and Preston, 2016), our results suggest that health in early adulthood may be an important confounding factor that explains why childless men and women, as well as those with many children, have higher post-reproductive mortality. Indeed, we observe that obese and overweight men, and men with the lowest aerobic fitness, are over-represented both amongst the childless and those who have 4 or 5 children.

Although this study has many strengths, there are certainly limitations. First, it must be highlighted that we have measures of BMI, physical fitness, and height from ages 17-20, and we do not have dynamic information on changes to these anthropometric measures over time. Although this does not matter for height, research shows that people tend to gain weight and to become less physically active as they age (Seefeldt et al., 2002; Malhotra et al., 2013). As such, we do not know the BMI or physical fitness of the men that we study at the time of partnership formation or childbearing, unless these transitions occur at a similar time to our measurements. Although this is a limitation, if one were only to have one snapshot of these anthropometric measures, the age at which we have it measured, ages 17-20, is an excellent age window to have that snapshot, as our measures precede the vast majority of partnership formation and childbearing. Previous research indicates that although people tend to gain weight as they age, this is largely an additive effect of age where individuals stay in roughly the same rank order on BMI within their cohort (e.g. see Figure 2 in Malhotra et al., 2013). If anything, those who were already overweight or obese in early adulthood seem to gain weight at a faster rate as they age than men with a 'normal' BMI in early adulthood (Malhotra et al., 2013). In terms of physical fitness, inter-age correlations in dimensions of physical fitness tend to range from 0.3 to 0.6 (Seefeldt et al., 2002).

Another important limitation is that we only had data on height, physical fitness and BMI for men, and it is difficult to know the extent to which these results could be generalized to women. The relationship between height and fertility would almost certainly be different for women, but it's possible that the patterns for physical fitness and BMI might be similar. A related limitation is that we did not have information on the anthropometric characteristics of the female partner of the men that we study. Due to assortative mating, it's very possible that part of the lower fertility of men who are less physically fit or who are overweight or obese could be attributable to having a partner with similar characteristics. As such, the lower fertility of these men might be attributable to having a partner with lower fecundity (Ramlau-Hansen et al., 2007), which we also know is more common than would be expected by chance due to assortative mating (Chen et al., 2014). A further limitation is that for the youngest cohort in our data, we only have information on fertility up to age 40. This means that we do miss a small percentage of fertility. Nevertheless, we would like to highlight the fact that our population register data is very suitable for studying male fertility, which is more difficult to capture in surveys than female fertility.

In this study we examine men born 1965-1972. The prevalence of being overweight or obese in childhood or early adulthood, and sedentary behavior, has become much more common in more recent birth cohorts in most high-income countries, and it is well established that the prevalence of obesity has increased dramatically across the world over the past several decades. Indeed, global obesity is estimated to have tripled between 1975 and 2016 (Jaacks et al., 2019). Given the research that demonstrates that being overweight or obese, or having a largely sedentary lifestyle, has a negative effect on fecundity (Hammoud et al., 2008), it is easy to imagine that this decline in healthy living could have a negative effect on fertility. Given secular trends in BMI and sedentary behavior, further research is needed to better understand how these developments are influencing fertility, and particularly childlessness, in Sweden as well as other countries.

Acknowledgements. We are grateful for helpful comments from audiences at the Stockholm University Demography Unit, the Population and Health Research Group at the University of St Andrews, the 2019 Nordic Demographic Symposium, and the 2019 British Society for Population Studies annual meeting. Funding was received via Vetenskapsrådet (grant no. 340-2013-5164) and Riksbankens Jubileumsfond (grant no. P17-0330:1). Kieron Barclay was partially supported by an European Research Council Starting Grant awarded to Mikko Myrskylä (COSTPOST: 336475). Access, linkage, and analysis of the data has been approved by a Swedish national ethical review board. Prior to access to this data, all identifiable information was removed by Statistics Sweden.

References

Agostini, L., J. Netto, M. Miranda Jr, and A. Figueiredo (2011). Erectile dysfunction association with physical activity level and physical fitness in men aged 40–75 years. *International Journal of Impotence Research 23*(3), 115–121.

Andersson, G., M. Ronsen, L. B. Knudsen, T. Lappedgård, G. Neyer, K. Skrede, K. Teschner, and A. Vikat (2009). Cohort fertility patterns in the nordic countries. *Demographic Research 20*(14), 313–352.

Barclay, K., K. Keenan, E. Grundy, M. Kolk, and M. Myrskylä (2016). Reproductive history and post-reproductive mortality: A sibling comparison analysis using swedish register data. *Social Science & Medicine 155*, 82–92.

Barclay, K. and M. Myrskylä (2014). Birth order and physical fitness in early adulthood: Evidence from swedish military conscription data. *Social Science & Medicine 123*, 141–148.

Blair, S. N., H. Kohl, C. E. Barlow, R. S. Paffenbarger, L. W. Gibbons, C. A. Macera, et al. (1995). Changes in physical fitness and all-cause mortality. *JAMA 273*(14), 1093–1098.

Buss, D. M. and M. Barnes (1986). Preferences in human mate selection. *Journal of Personality and Social Psychology 50*(3), 559.

Byars, S. G., D. Ewbank, D. R. Govindaraju, and S. C. Stearns (2010). Natural selection in a contemporary human population. *Proceedings of the National Academy of Sciences 107*(suppl 1), 1787–1792.

Cabler, S., A. Agarwal, M. Flint, and S. S. Du Plessis (2010). Obesity: modern man's fertility nemesis. *Asian Journal of Andrology 12*(4), 480–489.

Cai, T. (2007). Obesity and the timing of cohabitation and marriage. Master's thesis, University of North Carolina: Chapel Hill.

Case, A., A. Fertig, and C. Paxson (2005). The lasting impact of childhood health and circumstance. *Journal of Health Economics 24*, 365–389.

Case, A. and C. Paxson (2008). Stature and status: Height, ability, and labor market outcomes. *Journal of Political Economy 116*(3), 499–532.

Chen, H.-J., Y. Liu, and Y. Wang (2014). Socioeconomic and demographic factors for spousal resemblance in obesity status and habitual physical activity in the united states. *Journal of Obesity 2014*.

Cheng, J. and E. Ng (2007). Body mass index, physical activity and erectile dysfunction: an u-shaped relationship from population-based study. *International Journal of Obesity 31*(10), 1571.

Chudnovskaya, M. (2017). Trends in childlessness among highly educated men in Sweden. *European Journal of Population*, 1–20.

Clark, P. J. and J. Spuhler (1959). Differential fertility in relation to body dimensions. *Human Biology 31*(2), 121–137.

Damon, A. and R. B. Thomas (1967). Fertility and physique-height, weight, and ponderal index. *Human Biology 39*, 5–13.

Deaton, A. (2007). Height, health, and development. *Proceedings of the National Academy of Sciences 104*(33), 13232–13237.

Eriksson, M., H. Lingfors, and M. Golsäter (2018). Trends in prevalence of thinness, overweight and obesity among Swedish children and adolescents between 2004 and 2015. *Acta Paediatrica 107*(10), 1818–1825.

Fan, J., W. Dai, F. Liu, and J. Wu (2005). Visual perception of male body attractiveness. *Proceedings of the Royal Society B: Biological Sciences 272*(1560), 219–226.

Feldman, H. A., C. B. Johannes, C. A. Derby, K. P. Kleinman, B. A. Mohr, A. B. Araujo, and J. B. McKinlay (2000). Erectile dysfunction and coronary risk factors: prospective results from the massachusetts male aging study. *Preventive Medicine 30*(4), 328–338.

Frisco, M. L. and M. Weden (2013). Early adult obesity and us women's lifetime childbearing experiences. *Journal of Marriage and Family 75*(4), 920–932.

Fu, H. and N. Goldman (1996). Incorporating health into models of marriage choice: Demographic and sociological perspectives. *Journal of Marriage and the Family*, 740–758.

Gaskins, A. J., J. Mendiola, M. Afeiche, N. Jørgensen, S. H. Swan, and J. E. Chavarro (2015). Physical activity and television watching in relation to semen quality in young men. *British Journal of Sports Medicine 49*(4), 265–270.

Gibson, M. and A. Hammoud (2017). Male infertility. In T. Falcone and W. W. Hurd (Eds.), *Clinical Reproductive Medicine and Surgery: A Practical Guide* (3rd ed.)., pp. 209–226. Cham, Switzerland: Springer.

Gortmaker, S. L., A. Must, J. M. Perrin, A. M. Sobol, and W. H. Dietz (1993). Social and economic consequences of overweight in adolescence and young adulthood. *New England Journal of Medicine 329*(14), 1008–1012.

Hammoud, A. O., M. Gibson, C. M. Peterson, A. W. Meikle, and D. T. Carrell (2008). Impact of male obesity on infertility: a critical review of the current literature. *Fertility and Sterility 90*(4), 897–904.

Hammoud, A. O., N. Wilde, M. Gibson, A. Parks, D. T. Carrell, and A. W. Meikle (2008). Male obesity and alteration in sperm parameters. *Fertility and Sterility 90*(6), 2222–2225.

He, Y., J. Tian, W. H. Oddy, T. Dwyer, and A. J. Venn (2018). Association of childhood obesity with female infertility in adulthood: a 25-year follow-up study. *Fertility and Sterility 110*(4), 596–604.

Högnäs, R. S., D. J. Roelfs, E. Shor, C. Moore, and T. Reece (2017). J-curve? A meta-analysis and meta-regression of parity and parental mortality. *Population Research and Policy Review 36*(2), 273–308.

Homan, G., M. Davies, and R. Norman (2007). The impact of lifestyle factors on reproductive performance in the general population and those undergoing infertility treatment: a review. *Human Reproduction Update 13*(3), 209–223.

Hönekopp, J., U. Rudolph, L. Beier, A. Liebert, and C. Müller (2007). Physical attractiveness of face and body as indicators of physical fitness in men. *Evolution and Human Behavior 28*(2), 106–111.

Jaacks, L. M., S. Vandevijvere, A. Pan, C. J. McGowan, C. Wallace, F. Imamura, D. Mozaffarian, B. Swinburn, and M. Ezzati (2019). The obesity transition: stages of the global epidemic. *The Lancet Diabetes & Endocrinology 7*(3), 231–240.

Jacobs, M., L. Bazzano, G. Pridjian, and E. Harville (2017). Childhood adiposity and fertility difficulties: the bogalusa heart study. *Pediatric Obesity 12*(6), 477–484.

Jacobsen, B. K., S. F. Knutsen, K. Oda, and G. E. Fraser (2013). Body mass index at age 20 and subsequent childbearing: The adventist health study-2. *Journal of Women's Health 22*(5), 460–466.

Jæger, M. M. (2011). A thing of beauty is a joy forever? Returns to physical attractiveness over the life course. *Social Forces 89*(3), 983–1003.

Jalovaara, M. and A. Fasang (2017). From never partnered to serial cohabitors: Union trajectories to childlessness. *Demographic Research 36*, 1703–1720.

Jalovaara, M., G. Neyer, G. Andersson, J. Dahlberg, L. Dommermuth, P. Fallesen, and T. Lappegård (2018). Education, gender, and cohort fertility in the Nordic countries. *European Journal of Population*, 1–24.

Jelenkovic, A., K. Silventoinen, P. Tynelius, M. Myrskylä, and F. Rasmussen (2013). Association of birth order with cardiovascular disease risk factors in young adulthood: a study of one million swedish men. *PLoS One 8*(5), e63361.

Jensen, T. K., A.-M. Andersson, N. Jørgensen, A.-G. Andersen, E. Carlsen, N. E. Skakkebæk, et al. (2004). Body mass index in relation to semen quality and reproductive hormones among 1,558 Danish men. *Fertility and Sterility 82*(4), 863–870.

Jokela, M., M. Elovainio, and M. Kivimäki (2008). Lower fertility associated with obesity and underweight: the US National Longitudinal Survey of Youth. *American Journal of Clinical Nutrition 88*(4), 886–893.

Jokela, M., M. Kivimäki, M. Elovainio, J. Viikari, O. T. Raitakari, and L. Keltikangas-Järvinen (2007). Body mass index in adolescence and number of children in adulthood. *Epidemiology 18*(5), 599–606.

Jones, L. E., A. Schoonbroodt, and M. Tertilt (2010). Fertility theories: can they explain the negative fertility-income relationship? In J. B. Shoven (Ed.), *Demography and the Economy*. University of Chicago Press.

Jonnalagadda, S. S., R. Skinner, and L. Moore (2004). Overweight athlete: fact or fiction? *Current Sports Medicine Reports 3*(4), 198–205.

Jóźków, P. and M. Rossato (2017). The impact of intense exercise on semen quality. *American Journal of Men's Health 11*(3), 654–662.

Jutel, A. (2005). Weighing health: The moral burden of obesity. *Social Semiotics 15*(2), 113–125.

Kahn, B. E. and R. E. Brannigan (2017). Obesity and male infertility. *Current Opinion in Urology 27*(5), 441–445.

Kolk, M. (2014). Multigenerational transmission of family size in contemporary sweden. *Population Studies 68*(1), 111–129.

Kolk, M. (2019). The relationship between lifecourse accumulated income and childbearing of Swedish men and women born 1940-1970. *Stockholm Research Reports in Demography 19*, 1–38.

Kolk, M. and K. Barclay (2019). Cognitive ability and fertility among swedish men born 1951–1967: evidence from military conscription registers. *Proceedings of the Royal Society B: Biological Sciences 286*(1902), 20190359.

Kolotkin, R. L., C. Zunker, and T. Østbye (2012). Sexual functioning and obesity: a review. *Obesity 20*(12), 2325–2333.

Lundborg, P., P. Nystedt, and D.-O. Rooth (2014). Body size, skills, and income: evidence from 150,000 teenage siblings. *Demography 51*(5), 1573–1596.

Magnusson, P. K., F. Rasmussen, and U. B. Gyllensten (2006). Height at age 18 years is a strong predictor of attained education later in life: cohort study of over 950 000 Swedish men. *International Journal of Epidemiology 35*(3), 658–663.

Malhotra, R., T. Østbye, C. M. Riley, and E. A. Finkelstein (2013). Young adult weight trajectories through midlife by body mass category. *Obesity 21*(9), 1923–1934.

Morosow, K. and M. Kolk (2019). How does birth order and number of siblings affect fertility? a within-family comparison using swedish register data. *European Journal of Population*, 1–37.

Murphy, M. (2013). Cross-national patterns of intergenerational continuities in childbearing in developed countries. *Biodemography and Social Biology 59*(2), 101–126.

Murray, J. E. (2000). Marital protection and marital selection: evidence from a historical-prospective sample of american men. *Demography 37*(4), 511–521.

Myrskylä, M., K. Silventoinen, A. Jelenkovic, P. Tynelius, and F. Rasmussen (2013). The association between height and birth order: Evidence from 652 518 swedish men. *Journal of Epidemiology and Community Health 67*(7), 571–577.

Nettle, D. (2002). Height and reproductive success in a cohort of british men. *Human Nature 13*(4), 473–491.

Ortega, F. B., W. J. Brown, D.-c. Lee, M. Baruth, X. Sui, and S. N. Blair (2010). In fitness and health? a prospective study of changes in marital status and fitness in men and women. *American Journal of Epidemiology 173*(3), 337–344.

Patton, J. F., J. A. Vogel, and R. P. Mello (1982). Evaluation of a maximal predictive cycle ergometer test of aerobic power. *European Journal of Applied Physiology and Occupational Physiology 49*(1), 131–140.

Pawlowski, B., R. I. Dunbar, and A. Lipowicz (2000a). Evolutionary fitness: tall men have more reproductive success. *Nature 403*(6766), 156.

Pawlowski, B., R. I. Dunbar, and A. Lipowicz (2000b). Evolutionary fitness: tall men have more reproductive success. *Nature 403*(6766), 156.

Pisanski, K. and D. R. Feinberg (2013). Cross-cultural variation in mate preferences for averageness, symmetry, body size, and masculinity. *Cross-Cultural Research 47*(2), 162–197.

Puhl, R. and K. D. Brownell (2001). Bias, discrimination, and obesity. *Obesity Research 9*(12), 788–805.

Puhl, R. M. and C. A. Heuer (2009). The stigma of obesity: a review and update. *Obesity 17*(5), 941–964.

Ramlau-Hansen, C. H., A. M. Thulstrup, E. Nohr, J. P. Bonde, T. Sørensen, and J. Olsen (2007). Subfecundity in overweight and obese couples. *Human Reproduction 22*(6), 1634–1637.

Rasmussen, F., M. Johansson, and H. O. Hansen (1999). Trends in overweight and obesity among 18-year-old males in Sweden between 1971 and 1995. *Acta Paediatrica 88*(4), 431–437.

Rhodes, G., L. W. Simmons, and M. Peters (2005). Attractiveness and sexual behavior: does attractiveness enhance mating success? *Evolution and Human Behavior 26*(2), 186–201.

Roehling, M. V. (1999). Weight-based discrimination in employment: Psychological and legal aspects. *Personnel Psychology 52*(4), 969–1016.

Rønsen, M. (2004). Fertility and public policies-evidence from norway and finland. *Demographic research 10*, 143–170.

Rosen, R. C., M. Friedman, and J. B. Kostis (2005). Lifestyle management of erectile dysfunction: the role of cardiovascular and concomitant risk factors. *American Journal of Cardiology 96*(12), 76–79.

Saarela, J. and V. Skirbekk (2019). Childlessness and union histories: evidence from finnish population register data. *Journal of Biosocial Science*, 1–19.

Safarinejad, M. R., K. Azma, A. A. Kolahi, et al. (2009). The effects of intensive, long-term treadmill running on reproductive hormones, hypothalamus-pituitary-testis axis, and semen quality: a randomized controlled study. *Journal of Endocrinology 200*(3), 259–271.

SCB (2011). *Multigeneration Register 2010: A Description of Contents and Quality*. Stockholm: Statistics Sweden.

Schytt, E., A. Nilsen, and E. Bernhardt (2014). Still childless at the age of 28 to 40 years: A cross-sectional study of Swedish womens and mens reproductive intentions. *Sexual & Reproductive Healthcare 5*(1), 23–29.

Scott, E. and C. Bajema (1981). Height, weight and fertility among the participants of the 3rd harvard growth study. In *American Journal of Physical Anthropology*, Volume 54, pp. 276–276. WILEY-LISS DIV JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012.

Sear, R. (2006). Height and reproductive success. *Human Nature 17*(4), 405–418.

Sear, R. (2010). Height and reproductive success: is bigger always better? In U. J. Frey, C. Störmer, and K. P. Willführ (Eds.), *Homo Novus: A Human Without Illusions*, pp. 127–143. Springer.

Seefeldt, V., R. M. Malina, and M. A. Clark (2002). Factors affecting levels of physical activity in adults. *Sports Medicine 32*(3), 143–168.

Sell, A., A. W. Lukazsweski, and M. Townsley (2017). Cues of upper body strength account for most of the variance in men's bodily attractiveness. *Proceedings of the Royal Society B: Biological Sciences 284*(1869), 20171819.

Silventoinen, K., S. Helle, J. Nisen, P. Martikainen, and J. Kaprio (2013). Height, age at first birth, and lifetime reproductive success: a prospective cohort study of finnish male and female twins. *Twin Research and Human Genetics 16*(2), 581–589.

Stokes, A. and S. H. Preston (2016). Revealing the burden of obesity using weight histories. *Proceedings of the National Academy of Sciences 113*(3), 572–577.

Stokes, V. J., R. A. Anderson, and J. T. George (2015). How does obesity affect fertility in men–and what are the treatment options? *Clinical Endocrinology 82*(5), 633–638.

Stulp, G. and L. Barrett (2016). Evolutionary perspectives on human height variation. *Biological Reviews 91*(1), 206–234.

Stulp, G., M. Mills, T. V. Pollet, and L. Barrett (2014). Non-linear associations between stature and mate choice characteristics for american men and their spouses. *American Journal of Human Biology 26*(4), 530–537.

Stulp, G., T. V. Pollet, S. Verhulst, and A. P. Buunk (2012). A curvilinear effect of height on reproductive success in human males. *Behavioral Ecology and Sociobiology 66*(3), 375–384.

Tovée, M. J., D. S. Maisey, E. L. Vale, and P. L. Cornelissen (1999). Characteristics of male attractiveness for women. *The Lancet 353*(9163), 1500.

Vaamonde, D., M. E. Da Silva-Grigoletto, J. M. García-Manso, N. Barrera, and R. Vaamonde-Lemos (2012). Physically active men show better semen parameters and hormone values than sedentary men. *European Journal of Applied Physiology 112*(9), 3267–3273.

SUPPLEMENTARY MATERIALS

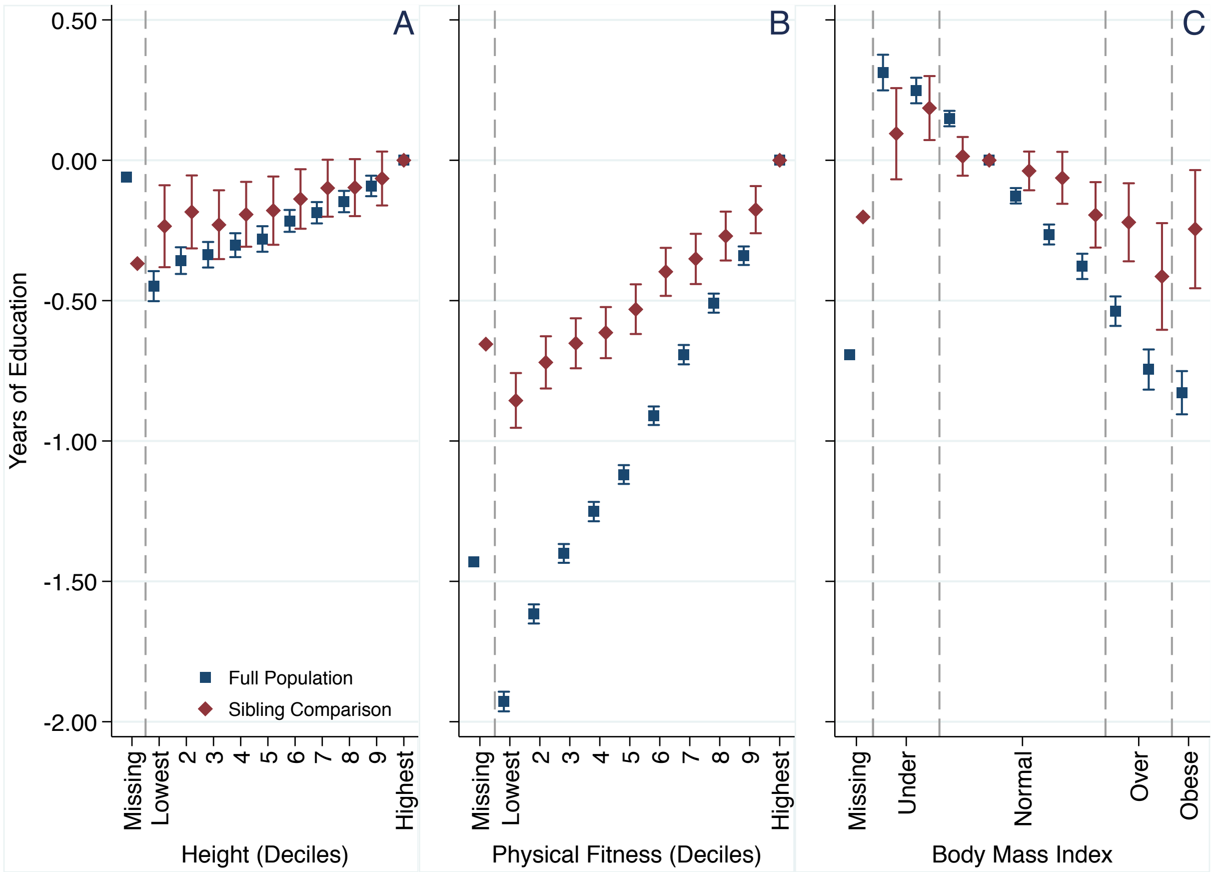

FIGURE S1. Years of education by height, physical fitness, and BMI amongst men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

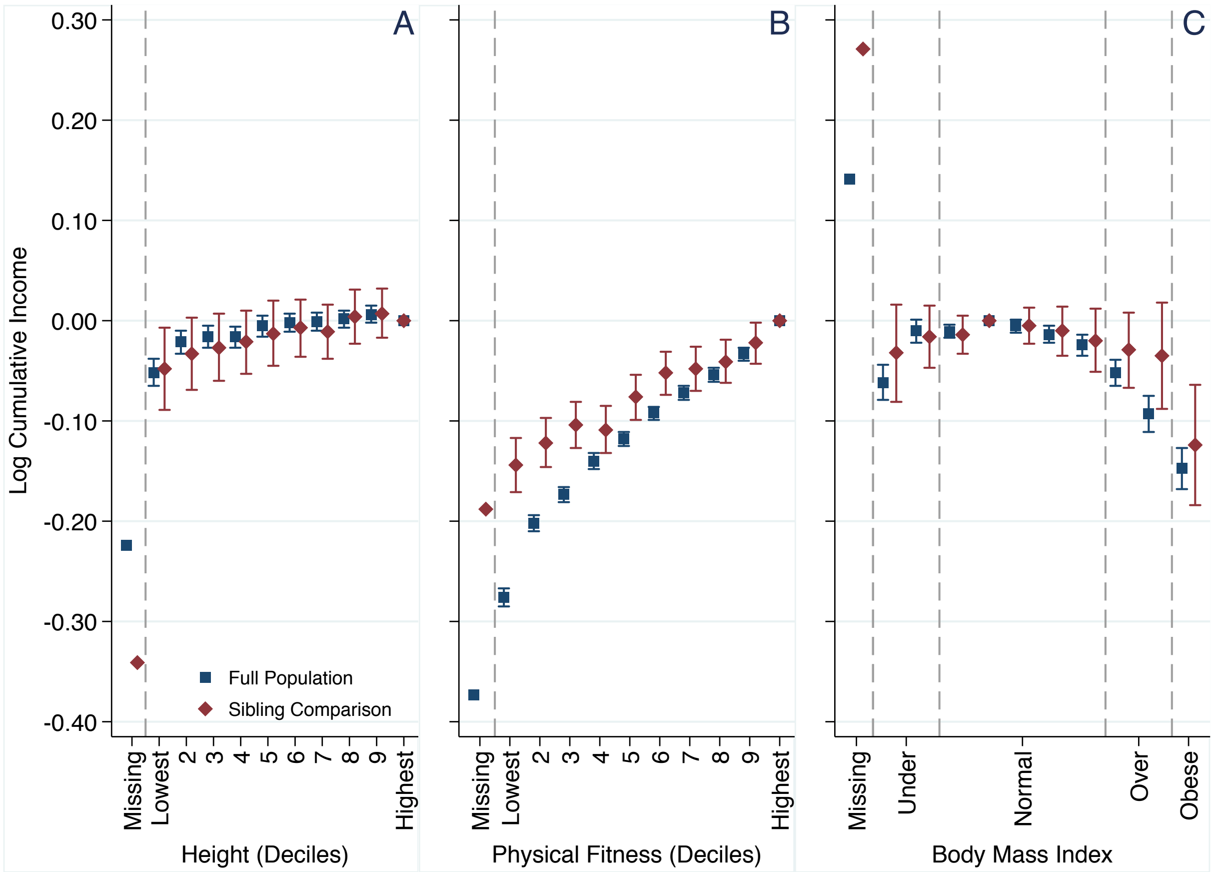

FIGURE S2. Logged cumulative income by age 40 by height, physical fitness, and BMI amongst men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

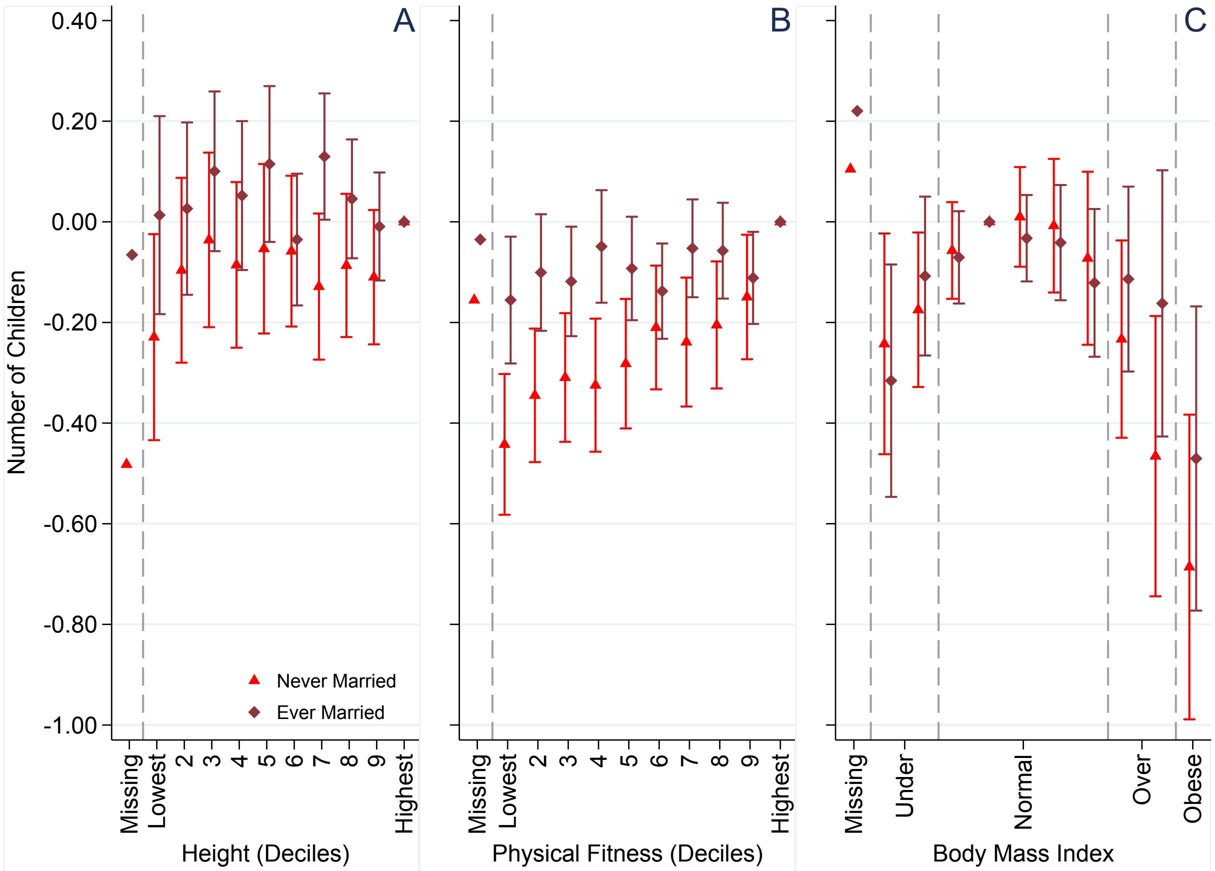

FIGURE S3. Fixed effects: total number of children by having ever married by age 40, men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

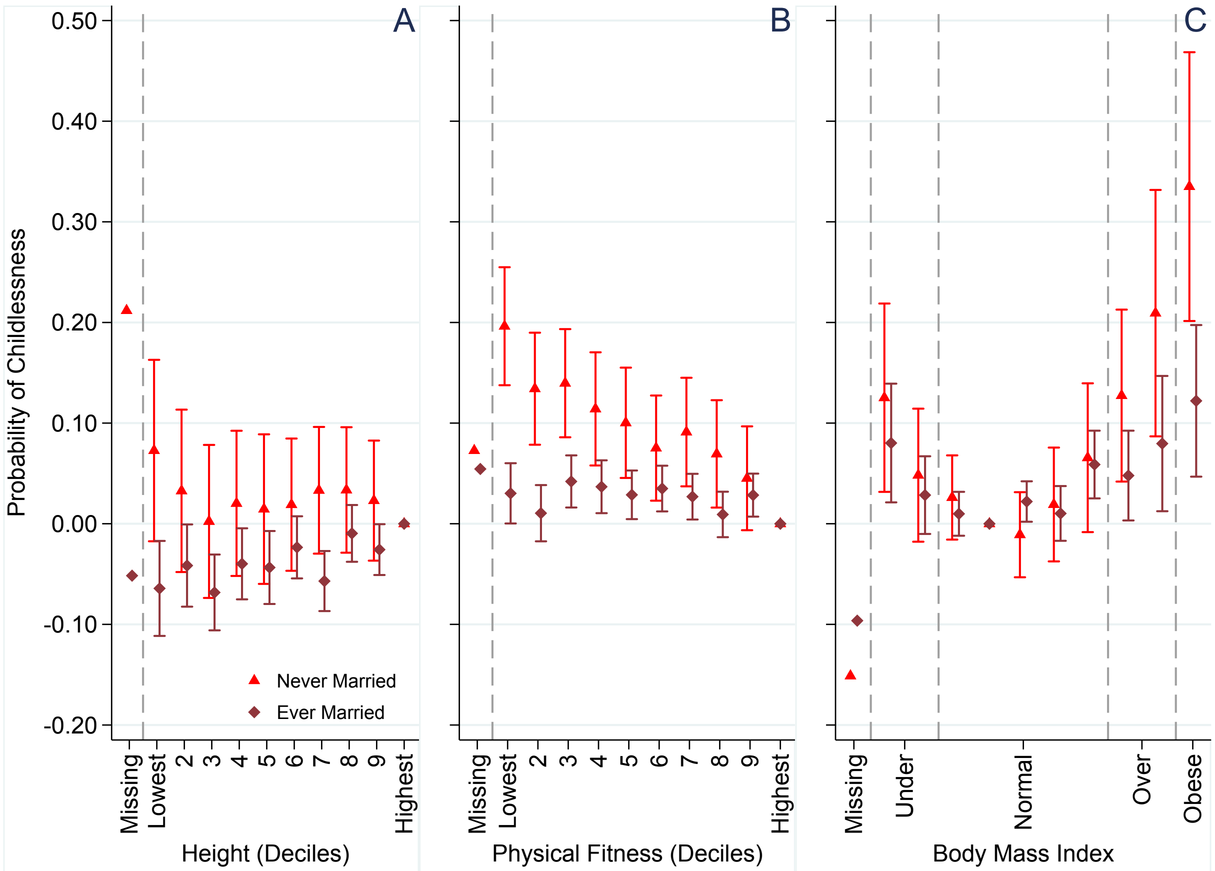

FIGURE S4. Fixed effects: probability of childlessness by having ever married by age 40, men born in Sweden, 1965-1972. Note: confidence intervals omitted for the 'missing' categories for each variable.

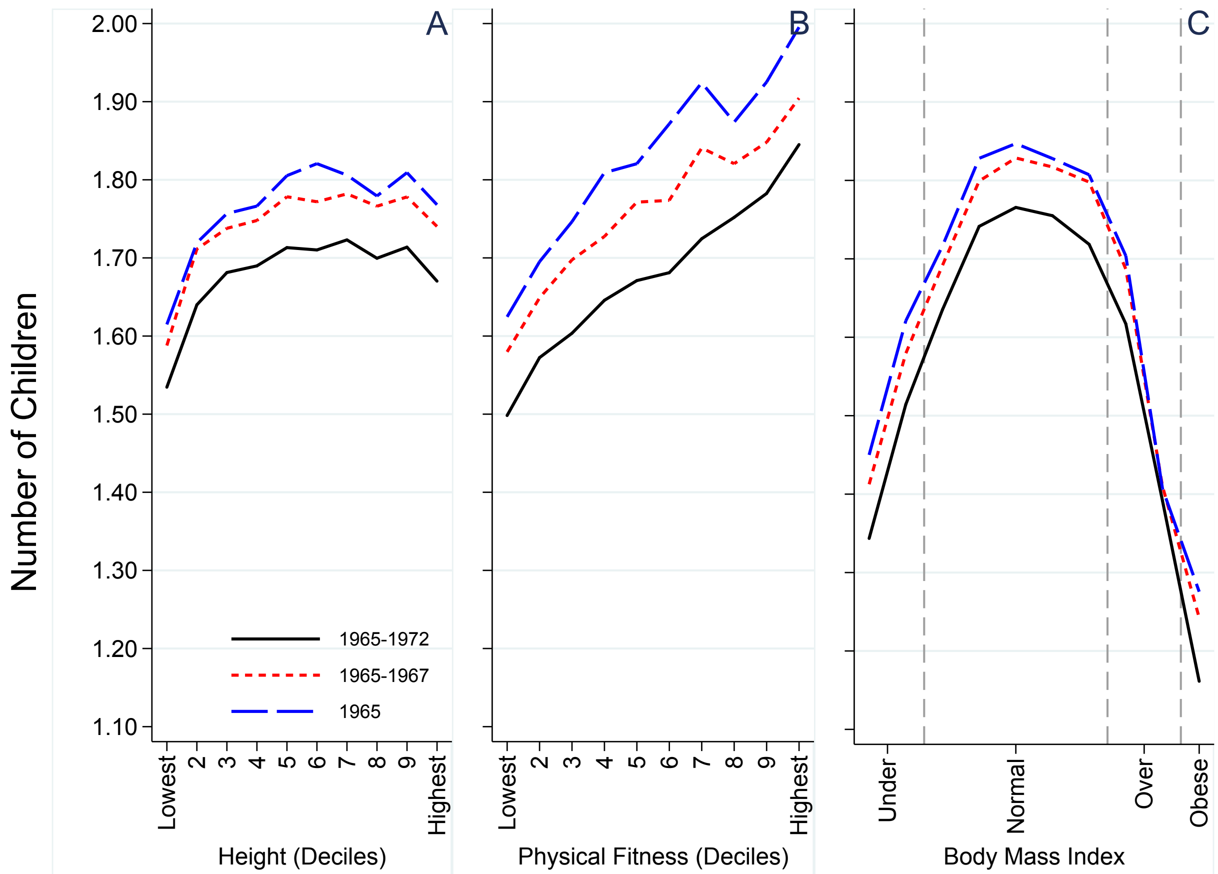

FIGURE S5. Number of children by height, physical fitness, and BMI measured at ages 17-20 for cohorts 1965-1972, 1965-1967, and 1965.

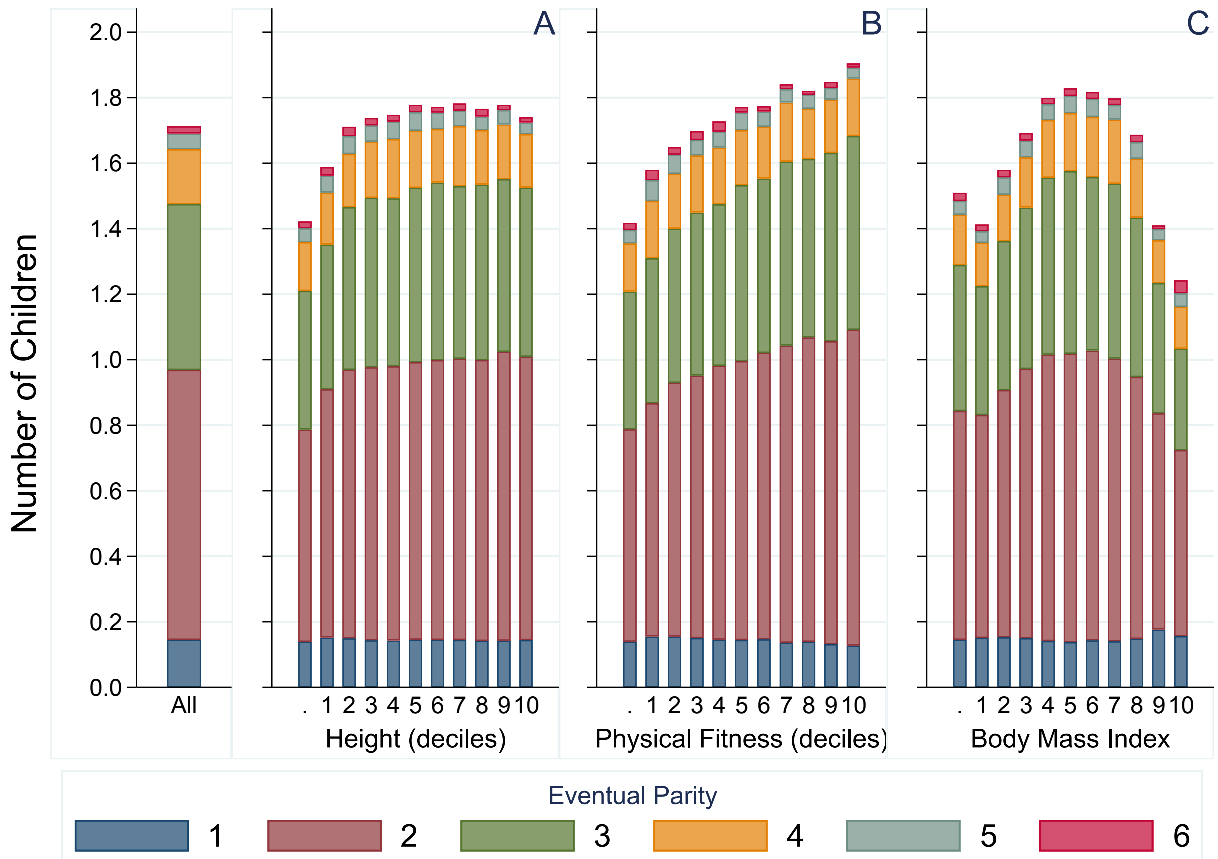

FIGURE S6. Contribution to fertility by parity by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1967.

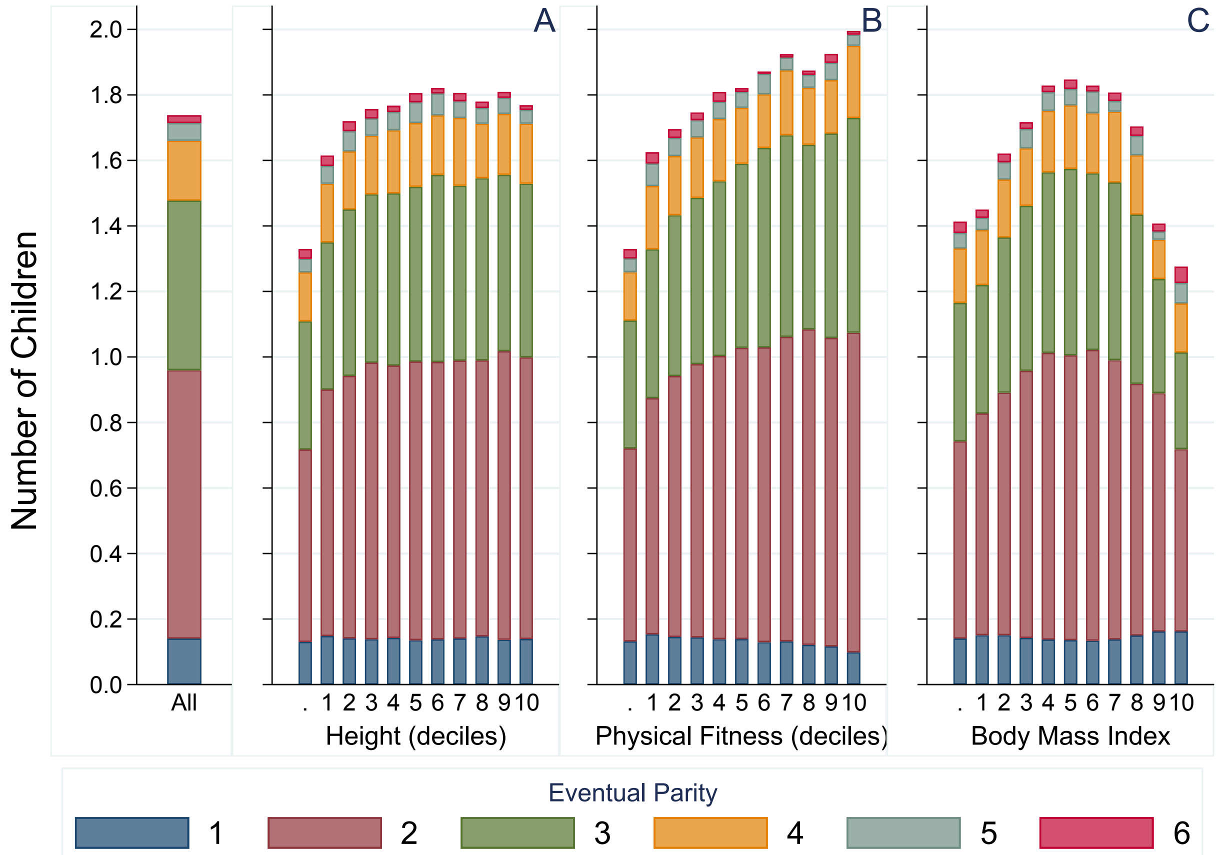

FIGURE S7. Contribution to fertility by parity by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden in 1965.

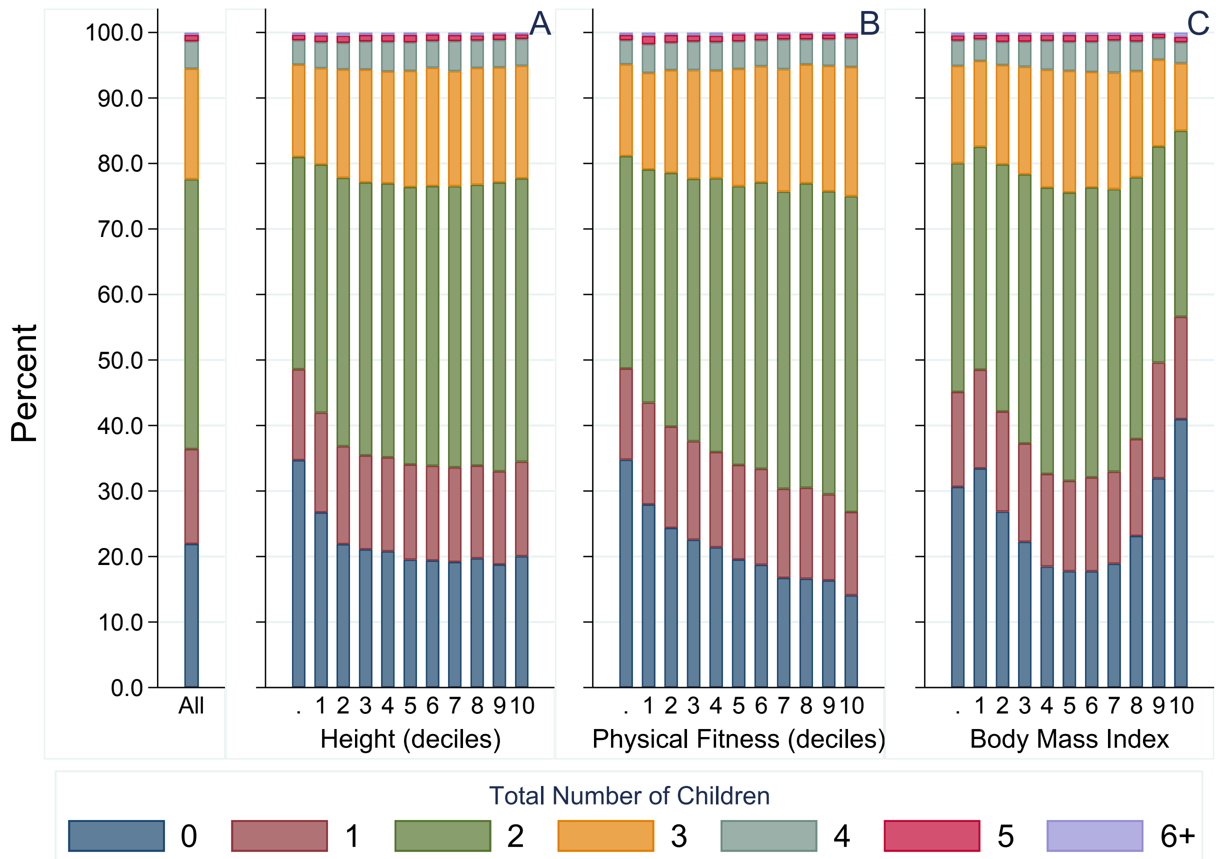

FIGURE S8. Parity distribution by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1967.

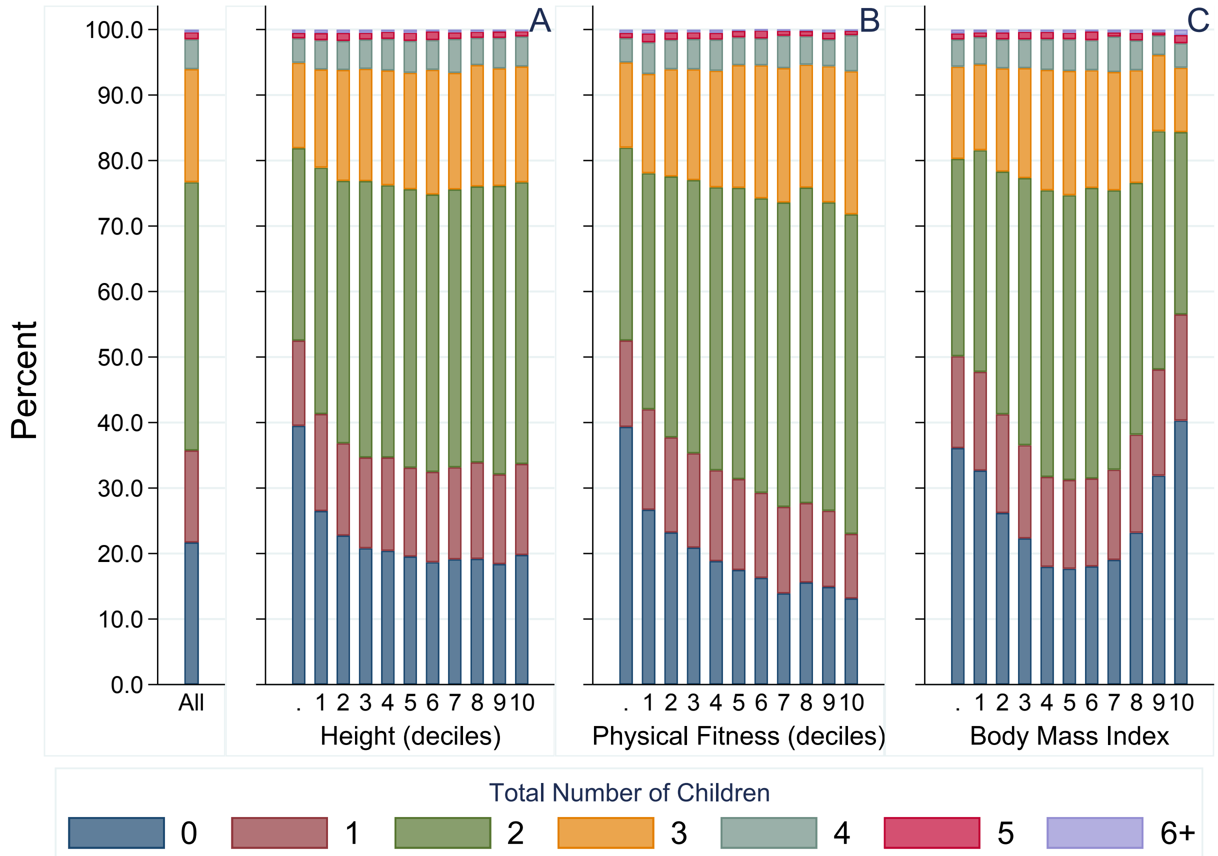

FIGURE S9. Parity distribution by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden in 1965.

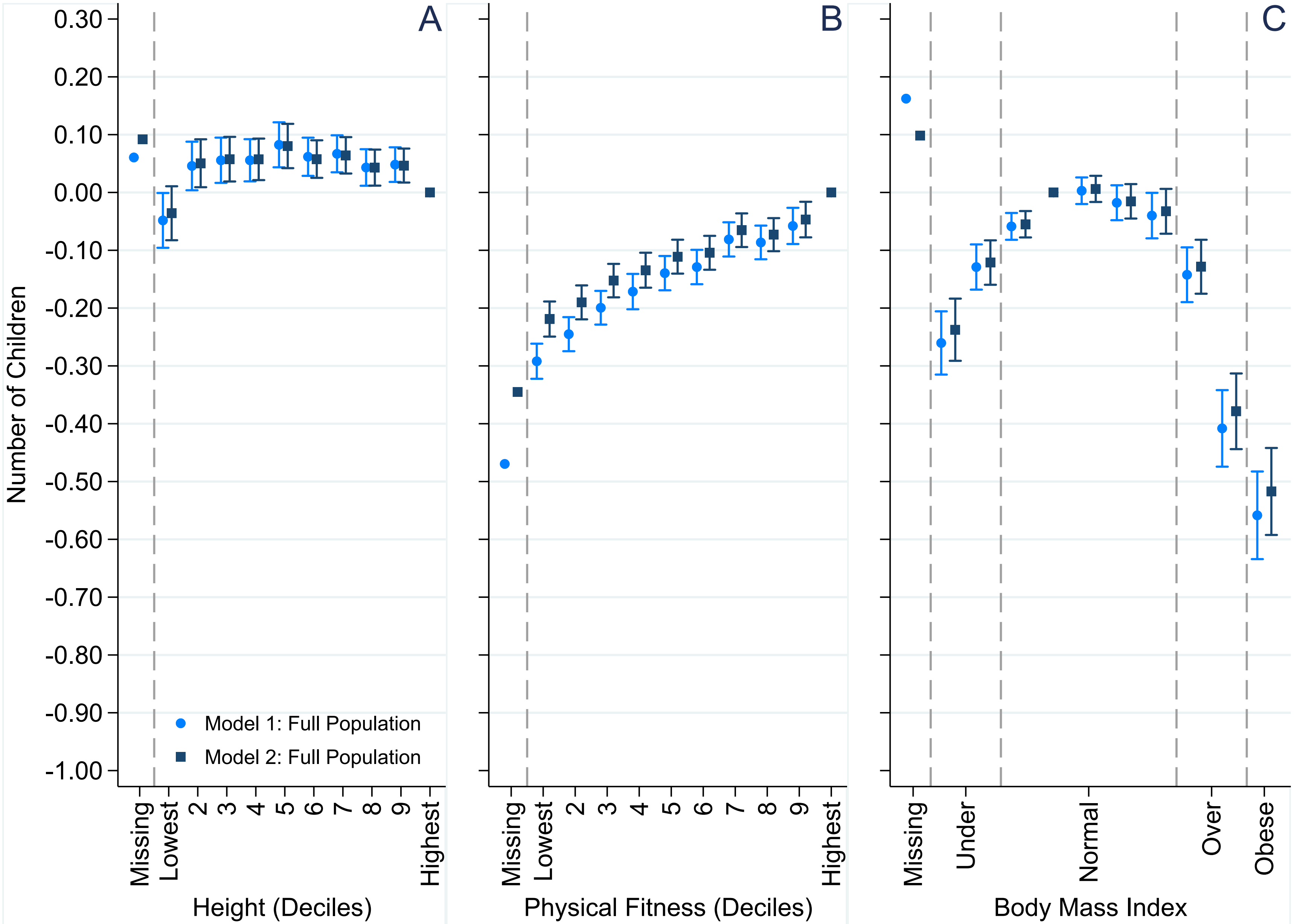

FIGURE S10. Total number of children by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden, 1965-1967. Note: confidence intervals omitted for the ‘missing’ categories for each variable.

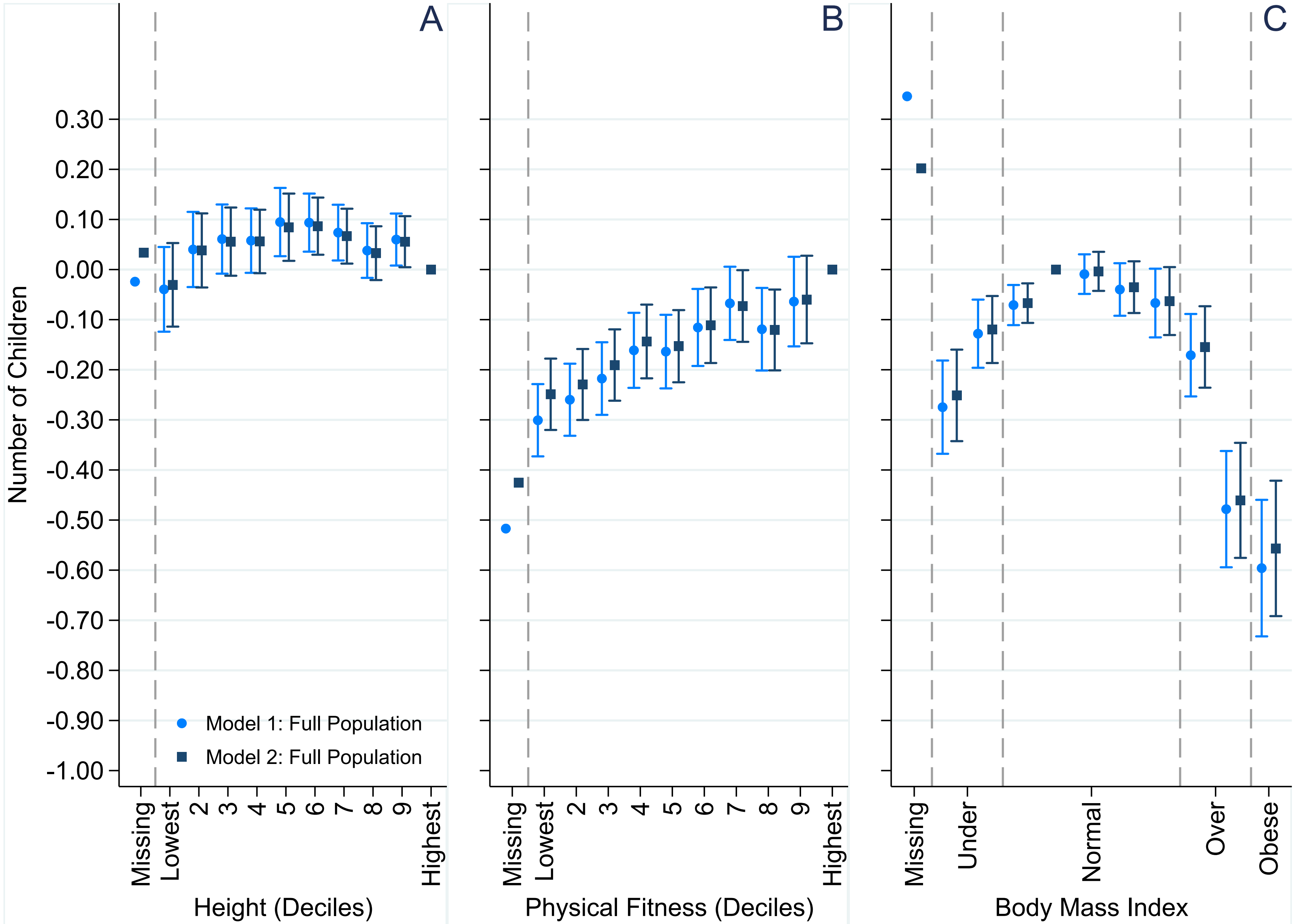

FIGURE S11. Total number of children by height, physical fitness, and BMI measured at ages 17-20 for men born in Sweden in 1965. Note: confidence intervals omitted for the 'missing' categories for each variable.

TABLE S1. Descriptive statistics: total number of children by BMI, physical fitness, and height measured at ages 17-20, and the distribution of each health measure within each level of BMI, physical fitness, and height. Swedish men born 1965-1972.

			Number of children				Health Measure (BMI, watts, cm)			
Variable	Category	N	Mean	SD	Min	Max	Mean	SD	Min	Max
Everyone		405,427	1.65	1.18	0	15				
BMI	Underweight ($\leq$17.49)	7,829	1.34	1.22	0	9	16.9	0.6	10.9	17.5
	Underweight (17.50-18.49)	19,017	1.52	1.19	0	10	18.1	0.3	17.5	18.5
	Normal (18.50-19.99)	65,072	1.64	1.17	0	11	19.3	0.4	18.5	20.0
	Normal (20.00-21.99)	124,365	1.74	1.14	0	14	21.0	0.6	20.0	22.0
	Normal (22.00-22.99)	49,444	1.77	1.14	0	15	22.5	0.3	22.0	23.0
	Normal (23.00-23.99)	33,214	1.76	1.14	0	10	23.5	0.3	23.0	24.0
	Normal (24.00-24.99)	21,136	1.72	1.15	0	10	24.5	0.3	24.0	25.0
	Overweight (25.00-27.49)	24,761	1.62	1.20	0	11	26.1	0.7	25.0	27.5
	Overweight (27.50-29.99)	8,634	1.39	1.21	0	8	28.6	0.7	27.5	30.0
	Obese (30+)	6,508	1.16	1.22	0	7	32.8	2.9	30.0	62.7
	Missing	45,447	1.45	1.25	0	14				
Physical fitness	1	38,631	1.50	1.27	0	12	212.8	18.9	3.0	233.0
(deciles)	2	37,275	1.57	1.23	0	10	244.4	5.6	234.0	253.0
	3	42,475	1.61	1.21	0	14	262.7	5.3	254.0	270.0
	4	33,724	1.65	1.20	0	15	277.1	3.4	271.0	282.0
	5	37,704	1.67	1.16	0	10	289.6	3.8	283.0	296.0
	6	41,949	1.68	1.15	0	11	303.5	4.2	297.0	310.0
	7	33,699	1.73	1.13	0	9	317.8	4.0	311.0	325.0
	8	42,274	1.75	1.10	0	13	333.6	4.2	326.0	340.0
	9	32,596	1.78	1.09	0	11	350.4	6.2	341.0	361.0
	10	37,308	1.85	1.06	0	11	388.8	26.0	362.0	800.0
	Missing	27,792	1.33	1.28	0	14				
Height (deciles)	1	41,888	1.54	1.22	0	11	168.4	2.8	138.0	171.0
	2	44,282	1.64	1.19	0	14	173.1	0.8	172.0	174.0
	3	40,242	1.68	1.17	0	10	175.5	0.5	175.0	176.0
	4	45,265	1.69	1.17	0	11	177.5	0.5	177.0	178.0
	5	22,736	1.71	1.16	0	15	179.0	0.0	179.0	179.0
	6	46,028	1.71	1.14	0	10	180.5	0.5	180.0	181.0
	7	41,009	1.72	1.15	0	13	182.5	0.5	182.0	183.0
	8	33,206	1.70	1.14	0	9	184.5	0.5	184.0	185.0
	9	33,985	1.71	1.13	0	10	186.9	0.8	186.0	188.0
	10	30,495	1.67	1.14	0	11	191.6	2.8	189.0	218.0
	Missing	26,291	1.32	1.28	0	14				

TABLE S2. Parity by age 40 or later by BMI measured at ages 17-20 for Swedish men born 1965-1972.

Body Mass Index	Parity	N	%	BMI	Parity	N	%
All	0	93,288	23.0	Normal (23.00-23.99)	0	6,228	18.8
	1	61,695	15.2		1	5,015	15.1
	2	167,644	41.4		2	14,751	44.4
	3	64,132	15.8		3	5,568	16.8
	4	14,323	3.5		4	1,278	3.9
	5	3,175	0.8		5	274	0.8
	6+	1,170	0.3		6+	100	0.3
Underweight ($\leq$17.49)	0	2,768	35.4	Normal (24.00-24.99)	0	4,255	20.1
	1	1,220	15.6		1	3,215	15.2
	2	2,582	33.0		2	9,153	43.3
	3	983	12.6		3	3,503	16.6
	4	215	2.8		4	809	3.8
	5	43	0.6		5	150	0.7
	6+	18	0.2		6+	51	0.2
Underweight (17.50-18.49)	0	5,304	27.9	Overweight (25.00-27.49)	0	6,054	24.5
	1	3,052	16.1		1	3,849	15.5
	2	7,229	38.0		2	9,921	40.1
	3	2,683	14.1		3	3,741	15.1
	4	548	2.9		4	914	3.7
	5	147	0.8		5	209	0.8
	6+	54	0.3		6+	73	0.3
Normal (18.50-19.99)	0	15,123	23.2	Overweight (27.50-29.99)	0	2,805	32.5
	1	10,184	15.7		1	1,496	17.3
	2	26,867	41.3		2	2,926	33.9
	3	10,009	15.4		3	1,062	12.3
	4	2,182	3.4		4	262	3.0
	5	514	0.8		5	64	0.7
	6+	193	0.3		6+	19	0.2
Normal (20.00-21.99)	0	24,050	19.3	Obese (30+)	0	2,757	42.4
	1	18,551	14.9		1	1,100	16.9
	2	54,766	44.0		2	1,824	28.0
	3	21,150	17.0		3	595	9.1
	4	4,552	3.7		4	165	2.5
	5	960	0.8		5	38	0.6
	6+	336	0.3		6+	29	0.5
Normal (22.00-22.99)	0	9,171	18.6	Missing	0	14,773	32.5
	1	7,232	14.6		1	6,781	14.9
	2	22,094	44.7		2	15,531	34.2
	3	8,588	17.4		3	6,250	13.8
	4	1,813	3.7		4	1,585	3.5
	5	407	0.8		5	369	0.8
	6+	139	0.3		6+	158	0.4

TABLE S3. Parity by age 40 or later by physical fitness measured at ages 17-20 for Swedish men born 1965-1972.

Physical fitness (deciles)	Parity	N	%	Physical fitness (deciles)	Parity	N	%
All	0	93,288	23.0	6	0	8,853	21.1
	1	61,695	15.2		1	6,576	15.7
	2	167,644	41.4		2	17,977	42.9
	3	64,132	15.8		3	6,710	16.0
	4	14,323	3.5		4	1,409	3.4
	5	3,175	0.8		5	322	0.8
	6+	1,170	0.3		6+	102	0.2
1	0	11,642	30.1	7	0	6,546	19.4
	1	6,271	16.2		1	5,132	15.2
	2	13,336	34.5		2	14,973	44.4
	3	5,329	13.8		3	5,539	16.4
	4	1,484	3.8		4	1,184	3.5
	5	404	1.1		5	253	0.8
	6+	165	0.4		6+	72	0.2
2	0	9,919	26.6	8	0	7,638	18.1
	1	6,088	16.3		1	6,202	14.7
	2	13,856	37.2		2	19,597	46.4
	3	5,492	14.7		3	7,120	16.8
	4	1,411	3.8		4	1,372	3.3
	5	372	1.0		5	270	0.6
	6+	137	0.4		6+	75	0.2
3	0	10,668	25.1	9	0	5,624	17.3
	1	6,769	15.9		1	4,612	14.2
	2	16,523	38.9		2	15,265	46.8
	3	6,421	15.1		3	5,738	17.6
	4	1,582	3.7		4	1,100	3.4
	5	349	0.8		5	188	0.6
	6+	163	0.4		6+	69	0.2
4	0	7,885	23.4	10	0	5,577	15.0
	1	5,269	15.6		1	5,033	13.5
	2	13,773	40.8		2	18,105	48.5
	3	5,063	15.0		3	7,092	19.0
	4	1,303	3.9		4	1,238	3.3
	5	292	0.9		5	207	0.6
	6+	139	0.4		6+	56	0.2
5	0	8,298	22.0	Missing	0	10,638	38.3
	1	5,844	15.5		1	3,899	14.0
	2	15,736	41.7		2	8,503	30.6
	3	6,097	16.2		3	3,531	12.7
	4	1,335	3.5		4	905	3.3
	5	298	0.8		5	220	0.8
	6+	96	0.3		6+	96	0.4

TABLE S4. Parity by age 40 or later by height measured at ages 17-20 for Swedish men born 1965-1972.

Height (deciles)	Parity	N	%	Height (deciles)	Parity	N	%
All	0	93,288	23.0	6	0	9,377	20.37
	1	61,695	15.2		1	6,982	15.17
	2	167,644	41.4		2	19,923	43.28
	3	64,132	15.8		3	7,670	16.66
	4	14,323	3.5		4	1,613	3.5
	5	3,175	0.8		5	345	0.75
	6+	1,170	0.3		6+	118	0.26
1	0	11,593	27.68	7	0	8,254	20.13
	1	6,778	16.18		1	6,201	15.12
	2	15,709	37.5		2	17,761	43.31
	3	5,821	13.9		3	6,798	16.58
	4	1,462	3.49		4	1,563	3.81
	5	374	0.89		5	314	0.77
	6+	151	0.36		6+	118	0.29
2	0	10,349	23.37	8	0	6,885	20.73
	1	6,913	15.61		1	4,946	14.89
	2	18,151	40.99		2	14,471	43.58
	3	6,774	15.3		3	5,471	16.48
	4	1,550	3.5		4	1,117	3.36
	5	385	0.87		5	223	0.67
	6+	160	0.36		6+	93	0.28
3	0	8,732	21.7	9	0	6,820	20.07
	1	6,220	15.46		1	5,139	15.12
	2	16,916	42.04		2	14,862	43.73
	3	6,455	16.04		3	5,669	16.68
	4	1,482	3.68		4	1,172	3.45
	5	316	0.79		5	253	0.74
	6+	121	0.3		6+	70	0.21
4	0	9,778	21.6	10	0	6,624	21.72
	1	6,906	15.26		1	4,559	14.95
	2	18,998	41.97		2	13,138	43.08
	3	7,391	16.33		3	4,922	16.14
	4	1,687	3.73		4	1,000	3.28
	5	385	0.85		5	182	0.6
	6+	120	0.27		6+	70	0.23
5	0	4,702	20.68	Missing	0	10,174	38.7
	1	3,416	15.02		1	3,635	13.83
	2	9,713	42.72		2	8,002	30.44
	3	3,828	16.84		3	3,333	12.68
	4	826	3.63		4	851	3.24
	5	190	0.84		5	208	0.79
	6+	61	0.27		6+	88	0.33

Table S5: Linear regression: final parity regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.244	0.017	-0.278, -0.210	-0.222	0.017	-0.256, -0.189
	Underweight (17.50-18.49)	-0.114	0.012	-0.138, -0.090	-0.110	0.012	-0.134, -0.086
	Normal (18.50-19.99)	-0.047	0.007	-0.061, -0.033	-0.044	0.007	-0.058, -0.030
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.012	0.007	-0.026, 0.002	-0.009	0.007	-0.023, 0.005
	Normal (23.00-23.99)	-0.033	0.009	-0.052, -0.015	-0.029	0.009	-0.047, -0.010
	Normal (24.00-24.99)	-0.073	0.012	-0.097, -0.049	-0.064	0.012	-0.088, -0.041
	Overweight (25.00-27.49)	-0.163	0.015	-0.191, -0.134	-0.144	0.014	-0.172, -0.116
	Overweight (27.50-29.99)	-0.371	0.020	-0.411, -0.331	-0.335	0.020	-0.375, -0.295
	Obese (30+)	-0.584	0.023	-0.628, -0.539	-0.528	0.022	-0.572, -0.484
	Missing	0.205	0.089	0.030, 0.379	0.140	0.087	-0.031, 0.311
Physical Fitness (deciles)	1	-0.352	0.009	-0.371, -0.334	-0.266	0.009	-0.285, -0.248
	2	-0.287	0.009	-0.305, -0.270	-0.223	0.009	-0.241, -0.206
	3	-0.252	0.008	-0.268, -0.235	-0.198	0.008	-0.214, -0.181
	4	-0.212	0.009	-0.230, -0.195	-0.168	0.009	-0.185, -0.151
	5	-0.190	0.008	-0.206, -0.173	-0.154	0.008	-0.170, -0.138
	6	-0.166	0.008	-0.182, -0.150	-0.137	0.008	-0.153, -0.122
	7	-0.144	0.008	-0.160, -0.127	-0.121	0.008	-0.137, -0.105
	8	-0.103	0.008	-0.119, -0.087	-0.085	0.008	-0.101, -0.070
	9	-0.076	0.008	-0.091, -0.061	-0.065	0.008	-0.080, -0.050
	10 [ref]	0.000			0.000		
	Missing	-0.352	0.032	-0.415, -0.289	-0.218	0.032	-0.280, -0.156
Height (deciles)	1	-0.012	0.015	-0.041, 0.017	0.000	0.014	-0.029, 0.028
	2	0.060	0.013	0.035, 0.086	0.063	0.013	0.038, 0.088
	3	0.083	0.012	0.059, 0.106	0.083	0.012	0.060, 0.106
	4	0.078	0.011	0.056, 0.100	0.079	0.011	0.057, 0.101
	5	0.094	0.012	0.071, 0.118	0.092	0.012	0.069, 0.115
	6	0.079	0.010	0.059, 0.099	0.076	0.010	0.056, 0.095
	7	0.085	0.010	0.066, 0.104	0.082	0.010	0.063, 0.101
	8	0.053	0.010	0.034, 0.072	0.050	0.010	0.031, 0.068
	9	0.056	0.009	0.038, 0.074	0.052	0.009	0.035, 0.070
	10 [ref]	0.000			0.000		
	Missing	-0.129	0.033	-0.194, -0.064	-0.077	0.032	-0.141, -0.013
Weight (deciles)	1	-0.065	0.025	-0.113, -0.017	-0.061	0.024	-0.108, -0.013
	2	-0.038	0.021	-0.080, 0.004	-0.037	0.021	-0.078, 0.004
	3	-0.026	0.019	-0.064, 0.012	-0.026	0.019	-0.063, 0.012
	4	-0.013	0.018	-0.048, 0.023	-0.013	0.018	-0.048, 0.022
	5	-0.015	0.017	-0.049, 0.018	-0.016	0.017	-0.049, 0.017
	6	-0.018	0.016	-0.050, 0.013	-0.018	0.016	-0.049, 0.013
	7	0.007	0.015	-0.021, 0.036	0.006	0.014	-0.022, 0.034
	8	0.004	0.013	-0.023, 0.030	0.002	0.013	-0.024, 0.028
	9	0.014	0.011	-0.008, 0.036	0.011	0.011	-0.011, 0.033
	10 [ref]	0.000			0.000		
	Missing	-0.286	0.090	-0.462, -0.110	-0.212	0.088	-0.385, -0.040

Continued on next page

Table S5 – *Continued from previous page*

Variable	Category	Model 1			Model 2		
		β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		0.000, 0.000
	1966	-0.062	0.007	-0.076, -0.047	-0.056	0.007	-0.070, -0.041
	1967	-0.095	0.007	-0.109, -0.080	-0.092	0.007	-0.106, -0.077
	1968	-0.136	0.008	-0.151, -0.121	-0.132	0.007	-0.146, -0.117
	1969	-0.159	0.008	-0.174, -0.144	-0.157	0.007	-0.172, -0.143
	1970	-0.198	0.008	-0.213, -0.183	-0.194	0.007	-0.208, -0.179
	1971	-0.219	0.007	-0.233, -0.204	-0.217	0.007	-0.231, -0.203
	1972	-0.258	0.007	-0.272, -0.243	-0.253	0.007	-0.268, -0.239
Sibling group size	1				-0.043	0.006	-0.054, -0.032
	2 [ref]				0.000		
	3				0.100	0.005	0.090, 0.110
	4				0.208	0.009	0.190, 0.226
	5				0.353	0.019	0.316, 0.390
	6+				0.500	0.031	0.438, 0.561
Birth order	1 [ref]				0.000		
	2				-0.025	0.004	-0.033, -0.017
	3				-0.063	0.007	-0.077, -0.049
	4				-0.127	0.013	-0.153, -0.100
	5				-0.273	0.026	-0.325, -0.222
	6+				-0.260	0.040	-0.339, -0.181
Educational attainment	Primary (<9 years)				-0.278	0.047	-0.371, -0.186
	Primary (9 years)				0.010	0.007	-0.005, 0.024
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				-0.097	0.006	-0.108, -0.086
	Tertiary (13-15 years)				-0.106	0.005	-0.116, -0.096
	Tertiary (15+ years)				-0.044	0.005	-0.054, -0.033
	Postgraduate (16-20 years)				0.035	0.015	0.006, 0.064
	Missing				-0.809	0.027	-0.862, -0.757
Cumulative income (deciles)	1				-0.833	0.008	-0.850, -0.817
	2				-0.458	0.008	-0.474, -0.442
	3				-0.328	0.008	-0.344, -0.313
	4				-0.258	0.008	-0.273, -0.243
	5				-0.228	0.008	-0.243, -0.213
	6				-0.186	0.007	-0.201, -0.171
	7				-0.158	0.007	-0.172, -0.143
	8				-0.134	0.007	-0.148, -0.120
	9				-0.095	0.007	-0.109, -0.081
	10 [ref]				0.000		
	Missing				-0.937	0.051	-1.037, -0.837
N		405,427			405,427		

Table S6: Linear regression: final parity regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.305	0.064	-0.430, -0.179	-0.288	0.063	-0.411, -0.165
	Underweight (17.50-18.49)	-0.150	0.044	-0.237, -0.063	-0.151	0.044	-0.236, -0.065
	Normal (18.50-19.99)	-0.085	0.027	-0.139, -0.032	-0.082	0.027	-0.135, -0.030
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.014	0.027	-0.038, 0.066	0.021	0.026	-0.030, 0.072
	Normal (23.00-23.99)	-0.042	0.036	-0.112, 0.028	-0.032	0.035	-0.101, 0.036
	Normal (24.00-24.99)	-0.087	0.046	-0.178, 0.003	-0.075	0.045	-0.164, 0.014
	Overweight (25.00-27.49)	-0.204	0.054	-0.309, -0.098	-0.176	0.053	-0.280, -0.073
	Overweight (27.50-29.99)	-0.366	0.076	-0.515, -0.217	-0.334	0.075	-0.480, -0.187
	Obese (30+)	-0.833	0.085	-1.000, -0.666	-0.744	0.084	-0.908, -0.580
	Missing	-0.107	0.304	-0.704, 0.489	-0.275	0.297	-0.858, 0.307
Physical Fitness (deciles)	1	-0.407	0.038	-0.480, -0.333	-0.316	0.037	-0.389, -0.244
	2	-0.337	0.035	-0.406, -0.268	-0.259	0.035	-0.327, -0.191
	3	-0.273	0.033	-0.338, -0.207	-0.208	0.033	-0.273, -0.144
	4	-0.251	0.034	-0.318, -0.184	-0.183	0.034	-0.249, -0.117
	5	-0.227	0.033	-0.292, -0.163	-0.178	0.032	-0.241, -0.114
	6	-0.201	0.031	-0.262, -0.140	-0.168	0.030	-0.227, -0.108
	7	-0.184	0.032	-0.247, -0.122	-0.150	0.031	-0.212, -0.089
	8	-0.100	0.031	-0.162, -0.039	-0.077	0.031	-0.137, -0.017
	9	-0.125	0.030	-0.184, -0.065	-0.111	0.030	-0.169, -0.054
	10 [ref]	0.000			0.000		
	Missing	-0.232	0.111	-0.450, -0.013	-0.129	0.107	-0.339, 0.080
Height (deciles)	1	-0.175	0.057	-0.287, -0.062	-0.151	0.056	-0.262, -0.041
	2	-0.023	0.051	-0.123, 0.076	-0.007	0.050	-0.104, 0.091
	3	0.012	0.048	-0.081, 0.105	0.023	0.047	-0.068, 0.114
	4	-0.015	0.044	-0.102, 0.072	-0.005	0.044	-0.091, 0.080
	5	0.038	0.047	-0.053, 0.129	0.043	0.046	-0.046, 0.133
	6	-0.004	0.040	-0.083, 0.076	-0.003	0.040	-0.081, 0.074
	7	0.012	0.039	-0.063, 0.088	0.010	0.038	-0.064, 0.085
	8	0.018	0.037	-0.056, 0.091	0.013	0.037	-0.059, 0.085
	9	-0.014	0.035	-0.082, 0.055	-0.021	0.034	-0.088, 0.046
	10 [ref]	0.000			0.000		
	Missing	-0.439	0.116	-0.666, -0.212	-0.294	0.111	-0.512, -0.076
Weight (deciles)	1	-0.081	0.090	-0.256, 0.095	-0.068	0.088	-0.241, 0.105
	2	-0.063	0.079	-0.217, 0.092	-0.058	0.077	-0.210, 0.094
	3	-0.045	0.072	-0.186, 0.095	-0.045	0.070	-0.183, 0.093
	4	-0.066	0.068	-0.198, 0.066	-0.073	0.066	-0.203, 0.057
	5	-0.047	0.064	-0.173, 0.079	-0.049	0.063	-0.173, 0.075
	6	-0.047	0.060	-0.165, 0.070	-0.040	0.059	-0.155, 0.075
	7	0.000	0.054	-0.107, 0.107	0.002	0.053	-0.103, 0.106
	8	-0.028	0.050	-0.125, 0.070	-0.026	0.049	-0.122, 0.070
	9	-0.003	0.042	-0.085, 0.079	-0.013	0.041	-0.094, 0.067
	10 [ref]	0.000			0.000		
	Missing	-0.039	0.308	-0.643, 0.565	0.136	0.301	-0.453, 0.726

Continued on next page

Table S6 – *Continued from previous page*

Variable	Category	Model 3			Model 4		
		β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.129	0.027	-0.181, -0.076	-0.134	0.027	-0.187, -0.080
	1967	-0.136	0.026	-0.186, -0.086	-0.158	0.028	-0.213, -0.102
	1968	-0.210	0.025	-0.260, -0.161	-0.239	0.031	-0.300, -0.178
	1969	-0.277	0.026	-0.328, -0.226	-0.306	0.035	-0.375, -0.237
	1970	-0.353	0.027	-0.406, -0.300	-0.394	0.040	-0.472, -0.317
	1971	-0.376	0.027	-0.429, -0.323	-0.424	0.045	-0.512, -0.336
	1972	-0.448	0.028	-0.502, -0.394	-0.506	0.050	-0.604, -0.408
Birth order	1 [ref]				0.000		
	2				0.030	0.020	-0.010, 0.070
	3				0.080	0.039	0.003, 0.157
	4				-0.012	0.063	-0.136, 0.111
	5				-0.138	0.098	-0.329, 0.054
	6+				0.018	0.138	-0.252, 0.287
Educational attainment	Primary (<9 years)				-0.817	0.150	-1.112, -0.523
	Primary (9 years)				-0.047	0.026	-0.099, 0.005
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				-0.054	0.022	-0.096, -0.011
	Tertiary (13-15 years)				-0.031	0.022	-0.074, 0.012
	Tertiary (15+ years)				0.042	0.023	-0.003, 0.087
	Postgraduate (16-20 years)				0.186	0.058	0.072, 0.299
	Missing				-0.827	0.130	-1.083, -0.572
Cumulative income (deciles)	1				-1.127	0.033	-1.192, -1.062
	2				-0.679	0.032	-0.741, -0.617
	3				-0.466	0.031	-0.527, -0.405
	4				-0.365	0.031	-0.425, -0.305
	5				-0.317	0.030	-0.376, -0.257
	6				-0.225	0.030	-0.284, -0.166
	7				-0.226	0.030	-0.285, -0.168
	8				-0.162	0.029	-0.220, -0.105
	9				-0.166	0.029	-0.223, -0.110
	10 [ref]				0.000		
	Missing				-1.277	0.322	-1.908, -0.647
N		75,905			75,905		

Table S7: Linear regression: years of education regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	Underweight (17.50-18.49)	0.251	0.023	0.205, 0.297	0.248	0.023	0.203, 0.294
	Normal (18.50-19.99)	0.149	0.014	0.122, 0.177	0.148	0.014	0.121, 0.176
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.130	0.014	-0.158, -0.103	-0.127	0.014	-0.154, -0.099
	Normal (23.00-23.99)	-0.268	0.018	-0.304, -0.233	-0.265	0.018	-0.300, -0.229
	Normal (24.00-24.99)	-0.378	0.023	-0.424, -0.333	-0.378	0.023	-0.423, -0.333
	Overweight (25.00-27.49)	-0.542	0.027	-0.595, -0.489	-0.538	0.027	-0.590, -0.485
	Overweight (27.50-29.99)	-0.753	0.036	-0.825, -0.682	-0.745	0.036	-0.817, -0.674
	Obese (30+)	-0.848	0.039	-0.925, -0.771	-0.828	0.039	-0.905, -0.751
	Missing	-0.656	0.162	-0.973, -0.339	-0.692	0.161	-1.007, -0.376
Physical Fitness (deciles)	1	-1.976	0.018	-2.011, -1.941	-1.928	0.018	-1.963, -1.893
	2	-1.654	0.018	-1.688, -1.619	-1.616	0.017	-1.650, -1.582
	3	-1.434	0.017	-1.467, -1.401	-1.400	0.017	-1.434, -1.367
	4	-1.280	0.018	-1.314, -1.245	-1.251	0.018	-1.286, -1.217
	5	-1.142	0.017	-1.176, -1.109	-1.120	0.017	-1.153, -1.086
	6	-0.929	0.017	-0.961, -0.896	-0.910	0.017	-0.943, -0.877
	7	-0.707	0.018	-0.742, -0.673	-0.693	0.018	-0.727, -0.658
	8	-0.519	0.017	-0.553, -0.485	-0.509	0.017	-0.543, -0.475
	9	-0.347	0.017	-0.380, -0.314	-0.340	0.017	-0.373, -0.307
	10 [ref]	0.000			0.000		
	Missing	-1.471	0.052	-1.573, -1.369	-1.430	0.052	-1.531, -1.328
Height (deciles)	1	-0.458	0.027	-0.511, -0.404	-0.448	0.027	-0.502, -0.395
	2	-0.366	0.024	-0.414, -0.318	-0.358	0.024	-0.405, -0.310
	3	-0.343	0.023	-0.389, -0.298	-0.336	0.023	-0.382, -0.291
	4	-0.309	0.022	-0.351, -0.266	-0.303	0.022	-0.345, -0.260
	5	-0.286	0.023	-0.332, -0.241	-0.280	0.023	-0.326, -0.235
	6	-0.221	0.020	-0.260, -0.182	-0.216	0.020	-0.255, -0.177
	7	-0.192	0.019	-0.230, -0.153	-0.187	0.019	-0.225, -0.149
	8	-0.150	0.019	-0.188, -0.112	-0.147	0.019	-0.185, -0.109
	9	-0.093	0.019	-0.130, -0.056	-0.092	0.019	-0.128, -0.055
	10 [ref]	0.000			0.000		
	Missing	-0.059	0.054	-0.165, 0.047	-0.060	0.054	-0.166, 0.045
Weight (deciles)	1	0.306	0.046	0.216, 0.396	0.298	0.046	0.209, 0.387
	2	0.365	0.040	0.287, 0.444	0.357	0.040	0.279, 0.435
	3	0.335	0.036	0.264, 0.407	0.329	0.036	0.258, 0.400
	4	0.287	0.034	0.220, 0.354	0.277	0.034	0.211, 0.344
	5	0.303	0.032	0.239, 0.366	0.295	0.032	0.232, 0.359
	6	0.273	0.031	0.213, 0.333	0.265	0.030	0.205, 0.325
	7	0.217	0.027	0.163, 0.270	0.213	0.027	0.159, 0.266
	8	0.174	0.025	0.124, 0.223	0.169	0.025	0.119, 0.218
	9	0.122	0.021	0.081, 0.163	0.119	0.021	0.078, 0.160
	10 [ref]	0.000			0.000		
	Missing	0.439	0.163	0.120, 0.758	0.473	0.162	0.155, 0.790
Birth year	1965 [ref]	0.000			0.000		

Continued on next page

Table S7 – *Continued from previous page*

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	1966	-0.131	0.014	-0.158, -0.104	-0.134	0.014	-0.160, -0.107
	1967	-0.184	0.014	-0.212, -0.157	-0.186	0.014	-0.213, -0.159
	1968	-0.158	0.014	-0.186, -0.130	-0.164	0.014	-0.191, -0.136
	1969	-0.110	0.014	-0.138, -0.082	-0.117	0.014	-0.145, -0.089
	1970	-0.097	0.014	-0.125, -0.069	-0.106	0.014	-0.134, -0.078
	1971	0.017	0.014	-0.011, 0.045	0.003	0.014	-0.025, 0.031
	1972	0.151	0.014	0.122, 0.179	0.135	0.014	0.107, 0.163
Sibling group size	1				-0.369	0.011	-0.391, -0.347
	2 [ref]				0.000		
	3				-0.025	0.010	-0.045, -0.005
	4				-0.195	0.018	-0.231, -0.160
	5				-0.449	0.032	-0.512, -0.386
	6+				-0.615	0.047	-0.707, -0.523
Birth order	1 [ref]				0.000		
	2				-0.265	0.008	-0.281, -0.249
	3				-0.333	0.013	-0.359, -0.307
	4				-0.367	0.024	-0.414, -0.320
	5				-0.394	0.041	-0.476, -0.313
	6+				-0.586	0.058	-0.700, -0.473
N		404,817			404,817		

Table S8: Linear regression: years of education regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	0.097	0.083	-0.066, 0.259	0.095	0.083	-0.068, 0.257
	Underweight (17.50-18.49)	0.188	0.058	0.074, 0.302	0.186	0.058	0.072, 0.300
	Normal (18.50-19.99)	0.013	0.035	-0.056, 0.083	0.014	0.035	-0.055, 0.083
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.036	0.035	-0.105, 0.033	-0.038	0.035	-0.107, 0.031
	Normal (23.00-23.99)	-0.061	0.047	-0.153, 0.032	-0.063	0.047	-0.155, 0.030
	Normal (24.00-24.99)	-0.194	0.059	-0.310, -0.077	-0.195	0.059	-0.311, -0.078
	Overweight (25.00-27.49)	-0.216	0.071	-0.356, -0.077	-0.221	0.071	-0.360, -0.082
	Overweight (27.50-29.99)	-0.406	0.097	-0.597, -0.216	-0.414	0.097	-0.604, -0.224
	Obese (30+)	-0.237	0.107	-0.447, -0.027	-0.245	0.107	-0.456, -0.035
	Missing	-0.172	0.404	-0.963, 0.620	-0.202	0.405	-0.995, 0.591
Physical Fitness (deciles)	1	-0.855	0.050	-0.952, -0.757	-0.856	0.050	-0.953, -0.758
	2	-0.718	0.048	-0.812, -0.625	-0.720	0.048	-0.813, -0.627
	3	-0.654	0.046	-0.743, -0.564	-0.652	0.045	-0.741, -0.563
	4	-0.614	0.046	-0.705, -0.523	-0.614	0.046	-0.705, -0.523
	5	-0.528	0.045	-0.617, -0.440	-0.531	0.045	-0.619, -0.442
	6	-0.398	0.044	-0.484, -0.312	-0.397	0.044	-0.483, -0.312
	7	-0.350	0.046	-0.440, -0.260	-0.351	0.046	-0.441, -0.262
	8	-0.271	0.045	-0.358, -0.184	-0.270	0.045	-0.357, -0.183
	9	-0.177	0.043	-0.262, -0.093	-0.176	0.043	-0.260, -0.092
	10 [ref]	0.000			0.000		
	Missing	-0.650	0.156	-0.955, -0.345	-0.655	0.155	-0.960, -0.351
Height (deciles)	1	-0.240	0.074	-0.385, -0.094	-0.235	0.074	-0.381, -0.089
	2	-0.187	0.066	-0.317, -0.058	-0.184	0.066	-0.314, -0.054
	3	-0.232	0.063	-0.355, -0.109	-0.230	0.062	-0.352, -0.107
	4	-0.195	0.059	-0.311, -0.079	-0.193	0.059	-0.308, -0.077
	5	-0.182	0.062	-0.304, -0.061	-0.179	0.062	-0.301, -0.058
	6	-0.138	0.054	-0.244, -0.032	-0.138	0.054	-0.244, -0.032
	7	-0.101	0.052	-0.203, 0.000	-0.099	0.052	-0.201, 0.002
	8	-0.098	0.052	-0.200, 0.004	-0.097	0.052	-0.199, 0.004
	9	-0.065	0.049	-0.161, 0.031	-0.065	0.049	-0.161, 0.031
	10 [ref]	0.000			0.000		
	Missing	-0.373	0.162	-0.690, -0.056	-0.368	0.162	-0.685, -0.051
Weight (deciles)	1	0.040	0.117	-0.190, 0.269	0.045	0.117	-0.184, 0.274
	2	0.106	0.103	-0.096, 0.309	0.107	0.103	-0.095, 0.309
	3	0.093	0.095	-0.092, 0.278	0.097	0.094	-0.088, 0.282
	4	0.155	0.089	-0.020, 0.329	0.157	0.089	-0.017, 0.331
	5	0.044	0.085	-0.122, 0.210	0.046	0.085	-0.120, 0.212
	6	0.078	0.079	-0.078, 0.233	0.081	0.079	-0.074, 0.236
	7	0.069	0.072	-0.072, 0.210	0.071	0.072	-0.070, 0.211
	8	0.054	0.066	-0.075, 0.183	0.054	0.066	-0.074, 0.183
	9	0.056	0.055	-0.051, 0.164	0.058	0.055	-0.050, 0.165
	10 [ref]	0.000			0.000		
	Missing	0.112	0.404	-0.680, 0.904	0.144	0.405	-0.650, 0.938

Continued on next page

Table S8 – *Continued from previous page*

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.095	0.035	-0.162, -0.027	-0.034	0.036	-0.103, 0.036
	1967	-0.151	0.033	-0.215, -0.086	-0.025	0.037	-0.099, 0.048
	1968	-0.209	0.033	-0.275, -0.144	-0.031	0.041	-0.112, 0.050
	1969	-0.209	0.034	-0.276, -0.142	0.023	0.047	-0.069, 0.114
	1970	-0.256	0.036	-0.326, -0.186	0.029	0.052	-0.073, 0.132
	1971	-0.253	0.036	-0.323, -0.183	0.096	0.059	-0.020, 0.212
	1972	-0.197	0.037	-0.268, -0.125	0.210	0.065	0.082, 0.338
Birth order	1 [ref]				0.000		
	2				-0.232	0.027	-0.285, -0.179
	3				-0.343	0.051	-0.443, -0.243
	4				-0.399	0.079	-0.555, -0.244
	5				-0.425	0.116	-0.652, -0.198
	6+				-0.649	0.157	-0.957, -0.341
N		75,811			75,811		

Table S9: Linear regression: log income regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.060	0.009	-0.078, -0.042	-0.062	0.009	-0.079, -0.044
	Underweight (17.50-18.49)	-0.009	0.006	-0.021, 0.002	-0.010	0.006	-0.022, 0.001
	Normal (18.50-19.99)	-0.010	0.003	-0.017, -0.004	-0.011	0.003	-0.017, -0.004
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.007	0.003	-0.013, 0.000	-0.005	0.003	-0.012, 0.001
	Normal (23.00-23.99)	-0.015	0.004	-0.024, -0.007	-0.014	0.004	-0.022, -0.005
	Normal (24.00-24.99)	-0.026	0.005	-0.037, -0.015	-0.024	0.005	-0.035, -0.014
	Overweight (25.00-27.49)	-0.055	0.007	-0.068, -0.042	-0.052	0.007	-0.065, -0.039
	Overweight (27.50-29.99)	-0.097	0.009	-0.115, -0.079	-0.093	0.009	-0.111, -0.075
	Obese (30+)	-0.153	0.011	-0.174, -0.133	-0.147	0.011	-0.168, -0.127
	Missing	0.143	0.075	-0.004, 0.290	0.141	0.075	-0.006, 0.287
Physical Fitness (deciles)	1	-0.287	0.005	-0.296, -0.279	-0.276	0.005	-0.285, -0.267
	2	-0.211	0.004	-0.219, -0.203	-0.202	0.004	-0.210, -0.194
	3	-0.181	0.004	-0.189, -0.174	-0.173	0.004	-0.181, -0.166
	4	-0.147	0.004	-0.155, -0.140	-0.140	0.004	-0.148, -0.132
	5	-0.124	0.004	-0.131, -0.117	-0.118	0.004	-0.125, -0.111
	6	-0.097	0.003	-0.104, -0.091	-0.092	0.003	-0.099, -0.086
	7	-0.076	0.004	-0.083, -0.069	-0.072	0.004	-0.079, -0.065
	8	-0.057	0.003	-0.064, -0.050	-0.054	0.003	-0.061, -0.047
	9	-0.035	0.003	-0.042, -0.029	-0.033	0.003	-0.040, -0.027
	10 [ref]	0.000			0.000		
	Missing	-0.385	0.019	-0.423, -0.348	-0.373	0.019	-0.410, -0.336
Height (deciles)	1	-0.054	0.007	-0.067, -0.040	-0.052	0.007	-0.065, -0.038
	2	-0.024	0.006	-0.036, -0.012	-0.021	0.006	-0.033, -0.010
	3	-0.017	0.006	-0.029, -0.006	-0.016	0.006	-0.027, -0.005
	4	-0.018	0.005	-0.028, -0.007	-0.016	0.005	-0.027, -0.006
	5	-0.007	0.005	-0.017, 0.004	-0.005	0.005	-0.016, 0.005
	6	-0.003	0.005	-0.012, 0.006	-0.002	0.005	-0.011, 0.007
	7	-0.002	0.005	-0.011, 0.007	-0.001	0.005	-0.010, 0.008
	8	0.001	0.004	-0.008, 0.010	0.002	0.004	-0.007, 0.010
	9	0.006	0.004	-0.002, 0.015	0.006	0.004	-0.002, 0.015
	10 [ref]	0.000			0.000		
	Missing	-0.223	0.020	-0.263, -0.183	-0.224	0.020	-0.264, -0.185
Weight (deciles)	1	-0.003	0.012	-0.026, 0.020	-0.005	0.011	-0.028, 0.017
	2	0.006	0.010	-0.014, 0.025	0.003	0.010	-0.016, 0.023
	3	0.004	0.009	-0.014, 0.022	0.002	0.009	-0.015, 0.020
	4	0.009	0.008	-0.008, 0.025	0.006	0.008	-0.010, 0.023
	5	0.008	0.008	-0.008, 0.023	0.006	0.008	-0.009, 0.021
	6	0.005	0.007	-0.010, 0.019	0.003	0.007	-0.012, 0.017
	7	0.006	0.007	-0.007, 0.019	0.005	0.007	-0.008, 0.018
	8	0.005	0.006	-0.007, 0.017	0.004	0.006	-0.008, 0.015
	9	0.010	0.005	0.000, 0.019	0.008	0.005	-0.001, 0.018
	10 [ref]	0.000			0.000		
	Missing	-0.169	0.075	-0.315, -0.023	-0.167	0.074	-0.313, -0.022

Continued on next page

Table S9 – *Continued from previous page*

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.010	0.003	-0.017, -0.004	-0.010	0.003	-0.016, -0.004
	1967	-0.010	0.003	-0.017, -0.004	-0.009	0.003	-0.016, -0.003
	1968	-0.013	0.003	-0.020, -0.007	-0.013	0.003	-0.020, -0.006
	1969	-0.012	0.004	-0.019, -0.005	-0.012	0.003	-0.019, -0.005
	1970	-0.022	0.004	-0.030, -0.015	-0.022	0.004	-0.030, -0.015
	1971	-0.013	0.004	-0.020, -0.006	-0.013	0.004	-0.020, -0.006
	1972	-0.011	0.004	-0.018, -0.003	-0.011	0.004	-0.019, -0.004
Sibling group size	1				-0.124	0.003	-0.130, -0.117
	2 [ref]				0.000		
	3				-0.012	0.002	-0.017, -0.007
	4				-0.044	0.004	-0.052, -0.035
	5				-0.100	0.009	-0.118, -0.082
	6+				-0.171	0.016	-0.203, -0.140
Birth order	1 [ref]				0.000		
	2				-0.018	0.002	-0.022, -0.014
	3				-0.027	0.003	-0.033, -0.020
	4				-0.028	0.006	-0.040, -0.016
	5				-0.009	0.013	-0.034, 0.016
	6+				-0.014	0.020	-0.053, 0.026
N			404,926			404,926	

Table S10: Linear regression: log income regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

Variable	Category	Model 3			Model 4		
		β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.032	0.025	-0.080, 0.017	-0.032	0.025	-0.081, 0.016
	Underweight (17.50-18.49)	-0.015	0.016	-0.046, 0.016	-0.016	0.016	-0.047, 0.015
	Normal (18.50-19.99)	-0.014	0.010	-0.033, 0.005	-0.014	0.010	-0.033, 0.005
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.005	0.009	-0.023, 0.013	-0.005	0.009	-0.023, 0.013
	Normal (23.00-23.99)	-0.010	0.012	-0.034, 0.014	-0.010	0.012	-0.035, 0.014
	Normal (24.00-24.99)	-0.020	0.016	-0.051, 0.012	-0.020	0.016	-0.051, 0.012
	Overweight (25.00-27.49)	-0.029	0.019	-0.067, 0.008	-0.029	0.019	-0.067, 0.008
	Overweight (27.50-29.99)	-0.034	0.027	-0.087, 0.019	-0.035	0.027	-0.088, 0.018
	Obese (30+)	-0.123	0.031	-0.184, -0.063	-0.124	0.031	-0.184, -0.064
	Missing	0.272	0.104	0.069, 0.476	0.271	0.104	0.067, 0.474
Physical Fitness (deciles)	1	-0.144	0.014	-0.172, -0.117	-0.144	0.014	-0.171, -0.117
	2	-0.122	0.012	-0.146, -0.097	-0.122	0.012	-0.146, -0.097
	3	-0.104	0.012	-0.127, -0.081	-0.104	0.012	-0.127, -0.081
	4	-0.109	0.012	-0.132, -0.086	-0.109	0.012	-0.132, -0.085
	5	-0.076	0.011	-0.099, -0.054	-0.076	0.011	-0.099, -0.054
	6	-0.053	0.011	-0.074, -0.031	-0.052	0.011	-0.074, -0.031
	7	-0.048	0.011	-0.070, -0.026	-0.048	0.011	-0.070, -0.026
	8	-0.041	0.011	-0.062, -0.020	-0.041	0.011	-0.062, -0.019
	9	-0.023	0.010	-0.043, -0.002	-0.022	0.010	-0.043, -0.002
	10 [ref]	0.000			0.000		
	Missing	-0.188	0.048	-0.281, -0.095	-0.188	0.048	-0.281, -0.095
Height (deciles)	1	-0.048	0.021	-0.089, -0.007	-0.048	0.021	-0.089, -0.007
	2	-0.033	0.019	-0.069, 0.003	-0.033	0.019	-0.069, 0.003
	3	-0.027	0.017	-0.060, 0.007	-0.027	0.017	-0.060, 0.007
	4	-0.022	0.016	-0.053, 0.010	-0.021	0.016	-0.053, 0.010
	5	-0.013	0.017	-0.045, 0.020	-0.013	0.017	-0.045, 0.020
	6	-0.007	0.015	-0.036, 0.021	-0.007	0.015	-0.036, 0.021
	7	-0.011	0.014	-0.038, 0.016	-0.011	0.014	-0.038, 0.016
	8	0.004	0.014	-0.023, 0.031	0.004	0.014	-0.023, 0.031
	9	0.007	0.013	-0.018, 0.032	0.007	0.013	-0.017, 0.032
	10 [ref]	0.000			0.000		
	Missing	-0.342	0.049	-0.438, -0.245	-0.341	0.049	-0.438, -0.245
Weight (deciles)	1	-0.010	0.032	-0.074, 0.053	-0.010	0.032	-0.074, 0.053
	2	-0.004	0.028	-0.059, 0.052	-0.004	0.028	-0.059, 0.051
	3	0.001	0.026	-0.049, 0.051	0.001	0.026	-0.049, 0.051
	4	0.012	0.024	-0.035, 0.060	0.012	0.024	-0.036, 0.059
	5	0.003	0.023	-0.042, 0.047	0.002	0.023	-0.042, 0.047
	6	-0.007	0.021	-0.049, 0.035	-0.007	0.021	-0.049, 0.035
	7	-0.007	0.019	-0.045, 0.031	-0.007	0.019	-0.045, 0.030
	8	-0.001	0.018	-0.035, 0.034	-0.001	0.018	-0.035, 0.034
	9	0.017	0.015	-0.012, 0.046	0.017	0.015	-0.012, 0.046
	10 [ref]	0.000			0.000		
	Missing	-0.285	0.106	-0.494, -0.077	-0.284	0.106	-0.492, -0.076

Continued on next page

Table S10 – *Continued from previous page*

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	0.001	0.009	-0.018, 0.019	0.003	0.010	-0.016, 0.022
	1967	0.005	0.009	-0.012, 0.023	0.011	0.011	-0.010, 0.032
	1968	0.004	0.009	-0.013, 0.022	0.012	0.011	-0.010, 0.035
	1969	-0.015	0.009	-0.033, 0.003	-0.004	0.013	-0.030, 0.021
	1970	-0.024	0.010	-0.044, -0.005	-0.012	0.015	-0.042, 0.018
	1971	-0.022	0.010	-0.042, -0.002	-0.007	0.017	-0.041, 0.027
	1972	-0.031	0.011	-0.052, -0.010	-0.013	0.019	-0.051, 0.025
Birth order	1 [ref]				0.000		
	2				-0.011	0.008	-0.027, 0.004
	3				-0.007	0.015	-0.037, 0.022
	4				-0.031	0.025	-0.080, 0.017
	5				-0.033	0.041	-0.112, 0.047
	6+				-0.065	0.057	-0.176, 0.047
N		75,850			75,850		

Table S11: Linear regression: parity progression (0→1, 1→2) regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		0→1						1→2					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.097	0.007	-0.110, -0.084	-0.088	0.007	-0.101, -0.075	-0.018	0.007	-0.033, -0.003	-0.018	0.007	-0.032, -0.003
	Underweight (17.50-18.49)	-0.041	0.005	-0.050, -0.032	-0.039	0.004	-0.048, -0.030	-0.010	0.005	-0.020, 0.000	-0.011	0.005	-0.021, -0.001
	Normal (18.50-19.99)	-0.016	0.003	-0.021, -0.011	-0.014	0.003	-0.019, -0.009	-0.005	0.003	-0.010, 0.001	-0.005	0.003	-0.011, 0.001
	Normal (20.00-21.99) [ref]	0.000	.		0.000			0.000			0.000		
	Normal (22.00-22.99)	-0.006	0.003	-0.011, -0.001	-0.005	0.002	-0.009, 0.000	-0.003	0.003	-0.009, 0.002	-0.002	0.003	-0.007, 0.004
	Normal (23.00-23.99)	-0.012	0.003	-0.019, -0.005	-0.011	0.003	-0.017, -0.004	-0.012	0.004	-0.020, -0.005	-0.010	0.004	-0.017, -0.002
	Normal (24.00-24.99)	-0.027	0.004	-0.036, -0.018	-0.024	0.004	-0.033, -0.016	-0.018	0.005	-0.027, -0.009	-0.013	0.005	-0.023, -0.004
	Overweight (25.00-27.49)	-0.066	0.005	-0.077, -0.056	-0.059	0.005	-0.069, -0.049	-0.031	0.006	-0.042, -0.020	-0.024	0.006	-0.035, -0.012
	Overweight (27.50-29.99)	-0.140	0.008	-0.155, -0.125	-0.124	0.008	-0.138, -0.109	-0.078	0.009	-0.095, -0.061	-0.065	0.009	-0.082, -0.049
	Obese (30+)	-0.231	0.009	-0.248, -0.214	-0.206	0.009	-0.222, -0.189	-0.110	0.01	-0.130, -0.091	-0.092	0.01	-0.112, -0.073
	Missing	0.138	0.03	0.080, 0.196	0.106	0.03	0.048, 0.164	-0.073	0.036	-0.144, -0.002	-0.062	0.036	-0.132, 0.008
Physical Fitness (deciles)	1	-0.149	0.003	-0.156, -0.143	-0.108	0.003	-0.114, -0.101	-0.083	0.004	-0.090, -0.075	-0.050	0.004	-0.057, -0.043
	2	-0.118	0.003	-0.124, -0.111	-0.087	0.003	-0.094, -0.081	-0.072	0.003	-0.079, -0.066	-0.046	0.003	-0.053, -0.039
	3	-0.103	0.003	-0.109, -0.097	-0.078	0.003	-0.084, -0.072	-0.061	0.003	-0.067, -0.054	-0.038	0.003	-0.045, -0.032
	4	-0.087	0.003	-0.093, -0.081	-0.067	0.003	-0.073, -0.061	-0.051	0.003	-0.058, -0.045	-0.032	0.003	-0.039, -0.025
	5	-0.074	0.003	-0.080, -0.068	-0.058	0.003	-0.064, -0.052	-0.046	0.003	-0.053, -0.040	-0.030	0.003	-0.036, -0.024
	6	-0.061	0.003	-0.067, -0.056	-0.049	0.003	-0.054, -0.043	-0.043	0.003	-0.049, -0.037	-0.029	0.003	-0.035, -0.023
	7	-0.051	0.003	-0.056, -0.045	-0.041	0.003	-0.046, -0.035	-0.037	0.003	-0.043, -0.031	-0.027	0.003	-0.033, -0.021
	8	-0.035	0.003	-0.040, -0.029	-0.027	0.003	-0.033, -0.022	-0.022	0.003	-0.028, -0.016	-0.015	0.003	-0.021, -0.009
	9	-0.026	0.003	-0.032, -0.021	-0.022	0.003	-0.027, -0.017	-0.017	0.003	-0.023, -0.011	-0.012	0.003	-0.018, -0.006
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.148	0.011	-0.170, -0.126	-0.088	0.011	-0.110, -0.066	-0.080	0.013	-0.105, -0.055	-0.043	0.013	-0.067, -0.018
Height (deciles)	1	-0.010	0.005	-0.021, 0.000	-0.003	0.005	-0.014, 0.007	-0.002	0.006	-0.014, 0.010	0.006	0.006	-0.006, 0.018
	2	0.019	0.005	0.010, 0.028	0.022	0.005	0.012, 0.031	0.010	0.005	0.000, 0.020	0.015	0.005	0.005, 0.025
	3	0.029	0.004	0.020, 0.037	0.030	0.004	0.022, 0.038	0.012	0.005	0.003, 0.021	0.017	0.005	0.007, 0.026
	4	0.025	0.004	0.017, 0.033	0.026	0.004	0.018, 0.034	0.012	0.004	0.003, 0.021	0.016	0.004	0.007, 0.025
	5	0.031	0.004	0.023, 0.039	0.031	0.004	0.023, 0.039	0.015	0.005	0.006, 0.024	0.018	0.005	0.009, 0.027
	6	0.030	0.004	0.022, 0.037	0.029	0.004	0.022, 0.036	0.011	0.004	0.003, 0.019	0.014	0.004	0.006, 0.021
	7	0.029	0.004	0.022, 0.036	0.029	0.003	0.022, 0.036	0.011	0.004	0.003, 0.018	0.013	0.004	0.005, 0.020
	8	0.019	0.003	0.013, 0.026	0.018	0.003	0.012, 0.025	0.009	0.004	0.002, 0.017	0.011	0.004	0.004, 0.018
	9	0.022	0.003	0.015, 0.028	0.021	0.003	0.014, 0.027	0.006	0.004	-0.002, 0.013	0.006	0.004	-0.001, 0.013
	10 [ref]	0.000			0.000			0.000			0.000		

Continued on next page

Table S11 – *Continued from previous page*

		0→1						1→2					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Missing	-0.072	0.012	-0.095, -0.048	-0.044	0.012	-0.067, -0.022	0.026	0.013	0.001, 0.052	0.021	0.013	-0.005, 0.046
Weight (deciles)	1	-0.020	0.009	-0.038, -0.002	-0.018	0.009	-0.035, -0.001	-0.019	0.01	-0.038, 0.000	-0.023	0.01	-0.042, -0.004
	2	-0.010	0.008	-0.026, 0.005	-0.010	0.008	-0.025, 0.005	-0.008	0.009	-0.024, 0.009	-0.012	0.008	-0.029, 0.004
	3	-0.008	0.007	-0.022, 0.006	-0.007	0.007	-0.021, 0.006	-0.006	0.008	-0.021, 0.009	-0.011	0.008	-0.026, 0.004
	4	-0.005	0.007	-0.018, 0.008	-0.005	0.006	-0.018, 0.007	-0.004	0.007	-0.018, 0.011	-0.007	0.007	-0.021, 0.007
	5	-0.006	0.006	-0.018, 0.007	-0.006	0.006	-0.018, 0.006	-0.004	0.007	-0.017, 0.010	-0.008	0.007	-0.021, 0.006
	6	-0.004	0.006	-0.015, 0.008	-0.003	0.006	-0.015, 0.008	-0.008	0.006	-0.020, 0.005	-0.011	0.006	-0.023, 0.001
	7	-0.001	0.005	-0.011, 0.009	-0.001	0.005	-0.011, 0.009	0.001	0.006	-0.011, 0.012	-0.002	0.006	-0.013, 0.009
	8	-0.001	0.005	-0.010, 0.008	-0.001	0.005	-0.010, 0.008	-0.001	0.005	-0.011, 0.009	-0.003	0.005	-0.013, 0.007
	9	0.007	0.004	-0.001, 0.015	0.006	0.004	-0.002, 0.013	0.002	0.004	-0.006, 0.011	0.001	0.004	-0.008, 0.009
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.168	0.03	-0.226, -0.109	-0.132	0.03	-0.190, -0.074	0.048	0.036	-0.023, 0.120	0.039	0.036	-0.032, 0.109
Birth year	1965 [ref]	0.000			0.000			0.000			0.000		
	1966	-0.015	0.003	-0.019, -0.010	-0.013	0.002	-0.018, -0.008	-0.019	0.003	-0.025, -0.014	-0.016	0.003	-0.021, -0.011
	1967	-0.026	0.003	-0.032, -0.021	-0.027	0.003	-0.032, -0.022	-0.023	0.003	-0.029, -0.018	-0.021	0.003	-0.026, -0.015
	1968	-0.037	0.003	-0.042, -0.032	-0.037	0.003	-0.042, -0.032	-0.032	0.003	-0.038, -0.026	-0.030	0.003	-0.036, -0.025
	1969	-0.041	0.003	-0.047, -0.036	-0.043	0.003	-0.048, -0.038	-0.036	0.003	-0.042, -0.030	-0.035	0.003	-0.041, -0.030
	1970	-0.051	0.003	-0.056, -0.046	-0.052	0.003	-0.057, -0.047	-0.043	0.003	-0.049, -0.037	-0.042	0.003	-0.048, -0.037
	1971	-0.055	0.003	-0.060, -0.049	-0.057	0.003	-0.062, -0.052	-0.047	0.003	-0.053, -0.042	-0.048	0.003	-0.054, -0.043
	1972	-0.060	0.003	-0.066, -0.055	-0.062	0.003	-0.067, -0.057	-0.060	0.003	-0.066, -0.055	-0.062	0.003	-0.068, -0.057
Sibling group size	1				-0.011	0.002	-0.015, -0.007				-0.025	0.002	-0.030, -0.020
	2 [ref]				0.000						0.000		
	3				0.016	0.002	0.012, 0.019				0.023	0.002	0.019, 0.026
	4				0.027	0.003	0.021, 0.033				0.034	0.003	0.028, 0.040
	5				0.040	0.006	0.029, 0.051				0.062	0.006	0.051, 0.073
	6+				0.052	0.008	0.036, 0.068				0.086	0.008	0.070, 0.102
Birth order	1 [ref]				0.000						0.000		
	2				-0.004	0.002	-0.007, -0.001				-0.002	0.002	-0.005, 0.001
	3				-0.014	0.002	-0.019, -0.009				-0.006	0.003	-0.011, -0.001
	4				-0.022	0.004	-0.031, -0.014				-0.010	0.005	-0.020, -0.001
	5				-0.038	0.008	-0.054, -0.022				-0.049	0.009	-0.066, -0.032
	6+				-0.031	0.011	-0.053, -0.009				-0.041	0.012	-0.063, -0.018
N	Primary (<9 years)				-0.144	0.017	-0.177, -0.111				-0.027	0.024	-0.074, 0.020
	Primary (9 years)				-0.018	0.002	-0.023, -0.013				-0.004	0.003	-0.010, 0.001
	Secondary (10-11 years) [ref]				0.000						0.000		

Continued on next page

Table S11 – *Continued from previous page*

		0→1						1→2					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Secondary (12 years)				-0.031	0.002	-0.035, -0.027				-0.003	0.002	-0.007, 0.002
	Tertiary (13-15 years)				-0.036	0.002	-0.039, -0.032				0.010	0.002	0.006, 0.014
	Tertiary (15+ years)				-0.021	0.002	-0.025, -0.018				0.032	0.002	0.028, 0.036
	Postgraduate (16-20 years)				-0.011	0.005	-0.021, -0.001				0.059	0.005	0.049, 0.069
	Missing				-0.382	0.011	-0.403, -0.360				-0.094	0.063	-0.218, 0.029
	1				-0.352	0.003	-0.358, -0.346				-0.175	0.004	-0.183, -0.168
	2				-0.185	0.003	-0.190, -0.179				-0.106	0.003	-0.113, -0.100
	3				-0.134	0.003	-0.139, -0.128				-0.072	0.003	-0.078, -0.066
	4				-0.102	0.003	-0.107, -0.097				-0.051	0.003	-0.056, -0.045
	5				-0.085	0.003	-0.090, -0.080				-0.043	0.003	-0.049, -0.038
	6				-0.066	0.003	-0.071, -0.061				-0.033	0.003	-0.038, -0.027
	7				-0.054	0.002	-0.059, -0.049				-0.025	0.003	-0.031, -0.019
	8				-0.042	0.002	-0.047, -0.037				-0.025	0.003	-0.030, -0.019
	9				-0.028	0.002	-0.033, -0.024				-0.014	0.003	-0.019, -0.009
	10 [ref]				0.000						0.000		
	Missing				-0.397	0.022	-0.440, -0.354				-0.141	0.037	-0.213, -0.069
N			405,427			405,427			312,139			312,139	

Table S12: Linear regression: parity progression (2→3, 3→4) regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		2→3						3→4					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.015	0.009	-0.033, 0.004	-0.015	0.009	-0.033, 0.004	-0.034	0.015	-0.062, -0.005	-0.034	0.014	-0.062, -0.006
	Underweight (17.50-18.49)	-0.014	0.006	-0.027, -0.001	-0.013	0.006	-0.025, 0.000	-0.024	0.010	-0.043, -0.004	-0.022	0.010	-0.041, -0.002
	Normal (18.50-19.99)	-0.008	0.004	-0.015, -0.001	-0.008	0.004	-0.015, -0.001	-0.006	0.006	-0.018, 0.005	-0.005	0.006	-0.017, 0.006
	Normal (20.00-21.99) [ref]	0.000			0.000			0.000			0.000		
	Normal (22.00-22.99)	0.001	0.004	-0.006, 0.008	0.001	0.004	-0.007, 0.008	0.006	0.006	-0.005, 0.017	0.003	0.006	-0.007, 0.014
	Normal (23.00-23.99)	-0.001	0.005	-0.010, 0.009	-0.001	0.005	-0.010, 0.009	0.022	0.008	0.008, 0.037	0.018	0.007	0.004, 0.033
	Normal (24.00-24.99)	0.001	0.006	-0.011, 0.014	0.000	0.006	-0.012, 0.012	0.018	0.010	-0.001, 0.037	0.010	0.010	-0.009, 0.029
	Overweight (25.00-27.49)	0.005	0.008	-0.010, 0.019	0.001	0.008	-0.014, 0.015	0.034	0.012	0.011, 0.057	0.022	0.012	-0.001, 0.045
	Overweight (27.50-29.99)	-0.002	0.011	-0.024, 0.019	-0.011	0.011	-0.033, 0.010	0.037	0.017	0.003, 0.070	0.018	0.017	-0.016, 0.051
	Obese (30+)	-0.018	0.012	-0.042, 0.007	-0.030	0.012	-0.054, -0.006	0.064	0.021	0.024, 0.105	0.038	0.020	-0.002, 0.078
	Missing	-0.019	0.046	-0.110, 0.071	-0.019	0.046	-0.109, 0.072	0.008	0.071	-0.130, 0.147	0.002	0.072	-0.140, 0.143
Physical Fitness (deciles)	1	0.029	0.005	0.020, 0.039	0.005	0.005	-0.005, 0.015	0.103	0.007	0.089, 0.118	0.043	0.008	0.028, 0.057
	2	0.021	0.005	0.012, 0.030	0.003	0.005	-0.006, 0.013	0.081	0.007	0.067, 0.094	0.032	0.007	0.018, 0.045
	3	0.014	0.004	0.006, 0.023	-0.000	0.004	-0.009, 0.009	0.069	0.007	0.057, 0.082	0.027	0.007	0.014, 0.040
	4	0.005	0.005	-0.004, 0.014	-0.006	0.005	-0.015, 0.003	0.079	0.007	0.065, 0.093	0.042	0.007	0.028, 0.056
	5	0.007	0.004	-0.001, 0.016	-0.002	0.004	-0.011, 0.007	0.045	0.006	0.032, 0.058	0.014	0.006	0.001, 0.027
	6	-0.001	0.004	-0.009, 0.008	-0.007	0.004	-0.015, 0.001	0.040	0.006	0.028, 0.052	0.014	0.006	0.001, 0.026
	7	-0.007	0.004	-0.015, 0.002	-0.012	0.004	-0.020, -0.003	0.036	0.007	0.023, 0.049	0.017	0.006	0.004, 0.030
	8	-0.011	0.004	-0.019, -0.003	-0.014	0.004	-0.022, -0.006	0.022	0.006	0.009, 0.034	0.007	0.006	-0.005, 0.019
	9	-0.006	0.004	-0.014, 0.002	-0.008	0.004	-0.016, 0.000	0.017	0.006	0.005, 0.029	0.007	0.006	-0.005, 0.019
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	0.027	0.017	-0.006, 0.059	0.003	0.016	-0.029, 0.035	0.085	0.026	0.034, 0.135	0.024	0.026	-0.027, 0.075
Height (deciles)	1	0.005	0.008	-0.010, 0.020	-0.003	0.008	-0.018, 0.013	0.019	0.012	-0.005, 0.043	-0.002	0.012	-0.026, 0.021
	2	0.003	0.007	-0.010, 0.016	-0.001	0.007	-0.014, 0.012	0.008	0.011	-0.012, 0.029	-0.009	0.010	-0.029, 0.012
	3	0.007	0.006	-0.005, 0.019	0.003	0.006	-0.009, 0.015	0.006	0.010	-0.014, 0.025	-0.008	0.010	-0.027, 0.011
	4	0.012	0.006	0.000, 0.023	0.009	0.006	-0.003, 0.020	0.007	0.009	-0.011, 0.025	-0.004	0.009	-0.021, 0.014
	5	0.013	0.006	0.000, 0.025	0.009	0.006	-0.003, 0.021	0.001	0.010	-0.018, 0.020	-0.009	0.009	-0.028, 0.009
	6	0.005	0.005	-0.005, 0.016	0.003	0.005	-0.007, 0.013	-0.004	0.008	-0.020, 0.012	-0.013	0.008	-0.029, 0.003
	7	0.008	0.005	-0.002, 0.018	0.006	0.005	-0.003, 0.016	0.012	0.008	-0.003, 0.028	0.005	0.008	-0.011, 0.020
	8	0.001	0.005	-0.009, 0.011	-0.001	0.005	-0.010, 0.009	-0.004	0.008	-0.019, 0.011	-0.011	0.008	-0.025, 0.004
	9	0.004	0.005	-0.006, 0.013	0.003	0.005	-0.007, 0.012	0.001	0.007	-0.013, 0.015	-0.003	0.007	-0.017, 0.012
	10 [ref]	0.000			0.000			0.000			0.000		

Continued on next page

Table S12 – *Continued from previous page*

		2→3						3→4					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Missing	0.004	0.017	-0.030, 0.038	0.004	0.017	-0.029, 0.038	-0.017	0.027	-0.070, 0.035	-0.013	0.027	-0.065, 0.040
Weight (deciles)	1	-0.003	0.013	-0.028, 0.022	-0.002	0.013	-0.027, 0.023	0.003	0.020	-0.036, 0.042	0.015	0.020	-0.024, 0.053
	2	-0.009	0.011	-0.030, 0.013	-0.008	0.011	-0.030, 0.014	0.000	0.017	-0.034, 0.034	0.010	0.017	-0.023, 0.044
	3	-0.004	0.01	-0.024, 0.016	-0.003	0.01	-0.022, 0.017	0.001	0.016	-0.030, 0.031	0.011	0.016	-0.020, 0.041
	4	0.001	0.009	-0.018, 0.019	0.002	0.009	-0.017, 0.020	0.002	0.015	-0.026, 0.031	0.012	0.014	-0.017, 0.040
	5	0.001	0.009	-0.017, 0.018	0.002	0.009	-0.016, 0.019	0.004	0.014	-0.023, 0.031	0.015	0.014	-0.012, 0.042
	6	-0.002	0.008	-0.019, 0.014	-0.002	0.008	-0.018, 0.014	0.003	0.013	-0.023, 0.028	0.011	0.013	-0.014, 0.036
	7	0.008	0.008	-0.006, 0.023	0.009	0.008	-0.006, 0.023	0.002	0.012	-0.021, 0.025	0.009	0.012	-0.014, 0.031
	8	0.006	0.007	-0.007, 0.020	0.006	0.007	-0.008, 0.019	0.002	0.011	-0.019, 0.023	0.007	0.011	-0.014, 0.028
	9	-0.004	0.006	-0.016, 0.007	-0.005	0.006	-0.016, 0.007	0.001	0.009	-0.017, 0.019	0.005	0.009	-0.013, 0.022
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	0.025	0.046	-0.066, 0.116	0.023	0.047	-0.068, 0.114	0.016	0.071	-0.124, 0.156	0.023	0.073	-0.119, 0.166
Birth year	1965 [ref]	0.000			0.000			0.000			0.000		
	1966	-0.010	0.004	-0.017, -0.003	-0.009	0.004	-0.017, -0.002	-0.003	0.006	-0.014, 0.008	-0.006	0.006	-0.017, 0.005
	1967	-0.011	0.004	-0.018, -0.004	-0.010	0.004	-0.017, -0.002	-0.007	0.006	-0.018, 0.004	-0.011	0.006	-0.022, 0.001
	1968	-0.021	0.004	-0.028, -0.013	-0.018	0.004	-0.026, -0.011	-0.012	0.006	-0.024, -0.001	-0.013	0.006	-0.025, -0.002
	1969	-0.030	0.004	-0.037, -0.022	-0.026	0.004	-0.033, -0.018	-0.016	0.006	-0.028, -0.005	-0.015	0.006	-0.027, -0.004
	1970	-0.038	0.004	-0.046, -0.031	-0.033	0.004	-0.041, -0.026	-0.034	0.006	-0.046, -0.022	-0.033	0.006	-0.044, -0.021
	1971	-0.046	0.004	-0.053, -0.038	-0.041	0.004	-0.048, -0.033	-0.042	0.006	-0.054, -0.031	-0.039	0.006	-0.050, -0.027
	1972	-0.062	0.004	-0.069, -0.054	-0.055	0.004	-0.063, -0.048	-0.046	0.006	-0.057, -0.034	-0.038	0.006	-0.050, -0.027
Sibling group size	1				-0.000	0.003	-0.006, 0.006				0.023	0.005	0.013, 0.032
	2 [ref]				0.000						0.000		
	3				0.045	0.003	0.040, 0.050				0.022	0.004	0.014, 0.029
	4				0.113	0.005	0.104, 0.121				0.053	0.006	0.041, 0.065
	5				0.165	0.008	0.148, 0.181				0.087	0.011	0.065, 0.109
	6+				0.204	0.012	0.180, 0.229				0.160	0.017	0.127, 0.193
Birth order	1 [ref]				0.000						0.000		
	2				-0.013	0.002	-0.017, -0.008				-0.012	0.003	-0.019, -0.005
	3				-0.026	0.004	-0.033, -0.019				-0.021	0.005	-0.031, -0.010
	4				-0.063	0.007	-0.076, -0.049				-0.027	0.009	-0.045, -0.008
	5				-0.096	0.012	-0.120, -0.072				-0.065	0.017	-0.099, -0.032
	6+				-0.087	0.017	-0.120, -0.054				-0.087	0.023	-0.133, -0.041
Education	Primary (<9 years)				0.051	0.031	-0.009, 0.112				0.107	0.047	0.015, 0.199
	Primary (9 years)				0.047	0.004	0.040, 0.055				0.039	0.006	0.028, 0.050
	Secondary (10-11 years) [ref]				0.000						0.000		

Continued on next page

Table S12 – *Continued from previous page*

		2→3						3→4					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Secondary (12 years)				-0.023	0.003	-0.029, -0.017				-0.033	0.005	-0.043, -0.024
	Tertiary (13-15 years)				-0.030	0.003	-0.035, -0.024				-0.060	0.004	-0.068, -0.052
	Tertiary (15+ years)				-0.009	0.003	-0.014, -0.003				-0.082	0.004	-0.090, -0.074
	Postgraduate (16-20 years)				0.027	0.008	0.012, 0.042				-0.078	0.010	-0.098, -0.059
	Missing				0.000	0.078	-0.152, 0.152				-0.037	0.119	-0.269, 0.196
Cumulative income (deciles)	1				0.064	0.005	0.054, 0.074				0.133	0.008	0.118, 0.148
	2				0.030	0.004	0.022, 0.039				0.078	0.006	0.065, 0.091
	3				0.024	0.004	0.016, 0.032				0.058	0.006	0.046, 0.070
	4				0.007	0.004	-0.001, 0.015				0.034	0.006	0.023, 0.046
	5				-0.010	0.004	-0.017, -0.002				0.034	0.006	0.022, 0.046
	6				-0.015	0.004	-0.023, -0.007				0.012	0.006	0.001, 0.024
	7				-0.019	0.004	-0.027, -0.011				0.009	0.006	-0.002, 0.021
	8				-0.020	0.004	-0.027, -0.012				0.001	0.006	-0.010, 0.012
	9				-0.023	0.004	-0.030, -0.015				0.008	0.006	-0.003, 0.019
	10 [ref]				0.000						0.000		
	Missing				0.002	0.046	-0.089, 0.093				0.090	0.075	-0.057, 0.236
N		250,444			250,444			82,800			82,800		

Table S13: Linear regression: parity progression (4→5, 5→6) regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		4→5						5→6					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.029	0.032	-0.091, 0.033	-0.030	0.031	-0.091, 0.032	-0.023	0.069	-0.159, 0.113	-0.017	0.069	-0.153, 0.118
	Underweight (17.50-18.49)	0.024	0.022	-0.020, 0.068	0.024	0.022	-0.019, 0.067	-0.040	0.045	-0.128, 0.048	-0.043	0.045	-0.130, 0.045
	Normal (18.50-19.99)	0.009	0.013	-0.015, 0.034	0.008	0.012	-0.016, 0.033	-0.012	0.027	-0.066, 0.041	-0.011	0.027	-0.064, 0.042
	Normal (20.00-21.99) [ref]	0.000			0.000			0.000			0.000		
	Normal (22.00-22.99)	0.019	0.012	-0.005, 0.043	0.014	0.012	-0.010, 0.038	0.008	0.027	-0.045, 0.060	0.004	0.026	-0.048, 0.055
	Normal (23.00-23.99)	0.015	0.016	-0.016, 0.046	0.012	0.016	-0.019, 0.043	0.026	0.035	-0.042, 0.095	0.016	0.035	-0.052, 0.085
	Normal (24.00-24.99)	-0.015	0.020	-0.055, 0.024	-0.023	0.020	-0.063, 0.016	0.020	0.046	-0.071, 0.110	-0.001	0.045	-0.090, 0.088
	Overweight (25.00-27.49)	0.020	0.025	-0.028, 0.068	0.009	0.024	-0.039, 0.057	0.019	0.054	-0.086, 0.124	0.008	0.053	-0.096, 0.113
	Overweight (27.50-29.99)	0.025	0.036	-0.045, 0.095	0.003	0.035	-0.066, 0.072	-0.004	0.076	-0.153, 0.145	-0.035	0.076	-0.184, 0.114
	Obese (30+)	0.065	0.042	-0.017, 0.147	0.041	0.041	-0.040, 0.122	0.187	0.088	0.014, 0.360	0.163	0.087	-0.008, 0.333
	Missing	0.050	0.147	-0.238, 0.338	0.073	0.139	-0.200, 0.346	0.421	0.276	-0.119, 0.962	0.447	0.273	-0.088, 0.982
Physical Fitness (deciles)	1	0.097	0.016	0.066, 0.127	0.033	0.016	0.002, 0.064	0.078	0.036	0.008, 0.147	0.017	0.036	-0.054, 0.088
	2	0.082	0.015	0.053, 0.112	0.030	0.015	0.000, 0.060	0.057	0.035	-0.011, 0.125	0.010	0.035	-0.058, 0.078
	3	0.064	0.014	0.036, 0.092	0.016	0.014	-0.013, 0.044	0.108	0.035	0.040, 0.176	0.058	0.035	-0.009, 0.126
	4	0.067	0.015	0.038, 0.097	0.026	0.015	-0.003, 0.055	0.111	0.035	0.042, 0.180	0.067	0.035	-0.001, 0.136
	5	0.049	0.015	0.020, 0.077	0.012	0.015	-0.016, 0.041	0.030	0.034	-0.038, 0.097	-0.007	0.034	-0.074, 0.060
	6	0.053	0.014	0.025, 0.081	0.020	0.014	-0.008, 0.048	0.031	0.034	-0.035, 0.097	-0.001	0.033	-0.066, 0.064
	7	0.038	0.015	0.009, 0.066	0.013	0.015	-0.016, 0.042	0.013	0.035	-0.056, 0.082	-0.020	0.034	-0.087, 0.047
	8	0.025	0.015	-0.003, 0.054	0.009	0.015	-0.020, 0.037	0.013	0.036	-0.057, 0.083	0.006	0.035	-0.063, 0.075
	9	0.015	0.014	-0.013, 0.042	0.000	0.014	-0.027, 0.028	0.047	0.036	-0.024, 0.118	0.038	0.036	-0.033, 0.108
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	0.091	0.046	0.000, 0.181	0.034	0.046	-0.055, 0.124	0.144	0.101	-0.053, 0.342	0.089	0.101	-0.109, 0.286
Height (deciles)	1	0.036	0.025	-0.013, 0.085	0.016	0.025	-0.033, 0.064	-0.043	0.056	-0.152, 0.066	-0.065	0.055	-0.174, 0.043
	2	0.037	0.022	-0.006, 0.080	0.021	0.022	-0.022, 0.064	-0.027	0.050	-0.124, 0.071	-0.041	0.049	-0.138, 0.056
	3	0.010	0.021	-0.031, 0.050	-0.004	0.020	-0.044, 0.036	-0.036	0.047	-0.129, 0.057	-0.055	0.047	-0.147, 0.037
	4	0.013	0.019	-0.024, 0.050	0.004	0.019	-0.033, 0.041	-0.072	0.044	-0.159, 0.015	-0.081	0.044	-0.167, 0.005
	5	0.019	0.020	-0.020, 0.059	0.011	0.020	-0.029, 0.050	-0.057	0.046	-0.146, 0.033	-0.066	0.045	-0.155, 0.022
	6	0.010	0.018	-0.024, 0.045	0.002	0.017	-0.032, 0.036	-0.046	0.041	-0.126, 0.034	-0.055	0.041	-0.135, 0.024
	7	0.005	0.017	-0.028, 0.038	-0.002	0.017	-0.034, 0.031	-0.023	0.040	-0.101, 0.054	-0.033	0.039	-0.111, 0.044
	8	0.013	0.017	-0.020, 0.046	0.004	0.017	-0.029, 0.037	0.004	0.040	-0.075, 0.084	-0.009	0.040	-0.087, 0.070
	9	0.010	0.016	-0.021, 0.042	0.008	0.016	-0.023, 0.040	-0.066	0.038	-0.139, 0.008	-0.071	0.037	-0.144, 0.002
	10 [ref]	0.000			0.000			0.000			0.000		

Continued on next page

Table S13 – *Continued from previous page*

		4→5						5→6					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Missing	0.005	0.048	-0.089, 0.099	-0.010	0.047	-0.102, 0.083	-0.128	0.104	-0.332, 0.076	-0.161	0.104	-0.365, 0.044
Weight (deciles)	1	-0.003	0.042	-0.085, 0.079	0.004	0.042	-0.078, 0.085	0.049	0.092	-0.132, 0.229	0.040	0.092	-0.140, 0.220
	2	0.007	0.037	-0.064, 0.079	0.015	0.036	-0.056, 0.086	0.029	0.079	-0.126, 0.184	0.021	0.078	-0.132, 0.175
	3	0.005	0.033	-0.059, 0.070	0.012	0.033	-0.052, 0.076	0.010	0.072	-0.131, 0.151	0.005	0.071	-0.135, 0.145
	4	0.002	0.031	-0.059, 0.062	0.009	0.031	-0.051, 0.069	0.039	0.069	-0.096, 0.174	0.033	0.069	-0.101, 0.167
	5	-0.007	0.029	-0.065, 0.051	0.000	0.029	-0.057, 0.057	-0.025	0.063	-0.149, 0.099	-0.024	0.063	-0.147, 0.100
	6	-0.005	0.027	-0.059, 0.049	0.002	0.027	-0.052, 0.055	-0.023	0.061	-0.142, 0.097	-0.022	0.061	-0.141, 0.096
	7	-0.005	0.025	-0.053, 0.043	0.001	0.024	-0.046, 0.049	0.008	0.055	-0.100, 0.116	0.002	0.055	-0.105, 0.109
	8	0.007	0.023	-0.037, 0.051	0.012	0.022	-0.032, 0.056	0.009	0.051	-0.092, 0.109	0.005	0.051	-0.094, 0.105
	9	0.002	0.019	-0.036, 0.039	0.003	0.019	-0.034, 0.041	-0.013	0.043	-0.097, 0.071	-0.010	0.042	-0.092, 0.073
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.043	0.146	-0.330, 0.244	-0.065	0.139	-0.338, 0.207	-0.377	0.280	-0.927, 0.173	-0.413	0.277	-0.956, 0.130
Birth year	1965 [ref]	0.000			0.000			0.000			0.000		
	1966	0.013	0.011	-0.009, 0.034	0.007	0.011	-0.015, 0.028	0.035	0.023	-0.011, 0.081	0.032	0.023	-0.014, 0.077
	1967	0.008	0.011	-0.014, 0.030	0.004	0.011	-0.018, 0.026	0.010	0.024	-0.037, 0.057	0.008	0.024	-0.039, 0.054
	1968	0.016	0.012	-0.007, 0.040	0.010	0.012	-0.013, 0.033	0.024	0.025	-0.025, 0.074	0.019	0.025	-0.030, 0.068
	1969	0.003	0.012	-0.021, 0.027	-0.001	0.012	-0.024, 0.023	0.050	0.027	-0.003, 0.102	0.051	0.027	-0.001, 0.103
	1970	-0.001	0.013	-0.025, 0.024	-0.002	0.013	-0.026, 0.023	0.010	0.028	-0.044, 0.065	0.015	0.027	-0.039, 0.069
	1971	-0.002	0.013	-0.027, 0.023	-0.002	0.013	-0.027, 0.022	-0.001	0.028	-0.055, 0.053	-0.002	0.027	-0.056, 0.051
	1972	-0.025	0.013	-0.050, 0.000	-0.025	0.013	-0.050, 0.000	-0.006	0.029	-0.064, 0.051	0.001	0.029	-0.056, 0.058
Sibling group size	1				0.010	0.010	-0.010, 0.030				-0.018	0.021	-0.059, 0.023
	2 [ref]				0.000						0.000		
	3				-0.009	0.008	-0.024, 0.007				0.028	0.019	-0.009, 0.065
	4				0.009	0.012	-0.015, 0.033				0.045	0.027	-0.007, 0.097
	5				0.094	0.021	0.053, 0.135				0.151	0.040	0.074, 0.229
	6+				0.124	0.028	0.068, 0.179				0.211	0.050	0.113, 0.309
Birth order	1 [ref]				0.000						0.000		
	2				-0.007	0.008	-0.022, 0.008				0.002	0.017	-0.031, 0.035
	3				0.009	0.011	-0.013, 0.031				-0.006	0.024	-0.053, 0.042
	4				-0.030	0.018	-0.066, 0.005				0.009	0.039	-0.068, 0.086
	5				-0.070	0.032	-0.133, -0.007				-0.068	0.063	-0.191, 0.055
	6+				-0.060	0.040	-0.139, 0.018				-0.090	0.074	-0.235, 0.055
Education	Primary (<9 years)				0.015	0.068	-0.118, 0.147				0.110	0.124	-0.133, 0.353
	Primary (9 years)				0.045	0.010	0.025, 0.066				0.042	0.019	0.004, 0.080
	Secondary (10-11 years) [ref]				0.000						0.000		

Continued on next page

Table S13 – *Continued from previous page*

		4→5						5→6					
		Model 1			Model 2			Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Secondary (12 years)				-0.014	0.010	-0.034, 0.005				-0.027	0.022	-0.069, 0.016
	Tertiary (13-15 years)				-0.041	0.010	-0.060, -0.022				-0.019	0.023	-0.064, 0.026
	Tertiary (15+ years)				-0.077	0.009	-0.095, -0.059				-0.074	0.024	-0.121, -0.028
	Postgraduate (16-20 years)				-0.091	0.023	-0.135, -0.047				-0.110	0.055	-0.219, -0.002
	Missing				-0.049	0.184	-0.410, 0.312				0.501	0.061	0.382, 0.620
Cumulative income (deciles)	1				0.137	0.015	0.108, 0.166				0.207	0.030	0.147, 0.266
	2				0.111	0.014	0.084, 0.138				0.150	0.029	0.092, 0.207
	3				0.053	0.013	0.027, 0.079				0.151	0.030	0.091, 0.211
	4				0.058	0.013	0.032, 0.084				0.067	0.030	0.009, 0.125
	5				0.034	0.013	0.008, 0.060				0.090	0.031	0.030, 0.150
	6				0.025	0.013	-0.001, 0.051				0.068	0.031	0.007, 0.128
	7				0.031	0.013	0.005, 0.058				0.079	0.031	0.017, 0.141
	8				0.027	0.013	0.000, 0.053				0.073	0.032	0.011, 0.136
	9				0.002	0.013	-0.024, 0.027				0.057	0.033	-0.007, 0.122
	10 [ref]				0.000						0.000		
	Missing				-0.053	0.107	-0.263, 0.157				-0.126	0.049	-0.222, -0.031
N			18,668			18,668			4,345			4,345	

Table S14: Linear regression: parity progression (0→1, 1→2) regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		0→1						1→2					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.112	0.024	-0.158, -0.065	-0.105	0.023	-0.150, -0.060	-0.062	0.034	-0.128, 0.004	-0.061	0.033	-0.126, 0.004
	Underweight (17.50-18.49)	-0.041	0.016	-0.072, -0.010	-0.041	0.016	-0.072, -0.010	-0.061	0.022	-0.104, -0.017	-0.062	0.022	-0.105, -0.018
	Normal (18.50-19.99)	-0.023	0.010	-0.042, -0.004	-0.021	0.009	-0.040, -0.003	-0.020	0.013	-0.045, 0.006	-0.020	0.013	-0.045, 0.005
	Normal (20.00-21.99) [ref]	0.000			0.000			0.000			0.000		
	Normal (22.00-22.99)	-0.000	0.009	-0.018, 0.018	0.002	0.009	-0.015, 0.020	-0.000	0.012	-0.024, 0.024	0.003	0.012	-0.021, 0.027
	Normal (23.00-23.99)	-0.025	0.012	-0.049, 0.000	-0.021	0.012	-0.044, 0.003	0.025	0.017	-0.008, 0.058	0.027	0.017	-0.006, 0.060
	Normal (24.00-24.99)	-0.058	0.016	-0.089, -0.027	-0.053	0.016	-0.083, -0.023	0.022	0.022	-0.020, 0.064	0.026	0.021	-0.016, 0.068
	Overweight (25.00-27.49)	-0.107	0.019	-0.145, -0.070	-0.096	0.019	-0.133, -0.059	0.008	0.026	-0.043, 0.060	0.014	0.026	-0.037, 0.066
	Overweight (27.50-29.99)	-0.172	0.028	-0.226, -0.118	-0.158	0.027	-0.210, -0.105	0.015	0.039	-0.062, 0.092	0.022	0.039	-0.054, 0.099
	Obese (30+)	-0.317	0.031	-0.379, -0.256	-0.280	0.030	-0.339, -0.220	-0.117	0.045	-0.206, -0.028	-0.098	0.045	-0.186, -0.010
	Missing	0.014	0.095	-0.172, 0.200	-0.058	0.095	-0.244, 0.128	-0.180	0.129	-0.433, 0.073	-0.201	0.125	-0.446, 0.044
Physical Fitness (deciles)	1	-0.167	0.013	-0.192, -0.141	-0.127	0.013	-0.152, -0.102	-0.054	0.018	-0.090, -0.019	-0.036	0.018	-0.072, -0.001
	2	-0.127	0.012	-0.151, -0.103	-0.093	0.012	-0.117, -0.070	-0.066	0.017	-0.099, -0.033	-0.051	0.017	-0.084, -0.018
	3	-0.120	0.012	-0.143, -0.098	-0.092	0.011	-0.114, -0.071	-0.050	0.016	-0.080, -0.019	-0.037	0.016	-0.068, -0.006
	4	-0.105	0.012	-0.128, -0.082	-0.076	0.012	-0.099, -0.054	-0.048	0.016	-0.079, -0.016	-0.033	0.016	-0.064, -0.002
	5	-0.090	0.011	-0.112, -0.068	-0.070	0.011	-0.091, -0.048	-0.022	0.015	-0.052, 0.009	-0.012	0.015	-0.042, 0.018
	6	-0.073	0.011	-0.094, -0.052	-0.059	0.010	-0.080, -0.039	-0.017	0.015	-0.046, 0.011	-0.012	0.015	-0.040, 0.017
	7	-0.075	0.011	-0.096, -0.053	-0.060	0.011	-0.081, -0.039	-0.025	0.015	-0.054, 0.004	-0.017	0.015	-0.046, 0.012
	8	-0.032	0.011	-0.053, -0.011	-0.023	0.010	-0.043, -0.002	0.000	0.014	-0.028, 0.028	0.003	0.014	-0.025, 0.031
	9	-0.038	0.010	-0.058, -0.018	-0.032	0.010	-0.052, -0.013	-0.037	0.014	-0.064, -0.010	-0.035	0.014	-0.062, -0.008
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.140	0.041	-0.220, -0.060	-0.094	0.039	-0.170, -0.018	0.052	0.059	-0.063, 0.168	0.072	0.058	-0.042, 0.186
Height (deciles)	1	-0.019	0.021	-0.059, 0.022	-0.008	0.020	-0.048, 0.031	-0.080	0.028	-0.135, -0.025	-0.076	0.028	-0.131, -0.021
	2	0.024	0.018	-0.012, 0.059	0.031	0.018	-0.003, 0.066	-0.041	0.024	-0.089, 0.006	-0.039	0.024	-0.086, 0.009
	3	0.039	0.017	0.006, 0.072	0.045	0.016	0.012, 0.077	-0.035	0.023	-0.080, 0.009	-0.032	0.023	-0.077, 0.012
	4	0.023	0.016	-0.008, 0.054	0.027	0.015	-0.003, 0.057	-0.051	0.021	-0.093, -0.010	-0.050	0.021	-0.091, -0.008
	5	0.032	0.016	0.000, 0.064	0.035	0.016	0.004, 0.067	-0.026	0.022	-0.069, 0.017	-0.024	0.022	-0.067, 0.019
	6	0.030	0.014	0.002, 0.058	0.031	0.014	0.003, 0.058	-0.035	0.019	-0.073, 0.002	-0.033	0.019	-0.070, 0.004
	7	0.030	0.014	0.003, 0.057	0.029	0.013	0.004, 0.055	-0.027	0.018	-0.063, 0.009	-0.026	0.018	-0.062, 0.009
	8	0.021	0.013	-0.005, 0.047	0.019	0.013	-0.006, 0.044	-0.028	0.018	-0.062, 0.007	-0.025	0.018	-0.060, 0.009
	9	0.019	0.012	-0.006, 0.043	0.016	0.012	-0.008, 0.040	-0.040	0.017	-0.072, -0.007	-0.041	0.016	-0.073, -0.008
	10 [ref]	0.000			0.000			0.000			0.000		

Continued on next page

Table S14 – *Continued from previous page*

		0→1						1→2					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Missing	-0.134	0.042	-0.217, -0.051	-0.072	0.040	-0.151, 0.006	-0.115	0.061	-0.234, 0.005	-0.110	0.060	-0.228, 0.008
Weight (deciles)	1	-0.067	0.032	-0.130, -0.004	-0.061	0.031	-0.122, -0.001	0.040	0.044	-0.046, 0.126	0.041	0.044	-0.045, 0.127
	2	-0.058	0.028	-0.113, -0.003	-0.056	0.027	-0.109, -0.003	0.026	0.038	-0.049, 0.101	0.029	0.038	-0.046, 0.104
	3	-0.044	0.025	-0.094, 0.006	-0.044	0.025	-0.093, 0.005	0.038	0.035	-0.030, 0.106	0.041	0.035	-0.028, 0.109
	4	-0.038	0.024	-0.085, 0.009	-0.040	0.023	-0.086, 0.005	0.006	0.033	-0.058, 0.070	0.007	0.033	-0.057, 0.071
	5	-0.046	0.023	-0.090, -0.001	-0.046	0.022	-0.090, -0.003	0.036	0.031	-0.025, 0.096	0.036	0.031	-0.025, 0.097
	6	-0.033	0.021	-0.075, 0.008	-0.030	0.021	-0.070, 0.011	0.004	0.029	-0.053, 0.061	0.005	0.029	-0.052, 0.062
	7	-0.030	0.019	-0.068, 0.007	-0.029	0.019	-0.066, 0.007	0.027	0.026	-0.024, 0.078	0.028	0.026	-0.023, 0.079
	8	-0.031	0.018	-0.066, 0.003	-0.030	0.017	-0.063, 0.004	0.015	0.024	-0.032, 0.062	0.017	0.024	-0.030, 0.064
	9	-0.003	0.015	-0.032, 0.026	-0.007	0.014	-0.035, 0.022	-0.001	0.020	-0.040, 0.039	-0.000	0.020	-0.040, 0.039
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.088	0.096	-0.276, 0.099	-0.013	0.096	-0.200, 0.175	0.167	0.131	-0.089, 0.424	0.190	0.127	-0.058, 0.438
Birth year	1965 [ref]	0.000			0.000			0.000			0.000		
	1966	-0.029	0.009	-0.047, -0.011	-0.032	0.009	-0.049, -0.014	-0.026	0.012	-0.050, -0.003	-0.026	0.012	-0.050, -0.001
	1967	-0.038	0.009	-0.055, -0.021	-0.049	0.010	-0.067, -0.030	-0.021	0.012	-0.043, 0.002	-0.022	0.013	-0.048, 0.004
	1968	-0.048	0.009	-0.065, -0.031	-0.061	0.011	-0.082, -0.040	-0.044	0.012	-0.067, -0.022	-0.046	0.015	-0.075, -0.017
	1969	-0.068	0.009	-0.085, -0.050	-0.082	0.012	-0.105, -0.058	-0.046	0.012	-0.069, -0.023	-0.048	0.017	-0.081, -0.015
	1970	-0.086	0.009	-0.104, -0.068	-0.105	0.014	-0.131, -0.078	-0.063	0.013	-0.088, -0.039	-0.068	0.019	-0.105, -0.030
	1971	-0.088	0.009	-0.106, -0.069	-0.109	0.015	-0.139, -0.079	-0.070	0.013	-0.095, -0.045	-0.074	0.022	-0.116, -0.032
	1972	-0.099	0.010	-0.118, -0.080	-0.124	0.017	-0.158, -0.091	-0.095	0.013	-0.121, -0.069	-0.102	0.024	-0.150, -0.055
Birth order	1 [ref]				0.000						0.000		
	2				0.011	0.007	-0.003, 0.025				0.001	0.010	-0.018, 0.020
	3				0.027	0.013	0.001, 0.054				0.009	0.018	-0.026, 0.045
	4				0.019	0.021	-0.022, 0.061				-0.004	0.028	-0.060, 0.052
	5				-0.001	0.032	-0.064, 0.062				-0.022	0.042	-0.105, 0.060
	6+				0.081	0.045	-0.008, 0.170				-0.005	0.060	-0.123, 0.113
Educational attainment	Primary (<9 years)				-0.257	0.049	-0.353, -0.162				-0.061	0.091	-0.240, 0.118
	Primary (9 years)				-0.050	0.009	-0.067, -0.033				-0.006	0.013	-0.030, 0.019
	Secondary (10-11 years) [ref]				0.000						0.000		
	Secondary (12 years)				-0.023	0.008	-0.038, -0.008				0.006	0.011	-0.016, 0.027
	Tertiary (13-15 years)				-0.008	0.008	-0.024, 0.007				0.024	0.011	0.003, 0.045
	Tertiary (15+ years)				0.023	0.008	0.007, 0.039				0.044	0.011	0.021, 0.066
	Postgraduate (16-20 years)				0.044	0.021	0.002, 0.085				0.106	0.025	0.056, 0.156
	Missing				-0.412	0.045	-0.499, -0.325				0.047	0.200	-0.344, 0.439
Cumulative	1				-0.449	0.012	-0.472, -0.425				-0.237	0.018	-0.273, -0.201

Continued on next page

Table S14 – *Continued from previous page*

		0→1						1→2					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
income (deciles)	2				-0.262	0.011	-0.284, -0.241				-0.168	0.016	-0.199, -0.137
	3				-0.174	0.011	-0.194, -0.153				-0.103	0.015	-0.133, -0.074
	4				-0.127	0.010	-0.147, -0.106				-0.080	0.015	-0.109, -0.051
	5				-0.116	0.010	-0.136, -0.095				-0.054	0.014	-0.082, -0.025
	6				-0.069	0.010	-0.089, -0.049				-0.051	0.014	-0.078, -0.023
	7				-0.072	0.010	-0.092, -0.052				-0.030	0.014	-0.057, -0.002
	8				-0.040	0.010	-0.060, -0.021				-0.051	0.014	-0.078, -0.024
	9				-0.042	0.010	-0.061, -0.023				-0.026	0.013	-0.052, 0.001
	10 [ref]				0.000						0.000		
	Missing				-0.494	0.117	-0.723, -0.265				0.091	0.212	-0.324, 0.506
N		75,905			75,905			58,777			58,777		

Table S15: Linear regression: parity progression (2→3, 3→4) regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		2→3						3→4					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	0.029	0.062	-0.092, 0.150	0.023	0.062	-0.097, 0.144	-0.183	0.164	-0.504, 0.138	-0.234	0.165	-0.558, 0.090
	Underweight (17.50-18.49)	0.026	0.040	-0.052, 0.104	0.027	0.040	-0.051, 0.105	-0.118	0.108	-0.329, 0.094	-0.141	0.109	-0.355, 0.073
	Normal (18.50-19.99)	-0.009	0.023	-0.055, 0.037	-0.012	0.023	-0.057, 0.034	-0.112	0.063	-0.235, 0.012	-0.134	0.063	-0.257, -0.010
	Normal (20.00-21.99) [ref]	0.000			0.000			0.000			0.000		
	Normal (22.00-22.99)	0.036	0.023	-0.008, 0.081	0.034	0.023	-0.010, 0.079	0.078	0.059	-0.038, 0.194	0.077	0.060	-0.040, 0.194
	Normal (23.00-23.99)	0.009	0.031	-0.051, 0.069	0.007	0.031	-0.053, 0.067	0.081	0.081	-0.077, 0.240	0.078	0.082	-0.082, 0.239
	Normal (24.00-24.99)	0.045	0.039	-0.031, 0.122	0.039	0.039	-0.038, 0.116	0.153	0.101	-0.046, 0.352	0.160	0.101	-0.038, 0.359
	Overweight (25.00-27.49)	0.066	0.048	-0.028, 0.159	0.062	0.048	-0.032, 0.156	0.139	0.126	-0.108, 0.387	0.143	0.126	-0.103, 0.389
	Overweight (27.50-29.99)	0.039	0.070	-0.099, 0.177	0.029	0.070	-0.109, 0.167	0.196	0.182	-0.162, 0.553	0.221	0.176	-0.124, 0.565
	Obese (30+)	-0.112	0.082	-0.273, 0.048	-0.118	0.082	-0.278, 0.042	-0.057	0.230	-0.509, 0.395	-0.059	0.231	-0.511, 0.393
	Missing	0.152	0.241	-0.320, 0.624	0.139	0.241	-0.333, 0.610	-0.470	0.405	-1.264, 0.323	-0.392	0.437	-1.248, 0.464
Physical Fitness (deciles)	1	-0.034	0.033	-0.098, 0.030	-0.045	0.033	-0.109, 0.020	0.070	0.087	-0.100, 0.241	0.048	0.087	-0.122, 0.218
	2	-0.042	0.030	-0.102, 0.017	-0.052	0.030	-0.111, 0.008	0.193	0.081	0.035, 0.351	0.169	0.080	0.012, 0.326
	3	-0.007	0.028	-0.063, 0.048	-0.015	0.028	-0.071, 0.041	0.074	0.077	-0.077, 0.224	0.044	0.077	-0.106, 0.194
	4	-0.007	0.029	-0.065, 0.050	-0.013	0.029	-0.070, 0.045	0.088	0.078	-0.066, 0.241	0.058	0.077	-0.094, 0.210
	5	-0.038	0.028	-0.093, 0.017	-0.042	0.028	-0.097, 0.013	0.063	0.076	-0.085, 0.211	0.039	0.075	-0.107, 0.186
	6	-0.055	0.027	-0.107, -0.002	-0.060	0.027	-0.112, -0.007	0.000	0.072	-0.141, 0.141	-0.015	0.072	-0.156, 0.126
	7	-0.034	0.027	-0.088, 0.020	-0.036	0.027	-0.090, 0.018	0.066	0.078	-0.086, 0.218	0.049	0.077	-0.101, 0.200
	8	-0.058	0.027	-0.110, -0.006	-0.058	0.027	-0.110, -0.006	-0.016	0.076	-0.164, 0.133	-0.040	0.076	-0.189, 0.108
	9	-0.050	0.025	-0.100, 0.000	-0.049	0.025	-0.099, 0.001	-0.002	0.071	-0.141, 0.136	-0.025	0.070	-0.163, 0.113
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	0.064	0.106	-0.144, 0.271	0.062	0.105	-0.145, 0.269	0.413	0.264	-0.105, 0.931	0.378	0.259	-0.129, 0.885
Height (deciles)	1	-0.061	0.051	-0.161, 0.039	-0.063	0.051	-0.163, 0.037	-0.126	0.137	-0.396, 0.143	-0.174	0.137	-0.444, 0.095
	2	-0.055	0.044	-0.142, 0.032	-0.060	0.044	-0.147, 0.027	-0.117	0.122	-0.355, 0.122	-0.146	0.122	-0.384, 0.093
	3	-0.069	0.041	-0.151, 0.012	-0.074	0.041	-0.155, 0.008	-0.077	0.115	-0.302, 0.149	-0.120	0.115	-0.346, 0.105
	4	-0.006	0.039	-0.082, 0.070	-0.011	0.039	-0.087, 0.065	-0.043	0.108	-0.255, 0.170	-0.070	0.107	-0.281, 0.140
	5	-0.011	0.040	-0.090, 0.068	-0.014	0.040	-0.092, 0.065	-0.032	0.111	-0.250, 0.186	-0.057	0.111	-0.274, 0.160
	6	-0.015	0.035	-0.084, 0.053	-0.017	0.035	-0.086, 0.051	-0.068	0.099	-0.262, 0.126	-0.099	0.099	-0.293, 0.094
	7	-0.022	0.034	-0.087, 0.044	-0.023	0.033	-0.089, 0.043	-0.130	0.094	-0.313, 0.054	-0.147	0.093	-0.330, 0.035
	8	-0.005	0.032	-0.069, 0.058	-0.010	0.032	-0.073, 0.054	-0.016	0.094	-0.200, 0.167	-0.054	0.094	-0.237, 0.130
	9	-0.011	0.030	-0.070, 0.049	-0.014	0.030	-0.073, 0.046	-0.173	0.086	-0.342, -0.004	-0.184	0.085	-0.351, -0.018
	10 [ref]	0.000			0.000			0.000			0.000		

Continued on next page

Table S15 – *Continued from previous page*

		2→3						3→4					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
	Missing	-0.134	0.109	-0.347, 0.080	-0.142	0.109	-0.355, 0.071	-0.446	0.277	-0.988, 0.096	-0.467	0.271	-0.997, 0.063
Weight (deciles)	1	0.045	0.080	-0.111, 0.201	0.045	0.079	-0.111, 0.201	0.316	0.210	-0.096, 0.727	0.395	0.209	-0.015, 0.805
	2	0.076	0.069	-0.060, 0.212	0.075	0.069	-0.061, 0.211	0.186	0.181	-0.169, 0.541	0.234	0.180	-0.119, 0.587
	3	0.069	0.063	-0.055, 0.194	0.069	0.063	-0.055, 0.193	0.135	0.167	-0.193, 0.463	0.186	0.166	-0.140, 0.513
	4	0.062	0.059	-0.054, 0.179	0.061	0.059	-0.054, 0.177	0.086	0.155	-0.217, 0.390	0.141	0.154	-0.162, 0.443
	5	0.054	0.056	-0.056, 0.164	0.050	0.056	-0.060, 0.160	0.127	0.147	-0.160, 0.414	0.180	0.145	-0.105, 0.464
	6	0.063	0.053	-0.040, 0.166	0.063	0.053	-0.040, 0.166	0.063	0.138	-0.207, 0.333	0.107	0.136	-0.160, 0.374
	7	0.076	0.047	-0.017, 0.168	0.075	0.047	-0.017, 0.167	0.051	0.123	-0.190, 0.291	0.095	0.121	-0.143, 0.333
	8	0.042	0.043	-0.043, 0.128	0.042	0.043	-0.043, 0.127	0.071	0.113	-0.151, 0.293	0.102	0.111	-0.116, 0.319
	9	0.019	0.037	-0.053, 0.091	0.019	0.037	-0.053, 0.091	-0.021	0.094	-0.205, 0.163	0.009	0.093	-0.173, 0.191
	10 [ref]	0.000			0.000			0.000			0.000		
	Missing	-0.052	0.245	-0.532, 0.427	-0.045	0.244	-0.523, 0.434	0.624	0.406	-0.172, 1.420	0.577	0.438	-0.281, 1.435
Birth year	1965 [ref]	0.000			0.000			0.000			0.000		
	1966	-0.045	0.022	-0.088, -0.003	-0.050	0.023	-0.095, -0.006	-0.022	0.057	-0.133, 0.090	-0.030	0.059	-0.146, 0.087
	1967	-0.040	0.021	-0.081, 0.001	-0.045	0.024	-0.093, 0.002	-0.022	0.054	-0.128, 0.084	-0.022	0.062	-0.143, 0.100
	1968	-0.074	0.021	-0.115, -0.032	-0.083	0.027	-0.136, -0.031	-0.066	0.057	-0.177, 0.046	-0.068	0.073	-0.211, 0.075
	1969	-0.092	0.022	-0.134, -0.050	-0.105	0.031	-0.165, -0.045	-0.045	0.057	-0.157, 0.067	-0.041	0.082	-0.202, 0.120
	1970	-0.162	0.023	-0.207, -0.117	-0.177	0.035	-0.245, -0.108	-0.150	0.061	-0.271, -0.030	-0.155	0.093	-0.337, 0.027
	1971	-0.147	0.023	-0.192, -0.102	-0.166	0.039	-0.242, -0.089	-0.189	0.061	-0.308, -0.070	-0.175	0.104	-0.379, 0.029
	1972	-0.184	0.024	-0.230, -0.137	-0.206	0.044	-0.292, -0.121	-0.108	0.064	-0.232, 0.017	-0.113	0.117	-0.342, 0.116
Birth order	1 [ref]				0.000						0.000		
	2				0.005	0.017	-0.029, 0.039				-0.034	0.046	-0.125, 0.056
	3				0.032	0.032	-0.031, 0.095				0.042	0.079	-0.113, 0.198
	4				-0.001	0.050	-0.098, 0.096				0.050	0.117	-0.180, 0.279
	5				0.012	0.071	-0.128, 0.152				0.006	0.164	-0.316, 0.327
	6+				-0.025	0.102	-0.226, 0.176				-0.110	0.234	-0.568, 0.348
Educational attainment	Primary (<9 years)				-0.082	0.142	-0.360, 0.196				-0.444	0.246	-0.926, 0.038
	Primary (9 years)				0.074	0.022	0.030, 0.117				0.008	0.051	-0.092, 0.108
	Secondary (10-11 years) [ref]				0.000						0.000		
	Secondary (12 years)				-0.030	0.020	-0.068, 0.009				-0.029	0.053	-0.133, 0.075
	Tertiary (13-15 years)				-0.053	0.020	-0.092, -0.014				-0.065	0.056	-0.175, 0.045
	Tertiary (15+ years)				-0.051	0.021	-0.092, -0.010				-0.125	0.060	-0.243, -0.008
	Postgraduate (16-20 years)				-0.004	0.048	-0.098, 0.089				-0.114	0.118	-0.345, 0.117
	Missing				0.100	0.420	-0.723, 0.923				0.000		
Cumulative	1				0.005	0.033	-0.060, 0.070				0.244	0.083	0.081, 0.408

Continued on next page

Table S15 – *Continued from previous page*

		2→3						3→4					
		Model 3			Model 4			Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI	β	SE	95% CI
income (deciles)	2				-0.024	0.029	-0.081, 0.032				0.240	0.078	0.087, 0.394
	3				-0.042	0.028	-0.096, 0.012				0.132	0.075	-0.015, 0.280
	4				-0.031	0.027	-0.083, 0.022				0.176	0.073	0.032, 0.320
	5				-0.054	0.027	-0.107, -0.002				0.121	0.075	-0.026, 0.268
	6				-0.056	0.026	-0.107, -0.004				0.164	0.074	0.020, 0.308
	7				-0.067	0.026	-0.118, -0.016				0.061	0.073	-0.082, 0.205
	8				-0.032	0.026	-0.083, 0.019				0.033	0.075	-0.114, 0.180
	9				-0.082	0.025	-0.132, -0.033				0.087	0.073	-0.056, 0.229
	10 [ref]				0.000						0.000		
	Missing				-0.581	0.333	-1.233, 0.071				0.000		
N		45,554			45,554			19,914			19,914		

Table S16: Linear regression: parity progression (4→5) regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		4→5					
		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	Underweight (17.50-18.49)	0.709	0.346	0.031, 1.387	0.448	0.324	-0.188, 1.083
	Normal (18.50-19.99)	0.662	0.184	0.303, 1.022	0.550	0.194	0.170, 0.930
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.365	0.186	-0.729, -0.001	-0.449	0.196	-0.833, -0.065
	Normal (23.00-23.99)	-0.805	0.242	-1.278, -0.331	-0.764	0.238	-1.230, -0.298
	Normal (24.00-24.99)	-0.450	0.261	-0.961, 0.061	-0.732	0.280	-1.282, -0.183
	Overweight (25.00-27.49)	-1.084	0.332	-1.734, -0.434	-1.180	0.359	-1.885, -0.476
	Overweight (27.50-29.99)	-1.304	0.601	-2.482, -0.126	-1.246	0.433	-2.094, -0.398
	Obese (30+)	-1.656	0.747	-3.121, -0.192	-1.516	0.796	-3.077, 0.046
	Missing	-1.574	0.580	-2.711, -0.437	-1.563	0.661	-2.860, -0.267
Physical Fitness (deciles)	1	-0.003	0.298	-0.587, 0.581	0.132	0.307	-0.470, 0.735
	2	-0.387	0.307	-0.990, 0.215	-0.174	0.318	-0.798, 0.450
	3	-0.332	0.273	-0.866, 0.203	-0.214	0.276	-0.754, 0.327
	4	-0.351	0.299	-0.937, 0.236	-0.250	0.309	-0.856, 0.356
	5	-0.299	0.284	-0.856, 0.257	-0.241	0.253	-0.737, 0.255
	6	-0.089	0.251	-0.580, 0.402	0.009	0.256	-0.492, 0.511
	7	-0.060	0.307	-0.662, 0.541	0.165	0.315	-0.452, 0.782
	8	-0.377	0.282	-0.929, 0.176	-0.348	0.258	-0.853, 0.157
	9	-0.610	0.291	-1.180, -0.039	-0.425	0.274	-0.963, 0.112
	10 [ref]	0.000			0.000		
	Missing	-0.570	0.389	-1.332, 0.192	-0.691	0.418	-1.510, 0.128
Height (deciles)	1	0.367	0.457	-0.528, 1.262	0.382	0.528	-0.653, 1.417
	2	0.146	0.367	-0.573, 0.865	0.097	0.431	-0.747, 0.941
	3	0.458	0.372	-0.272, 1.188	0.438	0.419	-0.385, 1.260
	4	0.181	0.317	-0.440, 0.802	0.181	0.380	-0.564, 0.926
	5	-0.014	0.356	-0.712, 0.683	-0.178	0.383	-0.929, 0.572
	6	0.061	0.291	-0.509, 0.632	0.000	0.337	-0.661, 0.662
	7	-0.358	0.256	-0.860, 0.144	-0.364	0.287	-0.927, 0.199
	8	-0.475	0.277	-1.019, 0.069	-0.524	0.289	-1.089, 0.042
	9	-0.756	0.252	-1.251, -0.261	-0.835	0.263	-1.351, -0.319
	10 [ref]	0.000			0.000		
	Missing	0.570	0.466	-0.343, 1.483	0.619	0.659	-0.672, 1.911
Weight (deciles)	1	-2.148	0.661	-3.444, -0.853	-2.059	0.706	-3.443, -0.674
	2	-1.544	0.548	-2.619, -0.470	-1.721	0.606	-2.909, -0.532
	3	-1.744	0.511	-2.745, -0.743	-1.831	0.589	-2.986, -0.677
	4	-1.217	0.476	-2.149, -0.285	-1.266	0.542	-2.328, -0.204
	5	-1.415	0.390	-2.180, -0.649	-1.538	0.451	-2.422, -0.655
	6	-0.991	0.407	-1.788, -0.194	-1.057	0.431	-1.901, -0.213
	7	-1.091	0.409	-1.894, -0.289	-1.122	0.462	-2.029, -0.216
	8	-0.836	0.358	-1.538, -0.135	-0.789	0.386	-1.546, -0.032
	9	-0.414	0.268	-0.940, 0.111	-0.550	0.304	-1.147, 0.046
	10 [ref]	0.000			0.000		
Birth year	1965 [ref]	0.000			0.000		

Continued on next page

Table S16 – *Continued from previous page*

Variable	Category	Model 3			Model 4		
		β	SE	95% CI	β	SE	95% CI
	1966	0.162	0.179	-0.190, 0.513	0.339	0.201	-0.054, 0.733
	1967	0.135	0.152	-0.163, 0.434	0.211	0.172	-0.127, 0.548
	1968	0.059	0.163	-0.261, 0.378	0.269	0.203	-0.130, 0.667
	1969	0.083	0.183	-0.275, 0.440	0.194	0.220	-0.238, 0.626
	1970	0.255	0.165	-0.068, 0.577	0.482	0.257	-0.022, 0.986
	1971	0.429	0.187	0.062, 0.796	0.738	0.303	0.144, 1.331
	1972	0.040	0.190	-0.332, 0.412	0.359	0.356	-0.340, 1.057
Birth order	1 [ref]				0.000		
	2				0.028	0.124	-0.215, 0.272
	3				-0.250	0.217	-0.675, 0.175
	4				-0.246	0.322	-0.877, 0.385
	5				-0.146	0.453	-1.034, 0.742
	6+				-0.417	0.516	-1.429, 0.595
Educational attainment	Primary (<9 years)				-1.440	0.569	-2.556, -0.323
	Primary (9 years)				0.221	0.133	-0.040, 0.483
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				0.133	0.199	-0.256, 0.523
	Tertiary (13-15 years)				-0.388	0.201	-0.781, 0.005
	Tertiary (15+ years)				-0.091	0.242	-0.564, 0.383
	Postgraduate (16-20 years)				0.827	0.538	-0.228, 1.881
Cumulative income (deciles)	1				0.258	0.294	-0.318, 0.833
	2				0.405	0.314	-0.210, 1.020
	3				0.178	0.289	-0.388, 0.743
	4				-0.013	0.278	-0.559, 0.533
	5				0.006	0.319	-0.620, 0.631
	6				0.152	0.318	-0.471, 0.776
	7				-0.088	0.280	-0.636, 0.460
	8				0.061	0.289	-0.506, 0.629
	9				0.395	0.295	-0.184, 0.974
	10 [ref]				0.000		
N		5,221			5,221		

Table S17: Linear regression: ever married by age 40 regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.058	0.007	-0.072, -0.044	-0.056	0.007	-0.070, -0.042
	Underweight (17.50-18.49)	-0.023	0.005	-0.033, -0.013	-0.027	0.005	-0.037, -0.017
	Normal (18.50-19.99)	-0.008	0.003	-0.014, -0.002	-0.010	0.003	-0.016, -0.004
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.006	0.003	-0.012, 0.000	-0.002	0.003	-0.007, 0.004
	Normal (23.00-23.99)	-0.014	0.004	-0.022, -0.006	-0.006	0.004	-0.014, 0.002
	Normal (24.00-24.99)	-0.027	0.005	-0.037, -0.017	-0.014	0.005	-0.024, -0.003
	Overweight (25.00-27.49)	-0.053	0.006	-0.065, -0.041	-0.031	0.006	-0.043, -0.019
	Overweight (27.50-29.99)	-0.106	0.009	-0.123, -0.089	-0.070	0.008	-0.087, -0.054
	Obese (30+)	-0.152	0.009	-0.171, -0.134	-0.105	0.009	-0.123, -0.087
	Missing	0.057	0.037	-0.015, 0.130	0.049	0.034	-0.019, 0.116
Physical Fitness (deciles)	1	-0.160	0.004	-0.168, -0.152	-0.070	0.004	-0.078, -0.063
	2	-0.132	0.004	-0.140, -0.125	-0.061	0.004	-0.068, -0.053
	3	-0.115	0.004	-0.122, -0.108	-0.053	0.004	-0.060, -0.045
	4	-0.103	0.004	-0.111, -0.096	-0.050	0.004	-0.057, -0.042
	5	-0.084	0.004	-0.091, -0.076	-0.037	0.004	-0.045, -0.030
	6	-0.072	0.004	-0.079, -0.064	-0.034	0.004	-0.041, -0.027
	7	-0.055	0.004	-0.062, -0.048	-0.026	0.004	-0.033, -0.019
	8	-0.041	0.004	-0.048, -0.034	-0.019	0.004	-0.026, -0.012
	9	-0.031	0.004	-0.038, -0.024	-0.017	0.004	-0.023, -0.010
	10 [ref]	0.000			0.000		
	Missing	-0.172	0.012	-0.196, -0.147	-0.076	0.012	-0.100, -0.053
Height (deciles)	1	-0.035	0.006	-0.047, -0.023	-0.016	0.006	-0.028, -0.004
	2	-0.008	0.005	-0.019, 0.003	0.004	0.005	-0.006, 0.015
	3	-0.001	0.005	-0.011, 0.009	0.009	0.005	-0.001, 0.019
	4	0.003	0.005	-0.007, 0.012	0.012	0.005	0.003, 0.021
	5	0.005	0.005	-0.005, 0.016	0.013	0.005	0.003, 0.023
	6	0.003	0.004	-0.005, 0.012	0.008	0.004	0.000, 0.017
	7	0.010	0.004	0.001, 0.018	0.014	0.004	0.006, 0.022
	8	0.005	0.004	-0.003, 0.013	0.008	0.004	0.000, 0.016
	9	0.010	0.004	0.002, 0.018	0.011	0.004	0.003, 0.018
	10 [ref]	0.000			0.000		
	Missing	-0.010	0.013	-0.035, 0.015	0.009	0.012	-0.015, 0.034
Weight (deciles)	1	-0.035	0.010	-0.055, -0.014	-0.039	0.010	-0.059, -0.019
	2	-0.018	0.009	-0.036, -0.001	-0.026	0.009	-0.044, -0.009
	3	-0.013	0.008	-0.029, 0.003	-0.020	0.008	-0.036, -0.005
	4	-0.007	0.008	-0.022, 0.008	-0.014	0.008	-0.029, 0.000
	5	-0.010	0.007	-0.024, 0.005	-0.017	0.007	-0.031, -0.003
	6	-0.012	0.007	-0.026, 0.001	-0.019	0.007	-0.032, -0.005
	7	-0.002	0.006	-0.014, 0.010	-0.008	0.006	-0.020, 0.004
	8	-0.004	0.006	-0.015, 0.008	-0.009	0.006	-0.020, 0.003
	9	0.005	0.005	-0.004, 0.015	0.001	0.005	-0.009, 0.010
	10 [ref]	0.000			0.000		
	Missing	-0.104	0.037	-0.178, -0.031	-0.087	0.035	-0.155, -0.019

Continued on next page

Table S17 – *Continued from previous page*

Variable	Category	Model 1			Model 2		
		β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.022	0.003	-0.028, -0.016	-0.017	0.003	-0.023, -0.011
	1967	-0.027	0.003	-0.033, -0.021	-0.023	0.003	-0.029, -0.017
	1968	-0.036	0.003	-0.042, -0.030	-0.033	0.003	-0.039, -0.027
	1969	-0.030	0.003	-0.036, -0.024	-0.030	0.003	-0.037, -0.024
	1970	-0.035	0.003	-0.041, -0.028	-0.035	0.003	-0.041, -0.029
	1971	-0.033	0.003	-0.039, -0.026	-0.038	0.003	-0.044, -0.032
	1972	-0.027	0.003	-0.033, -0.021	-0.037	0.003	-0.043, -0.031
Sibling group size	1				-0.017	0.002	-0.022, -0.012
	2 [ref]				0.000		
	3				0.022	0.002	0.018, 0.027
	4				0.041	0.004	0.033, 0.048
	5				0.062	0.007	0.048, 0.075
	6+				0.099	0.010	0.079, 0.118
Birth order	1 [ref]				0.000		
	2				-0.003	0.002	-0.007, 0.000
	3				-0.007	0.003	-0.012, -0.001
	4				-0.019	0.005	-0.030, -0.009
	5				-0.054	0.010	-0.073, -0.036
	6+				-0.074	0.013	-0.100, -0.048
Educational attainment	Primary (<9 years)				-0.079	0.015	-0.109, -0.050
	Primary (9 years)				-0.017	0.003	-0.022, -0.011
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				0.021	0.002	0.016, 0.025
	Tertiary (13-15 years)				0.049	0.002	0.045, 0.054
	Tertiary (15+ years)				0.100	0.002	0.096, 0.104
	Postgraduate (16-20 years)				0.171	0.006	0.159, 0.183
	Missing				-0.190	0.010	-0.209, -0.171
Cumulative income (deciles)	1				-0.374	0.003	-0.381, -0.368
	2				-0.255	0.003	-0.262, -0.249
	3				-0.199	0.003	-0.206, -0.193
	4				-0.165	0.003	-0.172, -0.158
	5				-0.146	0.003	-0.152, -0.139
	6				-0.117	0.003	-0.123, -0.110
	7				-0.105	0.003	-0.112, -0.098
	8				-0.087	0.003	-0.094, -0.081
	9				-0.060	0.003	-0.066, -0.053
	10 [ref]				0.000		
	Missing				-0.357	0.020	-0.396, -0.318
N		405,427			405,427		

Table S18: Linear regression: ever married by age 40 regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.070	0.023	-0.116, -0.025	-0.065	0.023	-0.110, -0.020
	Underweight (17.50-18.49)	-0.018	0.016	-0.050, 0.013	-0.020	0.016	-0.051, 0.011
	Normal (18.50-19.99)	-0.012	0.010	-0.031, 0.007	-0.010	0.010	-0.029, 0.008
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.013	0.010	-0.006, 0.031	0.016	0.009	-0.003, 0.034
	Normal (23.00-23.99)	-0.003	0.013	-0.028, 0.022	0.001	0.013	-0.023, 0.026
	Normal (24.00-24.99)	-0.015	0.017	-0.048, 0.017	-0.009	0.016	-0.041, 0.023
	Overweight (25.00-27.49)	-0.026	0.020	-0.065, 0.012	-0.014	0.019	-0.052, 0.024
	Overweight (27.50-29.99)	-0.048	0.028	-0.102, 0.007	-0.031	0.027	-0.085, 0.023
	Obese (30+)	-0.142	0.031	-0.203, -0.081	-0.107	0.031	-0.168, -0.047
	Missing	0.045	0.125	-0.199, 0.289	-0.007	0.119	-0.241, 0.227
Physical Fitness (deciles)	1	-0.111	0.014	-0.137, -0.085	-0.067	0.013	-0.093, -0.041
	2	-0.106	0.013	-0.131, -0.081	-0.068	0.013	-0.093, -0.044
	3	-0.097	0.012	-0.122, -0.073	-0.065	0.012	-0.089, -0.042
	4	-0.098	0.013	-0.122, -0.073	-0.065	0.012	-0.089, -0.041
	5	-0.082	0.012	-0.105, -0.058	-0.057	0.012	-0.080, -0.034
	6	-0.066	0.012	-0.089, -0.043	-0.049	0.011	-0.071, -0.026
	7	-0.058	0.012	-0.081, -0.034	-0.040	0.012	-0.063, -0.017
	8	-0.027	0.012	-0.050, -0.004	-0.015	0.011	-0.037, 0.008
	9	-0.043	0.011	-0.065, -0.021	-0.036	0.011	-0.058, -0.015
	10 [ref]	0.000			0.000		
	Missing	-0.057	0.041	-0.137, 0.024	-0.014	0.040	-0.093, 0.064
Height (deciles)	1	-0.056	0.021	-0.097, -0.015	-0.043	0.020	-0.083, -0.003
	2	-0.007	0.018	-0.043, 0.029	0.003	0.018	-0.032, 0.038
	3	-0.002	0.017	-0.036, 0.032	0.007	0.017	-0.026, 0.040
	4	0.003	0.016	-0.029, 0.035	0.010	0.016	-0.021, 0.041
	5	-0.002	0.017	-0.035, 0.031	0.004	0.016	-0.028, 0.036
	6	0.001	0.015	-0.027, 0.030	0.005	0.014	-0.023, 0.033
	7	0.001	0.014	-0.027, 0.029	0.003	0.014	-0.024, 0.030
	8	0.003	0.014	-0.024, 0.030	0.005	0.014	-0.022, 0.031
	9	0.005	0.013	-0.020, 0.030	0.004	0.013	-0.020, 0.029
	10 [ref]	0.000			0.000		
	Missing	-0.131	0.042	-0.214, -0.048	-0.079	0.041	-0.160, 0.002
Weight (deciles)	1	-0.029	0.033	-0.092, 0.035	-0.025	0.032	-0.087, 0.038
	2	-0.024	0.028	-0.079, 0.032	-0.023	0.028	-0.078, 0.032
	3	-0.011	0.026	-0.063, 0.040	-0.012	0.026	-0.062, 0.038
	4	0.005	0.025	-0.044, 0.053	0.001	0.024	-0.046, 0.048
	5	-0.016	0.023	-0.062, 0.029	-0.018	0.023	-0.063, 0.027
	6	-0.021	0.022	-0.064, 0.021	-0.019	0.021	-0.061, 0.023
	7	-0.010	0.020	-0.048, 0.029	-0.010	0.019	-0.048, 0.028
	8	-0.006	0.018	-0.042, 0.029	-0.006	0.018	-0.041, 0.029
	9	-0.008	0.015	-0.037, 0.022	-0.011	0.015	-0.040, 0.018
	10 [ref]	0.000			0.000		
	Missing	-0.078	0.126	-0.324, 0.168	-0.021	0.120	-0.258, 0.215

Continued on next page

Table S18 – *Continued from previous page*

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.024	0.010	-0.043, -0.005	-0.024	0.010	-0.043, -0.005
	1967	-0.026	0.009	-0.044, -0.009	-0.030	0.010	-0.050, -0.010
	1968	-0.042	0.009	-0.060, -0.025	-0.046	0.011	-0.068, -0.024
	1969	-0.052	0.009	-0.070, -0.033	-0.055	0.013	-0.080, -0.031
	1970	-0.057	0.010	-0.076, -0.038	-0.063	0.014	-0.091, -0.035
	1971	-0.062	0.010	-0.081, -0.042	-0.068	0.016	-0.100, -0.037
	1972	-0.061	0.010	-0.080, -0.041	-0.071	0.018	-0.106, -0.036
Birth order	1 [ref]				0.000		
	2				0.001	0.007	-0.013, 0.015
	3				0.013	0.014	-0.015, 0.040
	4				0.020	0.022	-0.023, 0.064
	5				-0.018	0.033	-0.083, 0.047
	6+				0.006	0.048	-0.088, 0.099
Educational attainment	Primary (<9 years)				-0.164	0.050	-0.261, -0.066
	Primary (9 years)				-0.027	0.009	-0.045, -0.009
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				0.005	0.008	-0.011, 0.021
	Tertiary (13-15 years)				0.036	0.008	0.020, 0.052
	Tertiary (15+ years)				0.093	0.009	0.076, 0.110
	Postgraduate (16-20 years)				0.154	0.021	0.113, 0.194
	Missing				-0.175	0.051	-0.275, -0.075
Cumulative income (deciles)	1				-0.382	0.012	-0.406, -0.359
	2				-0.268	0.012	-0.290, -0.245
	3				-0.199	0.011	-0.221, -0.176
	4				-0.163	0.011	-0.185, -0.141
	5				-0.139	0.011	-0.161, -0.117
	6				-0.089	0.011	-0.111, -0.067
	7				-0.078	0.011	-0.100, -0.056
	8				-0.069	0.011	-0.091, -0.048
	9				-0.058	0.011	-0.079, -0.037
	10 [ref]				0.000		
	Missing				-0.380	0.083	-0.542, -0.217
N		75,905			75,905		

Table S19: Linear regression: total number of children by whether the index person had ever married by age 40 regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.205	0.021	-0.246, -0.163	-0.113	0.023	-0.158, -0.068
	Underweight (17.50-18.49)	-0.110	0.016	-0.140, -0.079	-0.055	0.016	-0.086, -0.025
	Normal (18.50-19.99)	-0.049	0.010	-0.068, -0.030	-0.019	0.009	-0.037, -0.002
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.009	0.010	-0.028, 0.011	-0.006	0.008	-0.023, 0.010
	Normal (23.00-23.99)	-0.036	0.013	-0.062, -0.010	-0.016	0.011	-0.038, 0.006
	Normal (24.00-24.99)	-0.088	0.017	-0.120, -0.055	-0.028	0.015	-0.057, 0.001
	Overweight (25.00-27.49)	-0.197	0.019	-0.235, -0.159	-0.052	0.018	-0.087, -0.017
	Overweight (27.50-29.99)	-0.379	0.026	-0.431, -0.327	-0.174	0.026	-0.225, -0.123
	Obese (30+)	-0.568	0.028	-0.622, -0.513	-0.279	0.031	-0.340, -0.218
	Missing	0.131	0.108	-0.081, 0.343	0.030	0.116	-0.198, 0.258
Physical Fitness (deciles)	1	-0.315	0.013	-0.341, -0.290	-0.114	0.012	-0.137, -0.091
	2	-0.281	0.013	-0.306, -0.256	-0.083	0.011	-0.104, -0.061
	3	-0.246	0.012	-0.270, -0.222	-0.084	0.010	-0.104, -0.065
	4	-0.217	0.013	-0.242, -0.192	-0.060	0.011	-0.081, -0.040
	5	-0.201	0.012	-0.225, -0.176	-0.070	0.010	-0.089, -0.051
	6	-0.169	0.012	-0.193, -0.146	-0.071	0.009	-0.089, -0.053
	7	-0.147	0.013	-0.172, -0.122	-0.071	0.009	-0.090, -0.053
	8	-0.106	0.012	-0.130, -0.081	-0.048	0.009	-0.066, -0.030
	9	-0.085	0.012	-0.109, -0.061	-0.032	0.009	-0.049, -0.015
	10 [ref]	0.000			0.000		
	Missing	-0.221	0.038	-0.295, -0.146	-0.111	0.047	-0.203, -0.019
Height (deciles)	1	0.018	0.019	-0.019, 0.055	0.023	0.019	-0.013, 0.059
	2	0.088	0.017	0.055, 0.122	0.037	0.016	0.006, 0.069
	3	0.110	0.016	0.079, 0.141	0.046	0.015	0.017, 0.075
	4	0.097	0.015	0.067, 0.126	0.045	0.014	0.018, 0.072
	5	0.101	0.016	0.069, 0.132	0.064	0.015	0.035, 0.092
	6	0.107	0.014	0.080, 0.134	0.037	0.012	0.013, 0.061
	7	0.104	0.014	0.077, 0.131	0.041	0.012	0.018, 0.064
	8	0.063	0.014	0.036, 0.089	0.025	0.011	0.003, 0.047
	9	0.073	0.013	0.047, 0.099	0.018	0.011	-0.003, 0.039
	10 [ref]	0.000			0.000		
	Missing	-0.155	0.039	-0.230, -0.079	0.046	0.048	-0.048, 0.141
Weight (deciles)	1	-0.064	0.032	-0.127, -0.001	0.003	0.031	-0.057, 0.063
	2	-0.035	0.028	-0.090, 0.020	-0.007	0.026	-0.059, 0.045
	3	-0.035	0.026	-0.086, 0.015	0.008	0.024	-0.039, 0.055
	4	-0.014	0.024	-0.062, 0.033	0.004	0.022	-0.039, 0.048
	5	-0.032	0.023	-0.078, 0.013	0.021	0.021	-0.020, 0.062
	6	-0.024	0.022	-0.067, 0.019	0.013	0.020	-0.026, 0.051
	7	-0.008	0.020	-0.047, 0.031	0.029	0.018	-0.005, 0.064
	8	-0.003	0.018	-0.039, 0.033	0.020	0.016	-0.011, 0.052
	9	0.016	0.016	-0.014, 0.047	0.007	0.013	-0.020, 0.033

Continued on next page

Table S19 – *Continued from previous page*

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	-0.210	0.109	-0.423, 0.003	-0.039	0.117	-0.269, 0.190
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.044	0.010	-0.064, -0.025	-0.040	0.009	-0.057, -0.022
	1967	-0.076	0.010	-0.096, -0.056	-0.071	0.009	-0.089, -0.054
	1968	-0.119	0.010	-0.139, -0.099	-0.091	0.009	-0.109, -0.073
	1969	-0.139	0.010	-0.159, -0.119	-0.124	0.009	-0.142, -0.106
	1970	-0.167	0.010	-0.187, -0.147	-0.158	0.009	-0.176, -0.140
	1971	-0.193	0.010	-0.213, -0.173	-0.175	0.009	-0.193, -0.158
	1972	-0.220	0.010	-0.240, -0.200	-0.222	0.009	-0.239, -0.204
Sibling group size	1	-0.021	0.008	-0.036, -0.006	-0.040	0.007	-0.054, -0.025
	2 [ref]	0.000			0.000		
	3	0.064	0.007	0.050, 0.078	0.093	0.006	0.081, 0.105
	4	0.122	0.013	0.097, 0.147	0.210	0.011	0.189, 0.232
	5	0.230	0.025	0.181, 0.280	0.343	0.023	0.297, 0.389
	6+	0.258	0.038	0.183, 0.332	0.525	0.042	0.443, 0.607
Birth order	1 [ref]	0.000			0.000		
	2	-0.032	0.006	-0.043, -0.020	-0.013	0.005	-0.023, -0.003
	3	-0.065	0.010	-0.084, -0.045	-0.048	0.009	-0.065, -0.032
	4	-0.098	0.018	-0.134, -0.062	-0.110	0.017	-0.143, -0.077
	5	-0.190	0.034	-0.257, -0.124	-0.238	0.034	-0.305, -0.172
	6+	-0.115	0.051	-0.214, -0.015	-0.232	0.054	-0.337, -0.126
Educational attainment	Primary (<9 years)	-0.271	0.043	-0.355, -0.187	0.152	0.101	-0.046, 0.351
	Primary (9 years)	0.007	0.009	-0.011, 0.024	0.063	0.010	0.043, 0.084
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	-0.150	0.008	-0.165, -0.135	-0.074	0.007	-0.088, -0.061
	Tertiary (13-15 years)	-0.213	0.007	-0.228, -0.199	-0.084	0.006	-0.097, -0.072
	Tertiary (15+ years)	-0.227	0.008	-0.242, -0.213	-0.049	0.006	-0.061, -0.038
	Postgraduate (16-20 years)	-0.263	0.025	-0.312, -0.214	-0.021	0.015	-0.051, 0.010
	Missing	-0.554	0.021	-0.595, -0.512	-0.159	0.216	-0.581, 0.264
Cumulative income (deciles)	1	-0.679	0.012	-0.702, -0.657	-0.198	0.015	-0.227, -0.170
	2	-0.386	0.012	-0.409, -0.362	-0.100	0.011	-0.121, -0.079
	3	-0.290	0.012	-0.314, -0.266	-0.060	0.010	-0.079, -0.041
	4	-0.232	0.012	-0.256, -0.207	-0.046	0.009	-0.064, -0.029
	5	-0.194	0.012	-0.219, -0.170	-0.059	0.009	-0.076, -0.041
	6	-0.161	0.012	-0.186, -0.137	-0.054	0.008	-0.071, -0.038
	7	-0.131	0.013	-0.155, -0.106	-0.046	0.008	-0.062, -0.030
	8	-0.102	0.013	-0.127, -0.078	-0.050	0.008	-0.066, -0.034
	9	-0.082	0.013	-0.107, -0.058	-0.034	0.008	-0.049, -0.019
	10 [ref]	0.000			0.000		
	Missing	-0.758	0.050	-0.856, -0.661	-0.495	0.114	-0.718, -0.272
N		198,780			206,647		

Table S20: Linear regression: total number of children by whether the index person had ever married by age 40 regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.241	0.111	-0.458, -0.024	-0.332	0.116	-0.560, -0.104
	Underweight (17.50-18.49)	-0.172	0.078	-0.325, -0.020	-0.107	0.080	-0.264, 0.050
	Normal (18.50-19.99)	-0.055	0.049	-0.151, 0.040	-0.067	0.047	-0.158, 0.025
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.008	0.050	-0.090, 0.107	-0.036	0.044	-0.121, 0.050
	Normal (23.00-23.99)	-0.013	0.067	-0.143, 0.118	-0.034	0.058	-0.148, 0.079
	Normal (24.00-24.99)	-0.073	0.087	-0.243, 0.097	-0.108	0.075	-0.255, 0.038
	Overweight (25.00-27.49)	-0.229	0.099	-0.422, -0.035	-0.114	0.093	-0.296, 0.069
	Overweight (27.50-29.99)	-0.465	0.140	-0.739, -0.192	-0.170	0.134	-0.434, 0.093
	Obese (30+)	-0.688	0.153	-0.988, -0.389	-0.483	0.153	-0.782, -0.184
	Missing	-0.299	0.542	-1.361, 0.763	0.177	0.778	-1.348, 1.701
Physical Fitness (deciles)	1	-0.439	0.071	-0.578, -0.300	-0.143	0.064	-0.268, -0.017
	2	-0.342	0.067	-0.473, -0.210	-0.098	0.059	-0.213, 0.016
	3	-0.301	0.065	-0.428, -0.174	-0.112	0.055	-0.221, -0.004
	4	-0.320	0.067	-0.451, -0.188	-0.052	0.057	-0.163, 0.060
	5	-0.283	0.065	-0.411, -0.156	-0.075	0.052	-0.178, 0.028
	6	-0.207	0.062	-0.329, -0.085	-0.134	0.048	-0.228, -0.040
	7	-0.243	0.065	-0.370, -0.115	-0.046	0.049	-0.142, 0.051
	8	-0.207	0.064	-0.333, -0.082	-0.049	0.048	-0.144, 0.045
	9	-0.146	0.063	-0.269, -0.023	-0.109	0.046	-0.200, -0.018
	10 [ref]	0.000			0.000		
	Missing	-0.175	0.179	-0.527, 0.177	-0.023	0.229	-0.472, 0.425
Height (deciles)	1	-0.231	0.103	-0.433, -0.029	-0.001	0.100	-0.197, 0.194
	2	-0.100	0.093	-0.282, 0.081	0.004	0.087	-0.166, 0.174
	3	-0.044	0.088	-0.215, 0.128	0.085	0.080	-0.073, 0.242
	4	-0.085	0.083	-0.248, 0.077	0.045	0.075	-0.102, 0.192
	5	-0.066	0.085	-0.233, 0.101	0.104	0.078	-0.050, 0.258
	6	-0.065	0.076	-0.213, 0.084	-0.035	0.067	-0.166, 0.095
	7	-0.134	0.073	-0.277, 0.010	0.124	0.064	0.000, 0.249
	8	-0.083	0.072	-0.224, 0.058	0.042	0.060	-0.076, 0.159
	9	-0.108	0.068	-0.241, 0.025	-0.022	0.054	-0.129, 0.084
	10 [ref]	0.000			0.000		
	Missing	-0.470	0.184	-0.831, -0.108	-0.069	0.236	-0.533, 0.394
Weight (deciles)	1	-0.006	0.163	-0.325, 0.313	-0.035	0.154	-0.337, 0.268
	2	0.038	0.143	-0.242, 0.318	-0.066	0.135	-0.330, 0.199
	3	-0.004	0.132	-0.263, 0.254	-0.019	0.121	-0.256, 0.218
	4	-0.017	0.125	-0.262, 0.229	-0.104	0.113	-0.325, 0.117
	5	-0.023	0.120	-0.258, 0.211	-0.051	0.106	-0.259, 0.157
	6	0.028	0.112	-0.191, 0.247	-0.031	0.098	-0.224, 0.162
	7	0.086	0.102	-0.113, 0.285	0.016	0.090	-0.160, 0.193
	8	0.059	0.093	-0.125, 0.242	-0.030	0.082	-0.191, 0.130
	9	0.074	0.079	-0.081, 0.230	-0.048	0.068	-0.182, 0.085

Continued on next page

Table S20 – *Continued from previous page*

Variable	Category	Never Married			Ever Married		
		Model 4			Model 4		
		β	SE	95% CI	β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	0.218	0.552	-0.864, 1.299	-0.288	0.782	-1.821, 1.245
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.135	0.051	-0.234, -0.036	-0.110	0.046	-0.201, -0.020
	1967	-0.115	0.054	-0.221, -0.009	-0.069	0.049	-0.164, 0.026
	1968	-0.218	0.059	-0.333, -0.102	-0.148	0.052	-0.251, -0.046
	1969	-0.268	0.066	-0.398, -0.139	-0.163	0.059	-0.279, -0.047
	1970	-0.376	0.074	-0.521, -0.231	-0.276	0.068	-0.408, -0.143
	1971	-0.345	0.084	-0.509, -0.181	-0.309	0.077	-0.460, -0.159
	1972	-0.499	0.093	-0.681, -0.318	-0.339	0.086	-0.507, -0.171
Birth order	1 [ref]	0.000			0.000		
	2	0.017	0.038	-0.057, 0.091	0.003	0.035	-0.067, 0.072
	3	0.031	0.070	-0.106, 0.169	-0.008	0.068	-0.141, 0.124
	4	-0.015	0.113	-0.236, 0.206	-0.151	0.108	-0.362, 0.060
	5	-0.048	0.169	-0.379, 0.284	-0.320	0.174	-0.660, 0.021
	6+	0.200	0.247	-0.284, 0.685	-0.510	0.241	-0.981, -0.038
Education	Primary (<9 years)	-0.918	0.215	-1.339, -0.496	-0.207	0.511	-1.209, 0.795
	Primary (9 years)	-0.082	0.044	-0.169, 0.004	0.068	0.051	-0.033, 0.168
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	-0.126	0.040	-0.205, -0.047	-0.032	0.038	-0.107, 0.042
	Tertiary (13-15 years)	-0.061	0.042	-0.144, 0.022	-0.065	0.037	-0.137, 0.008
	Tertiary (15+ years)	0.009	0.047	-0.083, 0.102	-0.073	0.038	-0.148, 0.003
	Postgraduate (16-20 years)	0.130	0.146	-0.156, 0.416	-0.054	0.080	-0.211, 0.103
	Missing	-0.746	0.152	-1.045, -0.448	0.012	1.163	-2.267, 2.292
Cumulative income (deciles)	1	-0.905	0.067	-1.035, -0.774	-0.332	0.074	-0.478, -0.186
	2	-0.593	0.066	-0.723, -0.464	-0.196	0.057	-0.307, -0.084
	3	-0.301	0.068	-0.434, -0.168	-0.147	0.051	-0.248, -0.047
	4	-0.203	0.067	-0.335, -0.071	-0.157	0.050	-0.255, -0.059
	5	-0.235	0.067	-0.366, -0.104	-0.052	0.048	-0.146, 0.042
	6	-0.171	0.068	-0.304, -0.039	-0.060	0.047	-0.152, 0.033
	7	-0.178	0.068	-0.311, -0.044	-0.120	0.046	-0.210, -0.030
	8	-0.053	0.067	-0.184, 0.077	-0.037	0.044	-0.125, 0.050
	9	-0.034	0.069	-0.169, 0.101	-0.119	0.042	-0.201, -0.038
	10 [ref]	0.000			0.000		
	Missing	-0.597	0.570	-1.715, 0.520	-0.940	0.650	-2.214, 0.334
N		36,793			39,112		

Table S21: Linear regression: childlessness by whether the index person had ever married by age 40 regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	0.102	0.009	0.083, 0.120	0.021	0.006	0.009, 0.034
	Underweight (17.50-18.49)	0.048	0.007	0.035, 0.062	0.009	0.004	0.001, 0.017
	Normal (18.50-19.99)	0.021	0.004	0.013, 0.029	0.001	0.002	-0.003, 0.005
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.006	0.004	-0.002, 0.015	0.002	0.002	-0.002, 0.006
	Normal (23.00-23.99)	0.018	0.006	0.007, 0.029	0.003	0.003	-0.003, 0.008
	Normal (24.00-24.99)	0.038	0.007	0.024, 0.052	0.007	0.004	-0.001, 0.014
	Overweight (25.00-27.49)	0.092	0.008	0.076, 0.109	0.014	0.005	0.005, 0.023
	Overweight (27.50-29.99)	0.169	0.012	0.146, 0.192	0.037	0.007	0.023, 0.050
	Obese (30+)	0.253	0.013	0.228, 0.278	0.078	0.009	0.061, 0.095
	Missing	-0.153	0.052	-0.255, -0.051	-0.015	0.024	-0.062, 0.032
Physical Fitness (deciles)	1	0.152	0.006	0.141, 0.162	0.032	0.003	0.026, 0.038
	2	0.126	0.005	0.116, 0.137	0.025	0.003	0.020, 0.030
	3	0.115	0.005	0.105, 0.125	0.022	0.002	0.017, 0.027
	4	0.098	0.005	0.087, 0.108	0.020	0.003	0.015, 0.025
	5	0.089	0.005	0.079, 0.099	0.018	0.002	0.013, 0.023
	6	0.075	0.005	0.065, 0.085	0.015	0.002	0.010, 0.019
	7	0.062	0.005	0.052, 0.073	0.014	0.002	0.010, 0.019
	8	0.047	0.005	0.036, 0.057	0.006	0.002	0.002, 0.010
	9	0.036	0.005	0.026, 0.046	0.005	0.002	0.001, 0.009
	10 [ref]	0.000			0.000		
	Missing	0.097	0.016	0.065, 0.129	0.051	0.012	0.028, 0.075
Height (deciles)	1	-0.008	0.008	-0.024, 0.009	-0.002	0.005	-0.011, 0.008
	2	-0.038	0.007	-0.052, -0.023	-0.007	0.004	-0.015, 0.001
	3	-0.047	0.007	-0.060, -0.033	-0.011	0.004	-0.019, -0.004
	4	-0.041	0.007	-0.054, -0.029	-0.008	0.004	-0.015, -0.001
	5	-0.047	0.007	-0.061, -0.033	-0.010	0.004	-0.017, -0.003
	6	-0.048	0.006	-0.060, -0.036	-0.009	0.003	-0.015, -0.003
	7	-0.041	0.006	-0.053, -0.030	-0.011	0.003	-0.017, -0.005
	8	-0.028	0.006	-0.040, -0.017	-0.006	0.003	-0.012, 0.000
	9	-0.032	0.006	-0.043, -0.021	-0.006	0.003	-0.011, 0.000
	10 [ref]	0.000			0.000		
	Missing	0.088	0.017	0.055, 0.121	-0.025	0.012	-0.049, -0.001
Weight (deciles)	1	0.022	0.014	-0.006, 0.049	-0.003	0.008	-0.019, 0.012
	2	0.013	0.012	-0.011, 0.037	-0.002	0.007	-0.015, 0.011
	3	0.012	0.011	-0.010, 0.034	-0.004	0.006	-0.016, 0.008
	4	0.008	0.011	-0.013, 0.028	-0.001	0.006	-0.012, 0.010
	5	0.011	0.010	-0.009, 0.031	-0.006	0.005	-0.016, 0.004
	6	0.005	0.009	-0.013, 0.024	-0.006	0.005	-0.016, 0.003
	7	0.006	0.009	-0.011, 0.023	-0.007	0.004	-0.016, 0.001
	8	0.002	0.008	-0.013, 0.018	-0.005	0.004	-0.013, 0.003
	9	-0.007	0.007	-0.020, 0.006	-0.005	0.003	-0.011, 0.002
	10 [ref]	0.000			0.000		

Continued on next page

Table S21 – *Continued from previous page*

Variable	Category	Never Married			Ever Married		
		Model 2			Model 2		
		β	SE	95% CI	β	SE	95% CI
	Missing	0.186	0.052	0.084, 0.289	0.017	0.024	-0.030, 0.065
Birth year	1965 [ref]	0.000			0.000		
	1966	0.012	0.004	0.004, 0.020	0.006	0.002	0.002, 0.010
	1967	0.032	0.004	0.024, 0.040	0.010	0.002	0.006, 0.015
	1968	0.043	0.004	0.035, 0.052	0.014	0.002	0.010, 0.018
	1969	0.052	0.004	0.043, 0.060	0.018	0.002	0.013, 0.022
	1970	0.064	0.004	0.055, 0.072	0.020	0.002	0.016, 0.024
	1971	0.070	0.004	0.062, 0.079	0.023	0.002	0.018, 0.027
	1972	0.075	0.004	0.066, 0.083	0.028	0.002	0.023, 0.032
Sibling group size	1	0.002	0.003	-0.004, 0.009	0.011	0.002	0.007, 0.014
	2 [ref]	0.000			0.000		
	3	-0.016	0.003	-0.021, -0.010	-0.003	0.001	-0.005, 0.000
	4	-0.022	0.005	-0.032, -0.011	-0.007	0.002	-0.012, -0.002
	5	-0.033	0.009	-0.052, -0.015	-0.005	0.005	-0.015, 0.004
	6+	-0.029	0.014	-0.057, -0.002	-0.009	0.007	-0.022, 0.004
Birth order	1 [ref]	0.000			0.000		
	2	0.009	0.003	0.004, 0.014	-0.002	0.001	-0.005, 0.000
	3	0.020	0.004	0.012, 0.028	0.004	0.002	0.000, 0.008
	4	0.023	0.007	0.008, 0.037	0.009	0.004	0.001, 0.016
	5	0.037	0.013	0.011, 0.063	0.006	0.007	-0.008, 0.019
	6+	0.013	0.019	-0.023, 0.049	0.001	0.009	-0.017, 0.020
Educational attainment	Primary (<9 years)	0.136	0.018	0.101, 0.172	0.019	0.024	-0.028, 0.065
	Primary (9 years)	0.016	0.004	0.009, 0.023	0.005	0.002	0.000, 0.010
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	0.065	0.003	0.058, 0.071	0.006	0.002	0.003, 0.009
	Tertiary (13-15 years)	0.093	0.003	0.086, 0.099	0.007	0.002	0.004, 0.010
	Tertiary (15+ years)	0.105	0.003	0.098, 0.111	0.003	0.002	0.000, 0.006
	Postgraduate (16-20 years)	0.135	0.011	0.112, 0.157	0.010	0.004	0.002, 0.018
	Missing	0.290	0.010	0.270, 0.309	0.039	0.056	-0.070, 0.148
Cumulative income (deciles)	1	0.324	0.005	0.314, 0.334	0.105	0.004	0.098, 0.113
	2	0.180	0.005	0.170, 0.190	0.051	0.003	0.046, 0.057
	3	0.139	0.005	0.129, 0.149	0.032	0.002	0.028, 0.037
	4	0.109	0.005	0.099, 0.120	0.022	0.002	0.018, 0.026
	5	0.091	0.005	0.081, 0.101	0.018	0.002	0.014, 0.022
	6	0.074	0.005	0.064, 0.084	0.011	0.002	0.007, 0.015
	7	0.059	0.005	0.048, 0.069	0.009	0.002	0.005, 0.013
	8	0.046	0.005	0.036, 0.057	0.005	0.002	0.001, 0.009
	9	0.035	0.005	0.025, 0.046	0.002	0.002	-0.001, 0.006
	10 [ref]	0.000			0.000		
	Missing	0.379	0.023	0.335, 0.423	0.149	0.040	0.071, 0.228
N		198,780			206,647		

Table S22: Linear regression: childlessness by whether the index person had ever married by age 40 regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	0.126	0.047	0.033, 0.220	0.082	0.030	0.023, 0.140
	Underweight (17.50-18.49)	0.047	0.033	-0.019, 0.113	0.028	0.020	-0.011, 0.066
	Normal (18.50-19.99)	0.026	0.021	-0.015, 0.067	0.009	0.011	-0.013, 0.031
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.010	0.021	-0.052, 0.032	0.021	0.010	0.001, 0.041
	Normal (23.00-23.99)	0.020	0.029	-0.035, 0.076	0.009	0.014	-0.018, 0.036
	Normal (24.00-24.99)	0.065	0.037	-0.008, 0.138	0.057	0.017	0.023, 0.090
	Overweight (25.00-27.49)	0.127	0.043	0.043, 0.212	0.046	0.023	0.002, 0.091
	Overweight (27.50-29.99)	0.211	0.061	0.091, 0.331	0.085	0.034	0.018, 0.152
	Obese (30+)	0.335	0.068	0.202, 0.467	0.123	0.038	0.049, 0.198
	Missing	-0.069	0.258	-0.575, 0.437	0.018	0.201	-0.375, 0.411
Physical Fitness (deciles)	1	0.195	0.030	0.137, 0.253	0.030	0.015	0.000, 0.060
	2	0.134	0.028	0.078, 0.189	0.012	0.014	-0.016, 0.039
	3	0.137	0.027	0.084, 0.191	0.042	0.013	0.016, 0.068
	4	0.112	0.028	0.056, 0.168	0.038	0.013	0.012, 0.064
	5	0.101	0.028	0.047, 0.156	0.027	0.012	0.003, 0.051
	6	0.075	0.026	0.023, 0.127	0.033	0.012	0.011, 0.056
	7	0.092	0.027	0.039, 0.146	0.025	0.011	0.003, 0.048
	8	0.069	0.027	0.016, 0.122	0.008	0.011	-0.015, 0.030
	9	0.044	0.026	-0.007, 0.095	0.027	0.011	0.006, 0.049
	10 [ref]	0.000			0.000		
	Missing	0.085	0.084	-0.079, 0.250	0.054	0.052	-0.048, 0.156
Height (deciles)	1	0.075	0.046	-0.014, 0.165	-0.061	0.024	-0.108, -0.014
	2	0.036	0.041	-0.044, 0.115	-0.039	0.021	-0.079, 0.002
	3	0.005	0.038	-0.070, 0.080	-0.067	0.019	-0.104, -0.029
	4	0.020	0.036	-0.051, 0.092	-0.039	0.018	-0.074, -0.004
	5	0.022	0.038	-0.052, 0.096	-0.042	0.018	-0.078, -0.006
	6	0.022	0.033	-0.043, 0.087	-0.023	0.016	-0.054, 0.008
	7	0.037	0.032	-0.026, 0.099	-0.056	0.015	-0.085, -0.026
	8	0.034	0.032	-0.028, 0.095	-0.009	0.014	-0.037, 0.019
	9	0.024	0.030	-0.035, 0.083	-0.023	0.013	-0.048, 0.002
	10 [ref]	0.000			0.000		
	Missing	0.202	0.086	0.033, 0.372	-0.053	0.053	-0.158, 0.052
Weight (deciles)	1	0.008	0.071	-0.131, 0.148	0.040	0.037	-0.032, 0.113
	2	-0.003	0.062	-0.125, 0.119	0.069	0.033	0.005, 0.133
	3	0.001	0.057	-0.112, 0.113	0.040	0.029	-0.017, 0.098
	4	0.013	0.055	-0.094, 0.121	0.044	0.027	-0.010, 0.097
	5	0.038	0.052	-0.064, 0.140	0.032	0.026	-0.018, 0.082
	6	-0.003	0.049	-0.098, 0.093	0.030	0.024	-0.017, 0.077
	7	-0.021	0.044	-0.107, 0.065	0.031	0.022	-0.011, 0.074
	8	0.003	0.041	-0.077, 0.082	0.030	0.019	-0.007, 0.068
	9	-0.042	0.034	-0.109, 0.025	0.010	0.017	-0.022, 0.043
	10 [ref]	0.000			0.000		

Continued on next page

Table S22 – *Continued from previous page*

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	Missing	0.112	0.260	-0.397, 0.622	0.047	0.202	-0.348, 0.442
Birth year	1965 [ref]	0.000			0.000		
	1966	0.048	0.021	0.006, 0.089	0.007	0.010	-0.014, 0.027
	1967	0.075	0.022	0.031, 0.119	0.005	0.011	-0.017, 0.026
	1968	0.088	0.025	0.040, 0.137	0.009	0.012	-0.015, 0.033
	1969	0.123	0.028	0.069, 0.177	0.015	0.014	-0.012, 0.042
	1970	0.157	0.031	0.096, 0.218	0.020	0.016	-0.010, 0.051
	1971	0.150	0.035	0.081, 0.219	0.034	0.018	-0.001, 0.069
	1972	0.193	0.039	0.117, 0.269	0.019	0.020	-0.020, 0.059
Birth order	1 [ref]	0.000			0.000		
	2	-0.017	0.016	-0.047, 0.014	-0.007	0.008	-0.023, 0.009
	3	-0.022	0.030	-0.080, 0.036	-0.002	0.015	-0.032, 0.028
	4	-0.060	0.046	-0.151, 0.031	0.022	0.025	-0.026, 0.070
	5	-0.047	0.068	-0.180, 0.086	0.010	0.037	-0.062, 0.082
	6+	-0.154	0.099	-0.348, 0.039	0.016	0.044	-0.070, 0.102
Education	Primary (<9 years)	0.386	0.075	0.240, 0.532	0.045	0.142	-0.233, 0.323
	Primary (9 years)	0.062	0.018	0.027, 0.098	0.004	0.011	-0.017, 0.026
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	0.056	0.018	0.021, 0.090	-0.006	0.009	-0.023, 0.012
	Tertiary (13-15 years)	0.028	0.019	-0.009, 0.065	0.005	0.009	-0.013, 0.022
	Tertiary (15+ years)	-0.001	0.021	-0.042, 0.040	-0.004	0.009	-0.022, 0.015
	Postgraduate (16-20 years)	0.015	0.068	-0.117, 0.148	0.021	0.022	-0.022, 0.063
	Missing	0.390	0.076	0.241, 0.538	0.380	0.206	-0.025, 0.785
Cumulative income (deciles)	1	0.424	0.028	0.368, 0.479	0.125	0.018	0.090, 0.160
	2	0.277	0.028	0.221, 0.332	0.074	0.013	0.048, 0.100
	3	0.156	0.029	0.100, 0.212	0.051	0.012	0.028, 0.075
	4	0.099	0.029	0.043, 0.155	0.036	0.012	0.013, 0.059
	5	0.127	0.028	0.071, 0.182	0.016	0.011	-0.005, 0.038
	6	0.073	0.029	0.017, 0.129	0.017	0.011	-0.005, 0.039
	7	0.090	0.029	0.033, 0.147	0.022	0.011	0.001, 0.043
	8	0.027	0.028	-0.029, 0.082	-0.003	0.010	-0.024, 0.017
	9	0.022	0.029	-0.036, 0.079	0.023	0.010	0.003, 0.042
	10 [ref]	0.000			0.000		
	Missing	0.450	0.210	0.039, 0.862	0.313	0.180	-0.039, 0.665
N			36,793			39,112	

Table S23: Linear regression: marrying before age 40 and remaining married for at least 5 years regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.052	0.007	-0.066, -0.038	-0.051	0.007	-0.064, -0.037
	Underweight (17.50-18.49)	-0.018	0.005	-0.028, -0.008	-0.022	0.005	-0.032, -0.013
	Normal (18.50-19.99)	-0.008	0.003	-0.014, -0.002	-0.010	0.003	-0.016, -0.004
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.007	0.003	-0.013, -0.001	-0.002	0.003	-0.008, 0.004
	Normal (23.00-23.99)	-0.017	0.004	-0.025, -0.009	-0.007	0.004	-0.015, 0.000
	Normal (24.00-24.99)	-0.032	0.005	-0.042, -0.022	-0.017	0.005	-0.027, -0.007
	Overweight (25.00-27.49)	-0.053	0.006	-0.065, -0.041	-0.028	0.006	-0.040, -0.017
	Overweight (27.50-29.99)	-0.106	0.009	-0.123, -0.090	-0.066	0.008	-0.083, -0.050
	Obese (30+)	-0.153	0.009	-0.171, -0.135	-0.100	0.009	-0.118, -0.083
	Missing	-0.015	0.036	-0.086, 0.056	-0.022	0.033	-0.088, 0.044
Physical Fitness (deciles)	1	-0.178	0.004	-0.186, -0.170	-0.077	0.004	-0.085, -0.069
	2	-0.146	0.004	-0.153, -0.138	-0.065	0.004	-0.073, -0.058
	3	-0.125	0.004	-0.133, -0.118	-0.055	0.004	-0.063, -0.048
	4	-0.112	0.004	-0.120, -0.104	-0.052	0.004	-0.059, -0.044
	5	-0.092	0.004	-0.099, -0.084	-0.040	0.004	-0.047, -0.033
	6	-0.078	0.004	-0.085, -0.071	-0.036	0.004	-0.043, -0.029
	7	-0.059	0.004	-0.066, -0.051	-0.027	0.004	-0.034, -0.019
	8	-0.044	0.004	-0.052, -0.037	-0.020	0.004	-0.027, -0.013
	9	-0.031	0.004	-0.039, -0.024	-0.016	0.004	-0.023, -0.009
	10 [ref]	0.000			0.000		
	Missing	-0.187	0.012	-0.210, -0.163	-0.080	0.012	-0.103, -0.057
Height (deciles)	1	-0.035	0.006	-0.047, -0.023	-0.013	0.006	-0.025, -0.002
	2	-0.011	0.005	-0.022, 0.000	0.003	0.005	-0.008, 0.013
	3	-0.003	0.005	-0.013, 0.007	0.009	0.005	-0.001, 0.018
	4	-0.000	0.005	-0.010, 0.009	0.011	0.005	0.001, 0.020
	5	0.001	0.005	-0.009, 0.011	0.010	0.005	0.000, 0.020
	6	0.000	0.004	-0.008, 0.009	0.006	0.004	-0.002, 0.014
	7	0.006	0.004	-0.002, 0.014	0.011	0.004	0.003, 0.019
	8	0.004	0.004	-0.004, 0.013	0.008	0.004	0.000, 0.016
	9	0.009	0.004	0.001, 0.017	0.010	0.004	0.002, 0.018
	10 [ref]	0.000			0.000		
	Missing	-0.006	0.012	-0.030, 0.019	0.014	0.012	-0.010, 0.038
Weight (deciles)	1	-0.029	0.010	-0.049, -0.009	-0.034	0.010	-0.054, -0.015
	2	-0.016	0.009	-0.033, 0.002	-0.025	0.009	-0.042, -0.008
	3	-0.008	0.008	-0.024, 0.008	-0.017	0.008	-0.033, -0.001
	4	-0.004	0.008	-0.019, 0.011	-0.012	0.008	-0.027, 0.002
	5	-0.007	0.007	-0.021, 0.008	-0.015	0.007	-0.029, -0.001
	6	-0.010	0.007	-0.023, 0.004	-0.017	0.007	-0.030, -0.004
	7	0.000	0.006	-0.012, 0.012	-0.006	0.006	-0.018, 0.006
	8	-0.002	0.006	-0.014, 0.009	-0.008	0.006	-0.019, 0.003
	9	0.004	0.005	-0.005, 0.014	-0.001	0.005	-0.010, 0.009
	10 [ref]	0.000			0.000		
	Missing	-0.032	0.036	-0.103, 0.040	-0.015	0.034	-0.081, 0.051

Continued on next page

Table S23 – *Continued from previous page*

		Model 1			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.024	0.003	-0.030, -0.018	-0.018	0.003	-0.024, -0.012
	1967	-0.031	0.003	-0.037, -0.025	-0.025	0.003	-0.031, -0.019
	1968	-0.036	0.003	-0.042, -0.030	-0.032	0.003	-0.038, -0.026
	1969	-0.028	0.003	-0.035, -0.022	-0.028	0.003	-0.034, -0.022
	1970	-0.032	0.003	-0.038, -0.026	-0.032	0.003	-0.038, -0.026
	1971	-0.027	0.003	-0.033, -0.021	-0.032	0.003	-0.038, -0.026
	1972	-0.020	0.003	-0.027, -0.014	-0.031	0.003	-0.037, -0.025
Sibling group size	1				-0.025	0.002	-0.030, -0.020
	2 [ref]				0.000		
	3				0.022	0.002	0.018, 0.026
	4				0.037	0.004	0.029, 0.044
	5				0.049	0.007	0.036, 0.062
	6+				0.084	0.010	0.064, 0.103
Birth order	1 [ref]				0.000		
	2				-0.001	0.002	-0.005, 0.002
	3				-0.004	0.003	-0.009, 0.002
	4				-0.014	0.005	-0.024, -0.004
	5				-0.045	0.009	-0.063, -0.026
	6+				-0.054	0.013	-0.080, -0.028
Educational attainment	Primary (<9 years)				-0.094	0.013	-0.120, -0.068
	Primary (9 years)				-0.029	0.003	-0.035, -0.024
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				0.028	0.002	0.023, 0.032
	Tertiary (13-15 years)				0.062	0.002	0.058, 0.067
	Tertiary (15+ years)				0.118	0.002	0.114, 0.123
	Postgraduate (16-20 years)				0.191	0.006	0.179, 0.203
	Missing				-0.140	0.009	-0.158, -0.122
Cumulative income (deciles)	1				-0.389	0.003	-0.395, -0.382
	2				-0.267	0.003	-0.273, -0.260
	3				-0.206	0.003	-0.213, -0.199
	4				-0.164	0.003	-0.171, -0.158
	5				-0.141	0.003	-0.148, -0.134
	6				-0.112	0.003	-0.118, -0.105
	7				-0.098	0.003	-0.105, -0.091
	8				-0.081	0.003	-0.088, -0.075
	9				-0.055	0.003	-0.062, -0.048
	10 [ref]				0.000		
	Missing				-0.351	0.019	-0.388, -0.313
N		405,427			405,427		

Table S24: Linear regression: marrying before age 40 and remaining married for at least 5 years regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Model 3			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.053	0.023	-0.098, -0.008	-0.048	0.022	-0.092, -0.004
	Underweight (17.50-18.49)	-0.012	0.016	-0.044, 0.020	-0.014	0.016	-0.045, 0.017
	Normal (18.50-19.99)	-0.010	0.010	-0.029, 0.009	-0.009	0.009	-0.027, 0.010
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.008	0.010	-0.011, 0.027	0.011	0.009	-0.008, 0.029
	Normal (23.00-23.99)	-0.005	0.013	-0.030, 0.021	-0.000	0.013	-0.025, 0.024
	Normal (24.00-24.99)	-0.033	0.017	-0.066, 0.000	-0.026	0.016	-0.058, 0.006
	Overweight (25.00-27.49)	-0.024	0.020	-0.062, 0.015	-0.011	0.019	-0.048, 0.027
	Overweight (27.50-29.99)	-0.049	0.028	-0.104, 0.005	-0.032	0.027	-0.085, 0.022
	Obese (30+)	-0.140	0.031	-0.201, -0.079	-0.104	0.031	-0.164, -0.044
	Missing	0.024	0.112	-0.195, 0.243	-0.031	0.105	-0.237, 0.175
Physical Fitness (deciles)	1	-0.114	0.013	-0.141, -0.088	-0.068	0.013	-0.094, -0.042
	2	-0.108	0.013	-0.134, -0.083	-0.069	0.013	-0.094, -0.044
	3	-0.105	0.012	-0.129, -0.080	-0.071	0.012	-0.094, -0.047
	4	-0.102	0.013	-0.127, -0.077	-0.068	0.012	-0.092, -0.044
	5	-0.091	0.012	-0.114, -0.067	-0.065	0.012	-0.088, -0.041
	6	-0.072	0.012	-0.095, -0.049	-0.054	0.011	-0.076, -0.032
	7	-0.060	0.012	-0.084, -0.036	-0.042	0.012	-0.065, -0.019
	8	-0.032	0.012	-0.055, -0.009	-0.019	0.012	-0.042, 0.004
	9	-0.050	0.011	-0.072, -0.027	-0.043	0.011	-0.064, -0.021
	10 [ref]	0.000			0.000		
	Missing	-0.049	0.041	-0.130, 0.033	-0.003	0.041	-0.082, 0.076
Height (deciles)	1	-0.041	0.021	-0.082, -0.001	-0.027	0.020	-0.067, 0.012
	2	0.001	0.018	-0.035, 0.037	0.012	0.018	-0.023, 0.047
	3	0.012	0.017	-0.022, 0.046	0.021	0.017	-0.012, 0.055
	4	0.005	0.016	-0.027, 0.037	0.013	0.016	-0.018, 0.044
	5	-0.008	0.017	-0.042, 0.025	-0.002	0.016	-0.034, 0.030
	6	-0.001	0.015	-0.030, 0.027	0.002	0.014	-0.026, 0.030
	7	0.002	0.014	-0.025, 0.030	0.004	0.014	-0.023, 0.031
	8	0.008	0.014	-0.019, 0.035	0.010	0.014	-0.017, 0.036
	9	0.009	0.013	-0.016, 0.035	0.008	0.013	-0.016, 0.033
	10 [ref]	0.000			0.000		
	Missing	-0.146	0.043	-0.230, -0.062	-0.093	0.042	-0.175, -0.011
Weight (deciles)	1	-0.031	0.032	-0.094, 0.033	-0.027	0.032	-0.089, 0.035
	2	-0.016	0.028	-0.072, 0.039	-0.016	0.028	-0.070, 0.038
	3	0.002	0.026	-0.049, 0.053	0.001	0.025	-0.048, 0.051
	4	0.015	0.025	-0.033, 0.063	0.011	0.024	-0.036, 0.058
	5	-0.003	0.023	-0.048, 0.043	-0.004	0.023	-0.048, 0.041
	6	-0.007	0.022	-0.049, 0.036	-0.004	0.021	-0.045, 0.038
	7	0.002	0.020	-0.036, 0.041	0.003	0.019	-0.035, 0.040
	8	0.005	0.018	-0.030, 0.041	0.006	0.018	-0.029, 0.041
	9	-0.004	0.015	-0.034, 0.026	-0.008	0.015	-0.037, 0.021
	10 [ref]	0.000			0.000		
	Missing	-0.042	0.113	-0.263, 0.180	0.017	0.106	-0.191, 0.225

Continued on next page

Table S24 – *Continued from previous page*

Variable	Category	Model 3			Model 4		
		β	SE	95% CI	β	SE	95% CI
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.018	0.010	-0.037, 0.001	-0.018	0.010	-0.037, 0.000
	1967	-0.027	0.009	-0.045, -0.009	-0.031	0.010	-0.051, -0.011
	1968	-0.040	0.009	-0.058, -0.022	-0.045	0.011	-0.067, -0.024
	1969	-0.044	0.009	-0.062, -0.026	-0.049	0.012	-0.074, -0.025
	1970	-0.050	0.010	-0.069, -0.031	-0.058	0.014	-0.085, -0.030
	1971	-0.049	0.010	-0.068, -0.030	-0.058	0.016	-0.089, -0.026
	1972	-0.045	0.010	-0.065, -0.025	-0.058	0.018	-0.093, -0.023
Birth order	1 [ref]				0.000		
	2				0.001	0.007	-0.013, 0.015
	3				0.015	0.014	-0.012, 0.042
	4				0.026	0.022	-0.017, 0.069
	5				0.003	0.033	-0.061, 0.068
	6+				0.030	0.047	-0.062, 0.122
Educational attainment	Primary (<9 years)				-0.173	0.044	-0.260, -0.087
	Primary (9 years)				-0.036	0.009	-0.054, -0.019
	Secondary (10-11 years) [ref]				0.000		
	Secondary (12 years)				0.010	0.008	-0.006, 0.026
	Tertiary (13-15 years)				0.036	0.008	0.020, 0.052
	Tertiary (15+ years)				0.100	0.009	0.083, 0.117
	Postgraduate (16-20 years)				0.176	0.021	0.135, 0.217
	Missing				-0.112	0.051	-0.212, -0.011
Cumulative income (deciles)	1				-0.394	0.012	-0.418, -0.371
	2				-0.272	0.012	-0.295, -0.250
	3				-0.209	0.012	-0.232, -0.186
	4				-0.160	0.011	-0.182, -0.137
	5				-0.142	0.012	-0.165, -0.120
	6				-0.085	0.011	-0.108, -0.063
	7				-0.074	0.011	-0.096, -0.051
	8				-0.071	0.011	-0.093, -0.049
	9				-0.058	0.011	-0.080, -0.037
	10 [ref]				0.000		
	Missing				-0.411	0.086	-0.580, -0.242
N		75,905			75,905		

Table S25: Linear regression: total number of children by whether the index person had married by age 40 and remained married for at least 5 years regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	-0.215	0.021	-0.256, -0.173	-0.109	0.024	-0.155, -0.063
	Underweight (17.50-18.49)	-0.118	0.016	-0.149, -0.088	-0.051	0.016	-0.082, -0.020
	Normal (18.50-19.99)	-0.053	0.010	-0.072, -0.034	-0.014	0.009	-0.032, 0.004
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.006	0.010	-0.025, 0.014	-0.009	0.009	-0.026, 0.008
	Normal (23.00-23.99)	-0.029	0.013	-0.055, -0.004	-0.019	0.011	-0.042, 0.003
	Normal (24.00-24.99)	-0.078	0.016	-0.110, -0.046	-0.028	0.015	-0.057, 0.002
	Overweight (25.00-27.49)	-0.186	0.019	-0.223, -0.148	-0.057	0.018	-0.093, -0.021
	Overweight (27.50-29.99)	-0.368	0.026	-0.420, -0.317	-0.178	0.027	-0.231, -0.126
	Obese (30+)	-0.551	0.028	-0.606, -0.497	-0.290	0.032	-0.352, -0.228
	Missing	0.244	0.106	0.036, 0.451	0.020	0.132	-0.239, 0.279
Physical fitness (deciles)	1	-0.300	0.013	-0.325, -0.274	-0.105	0.012	-0.129, -0.082
	2	-0.265	0.012	-0.289, -0.240	-0.079	0.011	-0.101, -0.057
	3	-0.231	0.012	-0.255, -0.208	-0.085	0.010	-0.106, -0.065
	4	-0.203	0.013	-0.227, -0.178	-0.062	0.011	-0.083, -0.041
	5	-0.190	0.012	-0.214, -0.166	-0.068	0.010	-0.088, -0.049
	6	-0.160	0.012	-0.183, -0.137	-0.071	0.009	-0.089, -0.052
	7	-0.141	0.012	-0.165, -0.117	-0.071	0.010	-0.090, -0.053
	8	-0.098	0.012	-0.122, -0.074	-0.051	0.009	-0.068, -0.033
	9	-0.084	0.012	-0.108, -0.061	-0.030	0.009	-0.047, -0.013
	10 [ref]	0.000			0.000		
	Missing	-0.207	0.039	-0.282, -0.131	-0.127	0.047	-0.220, -0.035
Height (deciles)	1	0.011	0.019	-0.026, 0.048	0.027	0.019	-0.010, 0.064
	2	0.087	0.017	0.054, 0.120	0.038	0.016	0.006, 0.070
	3	0.108	0.016	0.077, 0.139	0.044	0.015	0.015, 0.074
	4	0.105	0.015	0.075, 0.134	0.036	0.014	0.009, 0.064
	5	0.110	0.016	0.079, 0.141	0.058	0.015	0.029, 0.087
	6	0.113	0.014	0.086, 0.140	0.029	0.012	0.005, 0.053
	7	0.111	0.013	0.085, 0.137	0.035	0.012	0.012, 0.058
	8	0.064	0.013	0.038, 0.090	0.021	0.012	-0.002, 0.044
	9	0.072	0.013	0.046, 0.097	0.016	0.011	-0.005, 0.037
	10 [ref]	0.000			0.000		
	Missing	-0.163	0.039	-0.240, -0.086	0.079	0.049	-0.017, 0.174
Weight (deciles)	1	-0.055	0.032	-0.118, 0.007	-0.011	0.031	-0.071, 0.050
	2	-0.023	0.028	-0.078, 0.032	-0.020	0.027	-0.073, 0.033
	3	-0.026	0.025	-0.076, 0.024	-0.005	0.024	-0.052, 0.043
	4	-0.000	0.024	-0.047, 0.047	-0.013	0.023	-0.057, 0.032
	5	-0.018	0.023	-0.063, 0.027	0.008	0.021	-0.034, 0.050
	6	-0.018	0.022	-0.061, 0.024	0.007	0.020	-0.032, 0.046
	7	0.002	0.020	-0.037, 0.040	0.020	0.018	-0.015, 0.055
	8	-0.001	0.018	-0.037, 0.035	0.019	0.016	-0.013, 0.051
	9	0.018	0.015	-0.012, 0.048	0.007	0.014	-0.020, 0.033

Continued on next page

Table S25 – *Continued from previous page*

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	-0.311	0.107	-0.520, -0.101	-0.040	0.132	-0.299, 0.220
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.045	0.010	-0.064, -0.026	-0.039	0.009	-0.057, -0.021
	1967	-0.072	0.010	-0.092, -0.052	-0.074	0.009	-0.092, -0.056
	1968	-0.123	0.010	-0.142, -0.103	-0.090	0.009	-0.108, -0.072
	1969	-0.144	0.010	-0.164, -0.124	-0.125	0.009	-0.143, -0.106
	1970	-0.175	0.010	-0.195, -0.155	-0.159	0.009	-0.177, -0.140
	1971	-0.210	0.010	-0.230, -0.191	-0.170	0.009	-0.187, -0.152
	1972	-0.239	0.010	-0.258, -0.219	-0.218	0.009	-0.235, -0.200
Sibling group size	1	-0.010	0.008	-0.024, 0.005	-0.043	0.007	-0.057, -0.028
	2 [ref]	0.000			0.000		
	3	0.070	0.007	0.056, 0.083	0.093	0.006	0.081, 0.104
	4	0.140	0.013	0.115, 0.165	0.211	0.011	0.189, 0.232
	5	0.274	0.025	0.225, 0.323	0.342	0.024	0.295, 0.388
	6+	0.311	0.037	0.238, 0.384	0.540	0.044	0.453, 0.626
Birth order	1 [ref]	0.000			0.000		
	2	-0.035	0.006	-0.047, -0.024	-0.012	0.005	-0.022, -0.002
	3	-0.071	0.010	-0.090, -0.052	-0.046	0.009	-0.062, -0.029
	4	-0.114	0.018	-0.149, -0.078	-0.106	0.017	-0.139, -0.072
	5	-0.231	0.034	-0.297, -0.165	-0.224	0.035	-0.293, -0.155
	6+	-0.162	0.050	-0.260, -0.065	-0.245	0.056	-0.355, -0.135
Educational attainment	Primary (<9 years)	-0.232	0.046	-0.323, -0.141	0.194	0.111	-0.024, 0.411
	Primary (9 years)	0.027	0.009	0.009, 0.044	0.062	0.011	0.041, 0.084
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	-0.162	0.007	-0.177, -0.148	-0.063	0.007	-0.077, -0.049
	Tertiary (13-15 years)	-0.234	0.007	-0.249, -0.220	-0.070	0.006	-0.082, -0.058
	Tertiary (15+ years)	-0.254	0.008	-0.268, -0.239	-0.034	0.006	-0.045, -0.022
	Postgraduate (16-20 years)	-0.283	0.024	-0.331, -0.235	-0.006	0.015	-0.036, 0.024
	Missing	-0.623	0.022	-0.666, -0.579	-0.180	0.250	-0.670, 0.310
Cumulative income (deciles)	1	-0.667	0.011	-0.689, -0.644	-0.165	0.016	-0.195, -0.134
	2	-0.382	0.012	-0.405, -0.359	-0.080	0.011	-0.102, -0.059
	3	-0.286	0.012	-0.310, -0.263	-0.054	0.010	-0.073, -0.034
	4	-0.237	0.012	-0.261, -0.214	-0.043	0.009	-0.061, -0.025
	5	-0.210	0.012	-0.234, -0.187	-0.053	0.009	-0.070, -0.035
	6	-0.176	0.012	-0.199, -0.152	-0.052	0.008	-0.068, -0.035
	7	-0.147	0.012	-0.170, -0.123	-0.044	0.008	-0.061, -0.028
	8	-0.121	0.012	-0.145, -0.097	-0.045	0.008	-0.061, -0.029
	9	-0.089	0.012	-0.113, -0.065	-0.036	0.008	-0.051, -0.020
	10 [ref]	0.000			0.000		
	Missing	-0.774	0.051	-0.875, -0.673	-0.500	0.114	-0.723, -0.277
N		217,095			188,332		

Table S26: Linear regression: total number of children by whether the index person had married by age 40 and remained married for at least 5 years regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	-0.280	0.106	-0.488, -0.072	-0.342	0.123	-0.583, -0.102
	Underweight (17.50-18.49)	-0.149	0.074	-0.293, -0.004	-0.170	0.084	-0.335, -0.005
	Normal (18.50-19.99)	-0.070	0.046	-0.160, 0.020	-0.055	0.049	-0.151, 0.041
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.012	0.047	-0.080, 0.105	0.011	0.046	-0.079, 0.102
	Normal (23.00-23.99)	0.006	0.063	-0.117, 0.130	0.012	0.062	-0.109, 0.132
	Normal (24.00-24.99)	-0.071	0.082	-0.232, 0.091	-0.119	0.080	-0.275, 0.037
	Overweight (25.00-27.49)	-0.243	0.093	-0.426, -0.060	-0.063	0.098	-0.254, 0.128
	Overweight (27.50-29.99)	-0.435	0.132	-0.693, -0.176	-0.172	0.145	-0.457, 0.112
	Obese (30+)	-0.671	0.143	-0.953, -0.390	-0.357	0.164	-0.679, -0.036
	Missing	-0.233	0.513	-1.240, 0.773	-0.630	0.681	-1.966, 0.705
Physical fitness (deciles)	1	-0.414	0.066	-0.544, -0.284	-0.122	0.069	-0.256, 0.013
	2	-0.323	0.063	-0.447, -0.199	-0.101	0.062	-0.222, 0.020
	3	-0.265	0.061	-0.385, -0.146	-0.085	0.058	-0.199, 0.030
	4	-0.282	0.063	-0.405, -0.160	-0.055	0.060	-0.173, 0.063
	5	-0.261	0.061	-0.380, -0.141	-0.053	0.055	-0.162, 0.056
	6	-0.197	0.059	-0.312, -0.082	-0.105	0.049	-0.202, -0.009
	7	-0.224	0.061	-0.344, -0.103	-0.026	0.052	-0.128, 0.077
	8	-0.170	0.060	-0.289, -0.052	-0.068	0.051	-0.168, 0.032
	9	-0.126	0.059	-0.242, -0.011	-0.106	0.048	-0.200, -0.013
	10 [ref]	0.000			0.000		
	Missing	-0.187	0.171	-0.522, 0.149	-0.133	0.258	-0.638, 0.373
Height (deciles)	1	-0.215	0.098	-0.407, -0.023	-0.066	0.105	-0.272, 0.140
	2	-0.102	0.088	-0.274, 0.071	-0.035	0.091	-0.214, 0.143
	3	-0.079	0.084	-0.242, 0.085	0.063	0.084	-0.102, 0.228
	4	-0.078	0.079	-0.232, 0.076	0.005	0.079	-0.150, 0.159
	5	-0.046	0.081	-0.206, 0.113	0.100	0.081	-0.060, 0.260
	6	-0.031	0.072	-0.171, 0.110	-0.059	0.070	-0.196, 0.078
	7	-0.106	0.069	-0.241, 0.030	0.100	0.066	-0.028, 0.229
	8	-0.087	0.067	-0.220, 0.045	-0.001	0.063	-0.124, 0.122
	9	-0.089	0.064	-0.215, 0.037	-0.044	0.057	-0.156, 0.067
	10 [ref]	0.000			0.000		
	Missing	-0.390	0.176	-0.736, -0.044	-0.040	0.266	-0.561, 0.481
Weight (deciles)	1	-0.041	0.154	-0.342, 0.260	0.038	0.163	-0.281, 0.357
	2	0.006	0.135	-0.259, 0.271	0.001	0.144	-0.282, 0.284
	3	-0.036	0.125	-0.281, 0.208	0.006	0.128	-0.245, 0.258
	4	-0.055	0.119	-0.288, 0.177	-0.090	0.120	-0.325, 0.146
	5	-0.051	0.114	-0.273, 0.172	-0.037	0.113	-0.259, 0.184
	6	-0.026	0.106	-0.234, 0.182	-0.032	0.105	-0.238, 0.174
	7	0.033	0.097	-0.156, 0.222	0.036	0.096	-0.152, 0.223
	8	-0.004	0.088	-0.177, 0.170	-0.009	0.087	-0.180, 0.161
	9	0.023	0.075	-0.124, 0.169	-0.033	0.073	-0.176, 0.110

Continued on next page

Table S26 – *Continued from previous page*

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	0.116	0.522	-0.908, 1.139	0.610	0.687	-0.737, 1.957
Birth year	1965 [ref]	0.000			0.000		
	1966	-0.167	0.048	-0.261, -0.074	-0.100	0.050	-0.198, -0.003
	1967	-0.152	0.051	-0.252, -0.052	-0.078	0.052	-0.179, 0.023
	1968	-0.260	0.056	-0.370, -0.150	-0.121	0.056	-0.231, -0.011
	1969	-0.319	0.063	-0.442, -0.196	-0.144	0.064	-0.269, -0.019
	1970	-0.413	0.070	-0.550, -0.276	-0.252	0.073	-0.395, -0.109
	1971	-0.415	0.079	-0.570, -0.259	-0.287	0.082	-0.448, -0.126
	1972	-0.573	0.088	-0.745, -0.400	-0.310	0.092	-0.491, -0.130
Birth order	1 [ref]	0.000			0.000		
	2	0.025	0.036	-0.045, 0.094	-0.004	0.038	-0.078, 0.070
	3	0.052	0.067	-0.079, 0.182	0.003	0.073	-0.140, 0.146
	4	-0.006	0.106	-0.214, 0.201	-0.138	0.115	-0.364, 0.088
	5	-0.096	0.159	-0.407, 0.216	-0.243	0.190	-0.614, 0.129
	6+	0.117	0.233	-0.340, 0.574	-0.533	0.265	-1.052, -0.013
Educational attainment	Primary (<9 years)	-0.887	0.199	-1.278, -0.497	0.174	0.622	-1.046, 1.393
	Primary (9 years)	-0.057	0.042	-0.139, 0.026	0.098	0.057	-0.014, 0.210
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	-0.132	0.038	-0.208, -0.057	-0.040	0.041	-0.120, 0.040
	Tertiary (13-15 years)	-0.095	0.040	-0.173, -0.016	-0.042	0.039	-0.119, 0.036
	Tertiary (15+ years)	-0.056	0.044	-0.143, 0.031	-0.039	0.041	-0.119, 0.040
	Postgraduate (16-20 years)	0.028	0.135	-0.237, 0.292	0.015	0.084	-0.150, 0.180
	Missing	-0.893	0.125	-1.138, -0.648	0.033	1.177	-2.274, 2.339
Cumulative income (deciles)	1	-0.921	0.062	-1.043, -0.799	-0.300	0.082	-0.461, -0.139
	2	-0.619	0.061	-0.739, -0.498	-0.193	0.060	-0.310, -0.077
	3	-0.341	0.063	-0.464, -0.217	-0.135	0.054	-0.241, -0.030
	4	-0.224	0.063	-0.347, -0.102	-0.124	0.052	-0.225, -0.023
	5	-0.256	0.062	-0.379, -0.134	-0.020	0.050	-0.119, 0.079
	6	-0.186	0.063	-0.309, -0.062	-0.047	0.049	-0.143, 0.050
	7	-0.209	0.063	-0.333, -0.085	-0.089	0.048	-0.184, 0.005
	8	-0.093	0.062	-0.214, 0.029	-0.025	0.047	-0.117, 0.066
	9	-0.056	0.064	-0.182, 0.070	-0.100	0.043	-0.185, -0.015
	10 [ref]	0.000			0.000		
	Missing	-0.486	0.557	-1.578, 0.606	-1.667	0.481	-2.610, -0.723
N		40,443			35,462		

Table S27: Linear regression: childlessness by whether the index person had married by age 40 and remained married for at least 5 years regressed on body mass index, physical fitness, and height, no fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 2			Model 2		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight (≤17.49)	0.101	0.009	0.083, 0.118	0.022	0.006	0.009, 0.034
	Underweight (17.50-18.49)	0.049	0.007	0.036, 0.062	0.009	0.004	0.001, 0.017
	Normal (18.50-19.99)	0.020	0.004	0.012, 0.028	0.001	0.002	-0.003, 0.005
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	0.005	0.004	-0.003, 0.013	0.003	0.002	-0.001, 0.007
	Normal (23.00-23.99)	0.015	0.005	0.005, 0.026	0.003	0.003	-0.002, 0.009
	Normal (24.00-24.99)	0.034	0.007	0.021, 0.048	0.007	0.004	-0.001, 0.014
	Overweight (25.00-27.49)	0.086	0.008	0.070, 0.102	0.016	0.005	0.007, 0.025
	Overweight (27.50-29.99)	0.161	0.011	0.139, 0.183	0.038	0.007	0.024, 0.052
	Obese (30+)	0.244	0.012	0.220, 0.267	0.078	0.009	0.061, 0.096
	Missing	-0.181	0.044	-0.268, -0.094	0.002	0.028	-0.052, 0.056
Physical fitness (deciles)	1	0.142	0.005	0.131, 0.152	0.030	0.003	0.024, 0.036
	2	0.118	0.005	0.108, 0.128	0.024	0.003	0.019, 0.029
	3	0.108	0.005	0.098, 0.117	0.021	0.002	0.017, 0.026
	4	0.092	0.005	0.082, 0.102	0.019	0.003	0.014, 0.024
	5	0.084	0.005	0.074, 0.093	0.017	0.002	0.013, 0.022
	6	0.069	0.005	0.059, 0.078	0.015	0.002	0.011, 0.020
	7	0.058	0.005	0.049, 0.068	0.014	0.002	0.010, 0.019
	8	0.043	0.005	0.033, 0.052	0.007	0.002	0.003, 0.011
	9	0.034	0.005	0.025, 0.044	0.005	0.002	0.001, 0.010
	10 [ref]	0.000			0.000		
	Missing	0.094	0.015	0.064, 0.124	0.052	0.012	0.028, 0.076
Height (deciles)	1	-0.005	0.008	-0.021, 0.010	-0.001	0.005	-0.011, 0.008
	2	-0.035	0.007	-0.049, -0.022	-0.008	0.004	-0.016, 0.001
	3	-0.044	0.007	-0.058, -0.031	-0.011	0.004	-0.018, -0.003
	4	-0.040	0.006	-0.053, -0.028	-0.007	0.004	-0.014, 0.000
	5	-0.047	0.007	-0.060, -0.033	-0.010	0.004	-0.017, -0.002
	6	-0.047	0.006	-0.058, -0.036	-0.008	0.003	-0.014, -0.002
	7	-0.042	0.006	-0.052, -0.031	-0.010	0.003	-0.016, -0.004
	8	-0.028	0.006	-0.039, -0.017	-0.005	0.003	-0.011, 0.001
	9	-0.030	0.005	-0.041, -0.020	-0.005	0.003	-0.011, 0.000
	10 [ref]	0.000			0.000		
	Missing	0.084	0.016	0.053, 0.115	-0.030	0.013	-0.055, -0.005
Weight (deciles)	1	0.020	0.013	-0.006, 0.046	-0.001	0.008	-0.016, 0.015
	2	0.011	0.012	-0.012, 0.034	-0.001	0.007	-0.014, 0.012
	3	0.010	0.011	-0.011, 0.031	-0.001	0.006	-0.013, 0.010
	4	0.005	0.010	-0.015, 0.024	0.002	0.006	-0.009, 0.013
	5	0.008	0.010	-0.011, 0.027	-0.003	0.005	-0.014, 0.007
	6	0.004	0.009	-0.014, 0.022	-0.005	0.005	-0.015, 0.004
	7	0.004	0.008	-0.012, 0.020	-0.005	0.004	-0.014, 0.003
	8	0.002	0.008	-0.013, 0.017	-0.005	0.004	-0.013, 0.003
	9	-0.009	0.006	-0.021, 0.004	-0.004	0.003	-0.011, 0.002

Continued on next page

Table S27 – *Continued from previous page*

Variable	Category	Never Married Model 2 β	SE	95% CI	Ever Married Model 2 β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	0.211	0.045	0.123, 0.299	0.001	0.027	-0.053, 0.055
Birth year	1965 [ref]	0.000			0.000		
	1966	0.013	0.004	0.005, 0.020	0.004	0.002	0.000, 0.008
	1967	0.030	0.004	0.022, 0.038	0.010	0.002	0.006, 0.014
	1968	0.043	0.004	0.035, 0.051	0.014	0.002	0.010, 0.018
	1969	0.052	0.004	0.044, 0.060	0.017	0.002	0.013, 0.021
	1970	0.063	0.004	0.055, 0.071	0.020	0.002	0.015, 0.024
	1971	0.073	0.004	0.065, 0.081	0.020	0.002	0.016, 0.024
	1972	0.078	0.004	0.070, 0.086	0.026	0.002	0.021, 0.030
Sibling group size	1	-0.001	0.003	-0.007, 0.005	0.010	0.002	0.007, 0.014
	2 [ref]	0.000			0.000		
	3	-0.016	0.003	-0.021, -0.010	-0.002	0.001	-0.005, 0.000
	4	-0.025	0.005	-0.034, -0.015	-0.006	0.002	-0.010, -0.001
	5	-0.042	0.009	-0.059, -0.024	-0.005	0.005	-0.014, 0.005
	6+	-0.038	0.013	-0.063, -0.012	-0.011	0.007	-0.024, 0.002
Birth order	1 [ref]	0.000			0.000		
	2	0.009	0.002	0.004, 0.014	-0.002	0.001	-0.005, 0.000
	3	0.021	0.004	0.014, 0.029	0.004	0.002	0.000, 0.008
	4	0.025	0.007	0.011, 0.039	0.008	0.004	0.001, 0.016
	5	0.043	0.012	0.019, 0.067	0.004	0.007	-0.010, 0.017
	6+	0.025	0.017	-0.009, 0.059	0.002	0.009	-0.016, 0.020
Educational attainment	Primary (<9 years)	0.127	0.018	0.092, 0.162	-0.005	0.024	-0.053, 0.042
	Primary (9 years)	0.011	0.003	0.004, 0.017	0.004	0.002	-0.001, 0.008
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	0.065	0.003	0.059, 0.071	0.004	0.002	0.001, 0.008
	Tertiary (13-15 years)	0.095	0.003	0.089, 0.101	0.005	0.002	0.002, 0.008
	Tertiary (15+ years)	0.108	0.003	0.102, 0.115	0.000	0.002	-0.003, 0.003
	Postgraduate (16-20 years)	0.135	0.011	0.114, 0.157	0.008	0.004	0.000, 0.016
	Missing	0.312	0.010	0.291, 0.332	0.071	0.064	-0.055, 0.197
Cumulative income (deciles)	1	0.317	0.005	0.307, 0.326	0.088	0.004	0.080, 0.096
	2	0.175	0.005	0.166, 0.185	0.045	0.003	0.039, 0.050
	3	0.136	0.005	0.126, 0.145	0.029	0.002	0.024, 0.034
	4	0.109	0.005	0.100, 0.119	0.020	0.002	0.016, 0.025
	5	0.093	0.005	0.084, 0.103	0.016	0.002	0.012, 0.021
	6	0.077	0.005	0.067, 0.087	0.010	0.002	0.006, 0.014
	7	0.062	0.005	0.053, 0.072	0.008	0.002	0.004, 0.012
	8	0.051	0.005	0.041, 0.060	0.003	0.002	0.000, 0.007
	9	0.037	0.005	0.027, 0.047	0.002	0.002	-0.002, 0.006
	10 [ref]	0.000			0.000		
	Missing	0.379	0.023	0.335, 0.424	0.153	0.042	0.070, 0.236
N			217,095			188,332	

Table S28: Linear regression: childlessness by whether the index person had married by age 40 and remained married for at least 5 years regressed on body mass index, physical fitness, and height, applying fixed effects. Swedish men born 1965-1972.

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
BMI	Underweight ($\leq$17.49)	0.149	0.044	0.064, 0.234	0.075	0.032	0.012, 0.138
	Underweight (17.50-18.49)	0.045	0.031	-0.015, 0.106	0.024	0.021	-0.017, 0.064
	Normal (18.50-19.99)	0.028	0.019	-0.009, 0.065	-0.003	0.012	-0.026, 0.020
	Normal (20.00-21.99) [ref]	0.000			0.000		
	Normal (22.00-22.99)	-0.008	0.019	-0.046, 0.029	0.016	0.011	-0.005, 0.037
	Normal (23.00-23.99)	0.012	0.026	-0.039, 0.062	0.013	0.014	-0.016, 0.041
	Normal (24.00-24.99)	0.064	0.034	-0.002, 0.130	0.057	0.018	0.022, 0.092
	Overweight (25.00-27.49)	0.130	0.039	0.054, 0.206	0.046	0.024	0.000, 0.092
	Overweight (27.50-29.99)	0.211	0.055	0.103, 0.319	0.054	0.036	-0.017, 0.126
	Obese (30+)	0.315	0.061	0.195, 0.434	0.106	0.041	0.027, 0.186
	Missing	0.019	0.172	-0.318, 0.356	-0.013	0.277	-0.556, 0.530
Physical fitness (deciles)	1	0.179	0.027	0.127, 0.232	0.032	0.016	0.000, 0.063
	2	0.129	0.026	0.079, 0.179	0.012	0.015	-0.017, 0.041
	3	0.122	0.025	0.074, 0.170	0.040	0.014	0.013, 0.067
	4	0.101	0.026	0.051, 0.151	0.042	0.014	0.014, 0.069
	5	0.091	0.025	0.042, 0.140	0.027	0.013	0.002, 0.052
	6	0.067	0.024	0.020, 0.114	0.028	0.012	0.005, 0.051
	7	0.089	0.025	0.040, 0.138	0.028	0.012	0.004, 0.052
	8	0.059	0.025	0.011, 0.108	0.013	0.012	-0.010, 0.037
	9	0.044	0.024	-0.002, 0.091	0.027	0.011	0.005, 0.049
	10 [ref]	0.000			0.000		
	Missing	0.086	0.077	-0.065, 0.236	0.096	0.057	-0.016, 0.207
Height (deciles)	1	0.063	0.041	-0.018, 0.144	-0.049	0.025	-0.098, 0.001
	2	0.025	0.037	-0.047, 0.098	-0.039	0.022	-0.081, 0.003
	3	0.006	0.035	-0.063, 0.074	-0.060	0.020	-0.098, -0.021
	4	0.007	0.033	-0.058, 0.071	-0.037	0.019	-0.074, 0.000
	5	0.007	0.034	-0.060, 0.074	-0.039	0.019	-0.076, -0.002
	6	-0.004	0.030	-0.063, 0.055	-0.019	0.016	-0.051, 0.013
	7	0.010	0.029	-0.047, 0.066	-0.046	0.016	-0.077, -0.016
	8	0.019	0.028	-0.037, 0.075	-0.005	0.015	-0.034, 0.024
	9	0.001	0.027	-0.052, 0.055	-0.017	0.013	-0.043, 0.009
	10 [ref]	0.000			0.000		
	Missing	0.166	0.078	0.012, 0.319	-0.066	0.059	-0.182, 0.050
Weight (deciles)	1	0.025	0.064	-0.101, 0.150	0.039	0.039	-0.037, 0.115
	2	0.021	0.056	-0.089, 0.130	0.063	0.035	-0.004, 0.131
	3	0.014	0.051	-0.087, 0.115	0.042	0.031	-0.018, 0.102
	4	0.023	0.049	-0.073, 0.119	0.048	0.029	-0.009, 0.104
	5	0.054	0.047	-0.037, 0.146	0.026	0.027	-0.027, 0.079
	6	0.022	0.044	-0.063, 0.108	0.031	0.025	-0.019, 0.081
	7	0.005	0.039	-0.072, 0.083	0.032	0.023	-0.012, 0.076
	8	0.026	0.036	-0.045, 0.098	0.020	0.020	-0.020, 0.059
	9	-0.019	0.031	-0.079, 0.041	0.012	0.018	-0.022, 0.047

Continued on next page

Table S28 – *Continued from previous page*

		Never Married			Ever Married		
		Model 4			Model 4		
Variable	Category	β	SE	95% CI	β	SE	95% CI
	10 [ref]	0.000			0.000		
	Missing	0.043	0.174	-0.298, 0.385	0.058	0.278	-0.487, 0.603
Birth year	1965 [ref]	0.000			0.000		
	1966	0.058	0.019	0.022, 0.095	0.006	0.011	-0.016, 0.027
	1967	0.077	0.020	0.038, 0.116	0.011	0.012	-0.013, 0.034
	1968	0.099	0.022	0.055, 0.142	0.012	0.013	-0.014, 0.037
	1969	0.130	0.025	0.081, 0.179	0.012	0.015	-0.017, 0.041
	1970	0.161	0.028	0.106, 0.216	0.019	0.017	-0.014, 0.052
	1971	0.157	0.032	0.095, 0.219	0.035	0.019	-0.003, 0.073
	1972	0.201	0.035	0.132, 0.269	0.015	0.022	-0.028, 0.057
Birth order	1 [ref]	0.000			0.000		
	2	-0.017	0.014	-0.045, 0.011	-0.010	0.009	-0.027, 0.007
	3	-0.025	0.027	-0.078, 0.027	-0.009	0.016	-0.041, 0.024
	4	-0.051	0.042	-0.132, 0.031	0.010	0.027	-0.042, 0.062
	5	-0.029	0.061	-0.148, 0.091	-0.007	0.038	-0.083, 0.068
	6+	-0.123	0.089	-0.298, 0.051	0.009	0.046	-0.082, 0.100
Educational attainment	Primary (<9 years)	0.288	0.069	0.152, 0.423	-0.080	0.171	-0.415, 0.254
	Primary (9 years)	0.054	0.016	0.022, 0.086	-0.002	0.013	-0.026, 0.023
	Secondary (10-11 years) [ref]	0.000			0.000		
	Secondary (12 years)	0.058	0.016	0.027, 0.089	-0.002	0.009	-0.021, 0.016
	Tertiary (13-15 years)	0.038	0.017	0.004, 0.072	0.007	0.009	-0.012, 0.025
	Tertiary (15+ years)	0.022	0.019	-0.016, 0.059	-0.005	0.010	-0.024, 0.015
	Postgraduate (16-20 years)	0.052	0.061	-0.067, 0.172	0.011	0.023	-0.034, 0.056
	Missing	0.431	0.065	0.303, 0.558	0.377	0.208	-0.030, 0.785
Cumulative income (deciles)	1	0.423	0.025	0.373, 0.472	0.097	0.020	0.058, 0.135
	2	0.284	0.025	0.235, 0.334	0.056	0.014	0.028, 0.084
	3	0.166	0.025	0.116, 0.215	0.032	0.013	0.007, 0.057
	4	0.110	0.026	0.060, 0.160	0.030	0.012	0.006, 0.054
	5	0.132	0.025	0.083, 0.182	0.007	0.012	-0.016, 0.029
	6	0.077	0.026	0.027, 0.128	0.006	0.012	-0.017, 0.029
	7	0.103	0.026	0.052, 0.153	0.014	0.011	-0.008, 0.036
	8	0.036	0.025	-0.013, 0.085	-0.009	0.011	-0.030, 0.012
	9	0.034	0.026	-0.018, 0.085	0.015	0.010	-0.005, 0.035
	10 [ref]	0.000			0.000		
	Missing	0.391	0.210	-0.020, 0.802	0.419	0.231	-0.034, 0.872
N		40,443			35,462		

Stockholm Research Reports in Demography

Stockholm University, 106 91 Stockholm, Sweden
www.su.se | info@su.se | ISSN 2002-617X

Stockholm
University
Demography Unit