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A double disadvantage for manual workers: more years of disability and a shorter life expectancy

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In France, manual workers have a shorter life expectancy than people in highly qualified occupations. Does a shorter life mean fewer years of ill health? Using data from the French health survey of 2003, Emmanuelle Cambois, Caroline Laborde and Jean-Marie Robine show that this is not the case. Not only do manual workers have a shorter length of life, but they also spend more years with disability.

Life expectancy in France has increased steadily, reaching 77 years for men and 84 years for women in 2007. But do these life expectancy gains correspond to extra years of good health? Or do we spend more years with illness, disability and need of assistance, especially in old age? Likewise, when we see the large and apparently incompressible differences in life expectancy observed over recent decades between people in highly qualified occupations and manual workers [1], does this imply that the former spend more years with disability?

To answer these questions, we can calculate heath expectancies to determine the mean number of years spent, for example, with and without disability in relation to total life expectancy (Box). The health and healthcare survey conducted in France by INSEE in 2003 distinguishes three types of disability situations involving different needs of care, help and assistive devices [2]:

– Type I disability: persons report at least one residual physical or sensory functional limitation (poor near or distant vision, poor hearing, difficulty walking, bending down or using hands and fingers); these limitations generally do not hamper their daily activities but may be associated with a need of assistive devices or of adaptations to the home or workplace;

– Type II disability: persons report having been limited in their daily activities for more than six months. They feel hampered in their work, their domestic tasks or in other activities;

– Type III disability: persons report difficulties in performing basic personal care activities such as washing, dressing or eating. These difficulties may result in need of help on a daily basis, i.e. a situation of dependence.

At age 35, disability-free life expectancy is around thirty years on average

In France, around one-third of persons aged 35 and over are affected by type I disability, and 18.5% by

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Table 1 - Total life expectancy and disability-free life expectancy by sex, France, 2003

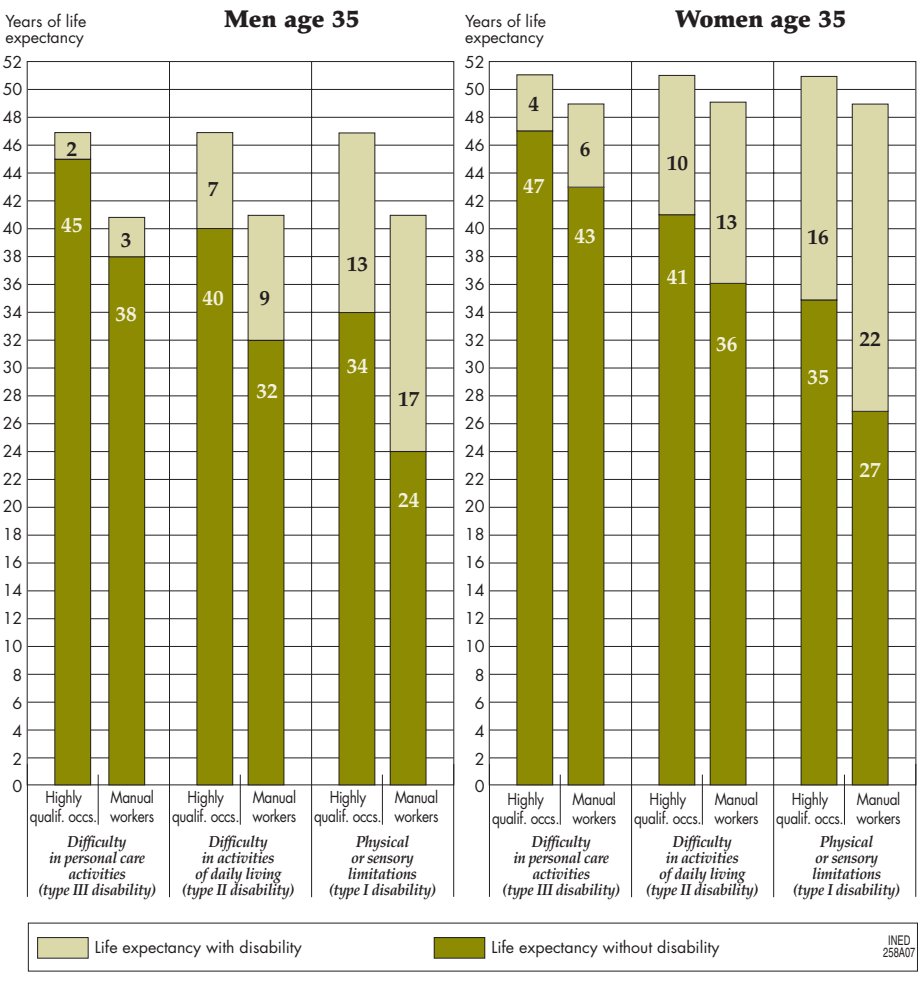
	Life expectancy (years)									Total life expectancy (years) (b)
	With or without difficulty in personal care activities (type III disability)			With or without difficulty in activities of daily living (type II disability)			With or without physical or sensory functional limitations (type I disability)			
	with	without (a)	ratio* (a/b)	with	without (a)	ratio* (a/b)	with	without (a)	ratio* (a/b)	(b)
At age 35										
Men	3.0	39.8	93 %	8.7	34.1	80 %	15.1	27.7	65 %	**42.8**
Women	5.3	43.5	89 %	12.1	36.7	75 %	20.0	28.8	59 %	**48.8**
Difference	+2.3	+3.7	-	+3.4	+2.6	-	+4.9	+1.1	-	**+6.0**
At age 60										
Men	2.7	18.0	87 %	6.2	14.5	70 %	11.2	9.5	46 %	**20.7**
Women	4.8	20.1	81 %	9.1	15.8	63 %	15.3	9.6	38 %	**24.9**
Difference	+2.1	+2.1	-	+2.9	+1.3	-	+4.1	+0.1	-	**+4.2**

* Proportion of total life expectancy spent free from disability.
Population: metropolitan France.

(E. Cambois, C. Laborde, J.-M. Robine, *Population & Societies*, 441, INED, January 2008)

Source: Authors' calculations based on data from the Permanent Demographic Sample (deaths between 1999 and 2003) and the INSEE health and health care survey of 2002-2003.

Figure 1 - Life expectancy at age 35 with and without disability among highly qualified occupations and manual workers for different levels of disability. Men and women, France, 2003



Population: metropolitan France.

(E. Cambois, C. Laborde, J.-M. Robine, *Population & Societies*, 441, INED, January 2008)

Source: Authors' calculations based on data from the Permanent Demographic Sample (deaths between 1999 and 2003) and the INSEE health and health care survey of 2002-2003.

type II. Type III disability is less common, concerning only 4.5% of this population. In 2003, men aged 35 could expect to live for a further 43 years, and women a further 49. At this age, life expectancy free from type I disability is 28 years for men (i.e. 28 disability-free years and 15 years with type I disability) and 29 years for women (29 disability-free years and 20 years with type I disability). Life expectancy free from type II disability is 34 years for men and 27 years for women, and for type III disability it totals 40 years for men and 43 years for women (Table 1). Men thus spend on average 3 years of life with the most severe level of disability (type III), and women 5 years, almost entirely lived after age 60. With age, the proportion of residual life expectancy spent with disability increases due to the accumulation of potentially disabling diseases and health problems. A man aged 60 can expect to live another 21 years, but only half of this period will be spent without any of the disability situations covered in this study. And although women have a longer life expectancy than men, they spend more years with disability, moderate disability in particular [3].

Manual workers have a shorter life expectancy and spend more years with disability

At age 35, the life expectancy of men in highly qualified occupations is 47 years, 4 years above the average and 6 years more than that of manual workers. On average, they will live 34 of these 47 years (73% of their total lifetime) without any disability, i.e. ten years longer than manual

workers whose disability-free life expectancy is only 24 years (60% of their lifetime) (Figure 1 and Table 2). For women, the life expectancy gap between highly qualified occupations and manual workers is smaller than for men (around 2 years), but for life expectancy free from type I disability, the gap is similar (8 years): at age 35, it totals 35 years for highly qualified occupations and only 27 years for manual workers (respectively, 70% and 55% of total life expectancy).

For men, life expectancy without level II disability is 40 years for highly qualified occupations compared with 32 years for manual workers (respectively, 85% and 78% of their total life expectancy). Without level III disability it is 45 years for highly qualified occupations versus 38 years for manual workers (respectively, 96% and 92% of their total life expectancy). Similar differentials are observed for women.

People in highly qualified occupations thus enjoy more disability-free years than manual workers, notably with regard to the most common forms of disability, such as functional limitations (type I). They are less prone to these difficulties and limitations, and are better able to manage their consequences. For the most severe disability, the differences are smaller, since situations of exceptionally poor health are rare. Differences nonetheless remain, with manual workers more often having type I functional problems liable to worsen over time and lead ultimately to dependence (type III).

These differences persist at older ages. At age 60, the life expectancy of male and female manual workers is still below that of highly qualified occupations, standing at 19 and 25 years, respectively, compared with 23 and 27 years for men and women in highly qualified occupations. And type I disability, common among the oldest-old, is more frequent among manual workers. After age 60, male and female manual workers will, on average, spend more than half of their remaining life with functional limitations. and, for the most severe type III disability, 16% and 22% of their remaining life, respectively. This compares with 9% for men and 16% for women in highly qualified occupations.

For manual workers, a shorter length of life does not signify fewer years of disability. In fact, the very opposite is true. Female manual workers spend 22 years on average with type I disability, compared with 16 years for women in highly qualified occupations (17 and 13 years respectively among men), and 6 years with type III disability, compared with 4 years for women in highly qualified occupations (3 and 2 years respectively among men).

Table 2 - Total and disability-free life expectancy at age 35 by occupational class, men and women, France, 2003 (two disability measures)*

Occupational class	Share of total population (%)	Life expectancy (years)						Total life expectancy (years)
		With or without difficulty in personal care activities (type III disability)			With or without physical or sensory functional limitations (type I disability)			
		with	without (a)	ratio** (a/b)	with	without (a)	ratio** (a/b)	(b)
Men age 35								
Highly qualif. occs.	16 %	2.1	44.5	96 %	12.6	34.0	73 %	**46.6**
Intermediate occs	21 %	2.4	42.4	95 %	14.0	30.8	69 %	**44.8**
Farmers	6 %	2.9	42.4	94 %	16.3	29.0	64 %	**45.3**
Self-employed	10 %	2.5	41.9	94 %	14.3	30.1	68 %	**44.4**
Clerical / sales workers	10 %	3.1	39.0	93 %	13.7	28.4	67 %	**42.1**
Manual workers	34 %	3.4	37.5	92 %	16.5	24.4	60 %	**40.9**
Inactive*	3 %	8.7	21.7	71 %	19.9	10.5	35 %	**30.4**
Total	**100 %**	**3.0**	**39.8**	**93 %**	**15.1**	**27.7**	**65 %**	**42.8**
Women age 35								
Highly qualif. occs.	8 %	4.4	46.5	91 %	15.5	35.4	70 %	**50.9**
Intermediate occs	14 %	4.4	45.4	91 %	17.7	32.1	65 %	**49.8**
Farmers	5 %	6.2	43.9	88 %	20.7	29.4	59 %	**50.1**
Self-employed	5 %	5.3	44.8	89 %	18.4	31.7	63 %	**50.1**
Clerical / sales workers	35 %	5.0	44.4	90 %	20.5	28.9	59 %	**49.4**
Manual workers	12 %	6.1	42.5	87 %	21.8	26.8	55 %	**48.6**
Inactive*	21 %	5.6	41.1	88 %	21.2	25.5	55 %	**46.7**
Total	**100 %**	**5.3**	**43.5**	**89 %**	**20.0**	**28.8**	**59 %**	**48.8**

* See note (1) in text.
** Proportion of total life expectancy free from disability.
Population: metropolitan France.

(E. Cambois, C. Laborde, J.-M. Robine, *Population & Societies*, 441, INED, January 2008)

Source: Authors' calculations based on data from the Permanent Demographic Sample (deaths between 1999 and 2003) and the INSEE health and health care survey of 2002-2003.

(1) The adult population is classified according to present occupation, or former occupation for unemployed persons or retirees who reported one. The inactive class only includes persons who are not currently working for reasons other than unemployment or retirement: 90% of inactive men and 70% of inactive women report having worked in the past, in half of all cases as manual workers. These previously active persons have a high prevalence of disability, and an above-average proportion receive social security benefits for incapacity or an officially recognized disability. If these persons are included in their former class (as are the unemployed and retirees), disability-free life expectancy decreases for all classes, manual workers in particular, and the differential between highly qualified occupations and manual workers increases. Traditionally, the inactive class is studied separately in French statistics.

Box

Disability-free life expectancy

Disability-free life expectancy is the average number of years individuals of a particular population or group are expected to live free of disability if current patterns of mortality and disability continue to apply. It is calculated by combining the age-specific prevalence of disability with period life table data to decompose the person-years in the life tables into those lived with and without disability. As the health survey covers persons living in private households only, it is assumed the years spent in an institution (often for health reasons) are years of disability, though this is not always the case, in particular for the most severe disability. Nonetheless, given the small proportion of persons living in institutions, the impact of this methodological choice does not exceed a few months of disability-free life expectancy [2]. The method probably also underestimates disability-free life expectancy because the disability data come from a cross-sectional survey (stock data) and do not only capture the most recent changes in exposure to risks of disability and need of care, unlike longitudinal survey data (flow data) which aim to capture the effects of current context (working and living conditions, healthcare systems, etc.). The estimates obtained in this way do not correspond literally to "period" indicators, as does life expectancy. Moreover, the nature and pace of change may vary between social classes, perhaps resulting in different degrees of under-estimation for the various classes, and under- or over-estimation of differentials between them. Despite such limitations, these estimates are widely used to evaluate mortality and health disparities on the basis of a highly informative summary measure which answers the questions raised at the beginning of this article.

Other occupational classes

The other occupational classes (1) are in intermediate positions (Table 2). For intermediate occupations, farmers and the self-employed, life expectancy is slightly below that of persons in highly qualified occupations. Among clerical and sales workers, women's life expectancy is similar to that of the above-mentioned classes, while for men it is closer to that of manual workers.

Generally speaking, the longer the life expectancy, the smaller the proportion of life spent with disability. Farmers – both men and women – are an exception: despite a relatively long length of life, their life expectancy free from type I disability is among the shortest (only 64% of total life expectancy for men and 59% for women). Though their lifestyle is likened to that of company managers in many respects, farmers also have a manual activity and working conditions which, as in the case of manual workers, probably results in above-average exposure to the risk of disability (though better management of these problems may explain why farmers are less disadvantaged than manual workers in terms of total life expectancy). The economically inactive class is distinctive, with an extremely low life expectancy, among men especially (2). These persons with no working activity (neither retired nor unemployed) are often excluded from the labour force for health reasons, a fact which explains their much higher risk of dying than the average. They spend two thirds of their very short life expectancy at age 35 with type I disability, and one-third with type III disability. Female inactivity is more common and in many cases not health-related. The life expectancy of inactive women is nonetheless 2 years below that of female manual workers, and the ratios of time spent with disability to time spent without are the same for both classes.

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Manual workers are not only disadvantaged with respect to length of life, they also spend more years than the average with a disability. Persons in manual occupations are particularly affected by physical or sensory functional limitations, spending more than 60% of their lives after age 60 with type I disability. There is no doubt that differences in exposure to the risks of disease or injury over the life course, linked to differences in living and working conditions and in the management and treatment of these problems, contribute to this double disadvantage, to an extent that remains to be determined.

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ABSTRACT

In 2003, in France, men aged 35 could expect to live for a further 43 years, including 28 free of disability, and women a further 49 years, including 29 free of disability. For men, only 3 years of life on average are spent with the most severe disability, often resulting in dependence, and for women, 5 years. The number of years spent with or without disability varies by occupational class. In 2003, in France, men in highly qualified occupations aged 35 could expect to live for a further 47 years, including 34 free of disability, and male manual workers a further 41 years, including 24 free of disability. These differentials increase with age: after age 60, male and female manual workers live more years with disability than without, and have more severe disability than persons in highly qualified occupations. In short, manual workers combine the dual disadvantages of a shorter life expectancy and more years spent with disability.

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