To the Editor:

In a recent publication in this journal[1] Chandra and Stephen report a substantial increase in the number (1.6 million) and percent (21.4%) of women with impaired fecundity between 1982 and 1995. They correctly note that aging of the population combined with delayed child bearing is a possible explanation for these increases. "The dramatic increase in the numbers of US women with impaired fecundity occurred because the large baby-boom cohort, many of whom delayed childbearing, had reached their later and less fecund years".

Consistent with this explanation, one would expect the increasing proportion of women with impaired fecundity would be concentrated in the older age groups. In fact the reverse occurred as can be seen in Table 1. By far the greatest increase in impaired fecundity was seen in women under 25, precisely the age group in which subfecundity because of delayed childbearing would be least likely. In fact, after stratification by parity, there was no change over time in the proportion with impaired fecundity among nulliparous women aged 35-44 (25.7% in both 1982 and 1995) and a slight decrease among parous women in this age group (from 10.1% to 9.8%).

Looking at the denominators used to calculate these percentages might help explain this apparent inconsistency. These denominators include all women, those who never tried to conceive, as well as those who did (successfully or not). Thus, if there is greater desire for pregnancy in one time period (or age group) vs. another, there would appear to be a greater impairment of fecundity even if the true rates (among those trying to conceive) were equal. For example, suppose in a group of 100 women (none surgically sterile), 50 don't want to conceive, 40 do and of those 10 (25%) can't. In this group, the rate of impaired fecundity would be 10% (10/100). Suppose further that in a second group of 100 women (none surgically sterile), 20 don't want to conceive, 80 do and of those 20 (25%) can't, yielding a rate of impaired fecundity of 20% (20/100). Thus, in this hypothetical example the rate of impaired fecundity has increased from 10% to 20% because more women in the second group wanted to conceive while the rate of failure to conceive among those trying has not changed.

As the authors noted, among women with impaired fecundity the percent of women wanting a baby rose from 60% to 71% between 1982-95. Although it is not known whether this was true of all women of reproductive age, their multiple logistic regression showed that wanting a baby was a significant predictor of impaired fecundity in each time period, with the strongest association (OR=4.7) in 1995.

On the other hand, if the decrease in fecundity seen only in the younger age groups is real, numerous factors could be contributing. We suggest that the role of the male be considered in this equation. Impaired fecundity reflects the fertility potential of both the man and the woman; its definition includes the impossibility or difficulty of the husband or cohabiting partner to father a child. Thus, the increase in impaired fecundity may reflect trends in female fertility, male fertility or both. For example, changes in vasectomy rates should be considered. Additionally, a recent study from Denmark [2] demonstrated a strong relationship between sperm count and fecundity, as measured by menstrual cycle-specific probability of conception. While the issue of declines in sperm count is admittedly controversial, a recent study estimated a 1.5% per year decline in sperm count in the US[3]. Over the 14 years discussed by Chandra and Stephen, this would predict a 21% decline, strikingly similar to the 21.4% increase in impaired fecundity reported by these authors.

Shanna H. Swan

Research Professor in Family and Community Medicine
University of Missouri, Columbia

Irva Hertz-Picciotto
Professor of Epidemiology
University of North Carolina

Table 1

Change in percent of US women with impaired fecundity by age (1882-1995)

Age	1982	1988	1995	% change (1982-95)
15-24	4.3	4.8	6.1	+41.9
25-34	10.0	9.6	11.2	+12.0
35-44	12.1	10.6	12.8	+5.8
Total	8.4	8.4	10.2	+21.4

[1] Chandra A, Stephen EH. Impaired Fecundity in the United States (1982-1995). Family Planning Perspectives 1998 30:34-42

[2] Bonde JPE, Ernst E, Jenses TK, Hjollund NHJ, Kolstad H, Henriksen TB, Scheike T, Giwercman A, Olsen J, Skakkebaek NE. Relation between semen quality and fertility: a population-based study of 430 first-pregnancy planners Lancet 1998 352:1172- 1177.

[3] Swan SH, Elkin EP, Fenster L. Have sperm densities declined: A reanalysis of global trend data. Environ Health Perspect 1997 105:1228-1232.