

# Living to 100 and Beyond: Survival at Advanced Ages

## Session 7: Mortality at Oldest Ages Session – Part I

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Deaths of Centenarians and Near-Centenarians in the U.S.  
Social Security Administration's Death Master File

### Acknowledgment

The author wishes to thank Dr. Kingkade for his generous discussion of this paper. Dr. Kingkade's presentation of centenarian data from the 2000 U.S. census was also a significant addition to the symposium.

### Biblical Citations

The author's intention in citing three Biblical verses regarding the human lifespan was simply to offer three remarkable ancient statements on this subject. It seems clear that none of these verses concerns life expectancy as we understand the concept today. The "threescore and ten" (70 years) [or if by reason of strength they be fourscore years (80 years)] of Psalms 90:10 represents an experiential estimate of the human lifespan in antiquity; in ancient times, men and women were old at seventy and exceptionally old at eighty. [See Mays(1971) for a discussion of Ulpian's estimations of life expectancy in ancient Rome. Ulpian's life expectation for all persons sixty and older was five years while Macer's table had been based on all lives expiring before the attainment of age sixty.]

On the other hand, the hundred years of Sirach 18:7-8 probably represents something close to the maximum lifespan observed in ancient times. Wilmoth (1995) argues that centenarians ought to have emerged by 2500 B.C. based on an estimated world population of 100 million; and if indeed the ninety-four regnal years recorded for Egyptian Pharaoh Pepi II (reigned 2278-2184 BC) in the third millennium B.C. are correct, he must have lived nearly one hundred years. The most dramatic historical event affecting human longevity (before the medical advances of the nineteenth and twentieth centuries) was probably the transition from a hunting and gathering-based society to an agriculture-based society. This created the potential for more protective environments, which fostered longer life spans. Dr. Thomas Perls has applied the adage "the older you are, the healthier you've been" to today's centenarians. Despite the absence of the medical advances of recent centuries in earlier times, the author believes it is reasonable to assume that exceptionally vigorous human beings have had the potential of living to age one hundred for many centuries.

As for the "one hundred and twenty years" of Genesis 6:3, it is interesting that Hayflick (2002) states that "the human life span has remained unchanged for the past 100,000 years at 125 years." Even in the twentieth century, only a handful of persons have been proved to have exceeded 120 years. The choice of 120 years for the lifespan of the Biblical patriarch Moses coincides neatly with the Genesis 6:3 verse.

There is no way of proving ancient claims of longevity such as those recorded by Easton (1799). On the other hand, it is easy to fall into the trap of rejecting all older centenarian claims. For example, there seems to be no intrinsic reason why the claim of the Greek philosopher Gorgias (483-378 BC) to 105 years should be rejected outright as implausible.

In a word, the author believes the Biblical testimonies tell us that human beings older than 70-80 years were rare in the ancient world; that very exceptional life spans of 100 years occurred occasionally; and that ages in excess of 120 years had not been observed. Hence the honor of the longer life spans claimed for the ancient Biblical patriarchs like Adam, Noah and Methusaleh.

Robert Johansen pointed out to the author yet one further Biblical verse concerning human longevity, from the prophet Isaiah's famous vision of "new heavens and a new earth" where "the wolf and the lamb shall feed together":

There shall be no more thence an infant of days, nor an old man that hath not filled his days; for the child shall die an hundred years old; but the sinner *being* an hundred years old shall be accursed. [Isaiah 65:20, King James Version].

Perhaps this verse reminds us that even if the advances of medical science result in a life expectancy at birth of one hundred years, the problems inherent in the human condition will remain. The author does not believe we have even begun to consider the challenges, which the human life span of 150 years predicted by today's mortality 'bulls' would entail.

The author surely did not intend to attempt to impose any ideological bias in citing these Biblical verses. He believes they shed light on the continuity of the human experience from ancient times to the present. We are in fact the beneficiaries of much ancient wisdom concerning the human condition and aging in particular. The author believes that the humanities can and should enrich and inform the scientific domains of demography and gerontology in their study of human longevity.

### **Extremes of Human Longevity, Stature and Weight**

The statistical and practical significance of "outliers" is probably small. Nevertheless, the fascination of the subject has remained strong for many centuries as noted by Laslett (1999).

Since writing his paper, the author has discovered biographical references for two extreme longevity "outliers": Allard, Lebre and Robine (1998) on Jeanne Calment (1875-1997), a very well-established case, and Addison (1991) on Mark Thrash (1820?-1943), a much more questionable case. Both volumes succeed well in bringing their subjects to life. It is fortunate that aside from a few exceptional cases like "Old Parr," extreme longevity has never been the subject of human exhibition to the extent of extreme stature and extreme weight. The difficult circumstances encountered by Robert Wadlow (1918-1940) [see Fadner (1944)] and Robert Hughes (1926-1958) [see Kurson (2001)] make the

exceptional lives of Calment and Thrash seem enviable. Bondeson (2000) also offers remarkable portrayals of extremes in human stature and weight. The English Queen Mother has died (March 30, 2002) since the author's paper was presented, but her life and other centenarian life histories help us to understand how rich an exceptionally long lifetime can be.

The author does not believe in any fixed limit to the human lifespan. Predation by humans and by micro-organisms constitute the largest threat to continuing improvement in human longevity today. Absent a cataclysm of global proportions, the author anticipates that centenarian populations will continue to grow and that age 125 will probably be attained and proven in the coming decades. The author is skeptical that age 150 will be attained in the twenty-first century unless medical technology makes possible the widespread replacement of essential body parts.

### **Public Domain U.S. Census and Social Security Death Information**

The utility of these records for demographic work remains to be seen. The success of private entrepreneurs in converting existing U.S. census microfilm records to searchable electronic records will probably be a critical factor in the potential use of public domain census records as birth record proxies. For all its limitations, the Social Security Administration Death Master File (DMF-PR) is an impressive collection of death records. It is an amazing experience to enter birth year = 1890 and death year = 2000 into a database query on one of the websites offering the DMF-PR and to view the individual death records selected. The improvements, which have been wrought in the DMF-PR, should increase its potential utility for demographic work. Its expansion to include all death records reported to SSA from any source would increase its utility for all its current and potential users: probate researchers, family historians and demographers.

### **Medical Status of Centenarian Populations**

Dr. Kingkade raises the interesting argument that health status (and resulting mortality) of persons attaining age 100 from earlier birth year cohorts may be expected to be superior to that of persons attaining age 100 from later birth year cohorts because the latter have been helped along by the medical advances of recent years. As Dr. Kingkade suggests, the author is indeed skeptical of the validity of this argument. The author believes that today's centenarians are the same exceptionally endowed individuals as the centenarians of one hundred years ago. There are more centenarians today because we have in the last century conquered many of the diseases which prematurely claimed even these exceptionally endowed individuals one hundred years ago.

The medical status of emerging centenarian populations will probably be more significant from the socio-economic point of view than their sheer numbers. Hopefully, centenarian studies will continue to pursue this important topic.

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