

# Time of Conception and Birth-Relation of “Big Killers” Patients and Longevity

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## Abstract

In recent years some interrelationships between time of birth and longevity were published. Concomitant publications appeared demonstrating links between Space Weather and the timing of medical events; in part of both these studies it was shown that Space Weather indices are stronger connected with the time of conception as with the birth time. The aim of these study was to consider birth and conception month of patients suffering from a number of “big killer” pathologies, affecting human longevity and comparing with published data on centenarians—100 - 112 years old persons in the USA. Patients and Methods: We included monthly births distribution of our four papers including patients with Acute Myocardial Infarction undergoing Percutaneous Coronary Intervention (PCI)—n-3765, and admitted in another tertiary medical facility for AMI—n-22,047, and, also patients suffering Rapid—n-1239 and Sudden Cardiac Death—n-327 and, also, patients with oncologic malignancies—n-44587. At all in this group 71,965 patients were included. Their birth and conception months were compared with analogical data of 1574 people of 100 - 112 years old using data of L.A. and N.S. Gavrilov for USA centenarians. Results: The birth months of the cardiovascular and oncology patients were maximal in January, March and April (above 10% at each of these months); their conception was maximal in April, June and July. The monthly distribution

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of conception and birth of the studied population is presented in Tables 1-3. The maximal birth months of the centenarians were November, September, and October; the maximal conception months were December, January, and February. Conclusion: People suffering Myocardial Infarction, Sudden Cardiac Death and Oncologic Malignancies are in higher numbers born in the first four months of the year and conception in April, June and July. The maximal birth months of the very old people were November, September and October and conception were December, January and February.

## Keywords

Conception, Birth, Month, Acute, Myocardial, Infarction, Rapid, Sudden, Cardiac, Death, Centenarians, Solar, Geomagnetic, Cosmic, Ray, Activity

## 1. Background-Introduction

In recent decades a number of studies were published demonstrating links among timing of medical events, human longevity and such parameters like month of birth, Space Weather activity indices (Solar, Geomagnetic, Cosmic Ray (Neutron), Space Proton Flux Activity) [1]-[3].

In some studies related to Space Weather effects it was shown that not only time (day, month) of birth physical conditions is related to some anatomic-physiologic properties of the individual longevity, but also physical conditions at time of conception are strong correlated with some congenital abnormalities like Congenital Heart Disease, Down Syndrome, etc. [4] [5]. The aim of this study was to: 1) synthesize data related to birth month of patients with such “big killer” diagnoses like Acute Myocardial Infarction (AMI) [6] [7], Rapid and Sudden Cardiac Death (RCD, SCD) [8], and Oncologic Malignancies [9], including 71,965 deaths, and their presumed conception month for each group of pathology and summarized both for all groups of patients, studied in the mentioned studies; 2) compare with analogic data of the literature for a group of centenarians (100 - 112 years old) in the USA and; 3) explore the existing differences [10].

## 2. Patients and Methods

We included monthly births distribution of our four papers including patients with Acute Myocardial Infarction undergoing Percutaneous Coronary Intervention (PCI) n-3765, and admitted in another tertiary medical facility for AMI, n-22,047, and, also patients suffering Rapid n-1239 and Sudden Cardiac Death, n-327 and, also, patients with oncologic malignancies—n-44,587. At all in this group 71,965 patients were included. Their birth data was collected from patient’s admission documents in Rabin Medical Center, Beilinson Hospital, Rabin Medical Center, Davidoff Oncology Center, Israel and Institute of Cardiology of the Lithuanian University of Medical Sciences, Kaunas, Lithuania according to the ethical norms accepted in medical research. Their birth and conception months were compared with analogical data of 1574 people 100 - 112 years old using data of L.A. and N.S. Gavrilov for USA centenarians. The patient’s conception month was calculated using month of the year nine months before birth month.

## 3. Results

**Table 1** presents the monthly birth distribution of five groups of patients suffering cardiac and oncologic pathology and the compared centenarians. **Table 2** presents presumed conception month for our study population and the centenarians group.

**Table 3** includes average of birth months and presumed conception time of the mentioned five cardiac and oncology patients groups and maximal birth and presumed conception month of the compared centenarian group [10].

The birth months of the cardiovascular and oncology patients were maximal in January, March and April (above 10% at each of these months); their conception was maximal at April, June and July. The monthly distribution of conception and birth of the studied population are presented in **Tables 1-3**.

**Table 1.** Monthly births distribution of Acute Myocardial Infarction (AMI), Rapid (RCD) and Sudden Cardiac Deaths (SCD) and malignancies in comparison with centenarians.

Months	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
AMI-PCI Patients n = 3765	9.9%	7.3%	12.5%	10.0%	7.4%	7.1%	7.8%	7.0%	8.3%	7.0%	7.5%	8.1%
AMI Patients n = 22,047	11.3%	8.8%	9.1%	8.6%	9.1%	8.1%	8.3%	7.7%	7.7%	7.3%	6.7%	7.3%
Malignant Neoplasm Patients n = 44,587	9.5%	7.7%	11.1%	9.6%	8.4%	7.4%	7.8%	7.7%	7.5%	7.6%	7.1%	8.7%
RCD* n = 1239	11.0%	8.2%	9.4%	9.4%	10.3%	9.0%	8.3%	7.7%	7.8%	6.7%	6.1%	6.2%
SCD** n = 327	10.5%	9.0%	9.9%	13.3%	9.0%	9.9%	7.1%	6.5%	7.7%	6.5%	5.6%	5.2%
People at age 100 - 112 n = 1574***									Maximum	Maximum	Maximum	

\*RCD—Rapid Cardiac Deaths; \*\*SCD—Sudden Cardiac Deaths; \*\*\* Gavrilov L.A., Gavrilova N.S. (2011) Season of Birth and Exceptional Longevity; Comparative Study of American Centenarians & Their Siblings and Spouses. J. of Aging Research, ID 104616: 1-11.

**Table 2.** Monthly conception distribution of Acute Myocardial Infarction (AMI), Sudden Cardiac Deaths (SCD, RCD) and malignant neoplasm patients in comparison with centenarians.

Months	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
AMI-PCI Patients n = 3765	7.0%	7.5%	8.1%	9.9%	7.3%	12.5%	10.0%	7.4%	7.1%	7.8%	7.0%	8.3%
AMI Patients n = 22,047	7.3%	6.7%	7.3%	11.3%	8.8%	9.1%	8.6%	9.1%	8.1%	8.3%	7.7%	7.7%
Malignant Neoplasm Patients n = 44,587	7.6%	7.1%	8.7%	9.5%	7.7%	11.1%	9.6%	8.4%	7.4%	7.8%	7.7%	7.5%
RCD* n = 1239	6.7%	6.1%	6.2%	11.0%	8.2%	9.4%	9.4%	10.3%	9.0%	8.3%	7.7%	7.8%
SCD** n = 327	6.5%	5.6%	5.2%	10.5%	9.0%	9.9%	13.3%	9.0%	9.9%	7.1%	6.5%	7.7%
People at age 100 - 112 n = 1574***	Maximum	Maximum										Maximum

\*RCD—Rapid Cardiac Deaths; \*\*SCD—Sudden Cardiac Deaths; \*\*\* Gavrilov L.A., Gavrilova N.S. (2011) Season of Birth and Exceptional Longevity; Comparative Study of American Centenarians & Their Siblings and Spouses. J. of Aging Research, ID 104616: 1-11.

**Table 3.** Average of monthly distribution of four groups of acute cardiac events (or deaths) and oncologic malignancies patients (n = 71,965) birth and conception months in comparison with centenarians\*.

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
<b>Percent of Births</b>	<b>10.5</b>	8.2	<b>10.5</b>	<b>10.2</b>	8.84	8.3	7.32	7.8	7.8	7.02	6.6	7.1
<b>Centenarian Births Maximum</b>									<b>X</b>	<b>X</b>	<b>X</b>	
<b>Percent of Conceptions</b>	7.2	6.6	7.1	<b>10.5</b>	8.2	<b>10.5</b>	<b>10.2</b>	8.84	6.6	8.67	7.32	7.8
<b>Centenarian Conceptions Maximum</b>	<b>X</b>										<b>X</b>	<b>X</b>

\*Gavrilov L.A., Gavrilova N.S. (2011) Season of Birth and Exceptional Longevity; Comparative Study of American Centenarians & Their Siblings and Spouses. J. of Aging Research, ID 104616: 1-11.

## 4. Discussion

After the publication in the Annals of National Academy of Sciences in year 2000 a review article that human longevity is related to month of birth [11] we published four articles proving birth month of different cardiac patients [6]-[8] and patients with oncologic malignancies [9]. In addition some our studies related to Congenital Heart Disease [4] and Down Syndrome [5] in the field of Clinical Cosmobiology showed that many analyzed

physical parameters, potentially playing a role in the pathogenesis of the mentioned diseases, are more significantly connected at the month of conception (9 months before birth) than these at time of the birth. Data was published discussing possible mechanisms of Solar Activity and other Space Weather parameters on the physical structure of our surroundings and possible effects on enzyme activity in human body, a mechanism that can change many aspects of metabolism and affect many pathways connected with predisposition to specific pathologies [12].

The changing Sun-Earth distance (shortest at January 3, most far at July 4, difference about 5 mln km) are also accompanied by many cosmophysical changes affecting our planet [13] [14]. It's remarkable, that the most often month of birth of the studied by Gavrilov's centenarians—November, September, October [10] were most rare birth months (also conception month) of the patients of the “big killers” diseases victims. Some analogic links between month of birth and longevity was observed in rats [15] [16]. The authors explain it by differences in Melatonin production in different parts of the year, maybe related to changing daylight amount, solar and geomagnetic activity. In previous studies in two geographically separated regions similar to our studies on longevity it was shown that also human deaths distribution is rhythmic and has a pick for total mortality (n-344,165), most cardiovascular diseases (n-169,671) at February ( $p < 0.0001$ ), and some, like suicides, traffic accidents, in other parts of the year [17].

## 5. Limitation of the Study

About 10% of births are premature; so, our assumption that all included patients conception time was nine months before their birth date is not completely right, but the difference, absolutely and in months of the year are small.

## 6. Conclusions

People suffering Myocardial Infarction, Sudden Cardiac Death and Oncologic Malignancies are in higher numbers born in the first four months of the year and conception in April, June and July. The maximal birth months of the very old people were November, September and October (according to frequency in Gavrilov's study) and presumed conception was in December, January, and February.

Different environmental physical activities in different parts of year can affect many systems of the embryo that may be involved in future predisposition to specific human pathologies.

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