

# Enriched and industrial uranium detected in civilians' urine that were exposed to the dust of Israeli rockets

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After July War many symptoms began to appear on some of the Lebanese people, according to what they have reported, which can be closely related to their exposure to the dust caused by the missile bombardment on the Lebanese territory, especially the southern suburb of Beirut. A group of them was tested by us, where we analysed their urine samples in this report.

Urine sample analysis is one of the means to indicate uranium existence in the surrounding human environment. Inhaling or swallowing the uranium dust should lead to uranium particles leak in the blood, entering in the blood circulation, reaching kidneys, liver and lymph nodes. The body emission of uranium depends on its nature whether solvent (i.e. uranium oxide UO<sub>3</sub>) which is easily disposed through the kidney or insoluble (i.e. uranium oxide UO<sub>2</sub>), where it remains in the body for a long time. Therefore, the urine analysis is a direct indicator to confirm the presence of uranium in the human body and to determine its type.

The previous studies showed a depleted uranium presence of a high extent in the soil, which led us to conduct additional checks, researching the possibility of uranium or depleted uranium presence in urine samples belonging to people who were subject to dust exposure caused by the Israeli missile attack on Lebanese territory. This could indicate that the source of uranium in urine is an emerging source and not a cause of the surrounding natural environment where these individuals live. According to their will we ran tests on 2 groups where samples were taken at different times for people who inhaled rocket explosions dust in the southern suburb of Beirut.

Samples were identified in these measurements according to these individuals who were feeling sick syndromes such as dizziness, nausea and fatigue, weakness and joint pains after their exposure to the rockets dust. Some of them are still under medical treatment.

## **First Group:** enriched uranium found in Urine samples.

Urine samples were collected from the first group within 24 hours (the group is composed of four members). Samples were kept in special sterile plastic containers to undergo the Urine examination, using spectroscopic technique - Mass spectroscopy. 100 ml was taken from each sample and was placed in a special plastic bottle that we had received earlier from British Harroel laboratories.

Moreover, we took samples from drinking water used by these individuals, as a referential sample to make sure that drinking water did not affect the results. All these samples were sent to Harroel laboratories to measure the quantity and nature of the uranium by using Sector field inductively coupled plasma-mass spectrometry (SF-ICP-MS).

To achieve Qualitative standards and accurate measurements, we carried out a standard measurement of uranium coupled with the urinary samples. Such uranium standards are supplied by specialized Companies in Nuclear standard. In table 1, symbols for obtained samples and measurements which show the concentration of such substances in urine, expressed in Nanogram per litre of urine. We also show in the table, uranium measurements in a sample of drinking water used by the same individuals (using the symbol WH). We offer in the table symbols that were given for each urine sample/individual and the results of each sample per individual.

First of all, it normally shows the amount of uranium included in the drinking water in 238/235U 1.138 in comparison with the normal standard 9.137. This indicated the accuracy of such used tools in measurements as well as the nature of the used drinking water. Likewise, the amount of uranium concentration that we obtained was 278.8 Nanogram/Litre, showed in the table, and which appears to be normal according to the standards.

While on the other hand, if we take a look at the uranium concentration results in urine samples we will find the following:

- 1- one of the urine samples with the symbol RKK-2 results a uranium rate of (U-238/U-235) which is equal to 137.5 and absolutely conforms with the normal value of 137.9 in addition to uranium concentration amount within this sample is equal to 1.82 nanogram / Litre which is a scarce amount according to the normal rate of uranium in the human body. This rate varies according to the environment nature and its uranium inclusion. However, the British royal organization had established a normal rate of zero to ten nanogram/litre of urine.
- 2- Sample MKK-1 with rate 135.61 indicates the presence of enriched uranium even though the error margin makes it however difficult to assert so. But the counterpart quantity U-235 that was found in this sample indicated that the uranium source is caused by nuclear reactors waste. In other words from depleted uranium container. While the concentration, which equals 13.71 ng/Litre remains within the normal range for the density of uranium in human urine.
- 3- Regarding the HKK-2 sample, it absolutely indicates the enriched uranium existence in the individual's urine, where the mass rate between the two uranium counterparts (5-238/U-23) equals to 118.35 in comparison with the normal rate which is 137.9 while the uranium concentration in it is equal to 2.14 ng / litre, relatively a low value.
- 4- The individual with the symbol AKK-2 indicates the value rate of the two counterparts which is equal to 213.34 presence of enriched uranium and a uranium concentration of 7.88 ng/Litre, which came within an allowed percentage.

The two individuals who proved the presence of enriched uranium in Bolhma, share their family daily lives with the individual RKK-2 «clean» before inhaling the dust of the bombardments and who was present for a long duration with the others during their exposure to the dust, that came late to be present with them after they already inhaled the explosions dust. He himself did not get exposed to any dust later on. Therefore we can take this individual as a benchmark or control for others. This confirms that the presence of depleted uranium is the reality of scientific results for inhaling the dust caused by the Israeli missile attack against the southern suburb of Beirut.

It is also worth mentioning that the individual with the symbol MKK-1, who we think that his sample contains enriched uranium, was not sharing his daily life with the individuals whom we studied their samples. Moreover, he took a tour for hours at the southern suburb of Beirut on August 14<sup>th</sup> 2006 directly after the bombardment. These results are significant because tests were taken after nine months after these individuals were exposed to the bombardments dust on the southern suburbs. This emphasizes from the health point, that the uranium existing in these individual's' bodies is not a solvent type. Not only that but also accompanied the blood circulation system of the human body for a long period and therefore it gets biologically disposed slowly from the body, within an unidentified biological period of time till now.

It is the half period of time where the kidney set out half of the uranium amount that originally entered the human body.

### **Comparison with the bombardment dust in the Suburbs**

It might be useful here that we show, only to compare the results of measurements of the urine samples, the outcomes and results of the study and measurements that were carried out by the British group Green Audit and led by Dr. Chris Baspe. The study analysed the dust in an ambulance vehicle filter, owned by the Islamic health organization that was transporting wounded in suburb during the war, before the Israeli bombardment destroyed it in the area and at the same place where these individuals got exposed to the dust caused by the missile attack. The uranium in the car filter was measured in the Harwell laboratories as well, using the spectroscopic mass separation. These results are shown in table number. 2

Samples were measured for several times, and every time the result of each sample taken from the vehicle filter was shown positive for depleted uranium. The measurements indicated the following values for uranium (U235/ U238), as follows: 133, 123, 113 and all of them showed an average content rate of enriched uranium equal to 0.123 this result is very close to the values given in Table No. 1. Yet, it is far from the natural ratio 9.137. This conformity certainly indicates that the individuals who we have studied their urine samples have certainly inhaled dust containing depleted uranium.

**Group 2:** high rates of natural uranium

Urine samples were taken from members of the second group after 5 months of analysing the first group, which means 14 months after the war. In these analyses we followed the same instructions, preparations and tests we used in collecting urine samples from Group 1. Our results are shown in Table no. 3

The results show that the quantity of uranium in urine samples of these individuals have also shown normal values attributed to the content of uranium counterparts U-238 and U-235, all close to the normal ratio 137.9 except samples (B7-10-04) and (LB7-10-10).

- 1- First sample B7-10-04 produced a natural uranium ratio equal to 138.27. However, the uranium density was 40.19  $\pm$  1.99 ng/litre which was above the normal rate we have got from the other counterparts and at the same time it is still above normal human standards. It is also considered very high as a ratio in comparison with the others as shown by the results indicated in table, where this value ranged between 8 and 2 ng/litre. This means that this person has been subject to inhaling or swallowing dust containing industrialized natural uranium. This reminds us once again that the rockets dust contained industrialized natural uranium, as happened in the town of Khiam as indicated in our results and those of the United Nations.
- 2- In the second case, the individual LB7-10-10, results indicate the proportion of uranium produced to <sup>238</sup>U/<sup>235</sup>U abnormal, equal 142.6  $\pm$  2.30 compared with 137.9 normal, which means the presence of enriched uranium in that person's urine. Worth elaboration, that before our studies on these urine samples we had carried out a detailed study on the soil of one of the holes created by the missile attack at the Al Galaheya area in Al Khayam village. The United Nations in a later phase had carried out similar tests on the same hole where they asserted that the uranium level was much higher than the normal rate in the area, which means that the hole is contaminated with industrial uranium.

**Results & Conclusions:**

During this study we have analysed urine samples for four different individuals who got exposed to dust caused by the Israeli missile aggression against the southern suburb of Beirut. Three of them come from the same family. These analyses asserted depleted uranium presence within the urine samples that belonged to only two of the group. Even though, the concentration level of the uranium was low and close to the normal environment rate. While the rest of samples belonging to the group, contained normal amount of uranium. These samples were studied according to the will of this group after experiencing sickness syndromes similar to those of the GULF WAR which appeared on American soldiers after the war, such as fatigue, arthritis and back pain, irritability, nausea, nervous.

It is important to point out that samples were taken from this group after 9 months of dust exposure (in southern suburb of Lebanon) which means that the type of uranium structure is insoluble and remains in the human body for a long period. The current research can not specify the exact period till now.

These results came consistent with other similar studies applied to two cities in Iraq and carried out by Prof. Sharma in the city of Basra.

We have carried out the same study on another group of eleven individuals and found that one sample contained depleted uranium and another one contained industrial natural uranium, but

the uranium concentration was very high, almost ten times higher than the rate at which dominated the rest of the group.

The most important aspect of this study is that it revealed to us an approximate amount of uranium that could be found in urine in the vicinity of a particular community (ie, in the southern suburb), which showed to be between 2 to 9 ng/litre of urine. Therefore, the present study can urge researchers to do statistical research studies on a wider scale regarding this vital health issue.

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