

# LEUKAEMIA AND RESIDENCE NEXT TO GAS STATIONS: A PRELIMINARY STUDY IN SAO PAULO CITY, BRAZIL

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**Background and Aims:** Aromatic hydrocarbons are environmental contaminants, found in gasoline and oil products, that exhibit mutagenic and/or pro-carcinogenic properties in humans. Among them, one of the more dangerous and known to be related to the risk of developing leukaemia is benzene, which is volatile and can be inhaled by the population. In Sao Paulo city there are about 2,300 gas stations, which are responsible for the contamination of soil and/or groundwater at 82.5% of the city contaminated areas (675). It is described in the literature that living near a gas station increases the risk of developing leukaemia in childhood. This aim of this study was to investigate whether there is an excess of leukaemia in children and adolescents from 0-14 years old who live in the vicinity of gas stations.

**Methods:** case-control design was adopted. Cases were all children and adolescents younger than 15 years old who died of leukaemia in Sao Paulo city, from January 1996 to December 2009 (548 deaths). Control group presented equal number of participants, with the same age range and gender distribution who did not die due to cancer, external and haematologic causes. Exposure was defined by distance between residences and gas stations ( $\leq 50$  meters).

**Results:** Living at a distance of up to 50 meters from gas station can increase the odds of leukaemia death (OR of 2.64, 95% IC: 0.93-7.45).

**Discussion:** This exploratory study suggests the association between leukaemia deaths and living in nearby gas stations even using a 1:1 proportion. We controlled for age and gender characteristics and we are aware that other confounders have to be taken into account in our further investigations.