

# Bisphenol A, an endocrine disruptor and risk of cancer: A review

AC Castillo González<sup>1</sup>, Sandra Colorado-Yohar<sup>1,2,3</sup>, Marcela Guevara<sup>2,5</sup>, Elena Salamanca<sup>6,7</sup>, Ana Jiménez<sup>8,9</sup>,  
F Navarro-Mateu<sup>2,4</sup>, María Dolores Chirlaque<sup>1,2</sup>.

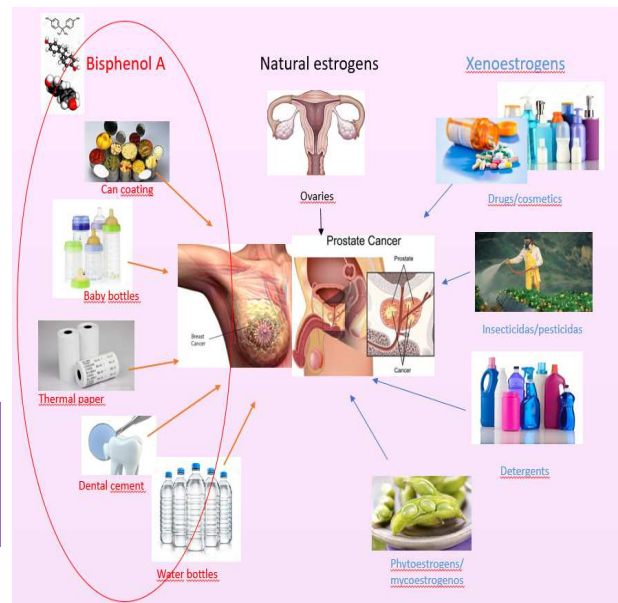
## Background

Humans are widely exposed to Bisphenol A (BPA), an estrogenically active endocrine disruptor which is present in many everyday products.

The population concern about the effects of BPA on hormone-dependent tissues and their possible carcinogenic effects.

## Aim

The main objective of this review is to summarize the most recent epidemiological studies on BPA exposure and their relationship with cancer in human populations.



## Methods

- A search of articles published in PubMed between February 2000 and February 2019 were reviewed by two investigators the key words "Bisphenol A, BPA, Cancer, Epidemiology, Humans, Health".
- The selected articles were classified in a database with the following variables: reference, country, study objective, sample size, study design, population, BPA concentrations and results. and was performed using.

## Results

- ➔ From 40 draft revised five articles were selected.
- ➔ Four epidemiological studies analyzing relationship between BPA and breast cancer in humans and one in prostate cancer.
- ➔ One of them analyzed the serum BPA levels and the percentage of mammary density in 264 postmenopausal women between 55 and 70 years of age. The serum BPA was positively associated with mammographic breast density (a risk factor for breast cancer).
- ➔ A second study, recruited 431 patients newly diagnosed prostate cancer and 402 age-matched controls. The authors found a positive association between the cumulative exposure index of BPA and prostate cancer. This study provides the first epidemiological evidence on carcinogenicity of BPA on the human prostate.
- ➔ So that, two of them, showed a statistically significant association between BPA and breast cancer or prostate cancer. The other three studies in breast cancer do not found any association.

## Conclusions

According to the articles reviewed we found two epidemiological studies to support a possible relationship between BPA exposure and breast or prostate cancer in humans. However, the number of studies is limited and with inconclusive results. More studies are needed at the human populations to further clarify the role of this endocrine disruptor in cancer.

1. Department of Epidemiology, Regional Health Authority, IMIB-Arrixaca, Spain.  
2. CIBER in Epidemiology and Public Health (CIBERESP), Madrid, Spain.  
3. Grupo de Investigación en Demografía y Salud, Facultad Nacional de Salud Pública, Universidad de Antioquia, Colombia.  
4. Unidad de Docencia, Investigación y Formación en Salud Mental, Servicio Murciano de Salud, IMIB-Arrixaca, Murcia, Spain.  
5. Navarra Institute for Health Research (IdiSNA), Pamplona, Spain  
6. Escuela Andaluza de Salud Pública, Granada, España.  
7. Instituto de Investigación Biosanitaria de Granada (IIBS.GRANADA), Universidad de Granada, España.  
8. Instituto de Investigación Sanitaria Biodonostia, San Sebastián, España.  
9. Subdirección de Salud Pública, San Sebastián, España.

