



Increased rate of dicentric chromosomes in French Polynesian thyroid cancer patients?

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11 **Increased rate of dicentric chromosomes in French Polynesian thyroid cancer**
12 **patients?**
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15 Dear Sir,
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17 We read with great interest the article from Violot et al. entitled Evidence of increased
18 chromosomal abnormalities in French Polynesian thyroid cancer patients (Violot et
19 al., Eur J Nucl Med Mol Imaging 2005;32(2): 174-179.
20

21 In their study they reported a 2.9 times increase of the number of dicentric
22 chromosomes in Polynesian patients which were followed for a differentiated thyroid
23 cancer. Furthermore, they linked their finding to the atmospheric nuclear weapon tests
24 carried out in French Polynesia. This issue is worth addressing but, in our opinion this
25 causal connection needs to be questioned. We want to bring forward three major
26 issues which were not taken into account by the authors and which cast doubt on their
27 conclusions.
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- 30 • The group of Polynesian thyroid cancer patients was compared to a group of
31 European patients with a thyroid cancer and to a group of healthy subjects living
32 in the Paris area. Obviously, this study is lacking adequate control groups of
33 Polynesians in whom the spontaneous rate of dicentric chromosome must be
34 determined. Thus it is quite possible that that the 2.9 increase of dicentric
35 chromosomes in Polynesian patients does not exist when they are compared to
36 control groups of Polynesians. If this were true the reasons why the Polynesians
37 have more dicentric chromosomes than European or French would have to be
38 determined.
39
 - 40 • Since ionising radiation is the most effective factor associated with an increase in
41 dicentric chromosome frequency, the authors evaluated radiation dose estimate
42 according to a dose response-curve obtained in cells of patients living in
43 Europe/France. Once again this evaluation does not hold because the dose
44 response-curve should have been obtained with cells drawn on a Polynesian
45 control group.
46
 - 47 • The authors link their finding of an increase rate of dicentric chromosomes in
48 comparison to European/French controls to the atmospheric nuclear weapon tests
49 carried out in French Polynesia. it is well established that dicentric chromosomes
50 of lymphocytes are good indicators of recent exposures to radiations (less than one
51 year. Since the nuclear weapon tests were carried out in French Polynesia between
52 1966 and 1974, the current observation of dicentric chromosomes cannot be
53 related to them.
54

55 Therefore the scope of the study of Violot et al., is quite limited and the only
56 conclusion which can be drawn is an excess of dicentric chromosome in
57 Polynesian patients in comparison to the European/French population. Everything
58 else needs more documentation.
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Ernest K.J. Pauwels

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