

REVISIONES BIBLIOGRÁFICAS

CONCLUSIONES

- 1.- La incineración de basuras produce gases con dioxinas, furanos y metales pesados, además residuos sólidos de alto contenido tóxico y otras sustancias no identificadas.
 - 2.- Dioxinas, furanos, metales pesados y ciertos gases son elementos siempre teratógenos y muchas veces cancerígenos. Son sustancias muy estables, resistentes a la degradación y que tienden a bioacumularse en el ser humano.
 - 3.- Las Incineradoras de basuras (RSUs) suponen un **riesgo, comprobado y evidente**, para la salud de las personas que viven en el entorno próximo .
 - 4.- Los gases producidos por la planta incineradora provocarán un aumento de la patología asmática y enfermedad pulmonar.
 - 5.- Los metales pesados (Hg, Cd....), de la combustión, producen daño permanente en el Sistema Nervioso Central y patologías fetales.
 - 6.-La manipulación de las cenizas es un proceso muy delicado que requiere los máximos controles para evitar contaminaciones masivas e irreversibles de los trabajadores, el aire y el agua.
 - 7.- Un posible fallo en los sistemas de control de estas plantas incineradoras supondría exponer a la población cercana a dosis imprevisibles de sustancias altamente tóxicas.
 - 8.-Los niños son la población más afectada, por el tiempo que van a vivir expuestos.
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BASES MÉDICAS

MEDLINE: 1.010 trabajos relacionan cáncer y dioxinas, 38.145 cáncer y metales, 3.238 cáncer y polución, 273 cáncer y cenizas, 478 dioxinas con receptor Ah intracelular, 583.217 receptor Ah y cáncer, etc.

1. Niños dioxinas: 205
2. Malformación y dioxinas: 167
3. Incineradora y teratógeno: 99
4. 52 trabajos con NOx y cáncer
5. 60 trabajos con SOx y cáncer
6. 259.810 con CO2 y cáncer
7. 616 basura y cáncer

BUSCADORES

GOOGLE: 30.200 páginas relacionan cáncer con incineradora, 85.100 cáncer con dioxina, 1.170.000 cáncer con metales, etc.

1. 682 páginas con el lema anti-incineradora
2. 468 con el lema accidente incineradora
3. 1080 con el lema muerte incineradora
4. 100 relacionan OMS, cáncer y dioxina
5. 25 OMS, cáncer e incineradora
6. 127 OMS cáncer y polución

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SOLO TRABAJOS POSTERIORES A 2000

1) ESTUDIOS CATALANES

- i. *Metal pollution of soils and vegetation in an area with petrochemical industry. Nadal M et al. Sci Total Environ 2004, 321(1-3): 59-69. CANTIDADES ELEVADAS DE Cd y V. AUMENTO DEL RIESGO DE CÁNCER POR INHALACIÓN DE As y Cr.*
- ii. *Human exposure to polychlorinated diphenyl ethers through the diet in Catalonia, Spain. Bocio A et al. J Agric Food Chem 2004, 52(6):1769-72. AUMENTAN LAS CANTIDADES EN PESCADOS Y MARISCOS.*
- iii. *Polycyclic aromatic hydrocarbons in foods: human exposure through the diet in Catalonia, Spain. Falco G et al. J Food Prot, 2003, 66 (12): 2325-31. LA INGESTA DIARIA SE ASOCIA AL INCREMENTO EN EL RIESGO DE DESARROLLO DE CÁNCER EN VARONES ADULTOS DE PESO 70 Kg.*
- iv. *Patterns of PCDDs and PCDFs in human milk and food and their characterization by artificial neural networks. Nadal M et al. Chemosphere 2004, 54(10): 1375-82. LOS PAÍSES CON MÁS CONSUMO DE PESCADO TIENEN MÁS DIOXINAS EN LA LECHE*
- v. *Monitoring internal exposure to metals and organic substances in workers at hazardous waste incinerator after 3 years of operation. Agramunt MC et al. Toxicol Lett 2003, 146(1): 83-91. 2,5 DCP y el V en orina esta elevada. El resto igual que en otras personas.*
- vi. *Influence of maternal stress on uranium-induced developmental toxicity in rats. Albina ML et al. Exp Biol Med 2003, 228(9): 1072-7.*
- vii. *Polychlorinated naphtalenes in foods: estimated dietary intake by the population of Catalonia, Spain. Domingo JL et al. Environ Sci Technol 2003, 37 (11): 2332-5. La cantidad mas elevada proviene de grasas, aceites y cereals.*
- viii. *Aluminum induced pro oxidant effects in rats: protective role of exogenous melatonin. Esparza JL. J Pineal Res 2003, 35(1): 32-9.*
- ix. *Polybrominated diphenyl ethers in foodstuffs: human exposure through the diet. Bocio A et al. J Agric Food Chem 2003, 51(10): 3191-5. Se consume cinco veces menos de lo permitido.*

- x. *Annual variation in the levels of metals and PCDD/PCDFs in soil and herbage samples collected near a cement plant.* Scuhmacher M et al. *Environ Int* 2003, 29(4): 415-21. El impacto de una cementera no es relevante.
- xi. *Levels of polychlorinated biphenyls in foods from Catalonia, Spain: estimated dietary intake.* Llobet JM et al. *J Food Prot* 2003, 66(3): 479-84. de 11 congeneres el 126 es el que más contribuye. La dosis es 150.13 pg WHO-TEQ/dia.
- xii. *Human exposure to dioxins through the diet in Catalonia, Spain: carcinogenic and non carcinogenic risk.* Llobet JM et al. *Chemosphere* 2003, 50 (9): 1193-200. 95.4 pg WHO.TEQ/dia (78.4 I-TEQ/dia) . **El riesgo carcinogénico e 1,360 de exceso para una vida de 70 años.**
- xiii. *Influence of age on aluminium induced neurobehavioral effects and morphological changes in rat brain.* Colomina MT et al. *Neurotoxicology* 2002, 23(6): 775-81. **Disminuyen el numero de sinapsis con la edad y la exposición al Aluminio.**
- xiv. *Health risk assessment of PCDD/PCDF exposure for the population living in the vicinity of a municipal waste incinerator.* Domingo JL et al. **Las reducciones ambientales son imperceptibles comparadas con la contribución de la ingesta diaria.**
- xv. *PCDD/PCDF congener profiles in soil and herbage samples collected in the vicinity of a municipal waste incinerator before and after pronounced reductions of PCDD/PCDF emissions from the facility.* Nadal M et al. *Chemosphere* 2002, 49(2): 153-9. **Otras fuentes tienen también importancia en la emisión de polución.**

2) Revisión aleatoria: **TODOS MALIGNOS**, incineradoras

- I. *Am J Epidemiol.* 2000 Jul 1;152(1):13-9. **Sarcoma de tejidos blandos y linfoma no hodgkiniano se agrupan alrededor de una incineradora municipal con altos niveles de emisión de dioxinas.** Viel JF, Arveux P, Baverel J, Cahn JY.

- II. Environ Int. 2002 Apr;28(1-2):103-10. **Transmisión de riesgo por dioxinas entre nueve incineradoras de gran tamaño en Taiwan.**
Ma HW, Lai YL, Chan CC.
- III. Tumori. 2000 Sep-Oct;86(5):381-3. **Sarcomas de tejidos blandos en la población general cercana a una planta química en el Norte de Italia.**Costani G, Rabitti P, Mambrini A, Bai E, Berrino F.
- IV. Environ Health Perspect. 2002 Dec;110(12):1169-73. **Efectos inmunológicos de las dioxinas: nuevos resultados de Seveso y comparación con otros estudios.**Baccarelli A, Mocarelli P, Patterson DG Jr, Bonzini M, Pesatori AC, Caporaso N, Landi MT.
- V. Risk Anal. 2002 Dec;22(6):1095-105. **Valoración del riesgo para la salud de las incineradoras de basuras en proyecto: aplicar correctamente la ciencia correcta.** Snary C.
- VI. Arch Environ Health. 2001 Nov-Dec;56(6):493-500. **Anomalías bioquímicas, neuropsicológicas y neurológicas tras exposición a 2,3,7,8-tetraclorodibenzo-p-dioxina (TCDD).** Pelclova D, Fenclova Z, Dlaskova Z, Urban P, Lukas E, Prochazka B, Rappe C, Preiss J, Kocan A, Vejlupekova J.
- VII. Epidemiology. 2003 Jul;14(4):392-8. **Emisiones de dioxinas de una incineradora de residuos sólidos y riesgo de linfoma no hodgkiniano.** Floret N, Mauny F, Challier B, Arveux P, Cahn JY, Viel JF.
- VIII. Occup Environ Med. 2003 Sep;60(9):680-3. **Riesgo de sarcomas de tejidos blandos y residencia en los alrededores de una incineradora de residuos industriales.** Comba P, Ascoli V, Belli S, Benedetti M, Gatti L, Ricci P, Tieghi A.
- IX. Environ Health Perspect. 2003 May;111(5):681-7. **Metaanálisis de dosis y respuestas en cáncer por dioxinas para tres cohortes ocupacionales.** Crump KS, Canady R, Kogevinas M.
- X. Ind Health. 2003 Jul;41(3):175-80. **Dioxinas: análisis de exposición-respuesta y evaluación de riesgo.** Steenland K, Deddens J.
- XI. Environ Health Perspect. 2003 Sep;111(12):1443-7. **Cuestiones significativas suscitadas por los metaanálisis de mortalidad por cáncer y exposición a dioxinas.** Starr TB.

- XII. Am J Epidemiol. 2001 Sep 1;154(5):451-8. **Valoración del riesgo de la 2,3,7,8-tetraclorodibenzo-p-dioxina (TCDD) basada en un estudio epidemiológico.** Steenland K, Deddens J, Piacitelli L.
- XIII. Ind Health. 2003 Jul;41(3):181-8. **Reconocimiento médico de trabajadores y residentes cerca de las incineradoras de residuos urbanos e industriales en Corea.** Leem JH, Hong YC, Lee KH, Kwon HJ, Chang YS, Jang JY.
- XIV. Int J Epidemiol. 2000 Jun;29(3):391-7. **Cáncer infantil, lugar de nacimiento, incineradoras y vertederos.** Knox E.
- XV. Chemosphere. 2001 May-Jun;43(4-7):909-23. **Evaluación del riesgo para la salud por emisión de dioxinas de una incineradora de residuos urbanos: Neerlandquarter (Wilrijk, Bélgica) Nouwen J, Cornelis C, De Fre R, Wevers M, Viaene P, Mensink C, Patyn J, Verschaeve L, Hooghe R, Maes A, Collier M, Schoeters G, Van Cleuvenbergen R, Geuzens P.**

3) MODERN INCINERATOR

1: Environ Sci Technol. 2004 Feb 15;38(4):1062-5. Formation of dioxins from incineration of foods found in domestic garbage. Katami T, Yasuhara A, Shibamoto T.

A mixture containing some seasoned foods, such as mayonnaise spread on bread, produced more dioxins (29.1 ng/g) than a mixture without seasoned foods did (18.9 ng/g).

2: J Hazard Mater. 2003 Apr 4;99(1):89-105. Partitioning characteristics of targeted heavy metals in IZAYDAS hazardous waste incinerator. Bakoglu M, Karademir A, Ayberk S.

The necessity of an additional system that would remove heavy metals efficiently was emphasized for the modern incinerators.

4) SAFETY INCINERATOR

a/ Environ Monit Assess. 2004 Mar;92(1-3):211-28. Assessment of human health risk of dioxin in Korea. Lim Y, Yang J, Kim Y, Chang Y, Shin D.

Although the estimated risks of cancer and reproductive dysfunctions were not unusually high in any of the four scenarios, the MOE values for the neurobehavioral effects on infants were not sufficiently high to guarantee the safety against this endpoint.

b/ Ind Health. 2003 Jul;41(3):189-96. Survey on the health effects of chronic exposure to dioxins and its accumulation on workers of a municipal solid waste incinerator, rural part of Osaka Prefecture, and the results of extended survey afterwards. Takata T.

According to the results of this survey the committee understood that the follow-up study of blood dioxins level of group III and IV workers was inevitable and concerned about the other MSWI workers in Japan who might also be exposed to similar level of dioxins. The Ministry of Labor decided to expand the survey to other MSWI workers in Japan as 3-year project from 1999. The summarized report on the project is appended in this paper.

c/ J Hazard Mater. 2002 Nov 11;95(1-2):47-63. Chemical stabilization of MSW incinerator fly ashes. Youcai Z, Lijie S, Guojian L.

It is important to prevent heavy metal-rich wastes from being incinerated in order to reduce the content of toxic metals in the fly ash. Chemical stabilization processes, especially using sodium sulfide as the chemical agent, are strongly recommended for the practical uses, in terms of the volume expansion and environmental safety of the stabilized products and cost balances, in comparison with the traditional cement or asphalt solidification methods.

d/ AIHAJ. 2001 Jan-Feb;62(1):28-35. Design and evaluation of a breath-analysis system for biological monitoring of volatile compound. Thrall KD, Callahan PJ, Weitz KK, Edwards JA, Brinkman MC, Kenny DV.

The results of the field studies illustrate the utility of monitoring workers for exposures throughout the day, particularly when job-specific tasks may indicate a potential for exposure.

5) INCINERATOR CANCER

1: Eur J Cancer Prev. 2004 Feb;13(1):83-6. Interaction between genetic polymorphism of cytochrome P450-1B1 and environmental pollutants in breast cancer risk. Saintot M, Malaveille C, Hautefeuille A, Gerber M.

Our results suggested that the Val CYP1B1 allele increases the susceptibility to breast cancer in women exposed to waste incinerator or agricultural pollutants.

3: Occup Environ Med. 2003 Oct;60(10):722-9. Mortality of employees of a perfluorooctanesulphonyl fluoride manufacturing facility. Alexander BH, Olsen GW, Burris JM, Mandel JH, Mandel JS.

Workers employed in high exposure jobs had an increased number of deaths from bladder cancer; however it is not clear whether these three cases can be attributed to fluorochemical exposure, an unknown bladder carcinogen encountered during the course of maintenance work, and/or non-occupational exposures. With only three observed cases the possibility of a chance finding cannot be ruled out.

4: Occup Environ Med. 2003 Sep;60(9):680-3. Risk of soft tissue sarcomas and residence in the neighbourhood of an incinerator of industrial wastes. Comba P, Ascoli V, Belli S, Benedetti M, Gatti L, Ricci P, Tieghi A.

The study shows a significant increase in risk of STS associated with residence within 2 km of an industrial waste incinerator; an aetiological role of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) can be hypothesised.

5: Epidemiology. 2003 Jul;14(4):392-8. Dioxin emissions from a solid waste incinerator and risk of non-Hodgkin lymphoma. Floret N, Mauny F, Challier B, Arveux P, Cahn JY, Viel JF.

Although emissions from incinerators are usually not regarded as an important source of exposure to dioxins compared with other background sources, our findings support the hypothesis that environmental dioxins increase the risk of non-Hodgkin lymphoma among the population living in the vicinity of a municipal solid waste incinerator.

6: Environ Monit Assess. 2003 Mar;83(1):35-45. Induction of cytochrome P4501A and endocrine disrupting effects of school incinerator residues. Oh SM, Ro KS, Chung KH.

Antiestrogenicity of the extracts was measured as decrease in E2-induced cell proliferation. Most of the extracts showed antiestrogenic activity in MCF7-BUS cell. The TEQ levels of the incinerator residues and the antiestrogenic activities were in good correlation, strongly suggesting that the potent toxic emissions were indeed produced from the on-site school waste semi-incinerators and could cause the antiestrogenicity.

7: Toxicol Ind Health. 2001 Jun;17(5-10):145-56. Indirect exposure assessment at the United States Environmental Protection Agency. Lorber M.

This incinerator emitted very large amounts of dioxin, more than any single source known to EPA. Models were used to predict the movement of dioxins from the stack to a nearby hypothetical farm, where individuals in the farm family were exposed to dioxins from consumption of home-produced beef and milk. The predicted lifetime cancer risk of 2.8×10^{-4} based on these food pathways was used by EPA's Region 5 to initiate regulatory activity on this incinerator.

8: Risk Anal. 2002 Dec;22(6):1095-105. Health risk assessment for planned waste incinerators: getting the right science and the science right. Snary C.

The article concludes that the ES has not always provided interested stakeholders with the best available information upon which to determine the tolerability of the health risks posed by waste incinerator

9: Waste Manag. 2002;22(4):405-12. Estimating the human health risks from polychlorinated dioxins and furans in stack gas emissions from combustion units: implications of USEPA's dioxin reassessment. Bell JU.

At this time it is unclear what the impact of these changes will be on facilities progressing through the permitting process, because it is not intuitively obvious how changes in the risk assessment input parameters will impact the magnitude of the dioxin/furan risk. In this paper, the receptor usually associated with the highest potential risk from dioxins/furans in a combustion risk assessment, the Subsistence Farmer, will be subjected to a sensitivity analysis to determine which of the multiple default input parameters will have the greatest influence on the potential cancer risk.

10: Environ Int. 2002 Apr;28(1-2):103-10. Transfer of dioxin risk between nine major municipal waste incinerators in Taiwan. Ma HW, Lai YL, Chan CC.

We concluded that risk transfers among incinerators through routes of food consumption should be considered in assessing health risks associated with incinerator-emitted dioxins in Taiwan. We should place high priority on implementing control measures to lower dioxin emissions in important food-exporting areas like Incinerator E. We should also emphasize analyzing dioxin contents in eggs, chicken, and vegetables in order to improve dioxin-related health risk assessments in the future.

11: Eur J Cancer Prev. 2001 Oct;10(5):459-67. Pesticides and mortality from hormone-dependent cancers. Janssens JP, Van Hecke E, Geys H, Bruckers L, Renard D, Molenberghs G. **However, the increased mortality due to breast cancer and to a lesser extent due to prostate cancer in traditional potato-growing areas needs attention and more research.**

13: Gesundheitswesen. 2001 Feb;63(2):66-9. [Evaluating health risk tolerance and risk assessment] Csicsaky M.

According to current regulations, major projects are subject to an environmental impact assessment. Within this framework, not only ecological criteria have to be met, but also the possible health impact for the exposed population must be assessed. In the absence of limit values for carcinogenic substances in the air, the health impact assessment can be based on quantitative risk assessment. This technology was formerly developed for the assessment of cancer risk imposed by existing environmental exposures, but it is also suitable for the prediction of future exposures and their health consequences. This is demonstrated by using a planned toxic waste incinerator as a model.

14: Am J Epidemiol. 2000 Jul 1;152(1):13-9. Soft-tissue sarcoma and non-Hodgkin's lymphoma clusters around a municipal solid waste incinerator with high dioxin emission levels. Viel JF, Arveux P, Baverel J, Cahn JY.

Although consistent, these findings should be confirmed by further investigation (e.g., a case-control study in which dioxins are measured in biologic tissues) before clusters of soft-tissue sarcoma and non-Hodgkin's lymphoma are ascribed to dioxin released by the municipal solid waste incinerator.

6) INCINERADORA Y MALFORMACION

1: Occup Environ Med. 2004 Jan;61(1):8-15. Risk of congenital anomalies in the vicinity of municipal solid waste incinerators. Cordier S, Chevrier C, Robert-Gnansia E, Lorente C, Brula P, Hours M.

Although both incinerator emissions and road traffic may plausibly explain some of the excess risks observed, several alternative explanations, including exposure misclassification, ascertainment bias, and residual confounding cannot be excluded. Some of the effects observed, if real, might be attributable to old-technology MSWIs and the persistent pollution they have generated.

2: Nippon Rinsho. 2000 Dec;58(12):2502-7. [Long-term effects of dioxin on human health and sex ratio] Iguchi T.

Extremely high dioxins exposure has been reported in 35 men dismantled an incinerator in Osaka, Japan. The average of the serum dioxin concentration in the workers was 680 pg, the maximum concentration was 5380 pg, these values were 200-300 times higher than normal healthy Japanese men(20-30 pg). The present article reviewed long-term effects of dioxins on human health and sex ratios after accidental dioxins exposure in Seveso, Italy, based on the recently published articles.

7) INCINERADORA Y MAMA

1: Eur J Cancer Prev. 2004 Feb;13(1):83-6. Interaction between genetic polymorphism of cytochrome P450-1B1 and environmental pollutants in breast cancer risk. Saintot M, Malaveille C, Hautefeuille A, Gerber M.

Our results suggested that the Val CYP1B1 allele increases the susceptibility to breast cancer in women exposed to waste incinerator or agricultural pollutants.

3: Environ Health Perspect. 2002 Jun;110(6):583-9. Host and environmental determinants of polychlorinated aromatic hydrocarbons in serum of adolescents.

Nawrot TS, Staessen JA, Den Hond EM, Koppen G, Schoeters G, Fagard R, Thijs L, Winneke G, Roels HA.

This study showed that in 16- to 18-year-old teenagers host factors are important determinants of serum concentrations of PCAHs, whereas environmentally related determinants may to some extent contribute independently to human exposure to these persistent chemicals in the environment.

4: Eur J Cancer Prev. 2001 Oct;10(5):459-67. Pesticides and mortality from hormone-dependent cancers. Janssens JP, Van Hecke E, Geys H, Bruckers L, Renard D, Molenberghs G.

However, the increased mortality due to breast cancer and to a lesser extent due to prostate cancer in traditional potato-growing areas needs attention and more research.

8) INCINERATOR LIVER

1: Occup Environ Med. 2003 Oct;60(10):722-9. Mortality of employees of a perfluorooctanesulphonyl fluoride manufacturing facility. Alexander BH, Olsen GW, Burris JM, Mandel JH, Mandel JS.

Workers employed in high exposure jobs had an increased number of deaths from bladder cancer; however it is not clear whether these three cases can be attributed to fluorochemical exposure, an unknown bladder carcinogen encountered during the course of maintenance work, and/or non-occupational exposures. With only three observed cases the possibility of a chance finding cannot be ruled out.

2: J Occup Environ Med. 2003 Jun;45(6):601-8. Association between dioxins/furans exposures and incinerator workers' hepatic function and blood lipids. Hu SW, Cheng TJ, ChangChien GP, Chan CC.

High-exposure workers showed consistently, although not statistically significantly, higher abnormality in gamma-glutamyltransferase (>52 U/L), alanine aminotransferase (>41 U/L), and aspartate aminotransferase (>37 U/L) than did low-exposure workers. However, there was no statistically significant interaction between dioxins/furans and HBV on these hepatic enzymes among incinerator workers.

3: Int Arch Occup Environ Health. 2003 Jul;76(6):467-72. Epub 2003 May 23.

Morbidity among municipal waste incinerator workers: a cross-sectional study.

Hours M, Anzivino-Viricel L, Maitre A, Perdrix A, Perrodin Y, Charbotel B, Bergeret A.

Skin irritation and cough were more frequent in the exposed workers. A slight decrease in pulmonary function was observed. These findings are in agreement with those of several other studies.

9) INCINERATOR SARCOMA

1: Occup Environ Med. 2003 Sep;60(9):680-3. Risk of soft tissue sarcomas and residence in the neighbourhood of an incinerator of industrial wastes. Comba P, Ascoli V, Belli S, Benedetti M, Gatti L, Ricci P, Tieghi A.

The study shows a significant increase in risk of STS associated with residence within 2 km of an industrial waste incinerator; an aetiological role of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) can be hypothesised.

2: Am J Epidemiol. 2000 Jul 1;152(1):13-9. Soft-tissue sarcoma and non-Hodgkin's lymphoma clusters around a municipal solid waste incinerator with high dioxin emission levels. Viel JF, Arveux P, Baverel J, Cahn JY.

Although consistent, these findings should be confirmed by further investigation (e.g., a case-control study in which dioxins are measured in biologic tissues) before clusters of soft-tissue sarcoma and non-Hodgkin's lymphoma are ascribed to dioxin released by the municipal solid waste incinerator.

10) INCINERATOR PULMONARY

1: Int Arch Occup Environ Health. 2003 Jul;76(6):467-72. Epub 2003 May 23. Morbidity among municipal waste incinerator workers: a cross-sectional study. Hours M, Anzivino-Viricel L, Maitre A, Perdrix A, Perrodin Y, Charbotel B, Bergeret A.

There were few adverse health effects in our morbidity study but skin irritation and cough were more frequent in the exposed workers. A slight decrease in pulmonary function was observed. These findings are in agreement with those of several other studies.

3: Int J Hyg Environ Health. 2002 Feb;204(5-6):323-6. In vitro effects of incinerator fly ash on pulmonary macrophages and epithelial cells. Diabate S, Mulhopt S, Paur HR, Wottrich R, Krug HF.

The total IFA and its insoluble fraction were shown to induce cytotoxicity and cytokine release in a dose-dependent manner. The soluble fraction was nearly unable to induce cytotoxicity and TNF-alpha release but showed potent induction of IL-8 release in BEAS-2B cells at increasing concentrations. Quartz caused similar effects compared to IFA in NR8383 but was less effective in BEAS-2B.

11) INCINERATOR LYMPHOMA

1: Epidemiology. 2003 Jul;14(4):392-8. Dioxin emissions from a solid waste incinerator and risk of non-Hodgkin lymphoma. Floret N, Mauny F, Challier B, Arveux P, Cahn JY, Viel JF.

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ORGANIZACIÓN MUNDIAL DE LA SALUD

- HEALTH RISKS OF PERSISTENT ORGANIC POLLUTANTS FROM LONG-RANGE TRANSBOUNDARY AIR POLLUTION. WHO EUROPE 2003.
- AIR QUALITY GUIDELINES. WHO 2000
- INTERNATIONAL AGENCY FOR CANCER RESEARCH. 2003
- WASTE MANAGEMENT AND PUBLIC HEALTH. WHO 2002

PUBLICACIONES VARIAS

- FACING AMERICA'S TRASH: WHAT'S NEXT FOR MUNICIPAL SOLID WASTE?

- ❑ SOCIALIA.ORG. COÑEGIO OFICIAL DE BIOLOGOS DE GALICIA
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- ❑ ESTILOS DE DESARROLLO INSULAR: LA ISLA DE LA PALMA
- ❑ DIARIO OFICIAL DE LA UNION EUROPEA 7.11.2003
- ❑ PLAN TERRITORIAL PARCIAL.BIDASOA
- ❑ PBDE IN PLASTICS Ecotoxicology BIO644, vt-03. Project work: **PBDE IN PLASTICS – occurrence and fate**. Sara Norström, Magdalena Nilsson. Supervisor: Arnout ter Schure
- ❑ INCINERATION AND DIOXINS IN FOODS: FSAI DISCUSSION PAPER.May 23 2003 1
- ❑ WASTE INCINERATION: A DYING TECHNOLOGY. GAIA 2003.

❑ **The Belgian PCB and Dioxin Incident of January–June 1999: Exposure Data and Potential Impact on Health. Nik van Larebeke,¹ Luc Hens,² Paul Schepens,³ Adrian Covaci,³ Jan Baeyens,⁴ Kim Everaert,⁴ Jan L. Bernheim,² Robert Vlietinck,⁵ and Geert De Poorter⁶** 1Department of Radiotherapy, Nuclear Medicine and Experimental Cancerology, Ghent University, Belgium; 2Human Ecology Department, Free University Brussels, Belgium; 3Toxicological Center, Antwerp University, Antwerp, Belgium; 4Department of Chemical Engineering, and 5Department of Human Genetics, Catholic University, Leuven, Belgium; 6Federal Ministry of Agriculture, Brussels

❑ **Dietary uptake of dioxins (PCDD/PCDFs) and dioxin-like PCBs in Atlantic salmon (*Salmo salar*).**

Anne-Katrine Lundebye^{1,*}, Marc H.G. Berntssen¹, Øyvind Lie¹, Gordon Ritchie², Pirjo Isosaari³, Hannu Kiviranta³ and Terttu Vartiainen^{3,4}

- ❑ No evidence of Dioxin Cancer Threshold.

David Mackie, Jungfeng Liu, Yeong-Shang Loh, Valerie Thomas

- ❑ Basis for a proposed reference dose for dioxin of 1-10 pg/kg-day: a weight of evidence evaluation of the human and animal studies. J Toxicol Environ Health B Crit Rev. 2003; 6: 115-59. Green JF et al.

- ❑ **El pediatra y la incineración de residuos sólidos. Conceptos básicos y efectos adversos en la salud humana**

J A Ortega García, J Ferrís i Tortajada*, J A López Andreu**, J García i Castell***, A Cánovas Conesa****, O Berbel Tornero, A Ortí Martín, V Ferrís i García*****, B Beseler Soto***** y E Andreu Alapont*****.

□ **Polución atmosférica por contaminantes químicos**

J. Ferrís i Tortajada¹, J.A. Ortega García, A. Ortí Martín, J.A. López Andreu², J. Garcia i Castell³, A. Cánovas Conesa, J. Aliaga Vera, J.J. Alcón Saez, B. Beseler Soto, E. Andreu Alapont, N. Molini Menchón

1Unidad de Oncología Pediátrica. 2Sección de Neumología Pediátrica. Hospital Infantil Universitari La Fe. 3Servicio de Anatomía Patológica.

Hospital de Sagunto. Grupo de Trabajo de Salud Medioambiental de la ociedad Valenciana de Pediatría.

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VARIOS

II CONGRESO VIRTUAL HISPANOAMERICANO DE ANATOMIA PATOLÓGICA

Bosch R et al. *Incidencia, Tendencia Temporal, Reclasificación y Diagnóstico Diferencial de los síndromes linfoproliferativos en la Provincia de Taragona.*

Aumento del 3,7 % anual de neoplasia linfoides y no parece que se deba a las mejoras diagnósticas

- **An evaluation of the occupational health risks to workers in a Hazardous Incinerator.** J Occup Health 2004; 46: 156-164. Sobre una incineradora que empezó a funcionar en Diciembre de 1997. Las concentraciones en el ambiente de carcinógenos son mucho más altas de lo permitido.
- **Factores de riesgo asociados a sarcomas de partes blandas pediátricos.** Ferris J et al. Rev Esp Pediatr 2001; 57: 445-457.

YOKOHAMA

DIOXINAS

- 2.4 picogramos en el aire (0.8 lo normal)
- Los nuevos limites no consideran el manejo de las cenizas.
- En el suelo: 23.000 picogramos: no está regulado actualmente
- No hay standards para limitar la cantidad de dioxinas en el suelo

KAMIKATSU: The zero waste project

- Desde 2001 cuando no se pudo controlar las dioxinas liberadas por una incineradora.
- Se clasifica la basura en 34 categorías
- Se recicla el 80 %