

## Fluoroderma Fact Sheet for Healthcare Providers

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**What is Fluoroderma?** Fluoroderma is a form of halogen acne caused by fluoride exposure. It is characterized by papulonodular eruptions around the mouth and forehead. In severe cases, fluoroderma lesions will also appear on the neck, chest, and back.<sup>1</sup>

**What Causes Fluoroderma?** Fluoroderma eruptions are caused by topical exposure to fluoride-based substances, such as fluoridated mouthwash and toothpaste.<sup>2,3</sup>

Blasik, L.G., Spencer, S.K., Fluoroderma. *Archives of Dermatology*, 1979 Nov;115(11); 1334-5. Patients developed papulonodular eruptions following prophylactic treatment for dental caries using fluoride gel preparations applied to the teeth. Lesions resembled the recognized halogenodermas, e.g. iododerma, bromoderma.

As with other halogenodermas, fluoroderma eruptions are also caused by ingestion of the offending halogen. This causal relationship is poorly recognized because of the pervasive nature of fluoride in the modern food supply (see below).

Feltman, R., Kosel, G., Prenatal and postnatal ingestion of fluorides - Fourteen years of investigation - Final report. *Journal of Dental Medicine*, 1961(16); 190-9.

One percent of cases exhibited dermatologic, gastro-intestinal and neurological reactions to sodium fluoride tablets of 1 mg per day (equivalent to 1 liter of water fluoridated at 1 ppm).<sup>\*</sup> Symptoms included eczema, atopic dermatitis, urticaria, epigastric distress, emesis, and headache. Symptoms disappeared when subjects were unknowingly given placebo tablets and recurred when fluoride tablets were reintroduced.

**Common Sources of Fluoride Exposure.** The appropriate treatment for fluoroderma is to limit fluoride exposure. In addition to food and beverages prepared with fluoridated water,<sup>4</sup> the following chart lists a sampling of common sources of fluoride in the modern food supply.<sup>5</sup>

| Food        | Fluoride Content            | Source of Fluoride Content   |
|-------------|-----------------------------|--|
| Tea         | .1 ~ 4.2 ppm <sup>6</sup>   | Bioaccumulation in tea leaves from pesticides/pollution. <sup>7</sup>                                      |
| Chicken     | 6 ~ 8.5 ppm <sup>8</sup>    | Bioaccumulation in poultry fat/bones from pesticides in feed. <sup>9</sup>                                 |
| Grapes/Wine | 3 ~ 9 ppm <sup>10</sup>     | Residue from Cryolite application to grape crops.  |
| Cereal      | 3.8 ~ 6.3 ppm <sup>11</sup> | Concentrated from water evaporation during drying process. <sup>12</sup>                                   |
| Other       | < 130 ppm <sup>13</sup>     | Residue on foods stored in food warehouses during fumigation with fluoride-based pesticides. <sup>14</sup> |

<sup>\*</sup> U.S. Department of Health and Human Services now recommends fluoridation of public water supplies at 0.7 ppm.

## Endnotes and References:

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- <sup>1</sup> For personal accounts of fluoroderma (including photos), see <http://www.CelluliteInvestigation.com/Acne>.
- <sup>2</sup> McCaffery, K, Fluoride and dermatitis. *Journal of the American Dental Association*, 2003(134); 1166-7.
- <sup>3</sup> Mellette, JR, Fluoride toothpaste: A cause of perioral dermatitis. *Archives of Dermatology* 1976(112); 730-1.
- <sup>4</sup> It is cost prohibitive to add pharmaceutical grade fluoride to municipal water supplies. Instead, 90 percent of fluoridated water is made with hydrofluorosilicic acid, a byproduct of the phosphate fertilizer industry. This fluoride compound is captured by “wet scrubbers” (air pollution control devices) and sold directly to water treatment plants without further refinement. To verify, contact your local water treatment facility or the EPA.
- <sup>5</sup> For a more comprehensive explanation of how to treat fluoroderma, including the common sources of fluoride exposure, see “Healing Acne from Within: A Guide to Diagnosing and Curing Acne Caused by Fluoride Exposure” available for free download at <http://www.CelluliteInvestigation.com/Acne>.
- <sup>6</sup> Levy, S.M., Guha-Chowdhury, N., Total fluoride intake and implications for dietary fluoride supplementation. *Journal of Public Health Dentistry*, 1999(59); 211-23.
- <sup>7</sup> Ruan, J.Y., Wong, M.H., Accumulation of Fluoride and aluminum related to different varieties of tea plants. *Environmental Geochemistry and Health*, 2003(23); 53-63.
- <sup>8</sup> Fein, N.J., Cerklewski, F.L., Fluoride content of foods made with mechanically separated chicken. *Journal of Agricultural Food Chemistry*, 2001;49(9); 4284-6.
- <sup>9</sup> According to the following EPA document, the legal limit for fluoride residue on livestock feed is 130 ppm. The limit for meat is 40 ppm. The EPA does not regulate the fluoride content of poultry bones or fat, the areas where fluoride is known to accumulate. Mechanically de-boned chicken products and soups made from chicken bones can contain fluoride in amounts significantly higher than the recommended limit. See, Sulfuryl fluoride: Pesticide Tolerance. Federal Register. July 15, 2005 (Volume 70, Number 135) [Rules and Regulations] [Page 40899-40908] (available at <http://www.epa.gov/fedrgstr/EPA-PEST/2005/July/Day-15/p13982.htm>).
- <sup>10</sup> Ostrom, G.S., Cryolite on grapes/Fluoride in wines - A guide for growers and vintners to determine optimum cryolite applications on grapevines. CATI Publication #960601.
- <sup>11</sup> Warren, J.J., Levy, S.M., Current and future role of fluoride in nutrition. *Dental Clinics of North America*, 2003(47); 225-43.
- <sup>12</sup> Heilman, J.R. et al., Fluoride concentrations of infant foods. *Journal of the American Dental Association*, 128(7); 857-63.
- <sup>13</sup> This is the legal tolerance for fluoride residue on wheat. For a full list of the fluoride tolerance levels of various foods, see <http://www.fluoridealert.org/pesticides/fluoride.tols.july.2005.html> maintained by the Fluoride Action Network Pesticide Project.
- <sup>14</sup> In January 2011, the EPA announced its intention to phase-out the use of sulfuryl fluoride, the fumigant used in food warehouses. (Facilities are not required to remove food from premises prior to fumigation.) EPA cited the aggregate fluoride exposure to infants and young children as their primary reason for the change in policy. For details of the announcement, see <http://www.epa.gov/pesticides/sulfuryl-fluoride/evaluations.html>.