

Radiation Exposure Comparisons

We live in a radioactive world – and we always have. Radiation is a part of our natural environment. We are all exposed to radiation on a daily basis which comes from many sources. From materials in the earth itself, from items we encounter and use on a daily basis, from outer space, and from inside our own bodies as a result of the food and water we consume. **ALL** organic matter, both plant and animal contains a small amount of radiation from radioactive potassium, radium and other isotopes. In addition, **ALL** water on Earth contains small amounts of dissolved uranium and thorium. This radiation is measured in units called millirems (mrem).

The average dose of radiation per person from all combined sources is about **620 mrems per year**. However, it is not uncommon for someone to receive more or less than this average in a given year.

Dental Sources of Radiation*

- One Film Based Dental X-Ray = 0.5 mrem
- One Digital Dental X-ray = 0.1 mrem
- A Set of 4 Bitewings = 0.4 mrem (**LESS Than 1 FILM BASED X-ray**)
- A Full Mouth Set of X-rays = 6 mrem
- Panorex X-ray = 2 mrem

Common Sources of Radiation for Comparison

- Flying in an airplane = 0.5 mrem / 30 Min of flight (**5 dental X-rays/30 Min**)
- Watching television or computer = 1 mrem / year (**10 dental X-rays**)
- Sleeping next to someone = 2 mrem / year (**20 dental X-rays**)
- Living in a brick house = 7 mrem / year (**70 dental X-rays**)
- Cooking with Natural Gas = 10 mrem / year (**100 dental X-rays**)
- Organic material (food & water) = 30 mrem / year (**300 Dental X-rays**)
- Smoking 1 pack of cigarettes/day = 36 mrem / year (**360 dental X-rays**)
- Breast Mammogram = 42 mrem / Breast (**420 dental X-rays**)
- Living in Colorado (High Altitude) = 63 mrem / year (**630 dental X-rays**)

The benefits of taking X-rays far outweighs the risks!

Dental X-rays help us diagnose a wide range of problems, including but not limited to:

- Dental Caries (Decay) that cannot be seen by visual inspection
- Periodontal (Gum) Disease and Bone Loss
- Open Contacts (spaces between teeth) that collect food and lead to Caries and Periodontal Disease
- Abscesses & Cysts
- Impacted Teeth
- Supernumerary (extra) teeth or Agenesis (missing) teeth
- Tumors - In some cases, when dental x-rays show the location of tumorous growths, x-rays can be responsible for saving your life.

*Above radiation information from American Nuclear Society
www.ans.org