

Eccentric Personality Physical Anatomy Dental Trespass?

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Per denying dental care that isn't based on or supported of X-raying your dental anatomy for a radiograph (a.k.a. "X-ray image picture"), has your dental care provider got "even" against humanity with you, or possibly physically committed you to physically experience the "destiny" of excessive initial and/or cumulative X-ray exposure? May we not question so, for if people are in a uniform with a college degree, there's no way that they can be illegally assaultive of a neighbor, and pirates only come stealthily, they never come boldly? Skeptical? That makes two of us. Please see the photograph and short biography of Don Pedro Coley near the end of this monograph.

One social contingency that here you should readily perceive, of the American dental profession (covert) monopoly's negligence and extortion that herewith I discuss, is much pathetically that the American dental profession wants to meet their "Uncle", who is truly "ours", our "Uncle Sam"; that is to say, the American dental profession wants the U.S.A. federal Government, to ban American dental practices from solely on the basis of those practices' dental patients' legal refusals to be dentally X-rayed; legally being able to deny those practices' dental patients legal dental care, that is without X-rays, and that accomplishes the same or much the same dental treatment, that would be accomplished with dental X-rays; or as reluctant-to-change children are famous for saying: "Make me."

A direct corollary of the dental profession monopoly's imposition of X-rays on dental patients, is dental patients' much pathetic resignation to be so X-ray molested, as ultimately consigning those patients to heavenly hereafter, per just compensation for those patients' having sustained X-ray exposure against those patients' preference. And both X-ray provider and X-ray recipient claim: "For the dental patient to receive dental care, we have no other adequately beneficial choice, than to subject the dental patient to dental X-rays, because we can't financially afford legal support that prevails legally in our favor, against the dental patient receiving dental X-rays.

The dental profession is not keeping adequate record of patient dental X-ray exposure. Indeed, neither the dental practices nor the dental patients are so able to do, because of a variety of factors, including dentists' retirements, patient relocations, lost dental records, and patient dental treatment from a variety of dental practices. Even if the dental profession monopoly launches a national or international dental records computer data base, the fact remains that, with X-rays, like so many things, what is low risk for some is not necessarily low risk for others.

Currently this May 30, 2022 the only government requirement for archiving Oregon dental patient dental X-ray image records that I have found, are the following Oregon Revised Statutes: **818-012-0070 Patient Records Oregon Board of Dentistry** "(1)(f) Date and description of all radiographs, study models, and periodontal charting;" "(3) Each licensee shall **maintain patient records and radiographs for at least seven years from the date of last entry unless:**

- (a) The patient requests the records, radiographs, and models be transferred to another licensee who shall maintain the records and radiographs;
- (b) The licensee gives the records, radiographs, or models to the patient; or
- (c) The licensee transfers the licensee's practice to another licensee who shall maintain the records and radiographs."

Thus Oregon dental patients' dental radiographs of 7 or greater years of age, **may be obliterated every 7 years!** Now honestly, how many adult teeth have remained essentially the same, including the teeth' locations, in the adults' mouths for at least 40 years? Yet we find the ultimatum **"no 7 years-recent radiographs of record, no dental repair"**, as usually fair, reasonable, and even negligible, to – from initial and/or recurrent direct and scattered X-rays in our mouth – try to avoid cancer induction into our lives of? After all, per the common knowledge of much of our population, we know that X-rays are potent carcinogens, and that human cells do not always maintain or completely recover their best health after those cells are X-rayed.

The dentists too often say “**Have another dental X-ray, or forgo dental care**”; or basically, “**Be X-rayed or forgo dental care from us**”. Why? A few wrong reasons, including claims such as these:

(1) the legal court says that, even with malpractice insurance, dental practices probably can't win all the dental lawsuit cases;

(2) the false claim that in history, “adequate” dentistry was usually impossible to happen without utilizing X-rays for some dental procedures;

(3) any intellectually competent adult dental patients, who are adequately informed of all dental procedures proposed for them self, and any intellectually competent ward dental patient with an intellectually competent legal guardian, both of whom are adequately informed of all dental procedures proposed for the ward dental patient, are, per respectively those intellectually competent patients and the ward patient's intellectually competent legal guardian refusing dental X-rays, incompetent to receive nonX-ray dental care;

(4) only dental treatment that has X-ray imaging is sufficiently informative to provide the “best” – as in “best legal proof for the dentist” and “best ongoing health for the patient” -- dental treatment of;

(5) on the average most people must suffer chronic X-ray damage as part of the “best” dental treatment for them;

(6) a false modesty claim that “the patients are worth no less than the “best” dental care, and that means X-ray dental treatment to the patients for sure”;

(7) the sky is the limit when it comes to how many dental X-rays are low risk enough to receive, since some people haven't been diseased with oral cancer after those people have been dentally X-rayed many more times than other people, who have had oral cancer; so go for broke, and hope that you're one of the lucky people who can keep functional teeth for your mouth without shortening your life of X-ray caused cancer, all because your dental practice doesn't trust you not to sue your dental practice, for your dental practice committing a dental treatment error or dental treatment accident, that most likely your dental practice wouldn't have committed, if you had a recent dental X-ray for your dental practice to estimate treatment from;

(8) “**U.S. Food and Drug Administration** guidelines for prescribing dental radiographs. Recall Patients With No Clinical Caries and Not at Increased Risk of Developing Caries. Posterior bitewing examination at 24- to 36-month intervals” (Reprinted from U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration; and American Dental Association, Council on Dental Benefit Programs, Council on Scientific Affairs.);

(9) oncologists estimate that many people daily to weekly become diseased with new cancer formation, however those peoples' immune system soon successfully intercepts and destroys the cancer; therefore trust your immunity to destroy every oral cancer that may occur of dental X-ray, and continue to have X-ray updates of your teeth often, after all, millions of adult human teeth – that were X-rayed seldom or never – have never decayed greatly during the entire lifespan of the humans whose teeth those were, but that doesn't prove that you are avoiding a dental health problem. How many times have we heard “your teeth may have been with you for decades, possibly because you have deliberately provided good care for them, but X-ray images older than three years must be out of date”?;

(10) your dentist doesn't know -- without a mirror that you pay your dentist to use – your dental backsides from a flat rock, can't well negotiate much of the world's nighttime terrestrial environment with a good flashlight, has yet – though experience makes a difference – to make perfect of practice, doesn't want you to suffer expensive dental treatment errors that your dentist might avoid with a pecuniarily cheap – though cumulatively to an at present, often unknown, variably cancer risk increasing extent – dental X-ray, and is aware that one of humanity's great quests, so as to provide alibis for at least some, has been to “faultlessly” accomplish the perfect criminal trespass; so has decided as a matter of routine, one case at a time all the same, to refuse to provide best compensatory dental care, in lieu of dental care that is supplemented with and/or based on cumulatively – and I do mean “cumulatively”, as in “more X-ray = higher cell damage risk” – debilitating dental X-rays;

(11) evaluating radiographs for evidence of dental status, rather than only cognitively estimating dental status without radiographs, is in general less work, more often dentally diagnostically accurate, and therefore more convenient for lazy dentists;

(12) states' legal policies which, possibly of nonelected career bureaucrats, or state government appointed second job dentistry board members, each member who both, as in Oregon, “serves at the pleasure of the Governor” (from ORS 679.230(3)(a) “The term of office of each member is four years, but a member serves at the pleasure of the Governor.” I find the stipulation rather should be “at the discretion of the Governor”),

and who per general legislative directives, such as a "The Secretary of State's Office herewith shall have authority to promulgate, implement, and administer specific rules for the accomplishment of the forgoing (legal) provisions" (example and quotes mine) type of stipulation, fraudulently claim such as does an Oregon Board of Dentistry "Clarification of Radiographs" paper (<https://www.oregon.gov/dentistry/Pages/FAQ-consumers.aspx>), that "The Dentist is the one who decides if the radiographs are needed, not the patient. They are an important diagnostic tool and it is the responsibility of the treating Dentist to determine how often they are needed.," so as to intimidate dental patients, dentists, and denturists to seek radiographic evidence, in case of lawsuit about quality of dental care;

(13) everyone suffers environmental background radiation exposure, so increase the cancer insecurity of your "happy-go-lucky" happenstance cancer risk in life, per receiving dental monopoly-required, and legal system corruption supported for dental service, coincident dental X-rays. ;

(14) "since our dental practice requires patient X-rays for legal evidence in legal court, your best chance for dental care without X-rays, is to shop for dental care elsewhere"; as if "elsewhere" the covert dental profession monopoly has adequate no X-ray dental care available, and is adequately accessible;

(15) less X-ray mrem exposure is required to provide current state-of-the-art radiographs, than was required to provide radiographs 50 or so years ago, so per your previous dental X-ray exposure, your X-ray caused disease risk from currently radiograph "adequate" X-ray mrem exposure, is less per radiograph now, than per radiograph of approximately 50 years ago, and therefore more radiographs can be taken of your teeth, without exceeding your short term X-ray damage recovery limitation, and cumulative X-ray damage tolerance limitation, that are of minimal risk to your long term survival, than could so safely be taken 50 or so years ago;

(16) sale of radiographs provides revenue for dental practices;

(17) similar to the sneeze suppressing accupressure point in the maxillae behind the upper lip center and just below the inner exterior nasal septum, there is an important nerve that the dentist just might of a radiograph be able to locate near a tooth in question;

(18) sonography – i.e. ultrasound – imaging isn't yet developed to provide fast, sharply contrasting, greatly detailed below tissue surface dental images to local dental clinics yet, so good enough to substitute financially cheap, fast, sharply contrasting, greatly detailed below tissue surface, cumulatively health and security disabling X-ray dental images, as often as a dental question or dental problem occurs that may be said to lack "adequate" documentation from previous dental imaging, so as to accomplish easier, more accurate dental treatment;

(19) politics may challenge the propriety of dental X-rays on the basis of initial and cumulative health risk, health disability, and health recovery; so deny dental care without X-rays to some persons who are of superior beneficial civil endowment and/or authoritatively beneficial responsible social experience, so as to support requiring X-rays of other persons who aren't so distinguished of endowment and/or experience;

(20) "If word gets around that our dental practice is, without X-rays, often providing the best dental care that is possible without X-rays (we are that experienced skillful, that lucky, and that accident infrequent of our best no X-ray dental care provision effort), competitor dental practices and/or the state dental board may likely monopolize us out of business for us not using more X-rays";

(21) out of habit, have you ever looked toward your wrist to view your wristwatch, and then observed that you aren't wearing your wristwatch?; Many dentists appear to have similarly habituated themselves to rely on radiographs for dental approximations;

(22) besides X-rays, oral cancer can happen of a variety of factors, including infections, burns, recurrent mechanical oral injury, drugs, tobacco, metastasized body cancers, and/or genetics; so oral cancer is often not likely caused of X-ray only;

(23) if the dental patient isn't trained, registered, and licensed to X-ray people, then the dental patient is incompetent to refuse being and/or reject having been dentally X-rayed;

(24) since your a patient for whom we don't have X-rays, and since no other X-ray practice or radiograph reference source has an X-ray of you, receive an X-ray from us so that we may have radiographic reference from you from then on;

(25) A favorite key support for crime is the claim "If my neighbor deserves to responsibly intentionally be wrong some way, I deserve to be wrong my way." Some criminals believe dental personnel are wrong to require X-rays for dental care that is accomplishable without X-rays, so they are satisfied to commit their crimes without depredating dental care facilities and/or dental care staff. Thus excessive dental care provider demand for dental X-ray provides an alibi for crime commitment and excludes dental care facilities and/or dental care providers from being vandalized some of crime.

(26) That dental X-rays have helped provide dental care for many American dental patients, is well recognized of the majority of America's dental care profession. America's professional dental care providers strive to provide the best dental care possible for Americans, including individualized care for dental patients with atypical dental problems. Since dental X-rays have helped many dental care providers provide and many dental patients receive dental care, and dental X-rays have helped many more dental patients than were X-rayed, to receive dental care; and even though the dental patient usually or often may have more reference about the patient's dental X-ray history than does the dental patient's dental care providers, for example in consequence of dental records not being required kept past 7 years, and because of multiple dental care providers ("see our new patient bargains") not having previous X-ray records available, so regardless then that the patient often appears of the same X-ray risk that the dental profession prefers to practice for the majority of Americans; if our dental practice provides dental care that you need without X-rays to you without X-rays, all of our patients would expect the same for them too, and the majority of dental care providers would decide that our dental practice didn't believe that "dental X-rays have helped provide dental care for many American dental patients", and would recommend that our dental practice be closed because of malpractice!

From the <https://www.oregon.gov/dentistry/Pages/laws-rules.aspx> webpage, the following information is available:

"Oregon Dental Practice Act
January 1, 2022 Dental Practice Act

Oregon Revised Statutes (ORS)
The law establishing the Board of Dentistry and describing its authority and responsibilities is found in ORS 679.230 – 679.255.
The law regarding Dentists is ORS 679.
The law regarding Dental Hygiene in Oregon is found in ORS 680.010 to 680.205 and 680.990.

Oregon Administrative Rules (OAR)
The administrative rules pertaining to dentistry, dental hygiene, dental assisting, and administration of anesthesia are found in OAR 818."

From <https://www.oregon.gov/dentistry/Pages/about-us.aspx> Oregon Board of Dentistry About Us:
"The Board of Dentistry is the second oldest licensing Board in Oregon, created by an act of the Legislature passed in February 23, 1887.

The Mission of the Oregon Board of Dentistry is to promote quality oral health care and protect all communities in the State of Oregon by equitably and ethically regulating dental professionals.

The authority and responsibilities of the Board are contained in Oregon Revised Statutes. Statutes regarding Dentists and Dental Therapists: ORS Chapter 679. Statutes regarding Dental Hygienists: ORS Chapter 680.010 to 680.205. Oregon Administrative Rules: Chapter 818."

Via item (12) before, here is the entirety of the (ORS) Chapter 679 Dentists presence of the root term "radiograph":

“679.621 Dental therapist scope of practice; duties of dentist; authority of dental therapist to supervise. (1) A dental therapist may perform, pursuant to the dental therapist’s collaborative agreement, the following procedures under the general supervision of the dentist:

(a) Identification of conditions requiring evaluation, diagnosis or treatment by a dentist, a physician licensed under ORS chapter 677, a nurse practitioner licensed under ORS 678.375 to 678.390 or other licensed health care provider;

(b) Comprehensive charting of the oral cavity;

(c) Oral health instruction and disease prevention education, including nutritional counseling and dietary analysis;

(d) Exposing and evaluation of radiographic images;”.

I didn't find the root term “radiograph” and the word “X-ray” throughout the entirety of ORS Chapter 680 Dental Hygienists, including ORS 680.010 to 680.205.

Here is the entirety of the *(ORS) Chapter 818 Oregon Board of Dentistry* presence of the root term “radiograph” and the word “X-ray” that I was able to find:

“Oregon Board of Dentistry

Chapter 818

Division 42

DENTAL ASSISTING

818-042-0050

Taking of X-Rays — Exposing of Radiographic Images

(1) A dentist may authorize the following persons to place films/sensors, adjust equipment preparatory to exposing films/sensors, and expose the films and create the images under general supervision:

(a) A dental assistant certified by the Board in radiologic proficiency; or

(b) A radiologic technologist licensed by the Oregon Board of Medical Imaging and certified by the Oregon Board of Dentistry (OBD) who has completed ten (10) clock hours in a Board approved dental radiology course.

(2) A dentist or dental hygienist may authorize a dental assistant who has completed a course of instruction approved by the Oregon Board of Dentistry, and who has passed the written Dental Radiation Health and Safety Examination administered by the Dental Assisting National Board, or comparable exam administered by any other testing entity authorized by the Board, or other comparable requirements approved by the Oregon Board of Dentistry to place films/sensors, adjust equipment preparatory to exposing films/sensors, and expose the films and create the images under the indirect supervision of a dentist, dental hygienist, or dental assistant who holds an Oregon Radiologic Proficiency Certificate. The dental assistant must submit within six months, certification by an Oregon licensed dentist or dental hygienist that the assistant is proficient to take radiographic images.”,

and here is more of the fraudulent claim from the Oregon Board of Dentistry “Clarification of Radiographs” paper (https://www.oregon.gov/dentistry/Documents/Clarification_on_Radiographs.pdf):

“Clarification on Radiographs

The Oregon Board of Dentistry (Board) regularly receives questions about the requirement for radiographs/X-rays, and how often they are required.

The decision when to take or not to take radiographs is the responsibility of an Oregon licensed Dentist or an Expanded Practice Permit Dental Hygienist and is based on factors including the patient's oral health, patient's age, the risk for disease and any sign or symptoms of oral disease that a patient may be experiencing.

The Board does not have a time requirement for how often radiographs or X-rays are to be taken. So if your Dentist says we (the Board) require X-rays every year, that is not true. The Dentist is the one who decides if the radiographs are needed, not the patient. They are an important diagnostic tool and it is the responsibility of the treating Dentist to determine how often they are needed.

The Board takes the following into consideration when it reviews care provided by our Licensees:

Oregon Revised Statute (ORS) 679.140(4) states:

"In determining what constitutes unacceptable patient care, the board may take into account all relevant factors and practices, including but not limited to the practices generally and currently followed and accepted by persons licensed to practice Dentistry in this state, the current teachings at accredited dental schools, relevant technical reports published in recognized dental journals and the desirability of reasonable experimentation in the furtherance of the dental arts."

To put this in perspective, in order to diagnose dental pathology and do an adequate examination on a new or existing patient, the Dentist must have adequate dental radiographs, periodontal probings if appropriate and a current medical history.

If during the dental examination pathology is diagnosed, the Dentist is obligated to tell the patient what the problem is, to explain the treatment options, explain the risks of providing or not providing the treatment, and answer questions. The Dentist is also required to document in the patient's records any dental pathology that is diagnosed during the examination."

The dental profession also says "Its only a small amount of X-rays"; however it doesn't say "Its a small amount of cumulative effect-producing X-ray recurrently in the same area", even though the dental profession applies multiple X-rays to the mouth, and the greater the X-ray exposure to the mouth, the greater the cancer risk to the mouth; and even though oftentimes some of those X-rays to the mouth, per bremsstrahlung and Compton scattering, and photoelectric absorption, adversely with X-rays affect adjacent tissues. Also the dental profession tries to pretend that recurrent X-ray exposure to the mouth is acceptable enough, compared to nonrecurrent X-ray exposure to arms or legs.

Some persons need much more dental care than other persons (e.g. severe collision caused oral injury, in addition to normal oral problems), and that doesn't necessarily mean that those persons needing more dental care, therefore necessarily deserve to suffer greater X-ray damage, that more readily causes cancer to those persons, than other persons who fortunately don't need so much dental care. I am aware that some people likely have actually chosen to replace their natural teeth with false teeth, rather than suffer excessive cancer-risking X-ray exposure, for repair of their natural teeth.

Here's the message sentiment I received from several dental practices that I asked for dental help: If you want dental help from us, then per receiving additional dental X-rays, you march straight toward your grave to have dental help from us. Why? Because I explained to them that I had two broken teeth that needed caps, and that I already had been dentally X-rayed so much, that I was at too high of risk of getting cancer if I received additional dental X-rays. Because I was refused caps for my broken teeth, as I refused to receive X-rays, one of the teeth lost a filling and now may benefit of a root canal, that, you guessed it, I would be advocated to have more X-rays for.

When I have rejected having X-rays that the dental profession has proposed for me, because I found those X-rays as truly unnecessary and excessively hazardous of my previous X-ray exposure, the dental profession's response to me, has sometimes been of the doctrine that: "When you refuse our X-rays that we prefer and are most comfortable with for your dental care, you refuse our dental care, and then without current dental X-rays of you, we simply don't have the time, or the experience, or the equipment, or the legal fees financing that may completely substitute for the X-ray-based dental care that we prefer for you. Due to the education politics that America's dentists must abide per, in order for those dentists to become and remain licensed practicing dentists of America, there is always a shortage of American dentists to provide dental care to applicants deserving of American dental care, and very seldom refusal of dental care because of refusal to be X-rayed, anyway."

"A picture is worth a thousand words", however too many of my dental X-rays have showed no dental and/or dental treatment abnormality, and thus haven't been worth exposing me to X-irradiation in the first place for. How about if a dental X-ray image doesn't develop well enough? **Oooops**, like the old saying goes, "If at first we don't succeed, try, try again"?? My fine line fractured heel was actually X-rayed twice while I was a child, because the first X-ray image of my heel was too indistinct.

In a January 20, 2011 Life Extension Foundation internet epost update, Dr. Edward Dauer, who was both director of radiology at Florida Medical Center in Fort Lauderdale, and a research associate professor of biomedical engineering and radiology at the University of Miami, is quoted as having said: "Even one X-ray, by itself, has the potential to cause a cancer. The more exposures you have, the more chance you have of developing a problem. On the other hand, much depends on the total amount of radiation a person has been subjected to, as its effects are cumulative. "

Herewith I offer three quotes copied from the internet: "***What Hygienists Should Say When Patients Refuse Dental Radiographs*** By Katharyn Edwards, RDH -October 6, 2021

(1)"I understand your concerns regarding radiation. Let me put these x-rays into perspective for you. A unit called a "rem" measures radiation. A rem is a large unit, much like a mile is a large unit of length, so we usually use a millirem (mrem) instead, much as you would measure in inches instead of miles for most purposes. (It takes 1000 mrem to equal one rem.) Advances in x-ray equipment" [e.g. fast exposure F speed film] "allow us to get a good x-ray image using much less radiation than was previously required. A typical dental x-ray image exposes you to only about 2 or 3 mrem. The National Council on Radiation Protection (NCRP) says that the average resident of the U.S. receives about 360 mrem every year from background sources. This comes from outer space, radioactive materials in the earth, and small amounts of radioactive material in most foods we consume."

(2)"Legal risks

Improper diagnosis due to a lack of dental radiographs leaves the practice in a state of liability. Even if you have a patient sign a form stating he or she willingly refuses radiographs, no patient can give consent for the dentist to be negligent. A patient simply cannot waive their right to receive adequate care by signing a refusal for x-rays. If continued resistance occurs, the doctor needs to determine at what point they will dismiss the patient from the practice."

(3)"I understand your concerns about x-rays. Please understand my position that I cannot give you the care you deserve without radiographs. Please be prepared on your next visit for x-rays, and we will take the minimum number necessary."

First, 360 mrem/365.25 days per year = 0.9856 mrem/day of background radiation, that on the average is divided into different contact points over a persons whole body, rather than being focused on one area of the mouth, as is a 2 – 3 mrem dental X-ray. Also much of that background radiation will not pass through every part of the body. X-ray sequelae bremsstrahlung and compton scattering radiation, and photoelectric absorption have caused substantial tissue damage. (For a somewhat brief description of bremsstrahlung and compton scattering radiation, and of photoelectric absorption, please see the reference information at the end of this monograph.)

Second, the dental profession monopoly claims their dentists are duly competent to provide dental care per the discretion – including the training, evaluation, estimations, physical coordination, and moral

commitment – of the dentist. Claiming the dentist must be negligent if practicing without X-rays, and must be responsible if practicing with X-rays, is an erroneous oversimplification of the dentist's ability and personal commitment to responsibly provide patient-safe and accessible dentistry. A patient does not “waive their right to receive adequate care”, by refusing to receive initially and/or cumulatively health injurious X-rays, that virtually invariably compromise the patient's ongoing health immediately to a higher cancer risk, that is substantially more likely to result in cancer development in the patient in the short and long term, than no X-ray dental treatment is.

A pertinent question here is “**How much risk is reasonable to who?**” Per an adequately dental care provider and patient protective, *Dental Access Without X-rays* legal waiver, a dental patient should have the right to opt for and receive a dentist's prescribed alternative dental care that is not supplemented with or based on X-rays, the same as a dental patient has the right to opt for and receive a dentist's prescribed dental care that is supplemented with and/or based on X-rays. Since reception of X-rays is no guarantee that the X-rays were necessary, and did not cause excessive first-time or cumulative tissue damage; where radiographs aren't the only dentist-prescribed dental treatment (for example, aren't only a “routine” radiograph-only dental exam), and are supportive of dental procedures that previously have been and/or that can be sufficiently approximated and/or accomplished without radiographs, dental practices should be required to provide without X-rays, alternative dental care, that if not better, is as nearly the same as possible, to the dental care with X-rays that the dental practice provides.

Again, a pertinent question here is “**How much risk is reasonable to who?**” Per a dental patient being X-rayed, the patient's life is risked with initial and/or often cumulative biologic tissue damaging and/or destroying, and increased cumulative lethal cancer risk causing, X-ray exposure, while the dental practice that applies the X-ray exposure to the patient, is only risking nonlethal civil penalty, for legal court-proven X-ray malpractice.

Per a third repetition, a pertinent question here is “**How much risk is reasonable to who?**” When a dental patient refuses to receive dental X-rays, per a legally valid and binding “Waiver of Dental Treatment Liability”, that denies all permission for the dental patient to, in a specific dental treatment that is of the dental patient's dental care provider that is specified in the waiver, be dentally X-rayed, and that renounces from all of the dental patient's dental care provider's dental personnel, who provide anatomical and/or counseling dental treatment to the dental patient, all legal responsibility that the dental personnel could have, for of a dental treatment that the dental personnel are qualified to administer, causing a dental treatment error to the dental patient, **where the error is due to the “Waiver of Dental Treatment Liability”** --

(1) per the waiver's legal signature of the dental patient, or (2) in the case of an intellectually competent dental patient who is a legal ward, per the waiver's separate legal signatures of the (ward) dental patient and the dental patient's intellectually competent legal guardian, or (3) in the case of a dental patient who isn't intellectually competent and who is a legal ward, per the waiver's legal signature of the (ward) dental patient's intellectually competent legal guardian -- **denying permission for the dental patient to be dentally X-rayed, the dental patient, or** in the case of an intellectually competent dental patient who is a ward, the dental patient and the dental patient's legal guardian, or in the case of a dental patient who isn't intellectually competent and who is a ward, **the dental patient's legal guardian**, assume and **receive all liability** for any and every dental treatment error that, because the dental patient did not receive a dental X-ray, is accidentally caused to the dental patient; and the dental care providers are at no legal or biologic risk for accidentally causing a dental treatment error, that is due to the dental patient, per the *Waiver of Dental Treatment Liability*, not receiving any dental X-ray.

Thirdly, of course dental X-ray images themselves are a complete and separate dental treatment, however humanity has had much of the competent dental care -- including fillings, caps, and false teeth – that humanity now has, before dental X-ray images were widely used. “Prominent New Orleans dentist C. Edmund Kells took the first dental x-ray of a living person in the U.S. In 1896. . . . Dentists began to use x-rays regularly in the 1950s.” (Quotes Source: *THE HISTORY AND BENEFITS OF DENTAL X-RAY IMAGING* BY DR. MARYAM BRAZDO DEC 18 2017) If a dental hygienist cannot, without radiographs, give a dental patient the care the patient “deserves” from a dental hygienist, wouldn't the dental hygienist rather be most properly known as a Dental Radiographologist or Dental Radiographer only?

A pertinent question here is “**What information may adequately legally substitute for and approximate a dental X-ray image?**” The patient's evaluating dentist's or denturist's experience with any dental X-rays of the same patient, and some dental X-rays of different patients; a patient's narratives and/or the patient's legal guardian's narratives of the patient's dental conditions; and a second dentist's evaluation of a patient's condition, are alternate information sources to adequately legally substitute for and approximate X-ray dental image information of. Possibly in the near future, computer simulations of a patient's dental condition, based on thermal imaging, ultrasound, visible light images, and previous radiographs may greatly approximate the patient's current dental condition, and so provide substantial legal evidence substitution for dental X-ray images.

The sun doesn't always shine prodigiously on our road travel, so we substitute artificial lighting for sunshine, and we thus travel roads at night anyway. Some people who are or who shall be in need of dental health care, cease to have sufficient good health to nonexcessively sacrificially tolerate dental X-rays of, and well before that (“mark 'twain”) intolerance point, humanity should – in all but the most “no better than, and no as good as, X-ray lifesaving treatment risk of last choice” exigent cases – necessarily decline to apply X-rays to those persons, so as to preserve and reserve those persons excessively health-sacrificing, X-ray “method of last resort” risk, emergency health care, for those person's true, last survival opportunity, “method of last resort” emergency health care.

What about persons like me, who are diagnosed hypothyroid, and who also have suffered ten going on 11 years, of apparently permanent left neck side mitochondrial suffocation (yes, I have consumed much PQQ to no avail), due to peripheral arterial disease (PAD) atherosclerosis of likely the left subclavian artery? I certainly don't want to, being so, thereof risk bremsstrahlung, compton scattering, rayleigh scattering, and photoelectric absorption radiation on my neck! By the way, I have thrice eliminated the PAD, per using 625mg of EDTA disodium with a meal, once every day for 7 to 24 consecutive weeks.

Recall the popular Democratic Party observation “You have a right to health care”, to which as previously elsewhere, herewith I respond “Per my right to health care, health care providers – including dental health care providers – and taxpayers are not necessarily slaves to provide health care to me.” However, per Jesus Christ saying “Unto Caesar what is Caesar's, unto the Lord what is the Lord's”; safe effectively life supporting and accessible dentistry dental care in America (U.S.A.), is mostly only available to Americans per an informal, often covert, dental health care provider monopoly (e.g., a person doesn't need a college degree to sell vital life supporting plumbing, auto mechanic, farm produce production, or house construction services to the public, but the person does need a college degree to legally sell as a dentist, the person's self labor-produced, dentistry services to the public) that, because correct dental care is on the average necessary for maximum healthy human longevity, justly deserves civil government regulation, to require that that dental health care provider monopoly does not deny the public of any reasonable opportunity for dental health improvement that is better than no dentist dental health intervention at all.

Thus per the popular American commercial proprietorship observation that “The Management Reserves the Right to Refuse Service to Anyone”, I **herewith** find and **vote** that the U.S.A. Federal Government should require all U.S.A. dental practices that sell their dental services to the public, to provide a no X-ray required alternative dental care service, that best approximates every X-ray required dental service that the dental practices offer to the public, and that may be less supported of diagnostic information than is dental X-ray image supported dental service, and that may have the form of X-ray optional but not required dental services. Yes, that's right, correct dental health care is life supporting and longevity increasing, and it should be government-required provided, without cancer risk increasing and/or cancer-promoting X-rays required received of dental patients, so that dental patients may receive correct dental health care only, rather than the patients having to receive correct dental health care that may be supported, though is modified, by cancer risk-increasing, and most likely tissue injuring, dental X-raying of those dental patients. Greater cancer risk that is due to X-raying of a dental patient, is a greater promotion for original cancer to first occur, though an X-ray image so produced may show a current cancerous or precancerous condition also.

That the dental profession has consistently failed to provide dental patients with a legal recourse to dental X-rays, such as a “*Waiver of Dental Treatment Liability*”, that renounces from all of the waiver's specific dental care provider's dental personnel, who provide anatomical and/or counseling dental treatment to

the dental patient, all legal responsibility that the dental personnel could have, for of a dental treatment that the dental personnel are qualified to administer, causing a dental treatment error to the dental patient, where the error is due to the *Waiver of Dental Treatment Liability* denying permission for the dental patient to be dentally X-rayed", provides an example of the **dental profession's excessively protracted irresponsibility** about dental patient's health rights and health, amounts to dental profession malpractice and immorality, and is strong evidence of the dental profession's deficient ethic. Per the dental profession's strong covert monopoly of professional dental care access, the dental profession has coerced many people to receive cumulative health damaging and/or cancer causing dental X-rays, or to forgo dental profession adjustment and/or repair of those people's dental conditions.

Concerning the current legal status of receiving dental treatment without dental X-rays, I estimate that if asked, our federal courts would find that dental X-ray of dental patients, especially soon recurrent dental X-ray of the same recently X-rayed areas of those dental patients, is disabling of those patients, in that X-rays may be observed to advance senescence in some of a patient's personal physiologic cells, per promoting cellular division (e.g. cellular replacement with telomere shortening), or may and sometimes – as in 1/x many exposures -- does induce neoplastic proliferation of some of those cells, or cause increased X-ray vulnerability (e.g. weakness from X-ray caused, reactive chemical species) to some of those cells, or be observed to cause a cell type-variable cumulative disabling lethality for some of those personal physiologic cells (e.g. nonregenerative muscle cells), that may induce apoptosis of some of those cells, or at least would most often cause disabling reduction of anatomical security, per increasing the probability that hazards – e.g. subsequent X-rays – in areas of those patients' previous dental X-ray exposure, will cause cellular damage and/or mutation (X-rays are mutagens. Most mutations are deleterious.).

Observing that X-rays are deleterious to anatomical health in the short and/or long term, currently a dental patient has the right to refuse dental care without X-rays, per requesting and receiving X-rays to accompany that dental care, providing that the patient or the patient's legal guardian is intellectually competent to so request, and providing that the dental care provider acquiesces to provide the X-rays. However, providing those dental X-rays per verbal contract only, or per a patient-signed treatment protocol, certainly does not necessarily prevent a court from finding a malpractice and/or damages lawsuit against the X-ray provider, for example per X-ray machine operation error and/or X-ray machine malfunction, and/or per the court deciding that the requested X-rays were unnecessary and superfluous. So, since we have the right to sue and win for some X-ray damage that we suffer, why do many dental care providers deny us dental care if we intellectually competently, legally responsibly, of adequate dental information and no coercion, voluntarily agree not to sue those providers, where of consequence of us having refused to be dentally X-rayed, those providers accidentally cause dental care provision errors that are our fault? That the court may find against the dental care provider with or without dental X-rays and with or without legal patient waiver, is not sufficient reason to refuse adequate dental care provision until X-rays are applied for possible dental care provision.

Every internally human anatomical viewing-only dental X-ray, leaves the dental X-rayed person's health at higher risk of cancer in the short or long term, as the human body isn't always able to completely repair – such as enzymatically, and/or per phagocytosis, and/or per tissue regeneration – X-ray damaged tissue. Thus, another reason both that the dental patient therefore has a right to opt for and receive less cancer-promoting dental care, than that same dental care is with X-rays; and that that dental care should be available on a quality basis that includes a best no X-ray use approximation of the quality, that that same dental care has with X-ray use.

Thus dental patients who have received dental X-rays – i.e. who have experienced near 0.01-10 nM ionizing short wavelength dentistry radiation -- of some of their personal physiologic cell tissues, are, commensurate with the dosage quantity and repetition intervals of their X-ray exposure, in minimum usually of reduced anatomical security, due to increased vulnerability to deleterious effect from, for example reactive oxygen species (ROS), and from any subsequent X-ray exposure, especially X-ray exposure to previously X-rayed areas; and are second most usually of reduced short-term and long term cellular health security likeliness, that amounts to a short-term health impairment – due to readily cellularly repairable X-ray caused cellular damage -- with some of their cells, and a long-term cellular health disability of some of their cells, that is due to both cellularly irreparable X-ray caused cellular damage, and increased probability of subsequent ROS and/or radiation exposure to the previously X-rayed area, causing increased damage to that area, simply because – **like raindrops** eventually completely wetting a dry sidewalk – some of that area has already been X-ray damaged and some of that area has yet to be X-ray

damaged (“when our number is up, our number is up”; like we have had our good luck already, and after all, X-rays randomly interact with our tissues.).

Therefore I **herewith** now **vote** that dental X-ray caused, long term cellular health disability, should be recognized of the U.S. federal Congress and federal Courts as a health care related **disability, that requires safety intervention**, like an occupational hazard may deserve mandatory recurrent exposure insurance coverage stipulation (ex. hospital-required health insurance coverage for nurses and medical lab techs), or an amputated limb may require a prosthesis, or a damaged tooth may require an artificial replacement, or damaged eyes may require glasses or laser surgery, or vehicular travel may require safety belts, or a business expense may qualify for a tax exemption.

I also have introduced to federal congresspersons, a similarly punctuated following advocacy statement **“Dental Access Without X-rays”** clause: I support and herewith vote for the United States of America (USA) Congress to enact into law, a USA **“Dental Patients Bill of Rights”** clause, that declares to the effect that:

“No dental patient may legally be denied dental care for refusing to be X-rayed,

(1) if the dental patient — being intellectually competent and adequately informed of both the dental patient's previous X-ray exposure-based current risk of, and the dental patient's dental care provider's current best dentist-estimated extent of, new initial and cumulative tissue damage and cancer risk, that the dental patient may sustain from the dental patient receiving every dental X-ray that the dental patient's dental care provider proposes for the dental patient to receive — without being or having been coerced to sign, voluntarily signs or has voluntarily signed, or

(2) if the dental patient is a ward dental patient, such as a minor dental patient, and is intellectually competent and adequately informed of both the dental patient's previous X-ray exposure-based current risk of, and the dental patient's dental care provider's current best dentist-estimated extent of, new initial and cumulative tissue damage and cancer risk, that the dental patient may sustain from the dental patient receiving every dental X-ray that the dental patient's dental care provider proposes for the dental patient to receive; and both the dental patient and the dental patient's intellectually competent legal guardian, — who also is adequately informed of both the dental patient's previous X-ray exposure-based current risk of, and the dental patient's dental care provider's current best dentist-estimated extent of, new initial and cumulative tissue damage and cancer risk, that the dental patient may sustain from the dental patient receiving every dental X-ray that the dental patient's dental care provider proposes for the dental patient to receive — without being or having been coerced to sign, voluntarily separately sign or have separately voluntarily signed, or

(3) if the dental patient is not intellectually competent and is a ward dental patient, such as a minor dental patient, and the dental patient's intellectually competent legal guardian — who is adequately informed of both the dental patient's previous X-ray exposure-based current risk of, and the dental patient's dental care provider's current best dentist-estimated extent of, new initial and cumulative tissue damage and cancer risk, that the dental patient may sustain from the dental patient receiving every dental X-ray, that the dental patient's dental care provider proposes for the dental patient to receive — without being or having been coerced to sign, voluntarily signs or has voluntarily signed

a legally valid and binding **“Waiver of Dental Treatment Liability”**, that denies all permission for the dental patient to, in a specific dental treatment that is of the dental patient's dental care provider that is specified in the waiver, be dentally X-rayed, and that renounces from all of the dental patient's dental care provider's dental personnel, who provide anatomical and/or counseling dental treatment to the dental patient, all legal responsibility that the dental personnel could have, for of a dental treatment that the dental personnel are qualified to administer, causing an accidental dental treatment error to the dental patient, where the error is due to the **“Waiver of Dental Treatment Liability”** -- per the waiver's legal signature of the aforesaid (1) dental patient, or per the waiver's legal signatures of the aforesaid (2) dental patient and the dental patient's intellectually competent legal guardian, or per the waiver's legal signature of the aforesaid (3) dental patient's intellectually competent legal guardian -- denying permission for the dental patient to be dentally X-rayed.”

Herewith immediately following, is an edited example of a *Waiver of Dental Treatment Liability* form, that previously some of my regular dentists – without them receiving any several or few weeks recent, or then

current month new, radiograph of me from anyone -- delivered extensive and completely satisfactory dental treatment, including three cap installations to me of:

Waiver of Dental Treatment Liability

Herewith I, _____ (Dental Patient's Name), now this _____ (Month, Day Number, and Year), waive as legally not binding for me, all legal responsibility that both my dentist, Dr. _____, and Dr. _____'s dental assistants could have for causing an accidental dental treatment error to me, that is due to me preferring not to be dentally X-rayed of, and/or refusing to be dentally X-rayed of Dr. _____'s dental care practice.

Here is a shortened form of the aforegiven advocacy statement for a "Dental Access Without X-rays Legal Clause":

{Petition for Dental Access Without X-rays Legal Clause.

I support and herewith vote for the USA Congress to enact into law, a "Dental Patients Bill of Rights" clause, that declares to the effect that: "No dental patient may legally be denied dental care for refusing to be X-rayed , (1) if the dental patient . . . (2)and/(3)or . . . patient's . . . legal guardian, without being coerced to sign, voluntarily signs a legally valid and binding "Waiver of Dental Treatment Liability", that denies all permission for the dental patient to, in a specific dental treatment that is of the dental patient's dental care provider that is specified in the waiver, be dentally X-rayed, and that renounces from all of the dental patient's dental care provider's dental personnel, who provide anatomical and/or counseling dental treatment to the dental patient, all legal responsibility that the dental personnel could have, for of a dental treatment that the dental personnel are qualified to administer, causing an accidental dental treatment error to the dental patient, where the error is due to the "Waiver of Dental Treatment Liability" -- per the waiver's legal signature of the aforesaid (1) dental patient, or per the waiver's legal signatures of the aforesaid (2) dental patient and the dental patient's intellectually competent legal guardian, or per the waiver's legal signature of the aforesaid (3) dental patient's intellectually competent legal guardian -- denying permission for the dental patient to be dentally X-rayed."

"Waiver of Dental Treatment Liability" form:

Herewith I, _____ (Dental Patient's Name), now this _____ (Month, Day Number, and Year), waive as legally not binding for me, all legal responsibility that both my dentist, Dr. _____, and Dr. _____'s dental assistants could have for causing an accidental dental treatment error to me, that is due to me preferring not to be dentally X-rayed of, and/or refusing to be dentally X-rayed of Dr. _____'s dental care practice. }

The corruption of humanity's inalienable **right for "health care that is without health trespass"**, per mandate of only no or incomplete proposed dental care delivery, if that proposed dental care delivery does not include excessive radiographs, such as experimental or investigative or affirmatory or confirmatory radiographs that are termed "diagnostic", and that all too often are revelatory of nothing preemptively adequate or excessively inadequate; or such as radiographs that indeed greatly improve diagnosis though also virtually invariably weaken healthy tissue and substantially increase cumulative cancer risk, has deliberately been greatly entrenched as a normal "**dental treatment as usual**" social health practice, per advocacy for institutionalized degree program-based, lifetime career, and retirement revenue providing optional standby health care emergency treatment. Oft times be wary of industry preferring to provide, or even knowing of, the fairest and most inalienable-rights-respecting "state of the art", or even "business as usual" ("Let the buyer beware.").

Likely, upon "business as usual" grant money pursuing "a better mouse trap", a new computer simulation-based diagnostic dental era shall be near, where the impropriety convenience of dental radiographs shall be much less humanely practical (go shop then), though each generation of humanity continues to inherit humanity's foibles, such as excessively trespassing to discover what trespass involves.

Among the science, mathematics, and engineering community, there is an abundance of disgust, that borders on revulsion, about excessive dental X-rays for dental treatment substituting for formal dental education, dental experience, visual dental exam, dental patient condition witness narrative, and approximation from similar dental condition – such as X-rays of other persons and/or computer simulations – evidence, to accomplish dental treatment of. This in part is because much of science, mathematics, and engineering has been, and continues to be, developed and discovered from estimations and approximations, that often were without photographic evidence for their occurrence, and/or to evince their presence consequence(s) of (e.g. "Once upon a time, estimate the far side of the moon."). This disgust is also because the famous "risk" of excessive tissue injury that is due to dental X-ray exposure, when usually occurring of many persons being dentally X-rayed, **translates into** a substantial percentage of those dentally X-rayed persons usually developing cancer from dental X-ray, and a significant number of those cancerous persons dying of that cancer, solely because those persons were dentally X-rayed. Another source of this disgust, is each individual's personal right to receive beneficial health assistance, without the individual excessively risking humanity's large group security and/or another person's health security, and without the individual unnecessarily suffering health injury, such as increased personal **cancer presence**, reduced health security, and increased cancer risk.

Truly people have equal inalienable rights always, though unequal right of way someways.

I hesitate to quote any of the many internet-referenced dental X-ray doses that I've observed, because as I researched the internet for dental X-ray exposure hazard information, one glaring recurrent omission became apparent, that is easy to understand, though disguised like sunburn advice. For example, "to start with, that's right, 3 to 19 minutes only of sunbathing/day, and you're on your way to a minimized risk and balanced tan; however 20 minutes of sunbathing and you have a sunburn"! In other words, the references "stack the deck", by listing the presumed and/or estimated, "sufficiently of some scale" tolerable cumulative annual dental X-ray exposure limit, as a summarization of the individual dose intensities received, but not also of those dose intensities per the time length that those doses are applied of; i.e. again, but not also of how long those dose intensities were applied! A scam, and a prevalent sinister swindle, that purports for example, "your 50 mrem 2.0 second X-ray exposure annually, is as safe as your neighbor's cumulative five 5 mrem 0.01 second X-ray exposures and five 5 mrem 2.0 second X-ray exposures annually, because $5(5 \text{ mrem}) + 5(5 \text{ mrem}) = 50 \text{ mrem}$."

From the FDA's and ADA's 2012 revised DENTAL RADIOGRAPHIC EXAMINATIONS: RECOMMENDATIONS FOR PATIENT SELECTION AND LIMITING RADIATION EXPOSURE (<https://www.fda.gov/media/84818/download>), page 16: "The **maximum permissible annual dose** of ionizing radiation for health care workers is **50 millisieverts (mSv)** and the maximum permissible **lifetime dose is 10 mSv** multiplied by a person's age in years."

Quick question: Why is it legal for a USA State to sell 1 payoff lottery ticket in one million lottery tickets sold? Answer: Because one of those million lottery tickets sold, pays off from the lottery.

RADIATION QUANTITY UNITS

The rem -- i.e. the *roentgen equivalent in man* -- is an older unit of radiation dose, that often yet is used in the United States. Since **a rem is a large dose** of radiation, the millirem (mrem) unit, which equals one thousandth of a rem (.001rem), is used often for doses commonly encountered. Both the **Gray** and the **Sievert** each = 100 rem, and therefore they **are 100 times larger than the rem!**

1 Gy = 1 joule/kilogram = 100 rad, and is a physical quantity. 1 Gy is the deposit of a joule (for comparison, a joule is a quantity of energy, and 1 joule/coulomb = 1 Volt) of radiation energy per kg of matter or tissue.

1 Sv = 1 joule/kilogram = 100 rem, and is a biological effect unit. The sievert represents the equivalent biological effect of the deposit of a joule of radiation energy in a kilogram of human tissue. For gamma rays, X-rays, and beta radiation, the gray is numerically the same value when expressed in sieverts; *however for alpha particles* (alpha particles are positively charged helium nuclei, and aren't X-rays) one gray is equivalent to 20 sieverts, and accordingly a radiation weighting factor is applied. The gray is a unit of absorbed dose and has replaced the rad.

1 rad = 0.010 gray (Gy) = 0.010 sievert (Sv)

1 rem = 0.010 sievert (Sv) = 10 millisieverts (mSvs) = 1,000 mrem

1 mrem = 0.000,010 sievert (Sv) = 10 microsieveverts (μ Svs)

A third unit, previous of 1990 called a quality factor (QF), and now called a radiation weighting factor (WR), is required for measurement of biological effect of radiation. The QF = 1 for gamma, X, and most beta radiations. 1 rad = 1 rem for gamma rays, X-rays, and most beta radiation (X-rays are a longer wavelength form of gamma rays, beta radiation is electron emission).

The amount of energy absorbed per unit weight of an organ or tissue, is the absorbed dose, and is expressed in units of gray (Gy). When measuring occupational exposures, the total external and internal absorbed doses **multiplied** by a radiation weighting factor (WR), is important, and is equal to the dose in Sv.

Every X-ray that our body sustains, is a besiegement of our body that usually leaves our body at least transiently, though often permanently impaired of at least DNA (genetic blueprint) damage, and often per X-ray induced free radical generation, causes cross-linked denaturation of some of our body tissue protein. X-rays have often confused human genetics, into an ambiguous, ongoing self-reinforcing, increasing and ultimately fatal to a human, physical self-onslaught of a human that is termed "Cancer".

For much of human history, knives have served humanity as benign -- though hazardous -- survival tools, and unfortunately as weapons of murderous assault. When we entrust our dentists to use scalpel knives for our dental care, we accept hazards of possibly fatal infection and/or hemorrhagic dental surgery complications; however we then neither authorize those dentists to murderously assault us of hygienic negligence, nor to irrevocably sever us from our necessary vital life support murderously. Even one X-ray may irreversibly sever us from our vital life support, and because X-ray effects are both cumulative, and occur greatly per luck that becomes more likely to be bad per additional X-ray exposure; dental patients deserve to refuse dental X-rays, for the best dental care that is possible without X-rays.

Although I find the entire **U.S.A. Constitution 2nd Amendment statement** that: "A well regulated militia, being necessary to the security of a free State, the right of the people to keep and bear arms, shall not be infringed.", is better precisely stated as "A well regulated militia, *sometimes* being necessary to the security" . . . "infringed.", I certainly do not find that the 2nd Amendment endorses, supports, legalizes, witnesses, and/or grants right to the people -- including a well regulated public and/or private militia designated of any of the people -- that allows the people to deploy against humanity, manufacture, and/or possess excessively indiscriminate, excessively general public fatality-causing capable, excessively insecurity producing, excessively mortality-vulnerability producing, X-ray exposure-providable, cancer and/or biologic cell disruption producable, **X-ray gun** arsenals, that both greatly decrease the public welfare and security, and that do not compensate

humanity with adequately increased survival of humanity vs increased public mortality-vulnerability and greatly reduced public and private security.

Frankly, if you're like me, you're tired of guarding against greatly excessively life destroying, junk-making weapons. Budget after budget shows up with the latest opportunity for providing another excessively damaging, junk maker weapon, to expensively guard about. Some of our neighbors yet pursue the money-to-their-pocket quest, for the ultimate weapon that can't be misoperated against humanity, because that weapon only destroys what is too bad against humanity. Of humanity's reproduction-derived temperament, lifespan limitation inheritance, boredom, accident potential, limited memory recall, learning curve, available timely education, physical response time, civilized coordination, reliable mechanical equipment, fatigue, environmental support, etc. humanity very likely doesn't have sufficient virtue, to of and during several forthcoming human generations, perpetually nontrespasingly coexist, with greater than a population-proportionate small number of much excessively damaging junk maker weapons (such as a large fuel/air bomb).

"The market shall vary", and substantially so randomly, and thus humanity should at all times abstain, and maintain the safest distance possible, from being in an approach to nearly burdening itself with humanity-produced, excessive junk maker weapons-caused, greater total human population insecurity, than humanity has total or near total human population-saving virtue to greatly avoid; else humanity becomes less competently more an entity of luck, and concomitantly less self-determined.

The apparently since year 2005 introduced, lightweight (some weigh less than 5 lbs), 115V electric outlet rechargeable, 100 or greater rapid-fire X-ray exposure capacity, \$3500 personally portable and mobile, hand-held **dental X-ray gun**; should at the very most be outlawed worldwide from being manufactured, and from being possessed of any human agency; both because possession of the gun allows nontraceable misuse of the gun too readily, and defending against misuse of the gun is too difficult. The mobility of the X-ray gun creates more public hazard than it provides vital life support, compared to a fixed emplacement -- such as mobile van or permanently ground-affixed building mounted, X-ray cubicle-shielded and confined, dental X-ray unit.

At the very least, manufacture and possession of the immediately aforescribed, apparently since year 2005 introduced, portable hand-held dental X-ray gun, should be restricted to technical government agencies that must have an updated, short term current government password authorization for, and a government records-filed fingerprint of, the servicer/possessor/operator of the X-ray gun, in order for the X-ray gun to be assembled, serviced, possessed and/or operated; and each X-ray gun must have two or more unique, permanent, traceable serial numbers, that are registered in the government X-ray gun control database, two of which are permanently affixed nonreadably to the naked or assisted eye in the permanent computer chip architecture, and one of which is readably ingrained in both an interior and an exterior part of the X-ray gun. Thence to respectively service only or service and operate the X-ray gun, the possessor of the gun must activate the gun with a government database-registered fingerprint and a currently government-authorized and updated service only or service and operate password. The number of X-ray exposures from, and the time limit for producing X-ray exposures with the X-ray gun, may be password limited also.

Recall that dental X-ray photographs -- i.e. "**radiographs**" -- **are most dark where they are most X-ray exposed**, and most light where they are least X-ray exposed. Thus a brief "low" sievert unit quantity X-ray exposure, of a healthy natural tooth that is in front of a large enough, adequately sensitive radiograph film, and behind the cheek of the mouth where the tooth resides, will show a light and darker, white and shades of gray image of the tooth; while having much darker than the tooth image, images of soft tissues such as gum and cheek that are near the tooth.

I estimate that the minimum dental X-ray penetration, to allow dental X-rays to create a dark tooth root, tooth nerve pulp, and all tooth crevices radiographic image of a healthy natural tooth, while overcoming all or most X-ray absorption that occurs in any tissues intervening between the X-ray source and the tooth to be X-rayed, and while preventing the dental X-rays from overdarkening the tooth's solid mineral area image, is set of both the totally solid lateral mineral cross-section of the tooth, and all tissue – including bone, gum, cheek, etc. -- that intervenes between the tooth and the X-ray source.

How many people can totally armor themselves -- including their eyes -- 24/7 with the equivalence of a solid mineral cross-section of a molar tooth and associated oral tissue, so as to safely avoid being tracelessly fatally – per cancer induction – ambushed from afar per a mobile X-ray gun, that is publicly, privately, and/or governmentally purchasable, and saleable as contraband?

People have done many wasteful and/or hazardous and/or impractical and/or superfluous and/or frivolous and/or capricious things, per investing themselves; oftentimes out of inconvenience for other personal investment, and oftentimes out of lack of both self-control and sufficient help to substitute for self-control deficiency. Throughout thousands of years of human-recorded history, a human quest for status, including legitimacy, right of way, prestige, self-sufficiency, etc., has of a variety of circumstances, including frustration, curiosity, futility, ignorance, deception, oversimplification, extortion, self-observed-only discovery, privacy, etc. corruptly sometimes found trespass as opportunity for status accomplishment; for example, successful theft to provide the thief as a community reference with experience of theft accomplished. Thus many tools have been assayed for the tools practicality to cause nontraceable "perfect crime" of. Tools such as a heavy icicle bludgeon on a stairwell, to a fatal electric shock in a bathtub, to an "accidental" drowning in a bathtub.

Generally estimated and considered true, is that dental X-ray dosage passage through a living human tissue, if prolonged for a comparatively short interval that is longer of a day than the briefest exposure that will yield an adequately detailed radiographic image of the best image-production equipment, is rapidly substantially damaging and/or fatal to the tissue, because the **minimum** dental X-ray dosage for dental image production greatly **depends on** the oral cavity -- including soft and hard tissues and teeth -- **passage and blockage of the dental X-ray dose, so that the dental X-ray dose to the oral cavity area is substantial indeed** (trying to display nerve, infection, and cavities within teeth)! (Corny and dangerous example of infrared radiation tolerance: I wet my finger and as briefly as possible, touched the approximately 225°F hot electric resistor range stove cooking element. Result, phhtt, a dry warm finger for being fast, rather than a charred dead finger for being slow) Generally recognized as safe (GRAS) annual X-ray dosage in the whole body is **no** X-ray annually. A tooth bitewing X-ray dosage is commonly listed as 4 – 5 microSieverts (μSvs) of a 4 bitewing exposure, so does that indicate 4-5 μSv for each bitewing or for all 4 together? Since the personally mobile dental X-ray gun can X-ray irradiate humans from afar, through most closed windows, closed doors, and solid walls; nontraceable criminal fatal X-ray exposure is possible, and abundantly likely.

Beware of the "absorption" interpretation of tooth X-ray as follows: "Since the X-rays that are absorbed are the only tissue damaging X-rays, apply enough X-rays from outside a cheek to the lateral mineral side of a molar tooth, so that through the nerve pulp in the hollow central nerve pulp chamber of the tooth, passes X-rays, that then pass through the opposite lateral mineral side of the tooth, and darken the radiograph film, proving -- like if you had X-rayed a tongue only, and thereof derived a greatly darkened radiograph film -- that because you see little or no cheek image, and do see nerve pulp image though there is no darkening of the solid mineral tooth image around the hollow central nerve pulp chamber of the tooth, that X-rays only encountered cheek or nerve pulp soft tissue **scantly**, and the only cancer that X-rays mostly can cause, is tooth mineral(?) and bone mineral(?) cancer, because those minerals absorb X-rays most."

For another perspective, let's consider an X-ray absorbance experiment. Hold your tongue outside of your lips as far as you can, and we'll place our best F-speed (fastest) radiograph photo film under your tongue, while we X-ray your tongue from the top of your tongue. Zap. Now what developed on the radiograph film? Is the film mostly very dark because most of the X-rays "never encountered and/or never were absorbed" of your tongue; rather those X-rays "missed" your tongue entirely -- like a tooth X-ray through your cheek "doesn't show much lightness" of your cheek -- and greatly darkened the radiograph film? Can you accept that as evidence that most of the continuous field of X-ray dose that went through your tongue, didn't interact, such as cause free radical production of and transient ionization with, or disrupt your tongue tissue, because the radiograph film wouldn't have been darkened so (it would have remained light, like it was to begin with), if many X-rays had interacted of and/or disrupted your tongue tissue??

Do you want to try the experiment for detector sensitivity, with an electronic sensor rather than a chemical radiograph film?

From another perspective, per dental X-ray may we receive a "light" X-ray dose, that is mostly absorbed in our cheek, gum, and bone, and that gives a light or blank image on the X-ray sensor (film or electronic detector), and that doesn't pass enough X-ray to cause other than a small amount of X-ray darkening of the X-ray sensor, unless more X-rays -- such as a longer sustained or greater initial X-ray dose -- are applied to both exceed the cheek tissue absorbance of X-ray, and to allow X-ray access to the tooth, so that cavities in the tooth may pass X-rays to the X-ray sensor, that darken the sensor?

Are you aware that your body uses Vitamin C and other antioxidants to stop free radical-initiated chain reactions, and that your body has a limited biochemical ability to reverse oxidations of, and restore your tissue? Good luck with your body recognizing, catching, and destroying any cancer cells formed from X-ray exposure, also. (**Hint:** I find dosing per ingesting Ecklonia cava (a highly anti-oxidizing seaweed), 250mg - 500mg of vitamin C, and other natural antioxidants 90 minutes before receiving a diagnostic X-ray, is advisable for reducing X-ray exposure risk of the diagnostic X-ray.)

Another radiation ruse to avoid, is: "Since most on-earth-surface and atmospheric environment, non-cosmic ray, non-ternary fission nuclear decay alpha radiation particles -- the composition of each being an emitted 2+ ionized helium nucleus, that is composed of only 2 protons and 2 neutrons, and has an atomic mass of 4 -- cause greater tissue damage than gamma radiation, because gamma radiation is a short wavelength flow of near-massless photons; X-rays, being a longer wavelength form of gamma rays than other gamma, aren't as hazardous to the human body as alpha radiation."

The deception: On-earth-surface and atmospheric environment, non-cosmic ray, non-ternary fission nuclear decay alpha particles, being large, are low penetrating and can be stopped by a piece of paper or the dead tissue layers of a skin callus, though I estimate eye corneal tissue may be more vulnerable to alpha radiation particle-caused damage, than is intact skin. Thus an abundance of some alpha radiation, is much safe to human health on the outside of a human's intact body, though substantially hazardous -- per skin cuts, inhalation, ingestion, etc -- within the human body. For example, alpha radiation has been used against prostate cancer. However, gamma radiation is highly energetic, highly ionizing of tissue, and highly penetrating of all earth matter.

How often and where does humanity encounter non-ternary fission, nuclear decay alpha radiation? Alpha radiation results from a variety of elements' nuclear decays, including of radon gas and some heavy metals, including Americium -- that is used in some smoke detectors --, radium, uranium, and thorium. Alpha decay requires a minimum size nucleus to support it, with beryllium-8 (element 4),

and the lightest tellurium (element 52) nuclides of atomic masses between 104 and 109, being the smallest elements that I've found reported discovered to support alpha particle production decay.

Thus both because possession of either a battery-powered or a corded electric outlet powered, either single or multiple X-ray exposure capacity, personally portable and mobile, lightweight hand-held dental X-ray gun, allows nontraceable gross misuse – such as unobserved long range through solid physical walls, physical assault – with and per the gun too readily, and defending against misuse of the government nonregulated gun is too difficult in many situations; **herewith now I vote** that both battery-powered and corded electric outlet powered, either single or multiple X-ray exposure capacity, personally portable and mobile, lightweight hand-held dental X-ray guns, **should be outlawed as not saleable legally to the public**, and should be limited to national government ownership only, and should require a limited-to-short-time, updatable government password, that limits operation of the guns to no greater than 20 minutes of noncontinuous dental grade X-ray discharge opportunity, and should each have a fingerprint-transmission and registration lens manual button constituent physical part of the gun, and should require that for any dental X-ray gun to discharge X-rays, a fingerprint of the operator of the X-ray gun, must first be transmitted to, registered in, and receive adequate security clearance per a government X-ray guns database, and then to unlock and to discharge the X-ray gun, the finger that has the adequate government security clearance, government registered fingerprint, must press on a fingerprint recognition lens activation button part of the gun, that is a different button than is the fingerprint-transmission and registration lens manual button part of the gun, so that the X-ray gun recognizes the fingerprint as the fingerprint that has adequate security clearance registration for activation of the X-ray gun, and the dental X-ray gun then, while the fingerprint finger continues to press the fingerprint recognition lens activation button, unlocks and may then per pressing a manual X-ray discharge trigger constituent physical part of the gun --- that is neither the fingerprint-transmission and registration lens manual button constituent physical part of the gun, nor is the fingerprint recognition lens activation button part of the gun --- be discharged per an operator selected, X-ray gun factory limited, dental exposure interval of operator selected, X-ray gun factory limited, dental grade X-rays; and should be connected to a 24/7 government database that monitors the operation of the X-ray guns, including the number, intensity, duration, excessive white and excessive black image quality exposure result, and identification of X-rayed subject's of X-ray discharges from the guns; and in the U.S.A., should be borrowable and leasable from the U.S.A. federal government, only per government approved security clearance.

The personally portable and mobile, lightweight hand-held dental X-ray guns, are not free-standing dental care that even near-adequately supplements for necessary or optionally enhancing dental service support tools, including stationary emplacement X-ray guns in X-ray blocking cubicles, variable speed dental drills, oral irrigation and vacuum equipment, fixed lighting, X-Ray backstop shielding, refrigerated dental pharmaceuticals, 24/7 internet "cloud" connection, computer recording and display devices, adjustable dental chair, sanitized dental service enclosures, sanitizing autoclave equipment, on site cap fabrication, onsite 24/7 electric power supply, etc. that a mobile dental van vehicle can provide and maintain; so like shoulder-launched anti-vehicle missiles, the personally portable and mobile, lightweight hand-held dental X-ray guns provide more community hazard to the general public than they prevent.

(Incidentally, commencing longer than a year ago, greater than five different dental practices have refused to cap two of my teeth and composite-fill a wisdom tooth, because being over 70 years old, I have already received an excessive quantity of dental X-rays, in particular, the larger X-ray doses of 55 years ago, and so I have refused additional dental X-rays. And do I know the dental professions' "similar to superstition" approximations about wisdom teeth?! Like the medical professions' tonsils approximations, you know the story from the "feeling": "For adequate respect from my neighbor, I need to impose -- even trespass -- towards my neighbor".)

Dental ethics are recurrently deficient **mostly** of excessive X-ray demand, and perhaps second mostly of either high profit charge for some dental services, or of preemptive to third molar (i.e. "wisdom tooth") above gum appearance, premature third molar extraction. Medical practice ethics are deficient in **several ways**, including: Beneficial new drug public availability, insufficient off-label prescribing because of insufficient malpractice insurance availability, lack of nutritional substitution for drug therapy prescription alternative recommendation, lack of over-the-counter (OTC) antibiotic availability; lack of multi-valent drug prescribing; lack of medical therapeutic approval for medically therapeutic biochemicals; no national government of any country in the world approval of Glycoprotein 160 (GP 160), GP 120, or/and GP 41 vaccine(s) against HIV; lack of OTC disodium ethylene diamine tetraacetic acid -- a.k.a. EDTA disodium -- therapy substitution for atherosclerosis surgery; private for-excessive-profit enterprise financial cost of hospitalization and medical care; and likely sometimes, time-dependent anesthesia safety. (**Hint:** Try an annually updated, court-appealable, government-mandated medical services and some medical commodities, limited maximum financial fee schedule, for medical expense fairness; such as a Federal Annual Medical Maximum Fee Schedule -- **FAMMFS** -- for the Veterans Administration Hospital system and/or the Medicare system and/or the Medicaid system.

FAMMFS could be augmented with a federal government room and board -- a.k.a. a per diem or stipend -- and college tuition contract allowance program, that may be similar to a U.S. Navy dentistry training program, and that provides financing to eligible baccalaureate degree recipient medical students, for four years of medical school training, with the provision that upon graduating from medical school and completing their internship as medical doctors, the federally financed medical doctors must then practice medicine per federal government permission, per the FAMMFS wage scale, at Veterans Administration hospitals and medical clinics and/or at U.S.A. hospitals and medical clinics, for four years, or pay back to the federal government at flexible interest during a four year period, the federal medical school financing, including the room and board financing, that the medical doctors received.) Disease has been supported as a reason for right of way, including trespass-based right of way, such as monopolistic excessive medical fees.

From ADA X-Rays/Radiographs (<https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/x-rays-radiographs>): "Hand-held units, which facilitate imaging when patients are sedated or anesthetized, were approved by the FDA in July 2005. The FDA advises dentists¹⁹ to use devices legally marketed for this purpose, and to check to see that they are properly labeled to indicate that this is the case. Studies of legally marketed devices found that radiation exposure" (**to operators**) "was within safety limits^{19, 20} and, in fact, were significantly less than for wall-mounted systems (0.28 mSv vs. 7.86 mSv)." (holding the X-ray gun resulted in less operator exposure than the operator stepping behind a wall shield to the X-ray nozzle? Oh wow, what operation, facilities, and studies!). "The studies concluded that there was, therefore, no need for additional shielding." "Cone-beam computed tomography (CBCT), introduced in the U.S. in 2001, produces a three-dimensional image of maxillofacial structures, with uses in oral surgery, orthodontics, and endodontics. The scanner rotates around the patient's head producing up to 600 images, which are assembled or reconstructed by scanning software. Analogous to a 2-D image comprised of pixels, CBCT creates a 3-D image comprised of voxels. A **drawback** of CBCT imaging is the **radiation exposure it requires**. CBCT in dentistry is the major single contributor of diagnostic radiation, and recent publications have expressed concerns regarding the safety of this imaging procedure in children."

From National Center for Biotechnology Information National Library of Medicine (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4846146/>), a set of three paragraph quotes: { "Dental radiographs are an integral part of everyday clinical dentistry. Dental X-ray equipment are commonly fixed (wall, floor or ceiling mounted) or mobile (tripod mounted on a set of wheels). A fairly new concept is the handheld, battery operated, portable X-ray unit which has come on the market. In the past, the majority of handheld, portable X-ray units are modified machines, for use in

military medicine, humanitarian missions" (bold hype emphasis mine, they aren't vitally practical enough for the criminal vulnerability that they provide) "and training exercises.^{1,2} They are also used in archaeological excavation sites, crime scene/disaster areas for forensic dentistry imaging and veterinary applications. The advantages of these devices extend to dental patients who are homebound or institutionalized with limited mobility and patients undergoing general anaesthesia,^{3–5} where conventional fixed or mobile X-ray units are not easily available."

"The regulations and the recommended radiation exposure dose limits are not the same worldwide. In the UK, the Ionizing Radiation Regulations 1999 suggests an annual whole-body effective dose constraint of 0.3 mSv for the general public and 1 mSv for the operator, who is directly engaged with dental radiography.⁶ Public Health England has calculated that, on average, the public is exposed to about 2.7 mSv of radiation a year.¹⁷ The annual dose limits for non-classified workers, which include dentists and radiographers, are 6-mSv whole-body effective dose and 150-mSv" (!) "equivalent dose to the extremities and eyes."

"In conclusion, there is a negligible increase in operator exposure levels using handheld X-ray devices which remain well below the recommended levels of operators' exposure. However, handheld X-ray machines should not automatically replace wall-mounted machines in a dental practice as they are consistent with a recorded dose to some parts of the body which otherwise should be nil. They do, however, remain **extremely useful**" (bold hype emphasis mine, they aren't vitally practical enough for the criminal vulnerability that they provide) "in other environments such as domiciliary visits, surgical theatres and forensic dentistry."}

From (<https://research.csu.edu.au/integrity-ethics-compliance/radiation/forms-templates-proformas/radiation-life/ionising/how-much>) "Between 2 and 10 sieverts in a short-term dose would cause severe radiation sickness with increasing likelihood that this would be **fatal**. 1,000 mSv (1 sievert) In a short term dose is about the threshold for causing immediate radiation sickness in a person of average physical attributes, but would be unlikely to cause death. Above 1000 mSv, severity of illness increases with dose. If doses greater than 1000 mSv occur over a long period they are less likely to have early health effects but they create a definite risk that cancer will develop many years later."

REFERENCE:

Description of Bremsstrahlung, Compton, and Coherent Scattering Radiation, and of Photoelectric Absorption

(Quoted from the internet http://www.columbia.edu/itc/hs/dental/sophs/material/production_xrays.pdf webpage, per Danny Hull's paraphrasing from *Production of X-rays and Interactions of X-rays with Matter* Pages 11-20.)

“The intensity of an x-ray beam is reduced by interaction with the matter it encounters. This attenuation results from interactions of individual photons in the beam with atoms in the absorber (patient).” Interaction of an incident (incoming) dental X-ray beam with a dental patient's mouth occurs per (1) Compton scattering, (2) photoelectric absorption, and (3) Coherent scattering.

(1) “**Compton** scattering occurs when a photon interacts with an outer orbital electron, which receives kinetic energy and recoils from the point of impact. The incident photon is then deflected by its interaction and is scattered from the site of the collision. As with photoelectric absorption, Compton scattering results in the loss of an electron and ionization of the absorbing atom. In a dental x-ray beam, approximately 62% of the photons undergo Compton scattering. Scattered photons travel in all directions.”

(2) “**Photoelectric** absorption occurs when an incident photon collides with an inner-shell electron in an atom of the absorbing medium resulting in **total absorption** and the incident photon ceases to exist. The electron is ejected from its shell, **resulting in ionization** and becomes a recoil electron (photoelectron). About 30% of photons absorbed from a dental x-ray beam are absorbed by the photoelectric process.

The recoil electrons ejected during photoelectric absorptions travel only a short distance in the absorber before they give up their energy. As a consequence, all the energy of incident photons that undergo photoelectric interaction is deposited in the patient. This is beneficial in producing high-quality radiographs, because no scattered radiation fogs the film, but potentially deleterious for patients because of increased radiation absorption.

An atom that has participated in photoelectric interaction is ionized. This electron deficiency (usually in the K shell) is instantly filled, usually by an L- or M- shell electron, with the release of characteristic radiation. The energies of characteristic photons are a function of the energy levels of various electron orbital levels and hence are characteristic of the target atoms. Whatever the orbit of the replacement electron, the characteristic photons generated are of such low-energy that they are absorbed within the patient and do not fog the film.

In both Photoelectric absorption and Compton scattering, electrons are ejected from their orbits in the absorbing material after interaction with x-ray photons. These secondary electrons give up their energy in the absorber by either of two processes: (1) collisional interaction with other electrons, resulting in ionization or excitation of the affected atom, and (2) radiative interactions, which produce bremsstrahlung radiation resulting in the emission of low-energy x-ray photons. Secondary electrons eventually dissipate all their energy, mostly as heat by collisional interaction, and come to rest.”

(3) “**Coherent** scattering (also know as **classical** scattering and **Thompson** Scattering) may occur when a low-energy incident photon passes near an outer electron of an atom (which has a low binding energy). The incident photon interacts with the electron in the outer-shell by causing it to vibrate momentarily at the same frequency as the incoming photon. The incident photon then ceases to exist. The vibration causes the electron to radiate energy in the form of another x-ray photon with the same frequency and energy as in the incident photon. In effect, the direction of the incident x-ray photon is altered.

Bremsstrahlung interactions, the primary source of x-ray photons from an x-ray tube, are produced by the sudden stopping, breaking or slowing of high-speed electrons at the target. This deceleration causes the electron to lose some kinetic energy, which is given off in the form of a photon. When the electrons from the filament strike the tungsten target, x-ray photons are created if they either hit a target nucleus directly (rare) or their path takes them close to the nucleus. If a high speed electron hits the nucleus of a target atom, all its kinetic energy is transformed into a single x-ray photon. (Total absorption has occurred).” }

Description of Rayleigh and of Compton Scattering Radiations, and of Photoelectric Effect (Absorption)

(Quoted from the internet <https://radiologykey.com/x-ray-imaging-fundamentals/> webpage, per Danny Hull's paraphrasing from *Radiology Key Fastest Radiology Insight Engine X-Ray Imaging: Fundamentals.*)

When radiation passes through matter, photons will penetrate, scatter, or be absorbed. X-ray interactions with matter include Rayleigh scattering, Compton scattering, photoelectric absorption, and pair production. Compton scattering and photoelectric absorption are the two most important interactions in diagnostic imaging. Rayleigh scattering, for the photon energies used in diagnostic x-ray imaging (30-100 keV diagnostic energy range) applications, is never more than a minor contributor compared to other interaction mechanisms. Pair production only occurs when photon energy is at least 1.02 MeV, which is not used by medical imaging.

“**Rayleigh scattering** (aka **coherent** or **classical** scattering) is an interaction in which the incident photon interacts with an electron of an atom and sets the total atom in the excited state.

The excited atom immediately radiates this energy as an emitting photon of the same energy but in a different direction. As a result, no ionization occurs and no electrons are ejected. The emitted photon undergoes a change in direction without a change in wavelength, and as the X-ray energy decreases, the scattering angle increases

In *medical imaging*, the image quality is negatively affected by the detection of scattered X-ray. However, in the energy range used in *diagnostic imaging* the probability of this type of interaction is low. For example, in soft tissues, Rayleigh scattering accounts for less than 5% of X-ray interaction above 70 keV, whereas it accounts for about 12% of interactions at 30 keV."

In **Compton scattering** the incident photon interacts with one of the atom's outer electrons, resulting in the scattered photon and the ejection of the electron.

Compton scattering results in the ionization of the atom and the energy of the incident photon is divided between the scattered photon and the ejected electron.

The ejected electron will lose its kinetic energy by excitation and ionization of atoms in the surrounding tissues, thereby contributing to the patient's radiation dose.

The Compton scattered photon may travel through the medium without further interactions or may undergo one or more subsequent interactions.

Compared to Rayleigh scattering, the relative probability of a Compton interaction increases as the incident photon energy increases. The probability of a Compton interaction is also dependent on the electron density. With the exception of hydrogen, the total number of electrons per unit mass is fairly constant in tissue; therefore, the probability of Compton scattering per unit mass is essentially independent of Z (i.e. the atomic number, an atom's quantity of protons. In an electrically neutral atom the atomic number also equals the atom's total quantity of electrons.), and the probability of Compton scattering per unit volume is approximately proportional to the density of the material. Hydrogenous materials have a higher probability of Compton scattering because the absence of neutrons in the hydrogen atom results in increased electron density.

Scattered X-rays provide no useful information for imaging and deteriorate image contrast and quality. Scattered X-rays also provide radiation hazards, particularly in fluoroscopy, in which radiation is scattered from the patient contributing to occupational radiation exposure.

In the **Photoelectric effect**, the incident photon collides with an atom transferring all of its energy to an electron, which is subsequently ejected from the atom. The energy of the ejected electron, called the photoelectron (E_e), is equal to the incident photon energy (E_0) minus the binding energy of the orbital electron (E_b).

The photoelectric effect plays an important role in soft-tissue imaging, for photon energies below 50 keV. Attenuation differences between tissues with slightly different atomic numbers are amplified by the **photoelectric absorption** process, which turns into image contrast. This differential absorption is exploited to improve image contrast in various applications. Examples include the selection of X-ray tube target material and fillers in mammography, and the use of phosphors containing rare earth elements (lanthanum and gadolinium) in intensifying screens.

The photoelectric process predominates when lower energy photons interact with high Z materials. Photoelectric absorption serves as the primary mode of interaction of diagnostic X-rays with high Z materials like screen phosphors, radiographic contrast media, and bone. Conversely, Compton scattering predominates at most diagnostic photon energies in materials of lower atomic numbers such as soft tissue and air.

Author's note: Years ago for a different essay, I researched the comma dash (,--) combination in a college library. The only discussion that I found for the comma dash combination, was in an approximately late 1940's grammar book. The book explained to the effect that formerly the comma dash combination had much been standard usage, and that then, however, the comma dash combination was increasingly becoming less common in current writing.

From *Punctuate It Right*/ 2nd ed. ©1993 Harry Shaw, "Actually, printers use three dashes: an *en dash* (which ... is represented by ... the length of a hyphen), the *em dash* (two hyphens), and the *2-em* (or sometimes longer) dash. The double dash, or long dash, is rarely needed in writing. The em dash (–) is what we usually have in mind when we talk about dashes in writing." ... "A final word about the dash: use it

sparingly. . . . Also, with rare exceptions, do not use it in combination with other marks. The combinations of colon-dash, semicolon-dash, comma-dash, and period-dash have largely disappeared in American usage. The dash is powerful enough to stand on its own.”

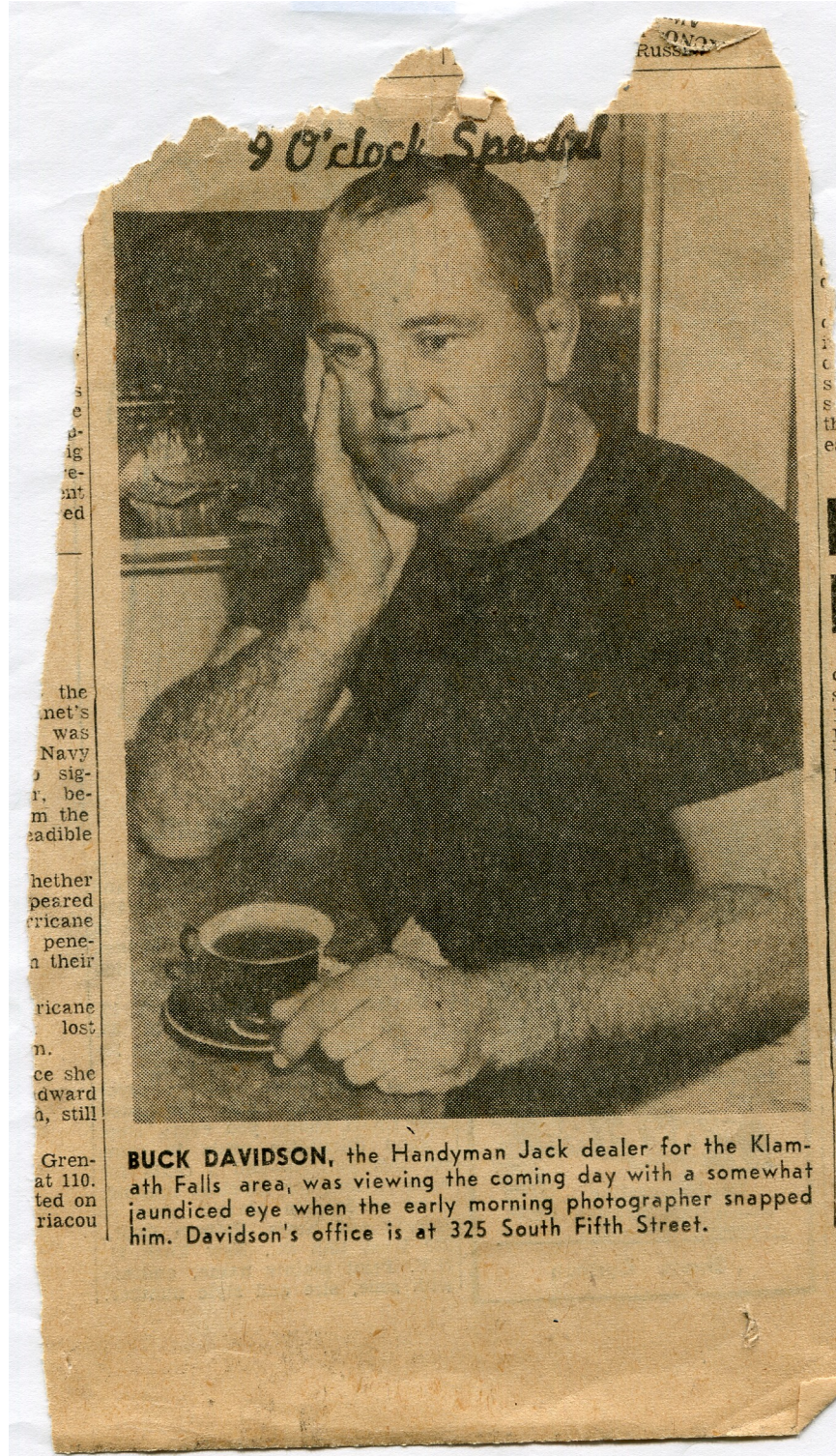
Though printers may deplore ink usage for the comma dash combination, herewith I find that the comma dash combination provides continuity for both comprehensive and intrinsic contextual review, of my proposed “*Dental Access Without X-rays*” “Dental Patients Bill of Rights” clause stipulations.

PICTURES FOLLOWING:

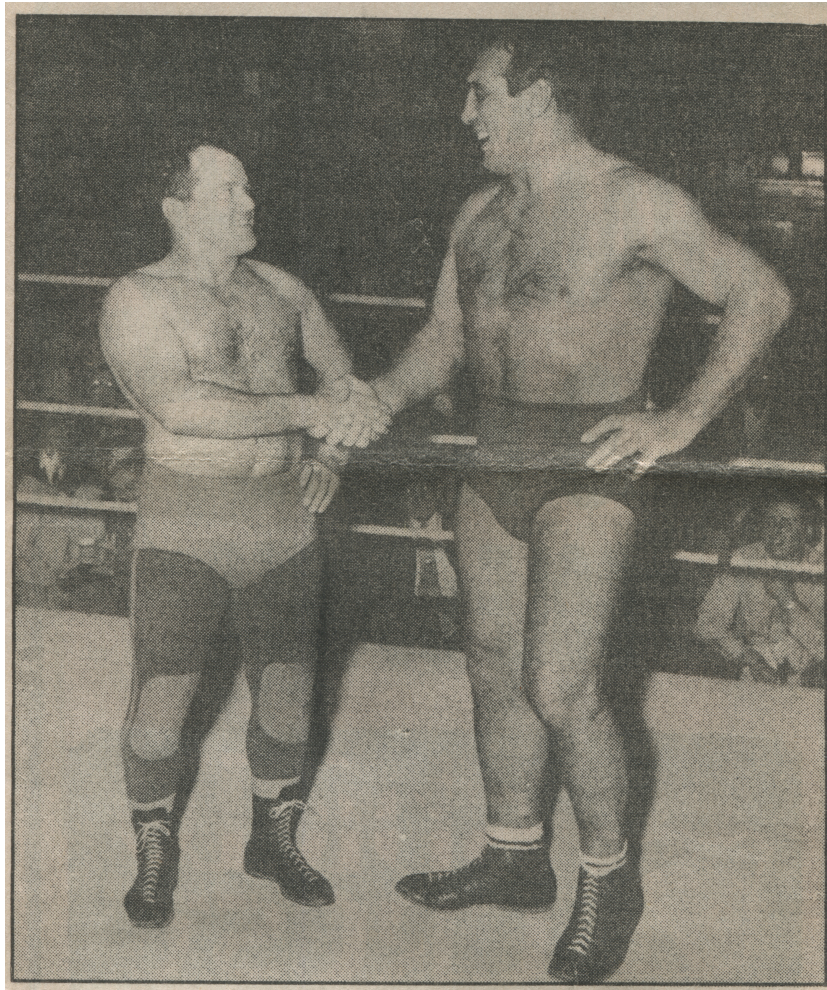
Immediately captioned here with this testimonial, is a picture of former television and motion picture



actor Don Pedro Coley, who was a student in the same high school that I was a student in, and who earned 6th place in a USA 1960 discus top 5 Olympic qualifying event, and who at 79 years of age, in 2017 is estimated to have died of dental X-ray induced throat cancer. Mr. Coley appeared in many television shows and some motion pictures, including Daniel Boone, Night Gallery, Ironside, Little House on the Prairie, Fantasy Island, Dukes of Hazzard, The A-Team, Beneath the Planet of the Apes, Herbie Rides Again, and Piranha.



Here's a picture of the deceased professional wrestler, my Grand-per-marriage Uncle Buck.



Here's a picture of Buck with a wrestling partner, Primo Carnera.

