

Conclusion in summary of findings health essay

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In summary, the EPA and WHO have stated the bad effects of chemicals such as dioxin and acrylamide which are found in burgers and its implications on human health. This brings an alarming warning to all of us consumers and we were previously oblivious to these chemicals. Now thanks to the EPA and WHO for their efforts and research, better understanding of these chemicals are delivered and obtained, consumers now are more aware and educated on the subject. For PAHs; The formation of reactive metabolites and the biologically effective dose are key to PAH toxicity. Diol epoxides—PAH intermediate metabolites—are mutagenic and affect normal cell replication when they react with DNA to form adducts. The location of epoxides in the bay region of a PAH predicts reactivity and mutagenicity. DNA adducts, as markers of exposure used in research, can be measured in various biologic media. The ability of CYP1A1 to biologically activate PAHs may be heritable and thus point to genetically susceptible populations at risk of PAH carcinogenesis. The most significant endpoint of PAH toxicity is cancer. Animal studies show that certain PAHs affect the hematopoietic, immune, reproductive, and neurologic systems and cause developmental effects.

Agency

PAH Compound(s)

Carcinogenic Classification

U. S. Department of Health and Human Services (HHS)benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(a, h)anthracene, andindeno(1, 2, 3-c, d)pyrene. Known animal carcinogensInternational Agency for Research on Cancer (IARC)benz(a)anthracene andbenzo(a)pyrene. Probably carcinogenic to humansbenzo(a)fluoranthene,

benzo(k)fluoranthene, and indeno(1, 2, 3-c, d)pyrene. Possibly carcinogenic to humans anthracene, benzo(g, h, i)perylene, benzo(e)pyrene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene. Not classifiable as to their carcinogenicity to humans U. S. Environmental Protection Agency (EPA) benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a, h)anthracene, and indeno(1, 2, 3-c, d)pyrene. Probable human carcinogens acenaphthylene, anthracene, benzo(g, h, i)perylene, fluoranthene, fluorene, phenanthrene, and pyrene. Not classifiable as to human carcinogenicity

Table 9: Shows the carcinogenic classifications of selected PAHs by specific agencies. Concerning trans fat in the United Kingdom, health concerns over trans fatty acids, as reported by the BBC (2007), major UK retailers - including Tesco, ASDA, Boots, Sainsbury's, the Co-op and Marks & Spencer - decided to stop using trans fatty acid in their own-brand products in January 2007. The BBC (2007) reported that this would affect around 5000 products sold by these supermarkets. The BBC (2007) reported that this represented a "scale and pace of change way beyond anything retailers or manufacturers are doing anywhere else in Europe". As the BBC (2007) report, many feel, however, despite this move, that foods should be clearly labeled so that people can make their own choices as to what they eat. As Tickell (2006) suggests, given the many demonstrated links between trans fatty acids and health problems, the Government should be doing more than simply labeling foods as containing trans fatty acids, particularly as many people don't read food labels and because many foods that people eat (such as unpackaged foods in restaurants) contain trans fatty acids, yet these foods are not subject to any labeling requirements. In addition, the use of synonyms for trans fatty

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acids on food labels is confusing for consumers, meaning that consumers could, unwittingly, be buying foods containing trans fatty acids even if they are trying to avoid consuming them. Trans fatty acids in other words trans fats made by hydrogenation process by heating liquid vegetable oils in the presence of hydrogen which means the liquid is saturated and converted into turned into solid making it more stable. This is for easier transportation hydrogenated oils can withstand longer and this is ideal for frying process of making foods. Trans fats are even worse than saturated fats because not only they increase LDL but they lower the level of HDL in the blood. The consumption of these saturated fats and most importantly Trans fatty acids causes problems in the cardiovascular system such as causing people to have heart diseases, stroke, diabetes, obesity and other related chronic condition. But what is worse is that in some places, mostly in developing countries people use partially hydrogenated oils because they are cheaper. But these oils are completely different than the oils that are used for cooking, they are mostly like trans-rich partially hydrogenated oils and they are really bad and the main causes of heart diseases. saturated fats boosts cholesterol level by increasing the harmful LDL and but also increases protective HDL. (In this cases unsaturated fats are much preferable because it lowers the harmful LDL and increases the protective, good HDL). LDL is low-density lipoproteins. They are responsible for carrying cholesterol from liver to the rest of the body. When going through the cells in the body, the cell might attach themselves to it and extract fat and cholesterol. So that is why they are referred to as bad and harmful lipoproteins which are detrimental to the human system overall.

Implications of findings and future suggestions

Because dioxin compounds are found in fatty acids of the patty, trimming fat from meat may decrease the exposure to dioxin compounds. Also, a balanced diet will help to avoid excessive exposure from a single source.

This is a long-term strategy to reduce body burdens. We as aware consumers have the power of reduce our intake levels of dioxin and we should exercise it. Also, as a side note, here are six steps to avoid dioxin in your food: 🍽️ Eat less animal fat - buy lean meats and poultry - and cut off the fat before cooking. 🍽️ Eat fat free dairy products - or as low as you can - such as milk, cheese, and yogurt. 🍽️ Fish is a healthy food choice - but fish are also affected, so avoid fatty fish (such as salmon) and cut the fat off before cooking and eating. 🍽️ Purchase food products that have been grain or grass fed. 🍽️ Eat more fruits and vegetables. As for acrylamide found in breads, The FDA also does not recommend that you avoid particular foods because of dioxins. The EPA's 2003 draft dioxin reassessment indicates that following the science-based advice in the Dietary Guidelines for Americans will also likely help individuals lower their risk of exposure to dioxins. These guidelines include the recommendations to choose a variety of meat and dairy products that are lean, low fat, or fat free and to increase consumption of fruits, vegetables, and whole grain products. Meat, milk, and fish are important sources of nutrients for the American public and an appropriate part of a balanced diet. Each of these foods provides high quality protein in the diet. Lean meat includes meats that are naturally lower in fat, and meat where visible fat has been trimmed. Reducing the amount of butter or lard used in the preparation of foods and cooking methods that reduce fat may also lower the risk. As for acrylamide, consumption, it is suggested that <https://assignbuster.com/conclusion-in-summary-of-findings-health-essay/>

burger buns which are not cooked on a hot pan is preferred over pan-cooked buns. This reduces the intake acrylamide in the diet from burgers. As elsewhere, consumption of high-heat-cooked starchy foods like French fries, potato chips and cereals are to be reduce as these foods contain high levels of acrylamide. Acrylamide ingestion is mostly from food and cigarettes, and unlikely sources included is water. This is because polyacrylamide is used as a one of a variety of cleaning agents, combining with solid material making it easier to filter/remove unwanted substances from water. For future research suggestion, although studies in rodent models suggest that acrylamide is a potential carcinogen, additional epidemiological cohort studies are needed to help determine any effects of dietary acrylamide intake on human cancer risk. It is also important to determine how acrylamide is formed during the cooking process Biospecimen collections in cohort studies will provide an opportunity to avoid the limitations of interview-based dietary assessments by examining biomarkers of exposure to acrylamide and its metabolites in relation to the subsequent risk of cancer. In case of PAH from barbecue, The presence of PAH was studied in several samples of meat and fish that were grilled on two geometrically different gas barbecues. In contrast to a horizontal barbecue, the vertical barbecue prevented fat from dripping onto the heat source, and the PAH level were very low and 10-30 times lower than with the horizontal system (Saint-Aubert et al., 1992). This information could serve as a method to reduce PAH levels from barbecuing. As well, the type of wood used can also determine the levels of PAH. Regarding the generation of liquid smoke flavorings, it has been showed that poplar wood generated the highest number and concentration of both total and carcinogenic PAH, while oak, cherry tree, beech samples were similarly less effective. Hardwoods

instead of softwoods have also been recommended, indeed, dry woods generate more PAH because of their higher smoke generation temperature (Guillen et al., 2000). All this information shows that certain conditions plays a very big role in determining PAH levels. Simple practices are known to result in a significantly reduced contamination of foods by PAH (Lijinsky and Ross, 1967; Lijinsky, 1991; Knize et al., 1999) as well as by other undesirable contaminants. This may include selectingA16 preferentially lean meat and fishes, avoiding contact of foods with flames for barbecuing, using less fat for grilling, and, in general, cooking at lower temperature for a longer time. Broiling (heat source above) instead of grilling can significantly reduce the levels of PAH. Actually the fat should not drip down onto an open flame sending up a column of smoke that coats the food with PAH. The use of medium to low heat, and placement of the meat further from the heat source, can greatly reduce formation of PAH. The intensity of flavor is not necessarily associated with the depth of the brown color of grilled foods. It is therefore needless to overcook the food to get the flavour. However, cooking must always remains effective as regards inactivation of any possible contaminating bacteria or endogenous toxins.