TOPIC #9: Are cell phones safe?

People who argue that cell phones are safe to use claim there is no increased risk of brain tumors, but opponents argue that cell phones haven't been around long enough for evidence to prove that they are indeed safe.

In your response, analyze the two articles taken from www.procon.org to determine which position is best supported. Use relevant and specific evidence from both articles to support your response.

Article 1

(1) Numerous peer-reviewed students have found that cell phone use is not associated with an increased risk of brain tumors. An October 20, 2011 study of 358,403 Danish citizens – the largest study of its kind to date – concluded that "there was no association between tumors of the central nervous system or brain and long-term (10 years +) use of mobile phones." A July 27, 2011 study found that there was no association between cell phone use and brain tumor risks among children and adolescents. Numerous other studies published from 2001 – 2013 have similarly concluded that there is no association between cell phone use and the development of brain tumors.

(2) Radiofrequency radiation from cell phones is non-ionizing and is not powerful enough to cause cancer. Ionizing radiation, including x-rays and ultraviolet light, produces molecules called ions that have either too many or too few electrons. Ions are known to damage DNA and cause cancer. Cell phone radiation, like radio, TV, and visible light radiation, is non-ionizing and lacks sufficient energy to add or remove electrons from molecules, and therefore it cannot ionize and cause cancer. According to the authors of a 2005 peer-reviewed study of 3.7 million Swedish residents, a "biologic mechanism that could explain any possible carcinogenic effect from radiofrequency radiation has not been identified."

(3) Cell phone radiation levels are tested and certified to remain within levels deemed safe by the Federal Communications Commission (FCC). The FCC sets the maximum amount of thermal radiation (heat) that cell phones are permitted to emit. This limit is measured as the amount of radiation absorbed by a user and is known as the specific absorption rate (SAR). In 1996 the SAR for cell phone radiation was set at a maximum of 1.6 watts of energy absorbed per kilogram of body weight. Manufacturers of cell phones must test their products to ensure that they meet this standard. Random tests of phones on the market by FCC scientists further ensure that radiation levels meet FCC guidelines.

Article 2

(1) Numerous peer-reviewed studies have shown an association between cell phone use and the development of brain tumors. According to a March 2008 meta-analysis of cell phone studies, there is a "consistent pattern" connecting cell phone use and an increased risk of developing glioma, a type of brain tumor. A March 31, 2009 study found that long-term cell phone use (10 years +) "approximately doubles the risk" of being diagnosed with glioma on the same side of the head where the cell phone is held. In April 2013 another study of Swedish cell phone users also found an association between cell phone use and the development of glioma and acoustic neuroma – a benign tumor formation on the nerve near the ear. Other studies published from 2005 – 2013 have similarly concluded that there is an association between cell phone use and increased risk of developing brain and head tumors.

(2) The International Agency for Research on Cancer (IARC) has classified cell phone radiation as a possible carcinogen. On May 31, 2011, the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) issued a press release announcing it had added cell phone radiation to its list of physical agents that are "possibly carcinogenic to humans" (group 2B agents). The classification was made after a working group of 31 scientists completed a review of previously published studies and found "limited evidence of carcinogenicity" from the radiofrequency electromagnetic fields emitted by wireless phones, radio, television, and radar.

(3) Due to the relatively recent adoption of cell phones, the long-term safety of the technology cannot be determined conclusively and caution is warranted. Research on glioma brain tumors shows the average latency period is 20 – 30 years. Although cell phones were introduced in 1983, it was not until 2003 that over 50% of the US population had a wireless subscription, so the 20-year mark for mass cell phone use has not yet been reached. The May 17, 2010 INTERPHONE study, the largest study ever to examine possible links between cell phones and brain tumors, concluded that overall there was "no increase in risk" for glioma or meningioma brain tumors, but the average user in the study had less than eight years of cell phone exposure. In his review of the INTERPHONE study results, Dr. Rodolfo Saracci stated that "none of today's established carcinogens, including tobacco, could have been firmly identified as increasing risk in the first 10 years or so since first exposure."