Game Changer?

December 21, 2010

It's only a short letter buried in the back pages of a journal, but it could change the entire cell phone–cancer controversy.

A group at Hebrew University in Jerusalem has reported a sharp increase in the incidence of parotid gland tumors in Israel over the last 30 years. Rakefet Czerninski, Avi Zini and Harold Sgan-Cohen found that these tumors have quadrupled since 1970, "with the steepest increase" after 2001 (see plot below). Their letter appears in the January 2011 issue of *Epidemiology;* it's a free download. They are with the Hadassah School of Dental Medicine at the university.

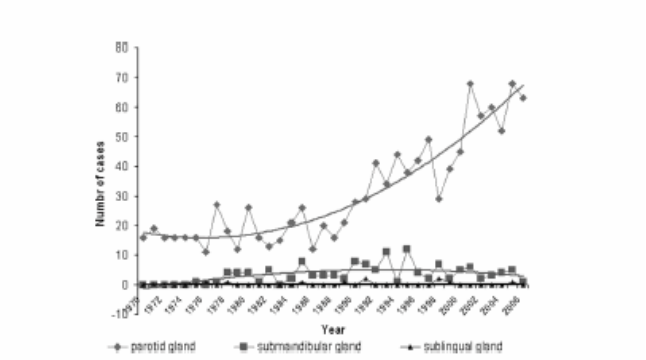


FIGURE. For trend analyses, we added regression lines and calculated R^2 values. Parotid gland cancer: $R^2 = 0.83$; Submandibular gland cancer: $R^2 = 0.36$; Sublingual gland cancer: $R^2 = 0.02$.

Source: Epidemiology, 22, *p.130, January 2011*

The reason this is so important is that three years ago Siegal Sadetzki, the leader of the Israeli Interphone study group, reported that heavy users of cell phones "showed significantly elevated risks" of parotid gland tumors; the trend was apparent as early as after only five years of use.

Sadetzki's results and those of others pointing to increases in the risk of developing brain tumors or acoustic neuromas, have met

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with widespread skepticism because, critics say, no one has seen an uptick of the these tumors in the general population. Now, the team in Jerusalem has seen exactly that —though no one is claiming to have shown a causal association. Even so, the new finding is guaranteed to rekindle concerns about the possible link between cell phones and cancer.

The parotid gland is a type of salivary gland —the one that is closest to the cheek next to where most people hold their cell phones. Interestingly, the new Israeli data show no similar increases in the two other major types of salivary glands, the submandibular and sublingual glands that are further away from the phone (see bottom two plots in the figure above).

Earlier this year, another group at the Hebrew University's Hadassah School of Dental Medicine found that, in a test on human volunteers, the parotid gland adjacent to a cell phone had higher rates of saliva secretion, and lower protein secretion, than did the parotid gland on the other side of the face.

Israelis are well known as exceptionally heavy users of cell phones. There has been a sixfold increase in the number of minutes used from 1997 to 2006, according to Czerninski and coworkers.

cancer, parotid gland tumors, Rakefet Czerninski, Avi Zini, Harold Sgan-Cohen, Siegal Sadetzki, Interphone, cancer trends,

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