

Are Third Generation Cellphones with Lower Radiated Power More Carcinogenic

Than Second Generation Cellphones?--An Exploration of Recent Data

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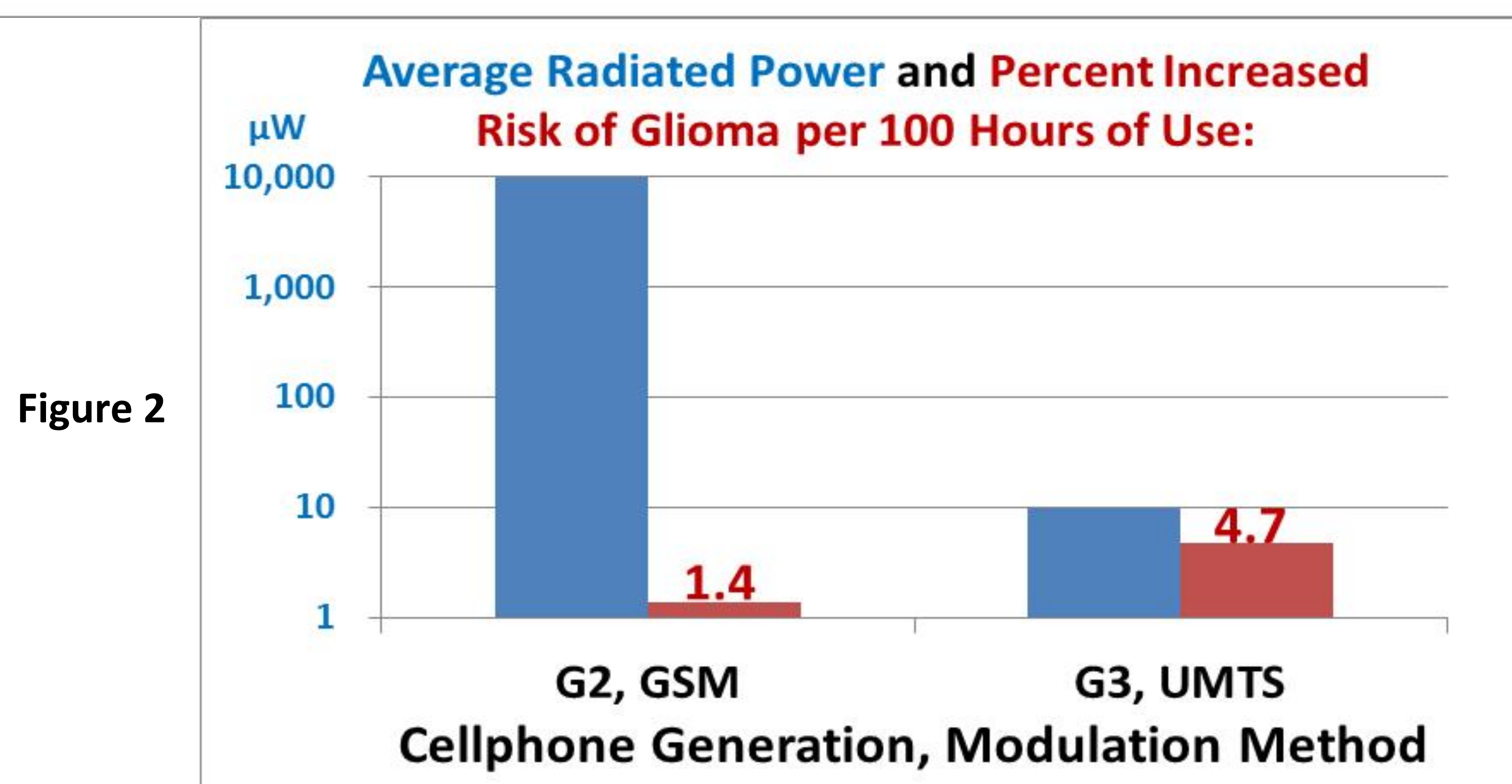
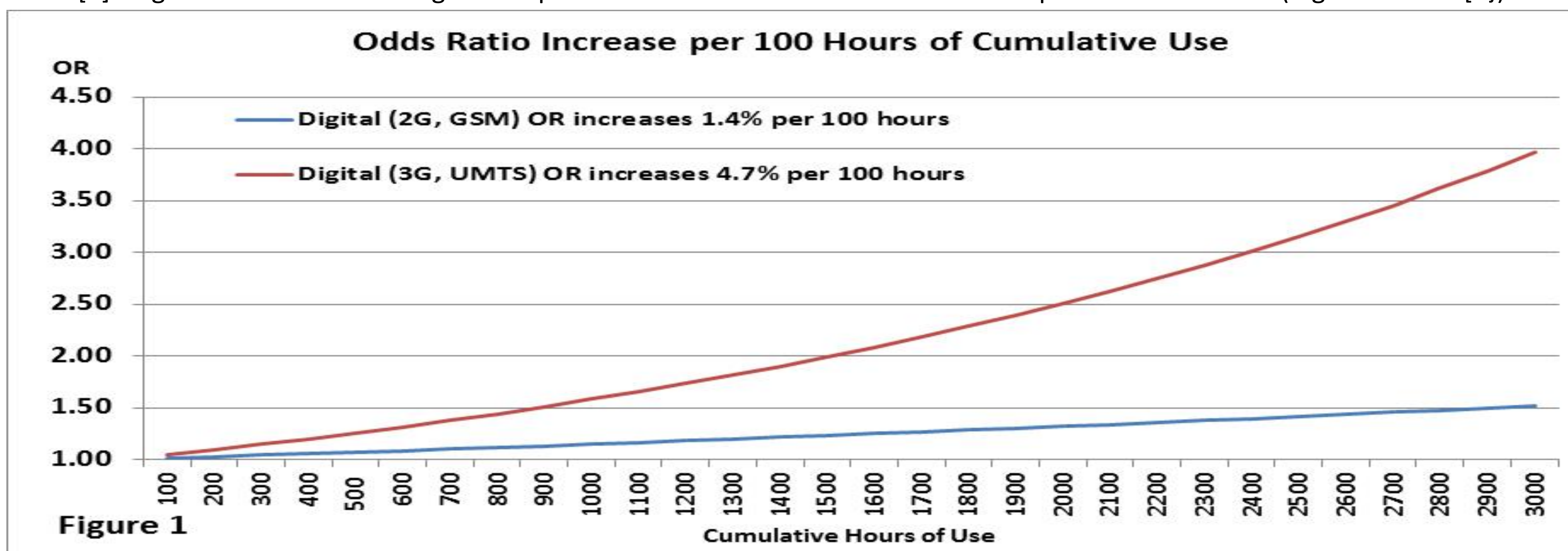
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In 2011, radio frequency radiation (RFR) was classified as a possible human carcinogen (Group 2B) based on epidemiological studies showing increased brain cancer risks [1]. Since that time, the epidemiological evidence for brain cancer has become even stronger suggesting classification of RF as a probable human carcinogen, Group 2A [2] or even Group 1, a human carcinogen [3]. Experimental studies have also suggested several molecular biological and cellular mechanisms which provide a basis for carcinogenicity [4]. Consistent with findings that UMTS signal may be more effective at inhibiting DNA repair [5, 6], risk of glioma is larger from UMTS compared to GSM signal [7].

Results

Counterintuitively, a higher glioma risk was observed for 3G, UMTS mobile phone use compared with 2G, GSM use [7]. Usage of 3G, UMTS phones increased the risk of glioma by 4.7% per 100 hours of cumulative use, OR 1.047, 95% CI=1.002-1.093; 2G, GSM mobile phones by 1.4%, OR 1.014, 95% CI=1.009-1.018. While these data were based on short latency and rather low numbers of exposed subjects, they are in line with the hypothesis that 3G, UMTS may have higher biological affects due to the wider frequency band, even though 3G, UMTS mobile phone's average radiated power is up to 3-orders of magnitude lower than 2G, GSM mobile phone's average radiated power (tens of μW vs tens of mW). Figure 1 illustrates risk with cumulative use, adapted from [7]. Figure 2 illustrates average rated power in combination with increased risk per 100 hour of use (log scale from [7]).



References

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