

**PROMOTION OF ORAL HEALTH FOR PREVENTION OF HEAD NECK CANCER:  
PIONEERING ROLES OF DR. SAMBA SIVA REDDY BATHULA****\*Rahul Ravilla**

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Dr. Samba Siva Reddy Bathula is an "out-of-the-box" thought leader and surgeon with specific focus on diseases of the ear, nose, throat (ENT), head and neck (HN).

Dr. Bathula has overwhelming interests in cancers of the head neck region, including oral cancers, thyroid cancers, cancer of the voice box and mechanisms and prevention of cancer.

Dr. Bathula has had a long and distinguished career in ENT and head and neck surgery.

Dr. Bathula received his initial surgical training in India and thereafter practiced in Jamaica and in the United States, after completing a Fellowship in Pediatric Otolaryngology from Children's Hospital of Michigan, Wayne State University. Currently, Dr. Bathula is a clinical academic Otolaryngology physician, focusing on adult and pediatric patients, in the ENT department of Detroit Medical Center and Assistant Professor at Michigan State University. He is well known for many surgical innovations, including appropriate timing for performing tracheostomy in neonates. This is a highly important issue, having direct impact on costs of care in the neonatal intensive care units. What sets Dr. Bathula apart in his career trajectory is his intense dedication to public health in prevention of cancers. Dr. Bathula is well-published and has comprehensive reviews on head neck cancer to his credit. Despite the many advances of cancer therapy, the diagnosis of cancer still portends a sense of omen. The only panacea is to direct endeavors for cancer prevention, which Dr. Bathula has taken a committed and unique pathway to influence large scale changes at a societal level. We obtained a glimpse into the philosophy of Dr. Bathula's advocacy.

**Q: You are known as a vocal proponent of oral health and advocate for avoiding to chew betelnut. How does this fit into your role as a ENT surgeon?**

SSRB: Betelnut and related products, including betel leaf, are popular mouth fresheners in many parts of the world. These include India and Indian communities residing in the United States. Betel leaf is popularly called 'pan'. 'Pan' and its products is popular in diverse

communities having access to ethnic grocer system even within the United States. Chewing tobacco is added to the preparation. The created quid alters the inner lining of the mouth. It increases fibrous tissue beneath the inner lining of the mouth (also called submucous fibrosis). Alarming, it may cause white patches inside the mouth, which is called leukoplakia. These are called premalignant condition. Unfortunately, this can progress to oral cancer. A deep commitment is required to enhance public awareness and create a sense of "internal awakening". The oral cavity is the gateway to the airway and the food tube. It is highly important to create a stratum of public awareness on avoidance of these recognized cancer agents.

**Q: How do you think that your web campaign shall reach out to the mass?**

SSRB: In the current era of digital transformation, such technology shall easily reach to remote corners of the world. With tremendous reliance on mobile technology, prominent organizations like World Health Organization (WHO) are taking mHealth measures to remote corners of the world. Though certain amount of the accessibility of the information is stochastic and beyond control at the deliverers end, our search engine optimization enables wide global access. Such is true for enhancing awareness about vaping products and hookah bars, which are becoming increasingly popular in the United States. Avoidance of tobacco in all forms is not only promotional of oral health but has sure direct impact on lung health, prevention of lung cancer, and even prevention of other organ cancers like urinary bladder cancer and pancreatic cancer.

**Q: So, behavioral changes are important measures in the toolbox for cancer prevention?**

SSRB: Cancers of head neck region can develop due to underlying pathophysiology resulting from behavior-based insults. These diseases continue to cause significant mortality in the United States. How then should we encourage people to bring about "real" change

in their health behavior, such as quitting smoking (which has a huge impact beyond prevention of oral cancers). Under most circumstances, intervention efforts, especially those that involve health messages, rest on the straight forward assumption that people will be motivated to alter their behavior if they understand the costs posed by the unhealthy habits they are pursuing. Yet people are reluctant to recognize their own personal risks and are kind of overconfident about their invulnerability to health problems. Thus, unique advice needs to be tailor-designed to motivate action while avoiding people's tendency to minimize their own vulnerability. I have kept this in mind and incorporated it in design of my websites and medical applications, while advocating the various health portals to positively impact health behavior, especially in relation to imbibing healthy behaviors aimed at improving personal health and preventing ENT related cancers arising in the head-neck region.

**Q: Though people know that betelnut and tobacco can be harmful, why do the general population still inclined to derive pleasure from it?**

SSRB: A certain level of hedonic pleasure is derived from these products. An important motivational force for my approaches for influencing health behavior changes are derived by adaptation of strategies that aid the translation of intentions into action. Even when people decide to act to improve their health conditions, there is, on average, only a half chance that their intention will lead to action. What is responsible for this gap? In many cases, people fail to get started—an intention is forgotten, the opportunity to act dissolves, or confusion about how to act results in inaction. In addition, peoples' initial efforts can be dismantled—they fall prey to temptations, distractions, low willpower, peer-related abuse of health or intention fatigue. Furthermore, the benefits afforded by changes in health practices such as increased physical activity only accrue if the change in behavior is sustained over time; yet people have difficulty maintaining new patterns of behavior. What can be done to increase the likelihood that people's healthy choices develop into new habits? In daily life, people who can stick with healthy behaviors often rely on well-practiced habits that reliably meet their health goals. For example, they might structure their homes with a consistent set of visible cues that promote healthy choices (e.g., accessible fresh vegetables) and remove cues that trigger unhealthy ones (e.g., TVs in bedrooms or avoiding smoking in cars with children around). One approach to transforming new behaviors into strong habits involves facilitating the repetition of the desired behavior in a stable context. For example, when people perform a behavior repeatedly in the same context (e.g., taking a walk after dinner), over time it becomes sufficiently automated to be performed without thinking. My dissemination of information through the websites achieves these goals of enhancing positive health behavior and raising awareness about serious health conditions, including motivation for

cessation of smoking, by its reinforcement approaches. Although the number of repetitions necessary to inculcate a habit can vary considerably, once it is formed, people can rely on the well-practiced behavior to protect them when they are distracted, or if their willpower remains suboptimal. Appropriate health vigilance is needed to keep America safe. Smoking tobacco is always contributory to the amplification of these health problems of chronic diseases, including head neck cancer, and innovative ways of smoking cessation are needed to tackle these issues from a public health perspective.

**Q: How can mere visualization of a website and dwelling upon it for a few moments bring about changes in health behavior?**

SSRB: At first glance, these approaches and advocacy may all seem elementary and simplistic. However, these are deep rooted in principles of creating internal conscience regarding health, utilizing complex methods of persuasion and behavioral economics. Addiction to substances like pan and tobacco act at a level of interplay of alterations of neuropharmacology and social impact. The initial goal is to create a state of cognitive dissonance, even if transient. The message is conveyed in a mild fashion following the nudge theory of Richard Thaler and Cass Sunstein. This is also strengthened by Cialdini's principles of persuasion but tempered with a sense of autonomy of the individual.

**Q: Is there any specific methodology which can alter the influence when someone is visualizing the contents on the internet**

SSRB: The website design of the health education portals is motivated by the Persuasive Systems Design (PSD) strategies, based on well-established psychosociological models, which purposefully uses technology to influence behavior change (for example, create cognitive ripples during an act of eating a "Whataburger") and has widely been demonstrated to influence adherence to web-based interventions. The scientific principles used in the dissemination of behavioral health information enhances the perceived relevance of the information, and potentially its effects, without requiring the costly involvement of trained professionals, hence increasing potential for scalability and sustainability. We know it is very difficult to motivate an individual for positive health behavior.

**Q. You advocate about safe sexual practices to enhance oral health. How does that correlate?**

SSRB: Oral sexual practices have existed for centuries and have been well known in Indian culture, as is described in ancient textbooks and is also seen architectural depicts in Khajuraho. Though specific reasons are not known, likely monogamy was responsible for prevention of florid oral viral infections. However, in the context of modern-day healthcare, practice of polygamy and MSM (Men sex with Men) have been responsible for changes of the infectious

strains of the culprit viruses. For example, earlier it was anticipated that while type I Herpes Simplex Virus (HSV) had a trajectory of oral spread and infection, the type II Herpes Simplex Virus (HSV) was largely localized to genital area. However, currently, HSV II to can cause oral infection and also infection at the back of the mouth. These information are truly alarming, as the virome can extend to the brain, far to the gastrointestinal tract and can cause inflammation of the voice box. These issues aggravate in patient with compromised immune system, such as those undergoing treatment for cancers with chemotherapy or radiotherapy or people living with HIV (pHIV). Obviously, these spectra of conditions have high relevance in my practice of ENT and head neck surgery. It has been known for some time that serum reactivity to HSV I and HSV II enhances the aggressiveness of the head neck cancer (HNC), which primarily resulted from alcohol, tobacco or infection with human papilloma virus (HPV). The importance of the oral cavity is underscored by its anatomical proximity to the nasal cavity, the brain, the upper airways and the esophagus (the food tube). For example, in my article on laryngeal inflammation, the detail should be inferred with context to the importance of the oral cavity. Even, conditions arising out of other organs can have complex relationship and impact issues at the level of the oral cavity. For example, acid reflux from the stomach causes inflammation of the oropharyngeal region and is also the commonest reason for chronic cough.

**Q: Thank you for this informative discussion Dr. Bathula. Any final advice you desire to share**

SSRB: Sun exposure can cause the cancer of the lip; thus appropriate sunscreens are important to prevent sun ray induced cancerous changes. Oral cancer spreads rapidly. So it is very important, both for early detection as well as initiation of treatment. More importantly, primary prevention is the key, which I vigorously endeavor through my cancer literacy projects. Complex nexus exists between economic interests and marketing strategies for betelnut products and tobacco products. Involvement of all levels of society shall be instrumental in ushering root level changes. Awareness needs to be created among homeless and incarcerated people, where the challenges of maintaining optimal oral health can remain guarded. Vaccine hesitancy should be overcome and vaccine protection encouraged to prevent HPV infection.



**Figure 1: Dr. SambaSiva Reddy Bathula.**