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### Challenges impacting giant goiter surgery at a tertiary Sub-Saharan Hospital

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Thyroid disease is prevalent in Africa. Regional governments' and NGO's effort to establish tertiary institutions and facilitate surgical outreaches have yielded little. Globally, health funding faces scarcity. Third world countries have been identified with neglected Thyroid disease like big goiters causing disfigurements, upper airway and gastrointestinal tract obstruction or neck vasculature engorgement. Longstanding cases may undergo malignant transformation or extend retrosternally. This was a prospective cohort selected from a pool of operated Thyroid patients at Breast and Endocrine Unit of Mulago National Referral and Teaching Hospital, Kampala Uganda. Averagely, six (6) Thyroidectomies are done every week. Two (2) out of these qualified for the study as having giant goiter. Surgery necessitated the team's lobbying for ICU space, meticulous peri-operative involvement of anesthesiology residents and undertaking thorough investigations. Age range of patients was 15 – 70 years with majority in the 40-60 year age bracket; a female preponderance of 8:1. Average operative time was 4 hours with about half utilized by anesthesia. Challenges encountered included team building, scarce surgical instruments, managing difficult airway, extracting impacted retrosternal goitre, encountering the markedly engorged neck vessels and ICU space. Loss to follow up after discharge was about 30%. Despite innumerable challenges, the result shows that 95% of our patients get successful surgery; 4% develop transient complications like hoarseness and hypocalcaemia. One patient required tracheostomy. Giant Thyroid is fairly common at Mulago. Its surgery is challenging. With organized team, competence, overall surgical results are comparable to those in well facilitated centers even amidst scarce resources.

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### Effect of mobile phone radiation on TSH and Thyroid hormones

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**Introduction:** In recent years, the widespread use of mobile phones has lead to a public debate about possible detrimental effects on human health. In spite of years of research, there is still a great controversy regarding the possibility of induction of any significant physiological effects in humans by microwave radiations emitted by mobile phones. This study aims to investigate the effects of electromagnetic fields induced by the Global System for Mobile communications (GSM) mobile phones on the Thyroid Stimulating Hormone (TSH) and Thyroid hormones in humans.

**Methods:** 77 healthy university students participated in this study. The levels of T3, T4 and TSH were measured by using appropriate enzyme-linked immunosorbent assay (ELISA) kits (Human, Germany).

**Results:** The average levels of T3, T4 and TSH in students who moderately used mobile phones were  $1.25 \pm 0.27$  ng/ml,  $7.76 \pm 1.73$  µg/dl and  $4.25 \pm 2.12$  µu/l respectively. The levels in the students who severely used mobile phones were  $1.18 \pm 0.30$ ,  $7.75 \pm 1.14$  and  $3.75 \pm 2.05$  respectively. In non-users, the levels were  $1.15 \pm 0.27$ ,  $8.42 \pm 2.72$  and  $2.70 \pm 1.75$ , respectively. The difference among the levels of TSH in these 3 groups was statistically significant ( $P < 0.05$ ).

**Conclusion:** As far as the study is concerned, this is the first human study to assess the associations between mobile phone use and alterations in the levels of TSH and Thyroid hormones. Based on the findings, a higher TSH level, low mean T4 and normal T3 concentrations in mobile users were observed. It seems that minor degrees of Thyroid dysfunction with a compensatory rise in TSH may occur following excessive use of mobile phones. It may be concluded that possible deleterious effects of mobile microwaves on hypothalamic-pituitary-Thyroid axis affects the levels of these hormones.

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