

## Radiation Protective Headwear

Many healthcare providers (interventionalists) are chronically exposed to ionizing radiation, which can lead to increased cancer risks. Currently surgeons and other personnel wear lead aprons, thyroid shields, and lead glasses to protect from radiation exposure. However, no commercially available product can protect the head of individuals involved in these procedures. Research has demonstrated that in a patient cohort composed of interventionalist individuals, 55% developed glioblastoma multiforme (GBM) where 85% of the tumors were located on the left side (Am J Cardiol 2013). This demonstrates a possible causal relationship between radiation exposures of the brain to tumor formation as most physicians stand on the right side of the patient. This study further highlights the need for the development of Radiation Protective Headwear to be worn by interventionalists.

### The technology

Researchers at VCU have developed a novel headgear to protect the head of physicians from radiation exposure. Multiple designs have been fashioned that incorporate radiation protecting material into comfortable and functional head gear. These designs include adjustable headgear with a novel fixation mechanism with multiple functions. This novel fixation mechanism allows for a comfortable but secure fit to the head to ensure protection while minimizing any extra weight felt from the cap. All designs are collapsible, lay flat, and are easily storable either in a drawer or on a hook. The headgear is customizable to allow for easy identification and durable for prolonged use.

### Benefits

- » Provides superior radiation protection to the head
- » Durable and designed for extended use
- » Can accommodate additional technology like operative headlights
- » Comfortable and customizable
- » Easily storable

### Applications

- » Radiation protection for the head

#### Patent status:

Patent issued

#### License status:

This technology is available for licensing to industry for further development and commercialization. **Prototypes have been developed.**

#### Category:

Biomedical

#### VCU Tech #:

14-025

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#### External resources:

[US D774,700 S1](#)

[US D773,740 S1](#)

#### Contact us about this technology

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