# Prophylactic Mesh Design

**(VA Reference No. 13-041)**

## Preventing hernia formation post-abdominal surgery

### Technology
- **Prophylactic Mesh Design**

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### Key Features
- Novel design
- Reduction of complications following hernia surgery
- Reduction of incisional hernias

### Stage of Development
- Conceptual

### Keywords
- Hernia mesh

### Patent Status
- Provisional filed

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## Technology

A concept of a novel mesh that could be used in preventing hernia formation post-abdominal surgery. The mesh is ideally constructed of biological material such as acellular dermal matrix to reduce the risk of surgical site infection. The design of the novel mesh is in the shape of the letter ‘I’, to ensure that the mesh structure is maintained in the abdomen and does not slip through the abdominal opening.

## Opportunity

The mesh design could be used in the prevention of hernias after abdominal surgery or could also be used in the repair of hernias. Overall, the hernia repair market has experienced moderate growth of nearly 5 percent annually since 2008 and was estimated at over $3.5 billion in 2012. The potential market opportunity could be estimated at $100 million annually based on the number of abdominal surgical procedures annually, occurrence rate of incisional hernias following surgery, and the estimated cost of the novel mesh device. The mesh design could lead to a reduction in complications following abdominal surgery; specifically the mesh design could lead to a reduction of incisional hernias, which occur in approximately 10 percent of patients undergoing abdominal surgery.

## Competitive Advantage

There are a variety of mesh products currently available in the market for hernia repair and prevention. However, there are four basic categories of mesh used for hernia repair and prevention: plastic mesh, gortex mesh, collagen mesh, and composites. Plastic mesh could result in complications if the mesh is left in direct contact with abdominal viscera resulting in adhesion formation. Gortex mesh does not incorporate into the impacted tissue like plastic mesh (therefore it can be left in contact with the viscera) preventing its use in repair of large hernias (due to a lack of a dense scar). In addition, gortex is slightly more expensive than plastic mesh. Collagen matrices used for hernia repairs can be obtained from a variety of human and non-human sources and are very expensive. Composite mesh is a combination of the other three mesh categories. A significant advantage of the novel mesh design proposed is the assumption that the design could be composed of any of the types of mesh currently available in the market.

## Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).