

Objectives	Idea 1	Idea 2	Idea 3
Should be lightweight	Yes <ul style="list-style-type: none"> <li>Decreased the size of the bag</li> <li>New flange design: twist and lock with more rigid plastic</li> </ul>	Yes <ul style="list-style-type: none"> <li>Added a lightweight fabric strap</li> </ul>	Yes <ul style="list-style-type: none"> <li>Decreased the size/volume of the bag</li> </ul>
Should be easy to use	Yes	Yes	Yes
Should be durable	Yes <ul style="list-style-type: none"> <li>Added round plastic inner-base inside the bag</li> </ul>	Yes	Yes
Should be comfortable	Yes	Varies <ul style="list-style-type: none"> <li>Strap on may be uncomfortable</li> </ul>	Yes
Should be cost effective	Yes	Yes	Yes
Should be odour resistant	Yes	May smell due to sweat on the strap	Yes

Constraints	Idea 1	Idea 2	Idea 3
Must be sterile	Yes	Yes	Yes
Must be government approved	Yes	Yes	Yes
Must be biocompatible	Yes	Yes	Yes
Must attach securely to abdomen	Yes	Yes	Yes
Must be oriented vertically	Yes	Yes- but on an angle	Yes
Must be resistant to movement	Yes	Yes	Yes
Must be resistant to moisture	Yes	Depends on the material used for the strap	Yes
Must be waterproof	Yes	Depends on the material used for the strap	Yes
Must provide storage for liquid and solid waste	Yes - decreased storage	Yes	Yes - decreased storage
Waste must be dispensable	Yes	Yes	Yes

Idea 1		Idea 2		Idea 3	
Advantages	Disadvantages	Advantages	Disadvantages	Advantages	Disadvantages
More secure coupling	Could be heavier	More secure to abdomen	Can be uncomfortable depending on user	More secure	Harder for people with arthritis
Smaller bag of volume makes it lighter	More frequent bag emptying	Bag is the same size and holds the same amount of waste	More complicated to use	lightweight	More frequent bag changes
Inner base plastic makes the twist and lock more secure	Slightly more complicated to use		Can interfere with waste secretion if not used properly	Easy to use	Takes more effort to use
Shape of the bag makes it more concealed			Strap may begin to smell quickly	Little material added	

Need Statement	Idea 1	Idea 2	Idea 3
Design a mechanism for Himesh that effectively secures his ostomy bag to his abdomen in order to prevent the bag from detaching and moving excessively during his physical activities.	Yes	Yes	Yes

Conclusion: According the comparison of the ideas based on the objectives/constraints, advantages/disadvantages, and the need statement, we have decided that we want to pursue idea 1 as it effectively meets the needs of the patient with minimal changes to the original ostomy bag they had. It is also cost effective, and prevents discomfort to the patient (no additional belts or straps). The smaller volume of the bag as well as the twist and lock makes it more secure as well as fit to the patient's needs during their physical activities.