

# Expandable Nasogastric Tube

Weeks 11 & 12 November 17<sup>th</sup> – November 29<sup>th</sup>

**Team:** Darren Klaty – Co-Team Leader  
Mike Rossmiller – Co-Team Leader  
Alex Broderick – BWIG  
Megan Halley – Communicator  
Sarah Czaplewski - BSAC

**Advisor:** Paul Thompson

**Client:** Dr. Steven Yale

## **Problem Statement:**

Nasogastric tubes (NG tubes) are commonly used for aspiration of gastric contents and gastric decompression in patients with small bowel obstruction. Placement of a NG tube causes discomfort and pain during insertion due in part to the large diameter of the tube. The project requires a nasogastric tube which is small enough to reduce discomfort, while still being functional. Secondary design specifications include pH sensitivity, to allow visual confirmation of when the tube reaches the stomach, and recyclability.

## **Previous Weeks Goals:**

- To determine feasibility of completing project using current design restraints
- Meet before Thanksgiving Break to come up with plan

## **Team Role Accomplishments:**

- Leaders – Completed Progress Report.
- Communicator – Professional contacts, set up hospital session for testing.
- BWIG – Put Progress Report online.
- BSAC – Will attend next BSAC meeting.

## **Summary of Design Accomplishments:**

- All – Worked on tubing insertion and packaging
- All – Shrink wrap tightness of fit
- Sarah – Prototyping and testing
- Sarah, Megan – Set up multiple testing opportunities for our samples
- Mike – Communicated with NG tube patient for further info

## **This Week's Goals/Individual Goals**

- Finalize design for proof of concept
- Mechanical Testing of samples
- Sim Lab testing 11/30
- Poster, paper work begins

## **Difficulties:**

- Difficulties with tube insertion and compression

**Activities:**

<b>Person(s)</b>	<b>Task</b>	<b>Time (hrs)</b>	<b>Weekly Totals</b>	<b>Semester Totals</b>
<b>Darren</b>	<b>Progress report</b>	<b>.5</b>		
	<b>Shrink wrap perforations</b>	<b>1.25</b>		
	<b>Shrink wrap packaging</b>	<b>1.5</b>	<b>3.25</b>	<b>27.25</b>
<b>Mike</b>	<b>Progress Report</b>	<b>.5</b>		
	<b>Shrink wrap and materials</b>	<b>1.5</b>	<b>2.0</b>	<b>24.25</b>
<b>Alex</b>	<b>Tubing insertion trials</b>	<b>2.0</b>	<b>2.0</b>	<b>21.5</b>
<b>Sarah</b>	<b>Building prototypes/testing</b>	<b>10</b>	<b>10</b>	<b>44.0</b>
<b>Megan</b>	<b>Sample Fabrication</b>	<b>4</b>		
	<b>Testing</b>	<b>2.0</b>		
<b>Megan</b>	<b>Brainstorming/research</b>	<b>1</b>	<b>7</b>	<b>28.0</b>

**Project Schedule:**

Tasks	September				October				November				Dec	
	7	14	21	28	5	12	19	26	2	9	16	23	1	7
<b>Product R&amp;D</b>														
Background Info	X	X	X	X	X			X	X	X	X	X		
Design Alternatives				X	X									
Final Design					X	X	X							
Materials						X	X	X	X	X	X	X		
Design Modeling						X	X	X	X	X	X	X		
Testing											X	X	X	
<b>Presentations</b>														
Mid-Semester							X							
Final														X
<b>Deliverables</b>														
Progress Reports	X	X	X	X	X	X	X	X	X	X	X	X		
PDS	X							X						
Mid-Semester Report								X						
Final Report														X
<b>Meetings</b>														
Team Meetings	X	X	X	X	X	X	X	X	X	X				
Advisor Meetings	X	X	X	X	X	X	X	X	X	X		X		
Client Meetings	X				X				X					
<b>Website</b>	X	X	X	X	X	X	X	X	X	X		X		

**Expenses:**

Expenses for tubing. Reimbursement to come in form of checks from Dr. Yale.