**Physical Therapy Exercises**

**Summary:**Physical Therapy is often assigned as a way to recover from minor injuries or to build strength and mobility after surgery or other major injuries. Physical therapy exercises are often augmented with resistance bands – a polymer! We will test a few different exercises which use bands and see how different strengths of bands can be used to adjust the difficulty of the exercises.

ILOs:

1. Material properties (strength) can be adjusted to meet the application and the difficulty of an exercise.
2. Materials can be used to develop specific muscle strength and prevent injury.

**Equipment list:**

Set of physical therapy bands. It is recommended that these are the same as those used in A20 (elastic modulus of PT bands)

**Intro:**

Has anyone ever been assigned physical therapy exercises? Which ones? Did any of them use resistance bands?

**Procedure:**

1. Pass out a set of bands to each group of students.
2. Demonstrate each selected exercise and allow students to try them. A resource for selecting different exercises is here: <https://www.rehabhero.ca/exercise>

It is recommended that exercises used to treat soccer injuries are selected. For example, ACL tears are common in soccer, so exercises used to rehabilitate athletes after ACL reconstruction are appropriate. Other preventative exercises, such as ankle strengthening, core strength, and mobility are recommended as well.

1. Monitor students to ensure that exercises are performed with the demonstrated form and only to the extent that the students are capable of without injury.
2. Ask students to try the same activity with a few different bands and see if they notice a difference.

**Discussion questions/debrief:**

Were there any bands that you did not use at all or for a certain exercise?

Which injuries might each exercise be used to treat or prevent?

Should all athletes use the same exercises? Should everyone use the same resistance band when completing that exercise?

**Lab handout needed?**

No, however having instructional videos or images on hand for the selected exercises is recommended so that students can refer back to them.