Safety first! Whether you are brand new to the fitness scene or have been working out for many years, everyone who is involved with physical activity is at risk of injury. Injury can come in many forms. It can result from a one-time event or can occur from overusing certain muscles over a longer period of time. To do our best work, staying healthy is invaluable. Highlighted below are some of the most common injuries that result from physical activity as well as give insight on how to prevent these injuries and treat them if they occur including resources at MIT.

Keys to Preventing Injury

There are many useful ways to prevent injury from occurring when exercising.

- **Don’t Forget the Warm-Up and Cool-Down**: A gradual warm-up helps blood circulate to your muscles giving them the necessary oxygen to begin producing energy and avoids early injury of otherwise tight muscles when intense activity begins. During this time, your muscles’ elasticity and range of motion increases preparing you for higher-intensity action. A cool-down with proper stretching lengthens your muscles and increase range of motion which helps to prevent everyday injuries resulting from tight, inflexible muscles such as lower back pain from tight hamstring muscles.

- **Go at Your Own Pace**: Starting off at a high intensity that your body is not used to can lead to soreness and injury. Make sure you start at a lower intensity level and gain an understanding of proper exercise form. When comfortable, gradually increase exercise intensity 5% at a time.
  - **Example**: When strength training, the amount of weight you lift with proper form should make your muscles tired after 10-15 repetitions. When you feel you can exceed this range with proper form, increase the weight by 5%.

- **Listen to Your Body**: Muscle soreness is normal when beginning an exercise program and will occur in the form of delayed onset muscle soreness (DOMS) 12-24 hours after exercise. This is typical when muscles are unaccustomed to high intensity activity and will gradually go away as you progress through the program. This soreness is different from acute soreness, which occurs during exercise as a result of improper form or too much weight. Acute soreness is a signal to your body to stop before damage occurs to your muscles or joints.
  - **Tip**: Alternate working muscle groups daily to rest those that have just been through intense activity. This prevents injury resulting from overuse.

- **Use the Proper Equipment**: Most activities require special equipment that may help to prevent injury. Everything from running shoes to goggles can be used to prevent injury.
  - **Example**: Poorly fitting shoes can cause blisters or even serious injuries like torn ligaments. Be sure to have the right type of shoes for your specific activity. Remember that basketball shoes are different from running shoes which are different from cleats needed for soccer.

*And don’t forget to always get a doctor’s approval before beginning any new exercise program*
Common Fitness Injuries
There are three main categories of common fitness injuries:

1. **Trauma**: An unexpected impact on the body resulting from a fall or collision leading to torn muscle fibers, swelling, and possibly bleeding

   **Specific Injuries**:
   - Muscle Strain: pulling or overstretching a muscle or tendon (tissue connecting muscles to bone).
   - Joint Sprains: overstretching or tearing a ligament (tissue connecting bones together in your joints). This is commonly seen in knees and ankles.

2. **Muscle Imbalance**: When one muscle group is worked without working the complimentary muscle group, the muscle has an increased injury risk as a result of compensating for the weaker muscle group.

   **Specific Injuries**:
   - Knee strain: resulting from weakness in the hamstrings.
   - Hamstring strain: when exercising, the quadriceps generate most of the power from the legs resulting in quicker fatigue of the hamstrings. Weaker hamstrings have the potential to strain.

3. **Overuse**: Working one muscle group too much can result in injury over time. It is important to rest muscle groups that have just been utilized for at least 24 hours to allow the body to repair the normal micro-tearing of muscle fibers that occurs as a result of exercise. If muscles are not rested, the body will be unable to undergo muscle re-synthesis and the normal microtears will become larger and could result in severe muscle injury.

   **Specific Injuries**:
   - Shin Splints: microtears and inflammation in the muscles surrounding the bones in the front of the lower leg.
   - Tendinitis: inflammation or irritation of the fibers that attach muscles to bone (often occurs at the joints, hamstrings, and groin causing tension, tightness, weakness and swelling).

### What to do When Injured

If the injury is serious the first thing that should be done is to seek medical attention by calling **617-253-1212 (MIT Police)** or going directly to **MIT Medical**. If it is not as serious, talk to a **MedLink** in your residence hall. These are trained students who can provide basic first aid and dispense single doses of over-the-counter-medicine. If the injury is relatively small a basic rule of thumb to treat the injury yourself is to use the acronym **P.R.I.C.E**.

- **P**rotection: Protect the injured site following the injury. This could mean using crutches, a sling, or covering the area with a bandage.
- **R**est: Allow time for the injury to heal. This depends on the type of injury and can range from a few days to a few weeks or even months.
- **I**ce: For injuries that cause swelling, ice for 20 minutes at a time intermittently throughout the day.
- **C**ompression: Wrap the injury for the first 72 hours to prevent swelling.
- **E**levation: Raise the injured site above your heart to reduce swelling, increase circulation, and reduce bleeding.

### Sources: