Whether mixing a chemical in the lab or trimming bushes in the yard, eye safety is important for all of us. The Center for Disease Control (CDC) reports that each day over 2000 US workers sustain eye injuries while working. Many of these eye injuries require trips to the Emergency Room and days off from work. This month’s Safety Gram will focus on prevention of eye injuries both in the lab and in our everyday lives.

Eye injuries range from simple scrapes caused by dust, woodchips, or blunt force to the eye to more severe, penetrating accidents from nails, staples, or slivers of wood. Chemical and thermal burns are also common sources of injury, causing damage to both the eye and its surrounding tissues. Even seemingly harmless encounters can later cause eye diseases and bacterial infections, resulting in permanent loss of vision.

The single most effective way to prevent eye injury is proper use of personal protective equipment (PPE), such as goggles or safety glasses. Anyone working in a lab with chemicals should always wear goggles to protect their eyes.

Serious eye injuries are not always immediately obvious. Delaying medical attention can cause the damaged area to worsen and could result in permanent vision loss of blindness. If you notice any of these signs in yourself or someone else, get medical help right away.

- One eye does not move as well as or sticks out further than the other
- Something in the eye or under the eyelid that cannot be removed.
- Unusual pupil size or shape. Blood in the clear part of eye.
- The person has obvious pain or trouble seeing
- The person has a cut of torn eyelid.

For all eye injuries:
- Do NOT rub, apply pressure, or try to remove object in the eye.
- Do NOT apply ointment or medication to the eye.
- See a doctor ASAP.

For chemical burns:
- Immediately flush the eye with plenty of clean water.
- Seek emergency treatment.

For cuts and punctures:
- Gently place a shield over the eye for protection.
- Do NOT rinse with water, remove the object, or apply pressure.

For particles, sand, or small debris:
- Lift the upper eyelid over the lashes of your lower lid.
- Blink several times and allow tears to flush out the particle.
- Use eyewash to flush eye, if necessary.
Protective Eyewear

Eye protection means more than just wearing the contact lenses or glasses you may use for vision correction. The type of eye protection needed depends on the activity you are involved in. While working in a lab around chemicals that might splash into your eye, you should always use goggles.

Eye protection is very important at home, as well. You might think that the family home is a fairly unthreatening setting; however, nearly half of all eye injuries each year occur in and around the home. Common activities that result in eye injury include: cooking foods that splatter hot grease or oil, using hazardous products and chemicals to clean, mowing the lawn, clipping hedges and bushes, using power tools, and securing equipment with bungee cords.

For most repair projects and activities around the home, standard ANSI-approved protective eyewear will be sufficient. For many work situations, the same protection you use at home will suffice, but there are important exceptions you need to know about. Sports eye protection should meet the specific requirements of that sport; these requirements are usually established and certified by the sport’s governing body.

To determine if your activity merits eye protection, consider if it will involve: (1) use of hazardous chemicals or other substances that could damage your eyes upon contact, (2) flying debris or other small particles, or (3) projectiles or objects that could fly into the eyes unexpectedly.

Use common sense in the lab and in your home – especially if there are children around for whom you are setting an example. If you need eye protection, come by the Chemistry Central Stockroom to purchase one of our many forms of eye protection.

Cautionary Tales

The following true stories are all provided from students and faculty from the Chemistry and Biochemistry Department.

- When helping a friend move, a bungee cord snapped and hit a student in the eye. The metal end lodged in his eye, and he now has a glass left eye.
- This faculty member was tossing apricots at her friends when she took a blow directly in the eye. Luckily, her gas-permeable, glass contact lens did not shatter; otherwise, she would most likely be blind.
- Despite his father’s numerous warnings, one student failed to wear eye protection while doing routine yardwork. A piece of debris lodged behind his contact lens causing a bacterial infection that swelled his eye shut within days. After over six months, this student has regained eyesight to 50% and anticipates surgery to, hopefully, return his eyesight to normal.
- While cooking, hot grease splashed into the eye of a faculty member.

Wearing protective eyewear will prevent 90 percent of eye injuries, so protect yourself and your family!