On January 7, 2010, there was an explosion in a chemistry lab at Texas Tech. Thankfully, nobody was killed, but a graduate student was seriously injured.

Two graduate students were working on creating derivatives of an explosive compound called nickel hydrazine perchlorate. They made 10 grams of the substance, which is 100 times more than their professor considered safe. (The professor instructed them to not make more than 100 mg, though the graduate students denied such a safety limit existed.) One of the students decided to crush the substance with a [mortar and pestle](http://en.wikipedia.org/wiki/Mortar_and_pestle) prior to analysis. However, this was a tragic mistake. These types of substances can explode under friction or pressure. And that's exactly what happened. The student suffered from burns and lost three fingers.

**Source:** [U.S. Chemical Safety Board](http://www.csb.gov/mobile/csb-releases-investigation-into-2010-texas-tech-laboratory-accident-case-study-identifies-systemic-deficiencies-in-university-safety-management-practices/)

On April 12th, 2011, Michele Dufault's life came to a tragic end. The 22-year-old Yale physics student was up late at night working alone in the chemistry department's machine shop, using an industrial lathe. Sadly, nobody was around to help Dufault when her hair became tangled in the rapidly spinning tool, which wrapped around her neck in a deadly instant. She died of strangulation, just weeks away from graduation.

A subsequent review found that the lathe lacked necessary safety features, such as an emergency stop button. However, this oversight did not apparently merit any sort of penalty against Yale for Dufault's death.

**Sources:** [YaleNews](http://news.yale.edu/2013/06/28/michele-dufault-endowment-yale-women-science-established%22%20%5Ct%20%22_self), [Science](http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2011_10_07/caredit.a1100110), [New York Times](http://www.nytimes.com/2011/04/14/nyregion/yale-student-dies-in-machine-shop-accident.html)

Chemistry labs are particularly dangerous. And that is why safety protocols should never be neglected.

That's what happened in the case of UCLA lab worker Sheri Sangji. On December 29th, 2008, she was transferring a syringe of tert-butyllithium when the contraption came apart in her hands. Tert-butyllithium ignites upon exposure to air. Sangji received second- and third-degree burns across more than 40% of her body. She died two and a half weeks later in the hospital.

Upon subsequent investigation, it was discovered that Sangji had not been told of the properties of tert-butyllithium, nor had she even received generalized safety training, which would have apprised her of the location of the emergency showers and informed her to wear a protective lab coat. Even more disturbing was that the lab had been cited for a dozen safety violations just two months before. Little was done to correct the problems.

**Sources:** [Wired](http://www.wired.com/wiredscience/2012/07/sangji-chemistry-death-ucla/), [C&EN](http://cen.acs.org/articles/91/i18/Patrick-Harran-Face-Felony-Trial.html)

The eyes are probably more vulnerable to injury in lab accidents than any other part of the body. Today affordable and well-designed safety glasses, goggles, and face shields make eye injuries fairly rare. In the days before tough transparent plastics made eye protection cheap and practical, however, eye injuries were just part of the job. Take Joseph-Louis Gay-Lussac (1778–1850) for instance. Not long after Humphry Davy (1778–1829) discovered potassium, Gay-Lussac began studying the metal. Given potassium’s violent reactivity, an accident was probably inevitable, even for a meticulous experimenter like Gay-Lussac. In 1808 a potassium explosion temporarily blinded the young chemist. His eyesight was never fully restored, which turned out to be a blessing in disguise: the corrective lenses he required afterward protected his eyes from at least one later explosion.

<http://www.chemheritage.org/discover/media/magazine/articles/26-2-not-so-great-moments-in-chemical-safety.aspx>

We were given 20 numbered dropper bottles with unknown contents and a few bottles with known reagents. We had to use the reagents to figure out what solutions were in the other bottles.

After a couple weeks of testing drudgery (I was working in the lab without my safety goggle on), I picked up one of the bottles by the stopper. The bottle slid off, fell 6 inches to the table surface, and the contents shot out of the neck and into my left eye. It stung a bit but there was a high chance it was a salt solution so I wasn't surprised. My lab partner informed me it was 4 molar NaOH.

I ran to the emergency eyewash and hit the lever. No dice - it wasn't actually hooked up. I jogged down to the nurses office and she emptied surettes of saline in my eye until someone could be found to drive me to the ER. At the ER they continued flushing the eye with saline for what seemed like hours (the nurse had my eyelid propped open with one hand and was squeezing bags of saline with the other).

http://www.reddit.com/r/chemistry/comments/d7dqs/lets\_hear\_some\_of\_your\_lab\_horror\_stories/

Two 10th-graders at Manhattan’s award-winning Beacon School were injured Thursday morning when a routine lab experiment went horribly awry, leaving one boy with serious burns. Chemistry teacher Anna Poole had hoped to treat her students to a “fun” demonstration of the rainbow of flames that results from burning four kinds of nitrates in separate crucibles, students and law-enforcement told The Post. But a volatile buildup of methyl alcohol fumes in the Upper West Side school’s third-floor chemistry lab ignited into a fireball that sped across a countertop and engulfed sophomore Alonzo Yanes, 16.

 “Help me! Help me!” screamed Yanes, who stood only a couple of feet away from the crucibles, according to witnesses. None of the students was wearing goggles. Yanes dropped to the floor and tried to roll, but precious seconds ticked by until someone could locate a fire extinguisher and then a blanket to extinguish the flames. “His skin — a lot of it was melted and scabbed,” said a classmate, Jeremy Reynoso, 15.

“He was on fire for a good minute,” Reynoso said. “I saw his ear was melting. The skin was peeling. His face was red. Afterward, he wasn’t talking or moving.”

Yanes suffered second- and third-degree burns to his head and neck, while another student, Julia Saltonstall, 16, suffered less severe burns to her neck, head and arm, said Deputy Fire Chief Anthony Devita.

The boy remained Thursday night in Cornell Medical Center’s burn unit.

A female student was working in the lab and carelessly decided to move the 2L H2SO4 CONC with just her fingers. The bottle slipped out of her fingers and landed on the floor, making a big splash. The chemical splashed upward and hit her face causing major damages to her face.

A female chemistry college student were working with acid and base. She has a tendency to scratch her head when she is thinking. On that day, she unfortunately touched her head and now she has a bald spot where her fingers touched her scalp.

In high school, our chem instructor warned us very clearly about the flammability of acetone. So naturally, my lab partner and I wanted to see if our teacher was correct. On the last day of a week-long lab, after everything had been cleaned up, we filled a small beaker with acetone and carefully placed it in one of the deep sinks. As I lowered the lit match toward the mouth of the beaker, I failed to notice the puddles of acetone spilled on the tabletop moments before by other students. One giant WHOOOSH later, and we had the attention of every student in the room, including those 30 feet away who claimed they felt a wall of heat blow past them. Fortunately, the acetone was the only thing flammable nearby, and it quickly burned itself out.

When I got home that afternoon and looked in the mirror, I started wondering why some of my hair had changed color. As I touched it and it flaked away into ashes, I realized just how close the flames had come.

My group was doing a lab based on the preparation of oil of wintergreen. When washing the organic solvent extract in the separating funnel, my friend left the stopper on. Our Chemistry teacher was standing right next to him and then all of a sudden the stopper flew off and the contents of the funnel burst all over the teacher. My friend, who was in shock of what had just happened, passed the funnel to me and then for some stupid reason I put the stopper back on. At this point, I think everyone started screaming at me to put it down. I was so confused when everyone started stepping away from me while held the funnel with one hand firm on the stopper. I felt the stopper push against my fingers and at this moment, I figured it was going to explode if I didn't release the pressure inside. Everyone was in hysteria while I was having a panic attack so I just threw the funnel in the sink and ran away from it. The teacher was drenched and went to the prep room to change, claiming his clothes had holes in it! We didn't really get in trouble though he stressed to everyone how important it was to read procedure instructions carefully, highlighting the 'carefully release the pressure in the separating funnel.”