

## The CSI Effect

Much has been said about the impact of glitzy TV shows, like *CSI*, on how the public perceives forensic science. This popular series has created misconceptions about crime labs and crime scene investigation. Let's look at some specific examples:

- *Crime labs are well-equipped with the latest high-tech instrumentation.* A few are, but many are underfunded and underequipped. Scientific equipment is expensive. For example; A GRIM 3 automated refractive index analyzer for glass costs about \$65,000; a pyrolysis gas chromatograph-mass spectrometer (PGC-MS) may cost \$110,000; a scanning electron microscope (SEM) may cost \$300,000; even an alternate light source (ALS) for detecting fingerprints and body fluids can cost \$20,000.
- *Crime scene investigators process the crime scene.* Processing is usually performed by trained police officers. CSIs are usually civilian employees, do not carry weapons, and do not have the power of arrest. Trained medical examiners handle the bodies.
- *Crime scene investigators know and do everything.* Not so. Specialists concentrate on one or a few areas of expertise, such as fingerprinting, trace evidence, drug analysis, or DNA profiling.
- *Crimes can be solved within the hour with high-tech equipment.* A crime is not solved in 44 minutes, nor is a DNA fingerprint available in half an hour. Many crime labs are understaffed. Backlogs, especially in DNA analysis, are prevalent, and can be as long as a year depending on priorities and politics. The cost of a thorough DNA profile can run as high as \$10,000! Fingerprints and toolmarks, not DNA, are still the most common types of evidence left at crime scenes.
- *DNA can solve most crimes.* DNA is not the ultimate clue. Often DNA is simply not left at a crime scene. If present and recognized, it may be hopelessly contaminated. A profile may be developed, but there may be no matches to suspects or databases. There may be other compelling evidence so that a DNA profile is not required. Time and budget constraints can also influence the application of DNA analysis.
- *All cases can be solved with high-tech science.* Most crimes are not solved by or even require forensic scientific analysis. Most do require traditional, down-to-earth police work such as eyewitness

accounts, interviewing, interrogation, following leads, confronting suspects, and always, writing reports.

- *Forensic science results are never wrong.* The practice of forensic science is not infallible. Even if no evidence is missed, or messed up, or lost, or ignored because the case is considered strong enough without it, or dismissed because of legal mistakes or omissions, lab personnel can make mistakes, instruments can malfunction, samples can become contaminated or switched, evidence can degrade or be fabricated, and experts can lie!
- *Forensic science is glamorous.* Forensic science, for the most part, is not flashy, exciting, and glamorous. It is hard, tedious, but rewarding work. The CSIs are not always good-looking and interesting. The labs are not always spacious, well-equipped, and exciting. The evidence is often dirty, smelly, messy, and gross. Most analysts are behind in their case work and juggle several cases at once, and they may spend an inordinate amount of their time in court.

How has the "CSI effect" affected the justice system?

- Juries are more informed about the use of science in analyzing evidence. This is good. However, they may have unreasonable expectations of crime scene investigations.
- Despite complaints by prosecutors, there is no statistical evidence that those jurors who watch *CSI* influence the outcome of a trial. Yet, prosecutors may now have to emphasize why certain types of evidence in a case have not been presented.
- A few criminals are becoming more careful, such as by wearing gloves, washing up, or burning potential evidence; however, even the act of destroying evidence can provide clues. Also, the scientific analysis of evidence is seen as so sophisticated that it is difficult not to leave a detectable trace.
- More people want to be forensic scientists: Enrollment in forensic science degree programs has increased. Interestingly, far more women are enrolling than men.
- There are more "expert-for-hire" junk scientists available, like the proverbial ambulance-chasing lawyers.