



# What is Risk? Some Key Definitions

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Drawing on multiple sources, but primarily from the wilderness and mountaineering literature on risk management and accidents, this document lays out some of the key risk management principles we use to plan ISDSI Expedition Field Courses, as well as in our training of staff, students, and others.

## Risk

Risk isn't random. It cannot be *eliminated* but it can be *managed*.

$$R = T \times P \times S$$

R – “Risk” is the chance of losing something valuable to us (health, life, property)

T – “Time” is the duration of the activity/event, or the number of times it is repeated

P – “Probability” is the chance (certain, high, medium, low or none) of something happening

S – “Severity” is how bad it will be if something happens (e.g. a bruise v. fatality)

It is the combination of T, P and S that you calculate to determine risk. To lower the risk, you lower one or more of the variables (T, P or S). If you *cannot* lower one of them, you may be able to lower one or more of the other ones.

How do we do this every day? Think about driving a car:

- What does wearing a seatbelt do? (reduction in “S/severity” in case of an accident)
- Why do you slow down on wet or icy roads? (reduce “P/probability” to avoid having an accident)
- Why are long road trips dangerous when the driver gets tired (high “T/time” value makes an accident more likely)

## HAZARDS

A hazard is a source of potential harm. Avoiding / managing hazards requires knowing which type you are dealing with.

### Subjective vs. Objective Hazards

- **Subjective** - self and decisions made / internal – this can be the result of ignorance, poor training, etc.
- **Objective** - external and environment – some environments can be managed to reduce hazards, some cannot.

Think about driving:

- Driving drunk – high subjective hazard / driving sober – low subjective hazard
- Driving on icy road in the dark – high objective hazards / dry road in daylight – low objective hazards

## NON-EVENT FEEDBACK

Non-event feedback is a form of negative feedback that can lead to reinforcing risky behavior and choices. Sometimes a poor choice or high risk activity does *not* result in a poor outcome. This *non-event* gives the practitioner *false* feedback about the safety/risk of the activity. For example, crossing a slope with a high risk of avalanche but *not* encountering an avalanche does not mean the slope and conditions were safe. Essentially, you got lucky.

## THE FUNNEL

Originally used to analyze accidents, the principle of the funnel is that a sequence of initial choices can determine the outcome.

- As we move forward in an event or chain of events, we often will have fewer and fewer choices. The goal is to maximize choices (staying at the top of the funnel).
- Early decisions can impact and constrain later decisions.
- “Moving down the funnel” can potentially make a poor outcome more likely to happen—eventually making it almost inevitable.
- Choices can move us UP or DOWN the funnel—giving either more or fewer options.

Think about driving:

- Forgetting to change worn out tires before a trip (choice one) means that if you encounter poor road surfaces (objective hazard) you will have less control. Continuing to drive in poor conditions (choice two) makes an accident more likely (etc.).

