Abstract: Can experience make you a better slots player? The present study demonstrates that, over time, players can learn to lose less. In an experiment using computer simulated slot machines with stationary payout distributions, subjects with little experience at the slot machine (those having a shorter playing time and fewer trials) made suboptimal decisions and poor judgments of average winnings, while experienced subjects (longer playing time and more trials) converged with normative standards and made accurate judgments of average winnings. The evidence suggests that inexperienced subjects may use characteristics of the observed payout distribution (for example, peak payouts of high value and low probability) as cues sometimes as misleading cues about the underlying distribution and consequently use that information to make biased and incorrect inferences. However, this study also shows that experience and learning can overcome this problem.