Summary of Basic Statistical Tests

Type of Data	Question?	If data are...	then do
1 numerical vector	normal distribution?		shapiro.test(), ks.test()
	equal probabilities?	counts	chisq.test()
	location of mean?	normal	t.test()
		non-normal	wilcox.test()
2 independent vectors	same distribution?		ks.test(), w jitter
	same means?	normal	t.test()
		non-normal	wilcox.test()
	same variances?	normal	var.test()
2 paired vectors	same means?	normal	t.test(...,paired = T)
		non-normal	wilcox.test(...,paired = T)
	functional relation?	normal	lm()
	correlated?	normal input	cor.test
		non-normal	cor.test(..., method = "spearman")
1 numerical vector, 1 factor	different group means?	normal, same variances	lm(), anova(), aov()
		different variances	kruskal.test()
2 numerical vectors, 1 factor	different means? interactions?	normal	lm()
2 vectors of counts	different proportions?		chisq(), fisher.test()

Problems and pitfalls of linear regression: (i) outliers, (ii) nonlinear covariates

Snag of anova with factor levels > 2: multiple comparisons inflating chances of a significant result; use Bonferroni correction or Tukey's H(onestly)S(ignificant)D(ifference)