

# Botch Percentages

The following table details the percentage chance of botching (by severity), given a stress-die roll of "0", for varying numbers of botch dice.

By the guidelines I use, it doesn't get much worse than a quintuple botch, so I've grouped the chance of rolling 5 or more zeros into one column.

You can also [download an Excel spreadsheet \(Zipped\)](#) that will calculate these values for a given number of botch dice.

For those who are interested, the formulae follow the table.

Terry Roddy has done a similar [analysis of Stress Die results](#).

Percentage Chance of Botch by Severity (given an initial roll of "0")

# Botch Dice	No Botch	Single	Double	Triple	Quad	5+ Botch
1	90%	10%	--	--	--	--
2	81%	18%	1%	--	--	--
3	72.9%	24.3%	2.7%	0.1%	--	--
4	65.61%	29.16%	4.86%	0.36%	0.01%	--
5	59.049%	32.805%	7.29%	0.81%	0.045%	0.001%
6	53.1441%	35.4294%	9.8415%	1.458%	0.1215%	0.0054%
7	47.8296%	37.2008%	12.4002%	2.2963%	0.2551%	0.0176%
8	43.0467%	38.2637%	14.8803%	3.3067%	0.4592%	0.0431%
9	38.742%	38.742%	17.2186%	4.4641%	0.744%	0.089%
10	34.8678%	38.742%	19.371%	5.7395%	1.116%	0.1634%
11	31.381%	38.3546%	21.3081%	7.1027%	1.5783%	0.275%
12	28.2429%	37.6572%	23.0127%	8.5232%	2.1308%	0.4329%
13	25.4186%	36.7158%	24.4772%	9.9722%	2.77%	0.646%
14	22.8767%	35.5861%	25.701%	11.4227%	3.4902%	0.923%
15	20.5891%	34.3151%	26.6895%	12.8505%	4.2835%	1.272%
16	18.5302%	32.9425%	27.4521%	14.2344%	5.1402%	1.7003%
17	16.6771%	31.5013%	28.0011%	15.5562%	6.0496%	2.2144%
18	15.0094%	30.0189%	28.3512%	16.8007%	7.0002%	2.8193%
19	13.5085%	28.5179%	28.5179%	17.9557%	7.9803%	3.5194%
20	12.1576%	27.017%	28.5179%	19.0199%	8.9778%	4.3174%
21	10.9418%	25.531%	28.3678%	19.9625%	9.9812%	5.2152%
22	9.8477%	24.0721%	28.0842%	20.8031%	10.9794%	6.2133%
23	8.8629%	22.6497%	27.683%	21.5312%	11.9617%	7.3113%
24	7.9766%	21.271%	27.1796%	22.1464%	12.9187%	8.5074%
25	7.1789%	19.9416%	26.5888%	22.6497%	13.8415%	9.7993%
26	6.461%	18.6653%	25.924%	23.0436%	14.7223%	11.1835%
27	5.8149%	17.4449%	25.1982%	23.3316%	15.5544%	12.6557%
28	5.2334%	16.2819%	24.4228%	23.5183%	16.3321%	14.2111%
29	4.7101%	15.177%	23.6087%	23.6087%	17.0507%	15.8444%
30	4.2391%	14.1303%	22.7656%	23.6087%	17.7065%	17.5494%
40	1.4781%	6.5693%	14.2334%	20.0323%	20.5887%	37.0982%
50	0.5154%	2.8632%	7.7943%	13.8565%	16.9829%	57.9877%
100	0.00002%	0.0003%	0.1623%	0.5892%	1.5875%	97.6607%

## The Formulae

Given: "n" botch dice;  $(nC_b) = \text{"a choose b" (e.g. } (10C_2), \text{ or } (nC_3)) = a! / ((b!)(a-b)!)$ .

No botch:  $P(0) = (0.9)^n$

Single botch:  $P(1) = n * (0.1) * (0.9)^{(n-1)}$

Double botch:  $P(2) = (nC_2) * (0.01) * (0.9)^{(n-2)}$

Triple botch:  $P(3) = (nC_3) * (0.001) * (0.9)^{(n-3)}$

Quadruple botch:  $P(4) = (nC_4) * (0.0001) * (0.9)^{(n-4)}$

Quintuple or worse botch:  $1 - (P(0) + P(1) + P(2) + P(3) + P(4))$

In General, for "b" botches:  $P(b) = (nC_b) * (0.1)^b * (0.9)^{(n-b)}$

