

# Package ‘truncnorm’

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**Version** 1.0-7

**Title** Truncated normal distribution

**Description** r/d/p/q functions for the truncated normal distribution

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## R topics documented:

truncnorm . . . . .	1
<b>Index</b>	<b>3</b>

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truncnorm	<i>The Truncated Normal Distribution</i>
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## Description

Density, distribution function, quantile function, random generation and expected value function for the truncated normal distribution with mean equal to 'mean' and standard deviation equal to 'sd'.

**Usage**

```
dtruncnorm(x, a=-Inf, b=Inf, mean = 0, sd = 1)
ptruncnorm(q, a=-Inf, b=Inf, mean = 0, sd = 1)
qtruncnorm(p, a=-Inf, b=Inf, mean = 0, sd = 1)
rtruncnorm(n, a=-Inf, b=Inf, mean = 0, sd = 1)
etruncnorm(a=-Inf, b=Inf, mean=0, sd=1)
vtruncnorm(a=-Inf, b=Inf, mean=0, sd=1)
```

**Arguments**

x, q	vector of quantiles.
p	vector of probabilities.
n	number of observations. If 'length(n) > 1', the length is taken to be the number required.
a	vector of lower bounds. These may be -Inf
b	vector of upper bounds. These may be Inf
mean	vector of means.
sd	vector of standard deviations.

**Details**

If mean or sd are not specified they assume the default values of 0 and 1, respectively. The values of a, b, mean and sd are recycled as needed.

**Value**

'dtruncnorm' gives the density, 'ptruncnorm' gives the distribution function, 'qtruncnorm' gives the quantile function, 'rtruncnorm' generates random deviates, 'etruncnorm' gives the expected value and 'vtruncnorm' the variance of the distribution.

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**References**

The accept-reject sampler follows the description given in Geweke, J. (1991). *Efficient simulation from the multivariate normal and student-t distributions subject to linear constraints*. In Computing Science and Statistics: Proceedings of the 23rd Symposium on the Interface, Ed. E. Keramidas and S. Kaufman, pp. 571-8. Fairfax Station, VA: Interface Foundation of North America.

# Index

## \*Topic **distribution**

- truncnorm, [1](#)
- dtruncnorm (truncnorm), [1](#)
- etruncnorm (truncnorm), [1](#)
- ptruncnorm (truncnorm), [1](#)
- qtruncnorm (truncnorm), [1](#)
- rtruncnorm (truncnorm), [1](#)
- truncnorm, [1](#)
- vtruncnorm (truncnorm), [1](#)