

Version: 3.x

# withSpring

withSpring lets you create spring-based animations.

[Preview](#) [Code](#)

## Reference

```
import { withSpring } from 'react-native-reanimated';

function App() {
  sv.value = withSpring(0);
  // ...
}
```

▼ Type definitions

## Arguments


toValue

The value at which the animation will come to rest.

config

Optional

The spring animation configuration.



Physics-based

Duration-based

Mass

1

Damping

10

Stiffness

100

Clamp

☐

Displacement threshold

0.01

Speed threshold

2

Reduce motion

system ▼

```
withSpring(sv.value, {  
  mass: 1,  
  damping: 10,  
})
```

```
stiffness: 100,
overshootClamping: false,
restDisplacementThreshold: 0.01,
restSpeedThreshold: 2,
reduceMotion: ReduceMotion.System,
})
```

Available properties:

| Name         | Type   | Default | Description   |
|--------------|--------|---------|---|
| mass         | number | 1       | The weight of the spring. Reducing this value makes the animation faster.                   |
| damping      | number | 10      | How quickly a spring slows down. Higher damping means the spring will come to rest faster.  |
| duration     | number | 2000    | Length of the animation (in milliseconds).  |
| dampingRatio | number | 0.5     | How damped the spring is. Value 1 means the spring is critically damped, and value >1 means |

| Name                               | Type         | Default             | Description  |
|------------------------------------|--------------|---------------------|--|
|                                    |              |                     | the spring is overdamped.  |
| stiffness                          | number       | 100                 | How bouncy the spring is.  |
| velocity                           | number       | 0                   | Initial velocity applied to the spring equation.   |
| overshootClamping                  | boolean      | false               | Whether a spring can bounce over the <code>toValue</code> .  |
| restDisplacementThreshold          | number       | 0.01                | The displacement below which the spring will snap to <code>toValue</code> without further oscillations.              |
| restSpeedThreshold                 | number       | 2                   | The speed in pixels per second from which the spring will snap to <code>toValue</code> without further oscillations. |
| reduceMotion <span>Optional</span> | ReduceMotion | ReduceMotion.System | A parameter that determines how the animation responds to the device's reduced                                       |

| Name | Type | Default | Description                   |
|------|------|---------|-------------------------------|
|      |      |         | motion accessibility setting. |

### ⓘ INFO

The `mass` and `damping` (physics-based) properties can't be used at the same time as `duration` and `dampingRatio` (duration-based).

When used together `duration` and `dampingRatio` overrides `mass` and `damping` props.

`callback` Optional

A function called upon animation completion. If the animation is cancelled, the callback will receive `false` as the argument; otherwise, it will receive `true`.

## Returns

`withSpring` returns an animation object. It can be either assigned directly to a shared value or can be used as a value for a style object returned from `useAnimatedStyle`.

## Example

Preview Code








## Remarks

- The callback passed to the 3rd argument is automatically workletized and ran on the UI thread.

## Platform compatibility

| Android   | iOS   | Web   |
|---|---|---|
|  |  |  |

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