Differences Between Base R Pipe (|>) and Magrittr Pipe (%>%)

These are some of the key differences to be aware of when using the **base R pipe (|>)** and the **magrittr/dplyr pipe (%>%)**.

1. Basic Use

Both pipes pass the **left-hand side (LHS)** into the **first argument** of the function on the right.

```
# Base R
mtcars |> head()

# magrittr
mtcars %>% head()
```

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2. Placeholder Use

- |> requires _, and it can **only** appear in named arguments.
- %>% uses ., and it can appear in **any position**.

```
# Base R: must be named
mtcars |> lm(mpg ~ wt, data = _)

# magrittr: anywhere
mtcars %>% lm(mpg ~ wt, .)
```

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3. Functions Without Explicit Arguments

- `|>` cannot pipe into something like `$`, `[[`, or `[` directly without extra syntax.
- `%>%` works more flexibly.

```
# magrittr: works
mtcars %>% .$mpg

# base R: needs an anonymous function
mtcars |> (\(x) x$mpg)()
```

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4. Anonymous Functions

- `|>` has built-in anonymous functions: use `\(x) ...`.
- `%>%` doesn't have this shortcut; you'd use a lambda with `function(x) ...`.

```
# Base R
mtcars |> (\(x) mean(x$mpg))()

# magrittr
mtcars %>% (function(x) mean(x$mpg))()
```

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5. Performance and Dependencies

- `|>` is built into **base R** (since 4.1), no packages required, lightweight, a bit faster.
- `%>%` is from **magrittr/dplyr**, more powerful and flexible, but needs a package.

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6. Chaining with Multiple Placeholders

- `|>` only supports **one placeholder `_`**.
- `%>%` allows **multiple `.`** in different argument positions.

```r
# Base R (only one _ allowed)
mtcars |> transform(mpg2 = _[["mpg"]] * 2)

# magrittr (multiple . ok)
mtcars %>% transform(mpg2 = .$mpg * 2, wt2 = .$wt * 2)
```

Rule of Thumb

- Use `|>` if you want **simple, base R, lightweight pipelines**.
- Use `%>%` if you want **more flexibility** (multiple placeholders, non-first argument insertion without naming, `$` extraction, etc.).

This document was created by ChatGPT.

OpenAI. (2025). ChatGPT (Sept 19 version) [Large language model]. https://chat.openai.com/