Fitting the outcome model

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Outcome Model

```
1 library(broom)
2
3 lm(outcome ~ exposure, data = df, weights = wts)
4   tidy()
```

✅ This will get us the point estimate

❌ This will get NOT us the correct confidence intervals

📦 {rsample}

1. Create a function to run your analysis once on a sample of your data

```r
fit_ipw <- function(split, ...) {
  .df <- analysis(split)

  # fit propensity score model
  propensity_model <- glm(
    exposure ~ confounder_1 + confounder_2 + ...
    family = binomial(),
    data = .df
  )

  # calculate inverse probability weights
  .df <- propensity_model |>
    augment(type.predict = "response", data = .df) |>
    mutate(wts = 1 / ifelse(exposure == 0, 1 - .fitted, .fitted))

  # fit correctly bootsrapped ipw model
  lm(outcome ~ exposure, data = .df, weights = wts) |>
    tidy()
}
```

2. Use {rsample} to bootstrap our causal effect

```
library(rsample)

# fit ipw model to bootstrapped samples
ipw_results <- bootstraps(df, 1000, apparent = TRUE) |>
  mutate(results = map(splits, fit_ipw))
```

3. Pull out the causal effect

```r
# get t-statistic-based CIs
boot_estimate <- int_t(ipw_results, results) |>
  filter(term == "exposure")
```

Your Turn

Create a function called `ipw_fit` that fits the propensity score model and the weighted outcome model for the effect between `extra_magic_morning` and `avg_spostmin`

Using the `bootstraps()` and `int_t()` functions to estimate the final effect.

12:00