

# Estimators of the average treatment effect

Here, we document all candidate estimators we will use in building synthetic causal estimators. For the most part, we write the estimators in the form

$$\sum_{i=1}^n \omega_i y_i,$$

where  $\omega_i$  is a weight function that can in general depend on all the data. Let  $d_i$  be the treatment indicator, and let  $x_i$  denote covariates. We will denote the propensity score as  $e_i$  and the prognostic score as  $g_i$

```
ate_list <- list( ipw = ipw2_ate, strat = strat_ate, strat_regr = strat_regr_ate, match_ps = match_ps_ate, match_prog = match_prog_ate, match_both = match_both_ate, cal_ps = caliper_ps_ate, cal_both = caliper_both_ate, grf = grf_ate, regr = regr_ate, dr = dr_ate, bal = bal_ate, hdbal = highdim_bal_ate )
```