

Discussion Section 8 #1(a)

AMS7
19 Jul
2016

$$\frac{8.75 - 9.74}{9.74} = -0.102, \text{ so B achieves } \textcircled{1}$$

clotting about 10% faster on average than G: practical sig ✓

inference; 2 (independent) ^{not paired} samples; continuous outcome: like the case study on daphnia; relevant formulas: (11), (12) p. R-26

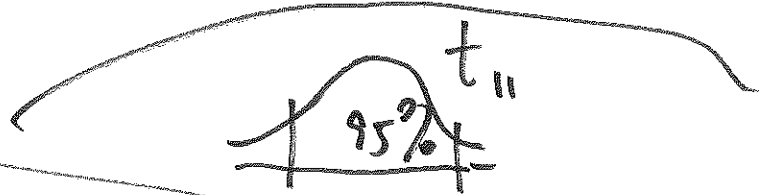
B	G
$n_1 = 6$	$n_2 = 7$
$\bar{y}_1 = 8.75$ min	$\bar{y}_2 = 9.74$ min
$s_1 = 0.58$ min	$s_2 = 0.82$ min

estimate of $(\mu_2 - \mu_1)$:

$$\bar{y}_2 - \bar{y}_1 = +0.99 \text{ min}$$

$$\hat{SE}_{\text{indep}}(\bar{y}_2 - \bar{y}_1) = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}} = 0.39 \text{ min} \quad (2)$$

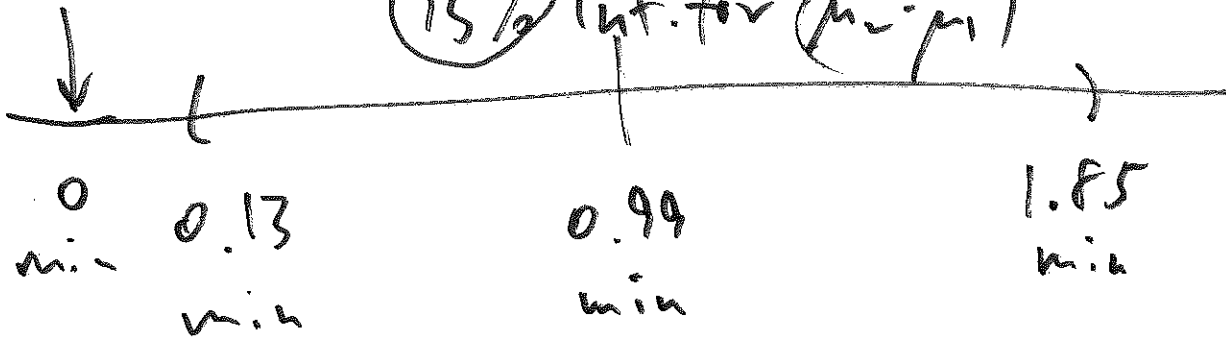
95% CI for $(\mu_2 - \mu_1)$: $(\bar{y}_2 - \bar{y}_1) \pm t_{n_1+n_2-2}^{0.95} \hat{SE}(\bar{y}_2 - \bar{y}_1)$



$$0.99 \text{ min} \pm 2.201 (0.39 \text{ min})$$

0.86 min

95% int. for $(\mu_2 - \mu_1)$



0 is not in the 95% int., so

the difference between (0 min) & (0.99 min) is ^{is probably real} statistically ^{not} easy to attribute to unlucky sampling

DS of #2 (a) cross-sectional: (3)

many rows, one moment in time

outcome (Y)	1 = CHD 0 = not
supposedly causal factor (X)	low exercise (C) vs. moderate exercise (T)
PfS (Z)	diet

design	obs. study
--------	------------

age
at
baseline
weight
at
baseline

56 2 101
9877 10239

do differ
by on amount
but's large in
practical terms