

# Supplemental Material

## Supplement 1: Example of Search strategy

### Search Details

**Query Translation:**

```
((("high-intensity interval training"[MeSH Terms] OR ("high-intensity"[All Fields] AND "interval"[All Fields] AND "training"[All Fields]) OR "high-intensity interval training"[All Fields] OR ("high"[All Fields] AND "intensity"[All Fields] AND "interval"[All Fields] AND "training"[All Fields]) OR "high intensity interval training"[All Fields]) OR (interval[All Fields] AND ("education"[Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "training"[All Fields] OR "education"[MeSH Terms] OR "training"[All Fields])) OR (high[All Fields] AND
```

**Result:**

[1801](#)

**Translations:**

high intensity	"high-intensity interval training"[MeSH Terms] OR ("high-intensity"[All Fields] AND "interval"[All Fields] AND "training"[All Fields]) OR "high-intensity interval training"[All Fields] OR ("high"[All Fields] AND "intensity"[All Fields] AND "interval"[All Fields] AND "training"[All Fields]) OR "high intensity interval training"[All Fields]
training	"education"[Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "training"[All Fields]
exercise	"exercise"[MeSH Terms] OR "exercise"[All Fields]
water	"water"[MeSH Terms] OR "water"[All Fields] OR "drinking water"[MeSH Terms] OR ("drinking"[All Fields] AND "water"[All Fields]) OR "drinking water"[All Fields]
hydrotherapy	"hydrotherapy"[MeSH Terms] OR "hydrotherapy"[All Fields]
immersion	"immersion"[MeSH Terms] OR "immersion"[All Fields]
head	"head"[MeSH Terms] OR "head"[All Fields]
swim	"swimming"[MeSH Terms] OR "swimming"[All Fields] OR "swim"[All Fields]

**Database:**

PubMed

**User query:**

((high intensity interval training OR interval training OR high intensity OR intermittent exercise OR plyometric)) AND (aquatic exercise OR water exercise OR hydrotherapy OR immersion OR head out aquatic OR water run OR swim)

## Supplement 2. Summary of authors assessment of risk of bias

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Bento 2015	?	?	-	?	-	?	-
Broman 2006	?	?	-	?	?	?	-
Connolly 2016	?	?	-	+	+	?	-
Hamer 1990	?	?	-	?	-	?	-
Michaud 1995	-	-	-	?	-	?	?
Mohr 2014	?	?	-	?	+	?	-
Mohr 2015	?	?	-	+	+	?	-
Moreira 2013	+	?	-	+	+	?	-
Moreira 2014	+	?	-	+	+	?	-
Munukka 2016	+	+	-	+	+	?	-
Nordsborg 2015	?	?	-	+	-	?	-
Rebold 2013	?	?	-	?	?	?	?
Waller 2017	+	+	-	-	+	?	-

### Supplement 3. Methodological quality assessment of included studies – PEDro scale

<b>Study</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>Total</b>
Bento 2014	1	1	0	1	0	0	0	0	0	1	1	<b>4/10</b>
Broman 2006	1	1	0	1	0	0	0	0	0	1	1	<b>4/10</b>
Connolly 2016 <sup>a</sup>	1	1	0	1	0	0	0	1	0	1	1	<b>5/10</b>
Hamer 1990	1	1	0	1	0	0	0	0	0	1	1	<b>4/10</b>
Munukka 2016 <sup>b</sup>	1	1	1	1	0	0	1	1	1	1	1	<b>8/10</b>
Michaud 1995 <sup>x</sup>	1	0	0	1	0	0	0	0	0	1	1	<b>3/10</b>
Mohr 2015 <sup>a</sup>	1	1	0	1	0	0	0	1	0	1	1	<b>5/10</b>
Mohr 2015 <sup>a</sup>	1	1	0	1	0	0	0	1	0	1	1	<b>5/10</b>
Moreira 2013 <sup>c</sup>	1	1	1	1	0	0	1	1	0	1	1	<b>7/10</b>
Moreira 2014 <sup>c</sup>	1	1	1	1	0	0	1	0	0	1	1	<b>6/10</b>
Nordsborg 2015 <sup>a</sup>	1	1	0	1	0	0	0	0	0	1	1	<b>4/10</b>
Rebold 2013	1	1	0	0	0	0	0	0	0	1	1	<b>3/10</b>
Waller 2017 <sup>b</sup>	1	1	0	1	0	0	0	1	1	1	1	<b>6/10</b>

Scale of item score 0 = absent/ unclear, 1= present, The PEDro scale criteria are:- (1) specification of eligibility criteria (2) random allocation (3) concealed allocation (4) prognostic similarity at baseline (5) subject blinding (6) therapist blinding (7) assessor blinding (8) greater than 85% follow up of at least one key outcome (9) intention to treat analysis (10) between group statistical comparison for at least one key outcome (11) point estimates and measures of variability provided for at least one key outcome. <sup>a, b, c</sup> = papers describing same interventional study; <sup>x</sup> = non RCT

Supplement 4. Consensus on Exercise Reporting Template (CERT) assessment.

CERT CHECKLIST																				TOTAL SCORE
Article	1	2	3	4	5	6	7a	7b	8	9	10	11	12	13	14a	14b	15	16a	16b	
Bento	0	0	1	0	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	11
Broman	1	1	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	15
Hamer	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
Michaud	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	15
Mohr	0	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	15
Moreira	1	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	16
Rebold	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	14
Waller	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	17

1= YES; 0= NO  
For each item describe: (1) the equipment; (2) the personnel expertise; (3) the individual; (4) supervised or unsupervised; (5) adherence to the exercise; (6) motivation strategies; (7a and b) when and how the exercise progressed; (8) the replication; (9) the home program; (10) non-exercise components; (11) type and adverse events; (12) setting; (13) the intervention; (14a and b) the exercise or individualized; (15) starting level; (16a and b) adherence measurement and delivered as per protocol.

### Supplement 5. Sensitivity analysis for effect of A-HIIT versus control on aerobic performance

Figure 5.1. Effect of A-HIIT versus control with removal of studies based on high selection bias

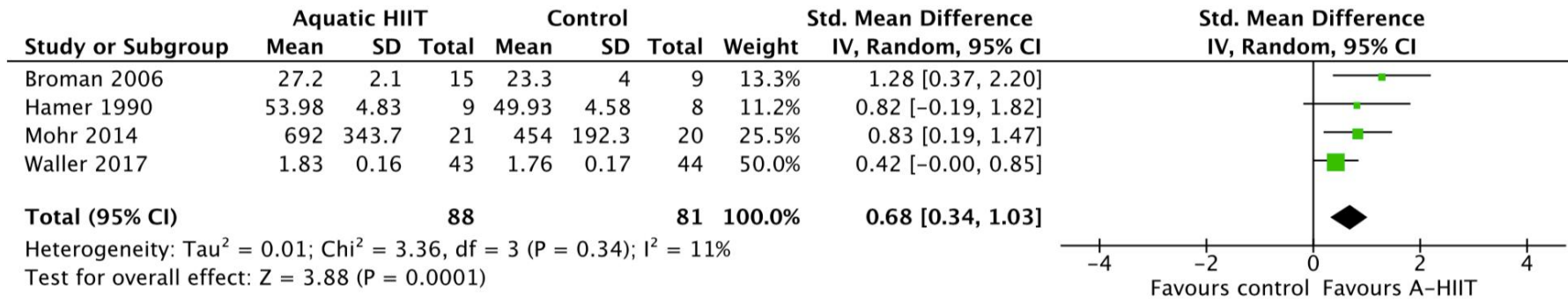


Figure 5.2. Effect of A-HIIT versus control with removal of studies based on low methodological quality

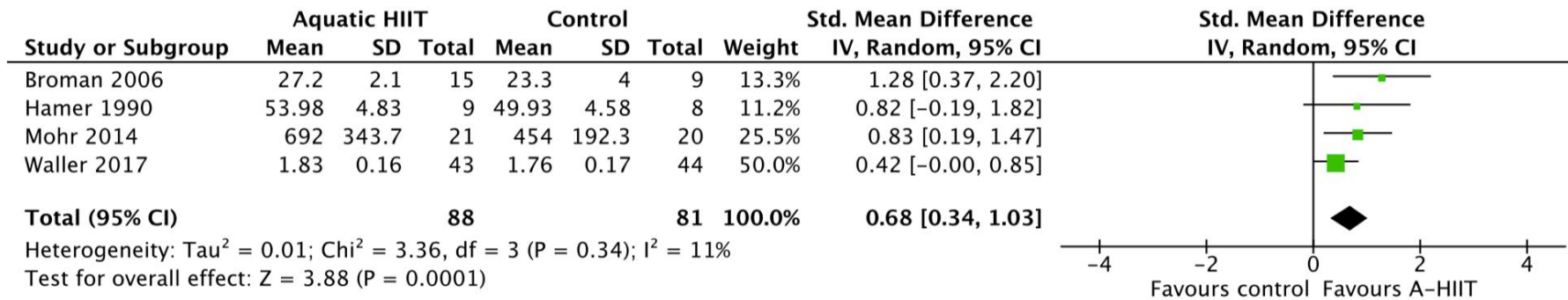


Figure 5.3. Effect of A-HIIT versus control with removal of studies with high attrition bias

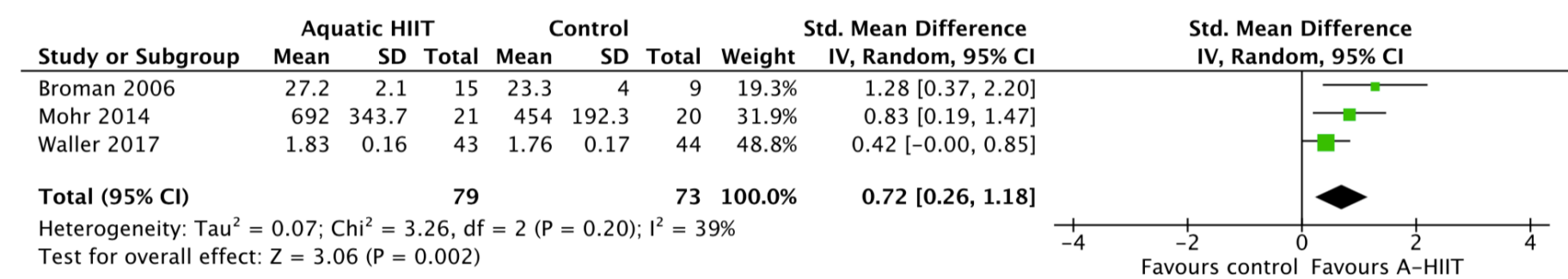


Figure 5.4. Effect of A-HIIT versus control with removal of studies with training frequency of 2 or less per week

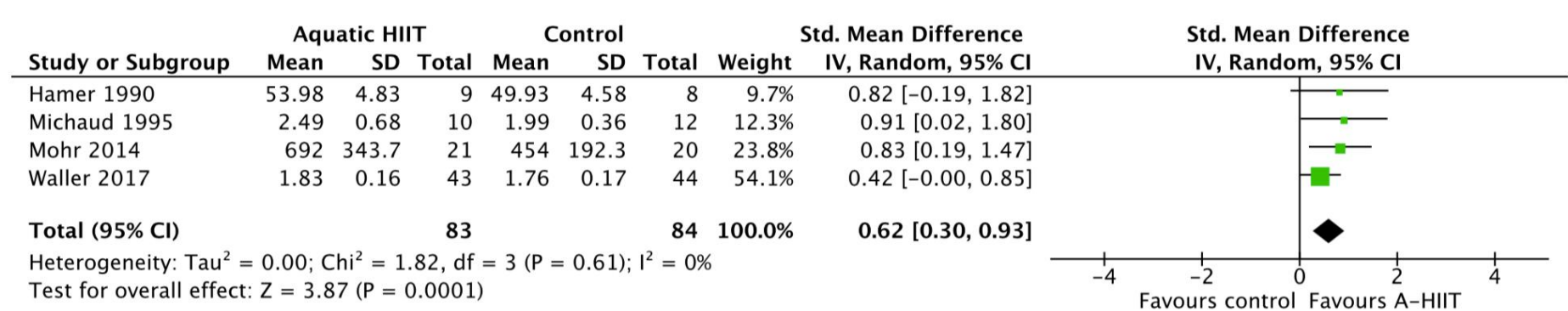
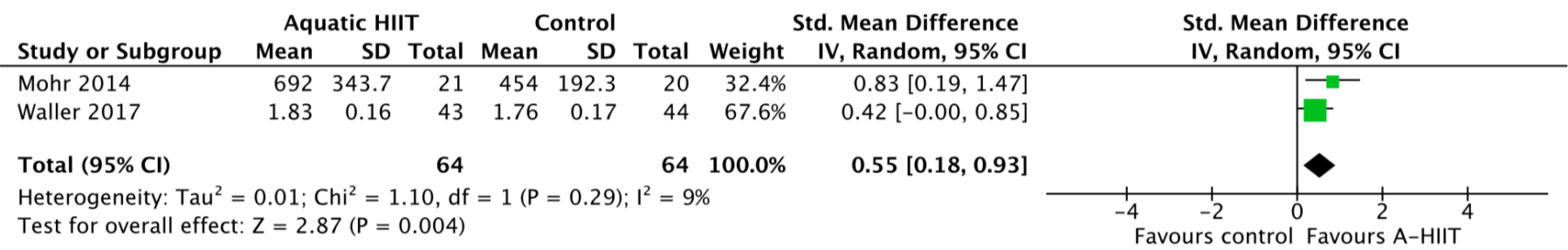


Figure 5.5. Effect of A-HIIT versus control with removal of studies conducted eight weeks or less



## Supplement 6. Sensitivity analysis for effect of A-HIIT versus control on lower limb strength

Figure 6.1. Effect of A-HIIT versus control with removal of studies with high attrition bias

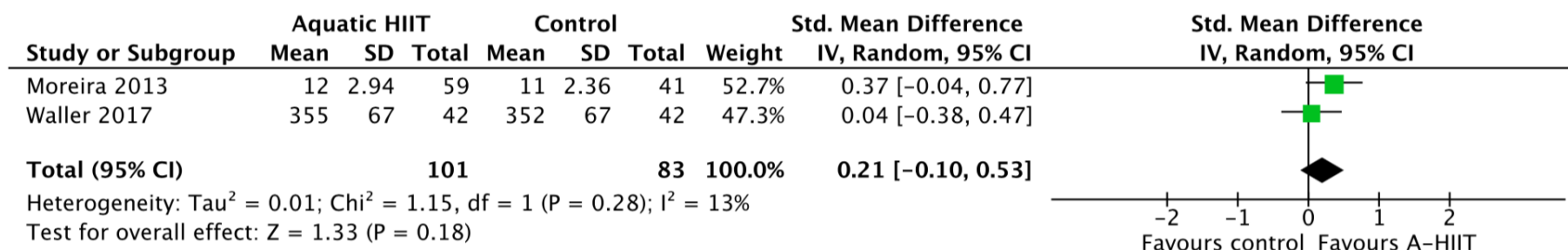
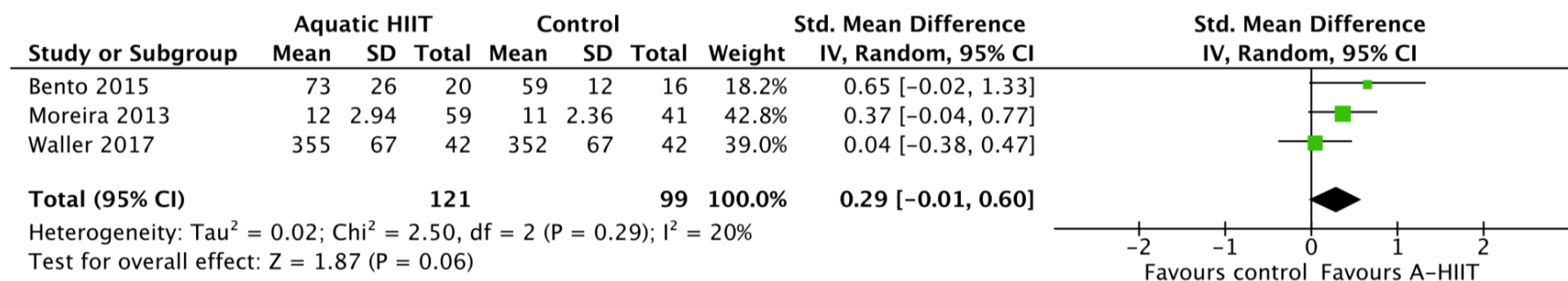


Figure 6 .2. Effect of A-HIIT versus control with removal of studies conducted 8 weeks or less





## Supplement 7. Sensitivity analysis for effect of A-HIIT versus control on body fat mass

Figure 7.1. Effect of A-HIIT versus control with removal of studies with low methodological quality

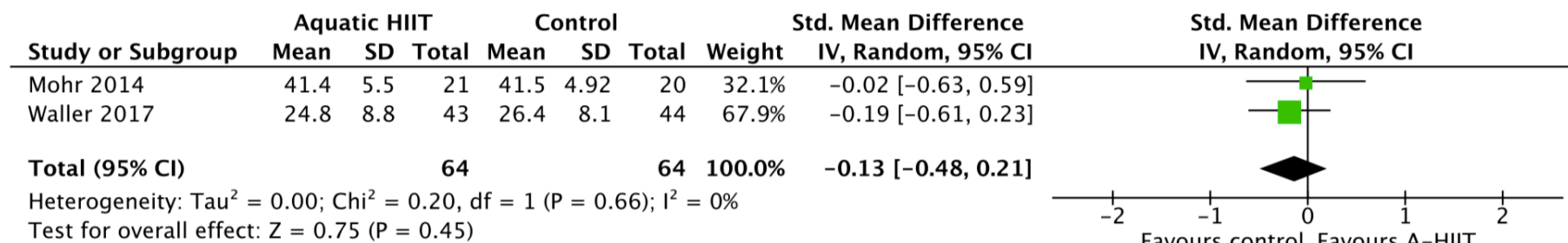
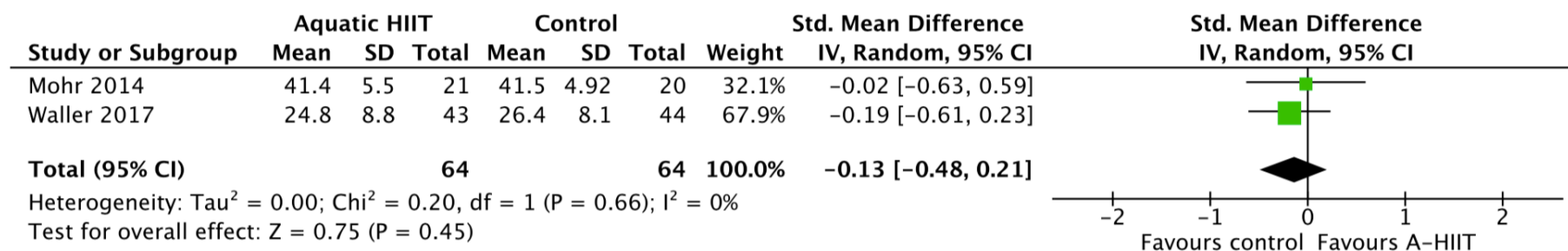


Figure 7.2. Effect of A-HIIT versus control with removal of studies with training frequency 2 or less per week



## Supplement 8. A-HIIT versus control – adverse events

Figure 8.1. Effect of A-HIIT versus control for minor adverse events

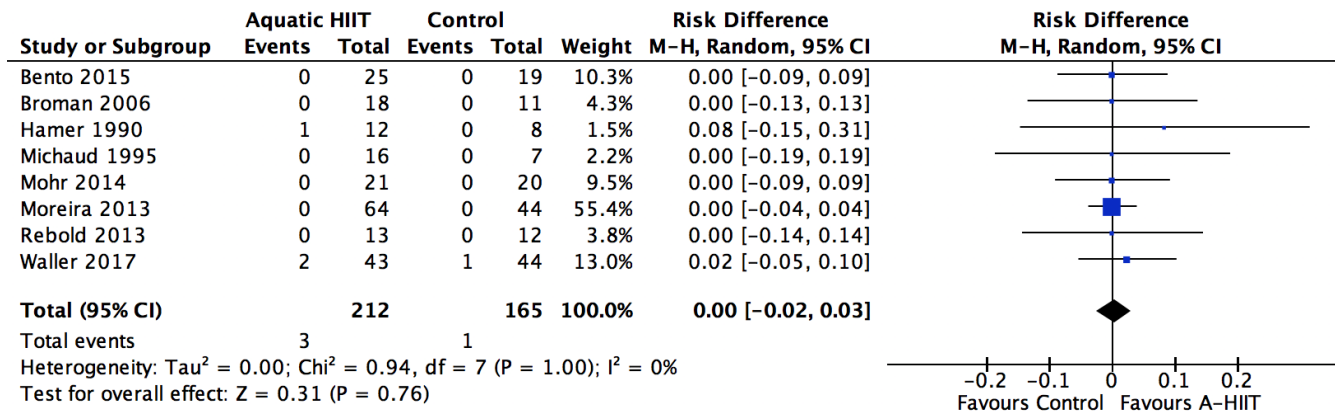


Figure 8.2. Effect of A-HIIT versus control for serious adverse events

