

Supplement Table 1. Parameters reported per single trial included in the meta-analysis

Authors	Adverse events						Hormonal parameters						Sperm parameters						Body composition and metabolic parameters					
	G	A	HL	↓TV	↑BP	↑C	ED	↓L	LH	FSH	TT	E2	SHBG	TS	SC	SM	FM	LM	LDL	HDL	TC	TG	FG	
Aakvaag and Stromme, 1974 [9 ^a]																								
Strauss et al., 1983 [10]									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Alén et al., 1985 [11]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Yesalis et al., 1988 [12]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Knuth et al., 1989 [13]									x															
Moss et al., 1993 [14]																								
Evans, 1997 [15]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Korkia and Stimson, 1997 [16]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Torres-Calleja et al., 2001 [17]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Fudala et al., 2003 [18]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Perry et al., 2005 [19]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Taher et al., 2008 [20]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Ip et al., 2010 [21]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Al-Janabi et al., 2011 [22]																								
Coward et al., 2013 [23]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Razavi et al., 2014 [24]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Rasmussen et al., 2016 [25], 2017 [26], 2018 [27]																								
Baggish et al., 2017 [28]																								
Bordin et al., 2017 [29]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Barbosa Neto et al., 2018 [30]																								
Horwitz et al., 2019 [31]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Smit and de Ronde, 2018 [32]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Souza et al., 2019 [33]																								
Böijesson et al., 2020 [34]																								
Aakvaag and Stromme, 1974 [9 ^a]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Strauss et al., 1983 [10]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Alén et al., 1985 [11]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Yesalis et al., 1988 [12]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Knuth et al., 1989 [13]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Moss et al., 1993 [14]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Evans, 1997 [15]																								
Korkia and Stimson, 1997 [16]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Torres-Calleja et al., 2001 [17]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Fudala et al., 2003 [18]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

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	G	A	HL	↓ TV	↑ BP	↑ C	ED	↓ L	LH	FSH	TT	E2	SHBG	TS	SC	SM	FM	LM	LDL	HDL	TC	TG	FG	
Perry et al., 2005 [19]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Taher et al., 2008 [20]								x																
Ip et al., 2010 [21]	x		x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Al-Janabi et al., 2011 [22]	x	x						x																
Coward et al., 2013 [23]							x																	
Razavi et al., 2014 [24]																								
Rasmussen et al., 2016 [25], 2017 [26], 2018 [27]	x	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Baggish et al., 2017 [28]									x															
Bordin et al., 2017 [29]	x	x	x						x			x	x	x	x	x	x	x	x	x	x	x	x	x
Barbosa Neto et al., 2018 [30]	x	x							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Horwitz et al., 2019 [31]									x															
Smit and de Ronde, 2018 [32]																								
Souza et al., 2019 [33]	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Böijesson et al., 2020 [34]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

G: gynecomastia, A: acne, HL: hair loss, ↓ TV: reduced testis volume, ↑ BP: increased blood pressure, ↑ C: increased cholesterol, ED: erectile dysfunction, ↓ L: reduced libido, LH: luteinizing hormone, FSH: follicular stimulating hormone, TT: total testosterone, E2: estradiol, SHBG: sex hormone binding globuline, TS: total sperm count, SC: sperm concentration, SM: sperm normal morphology, FM: fat mass, LM: lean mass, LDL: low-density lipoprotein cholesterol, HDL: high-density lipoprotein cholesterol, TC: total cholesterol, TG: triglycerides, FG: fasting glucose.

^aRandomized controlled trial.