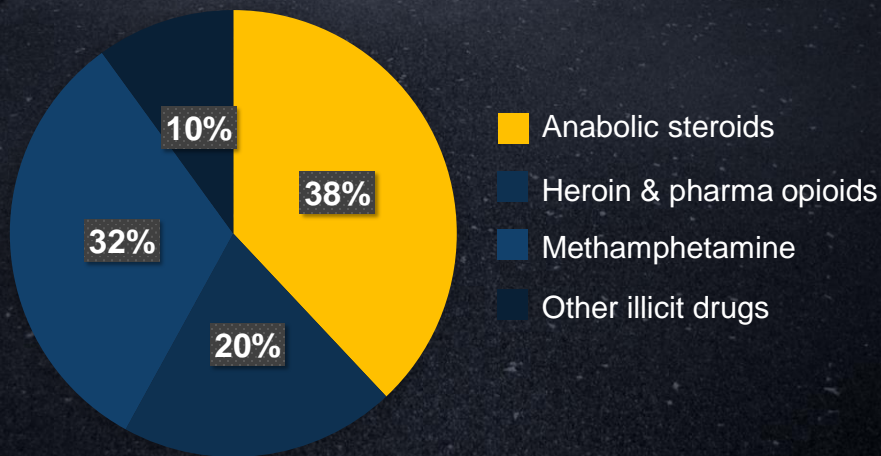


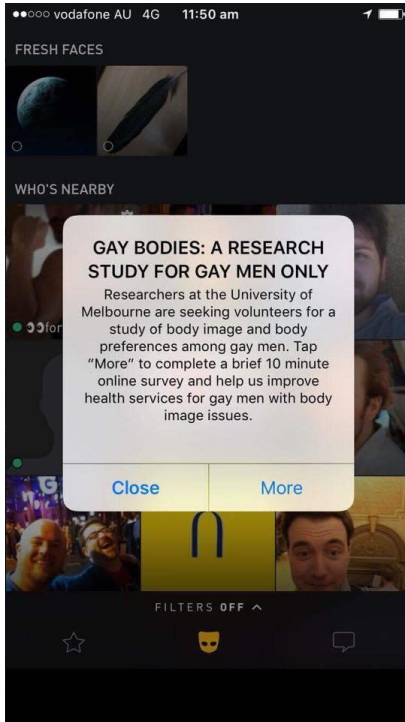
## Introduction – new injection drug users



Australian Needle and Syringe Program Survey National Data Report 2014

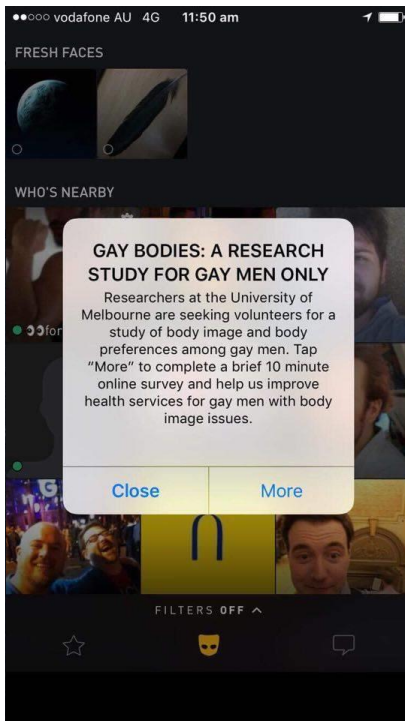
## Introduction – sexual minority men

- ❖ Sexual minority more susceptible to:
  - ❖ Body dissatisfaction (e.g. Frederik & Essayil, 2016)
  - ❖ Eating disorders (e.g. Calzo et al. 2017)
  - ❖ Body dysmorphic disorder (e.g. Schneider et al. 2017)
  - ❖ **Anabolic steroid use** (e.g. Blashill et al. 2017)
- ❖ Limited research on sexual minority men in Australia and New Zealand with large sample sizes (i.e.,  $N > 500$ )
- ❖ Geosocial-networking smartphone application (GNSA) advertisements are a method for recruiting large numbers of sexual minority men with excellent geographical representation



## Method – recruitment

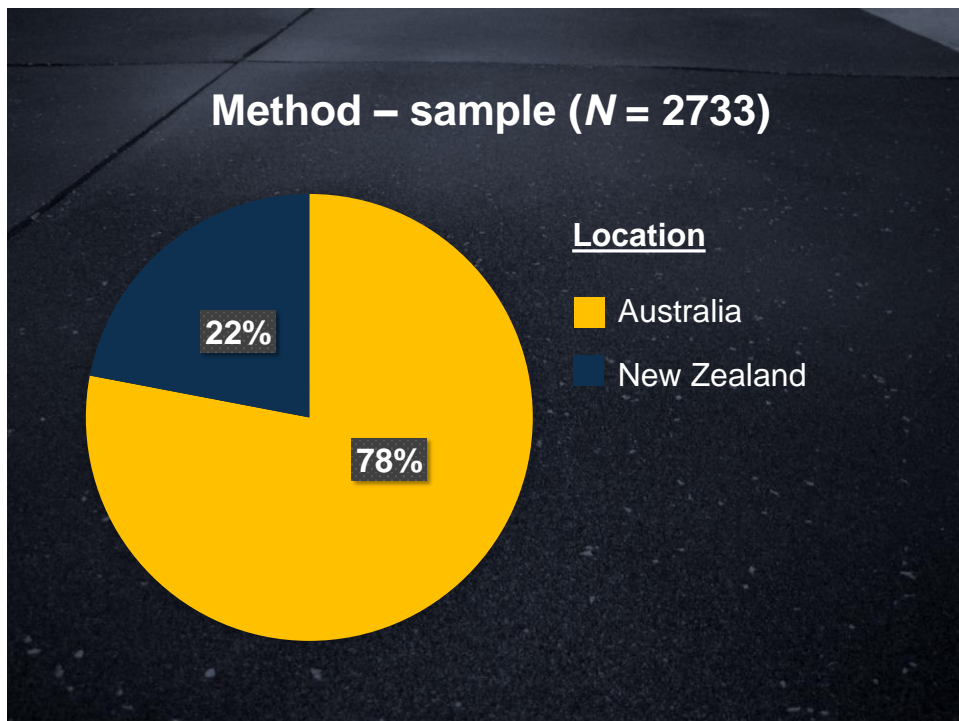
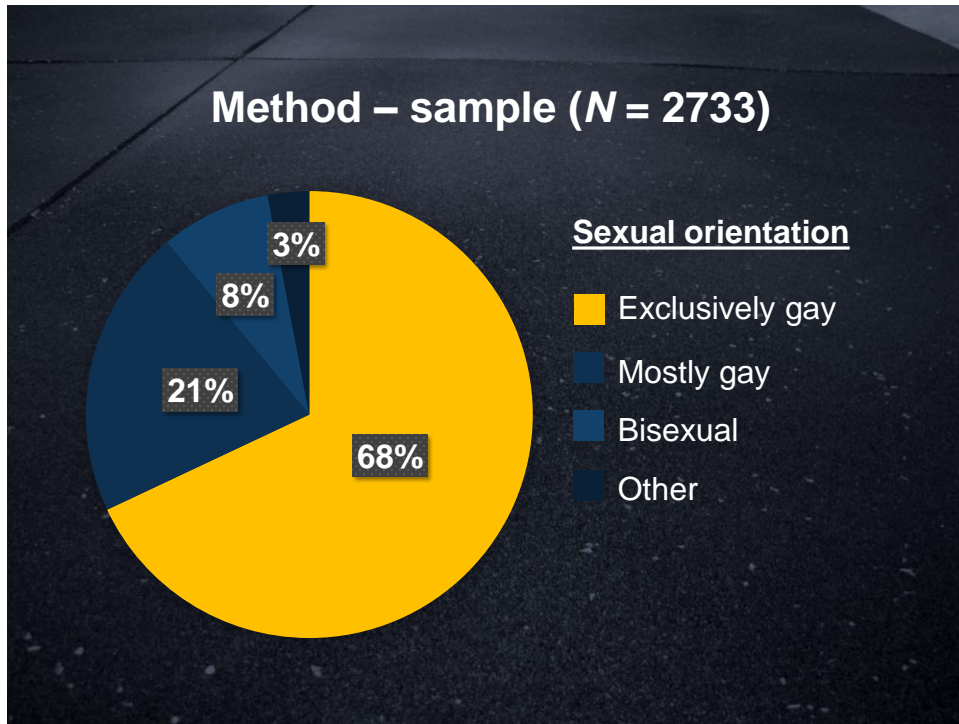
- ❖ Advertisements that solicited volunteers for a study of “body image and body preferences” [*no mention of steroids*]
- ❖ Advertisements appeared on four non-consecutive days in late April and early May of 2017
- ❖ Disseminated nationwide across Australia and New Zealand
- ❖ Median survey completion time = 11 minutes; counterbalanced

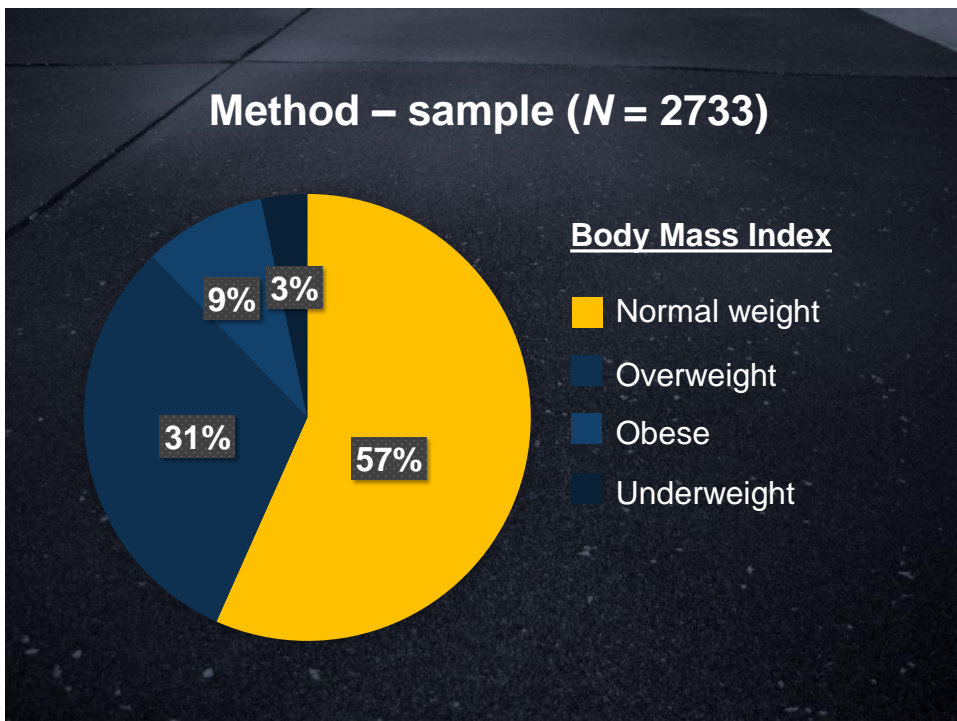
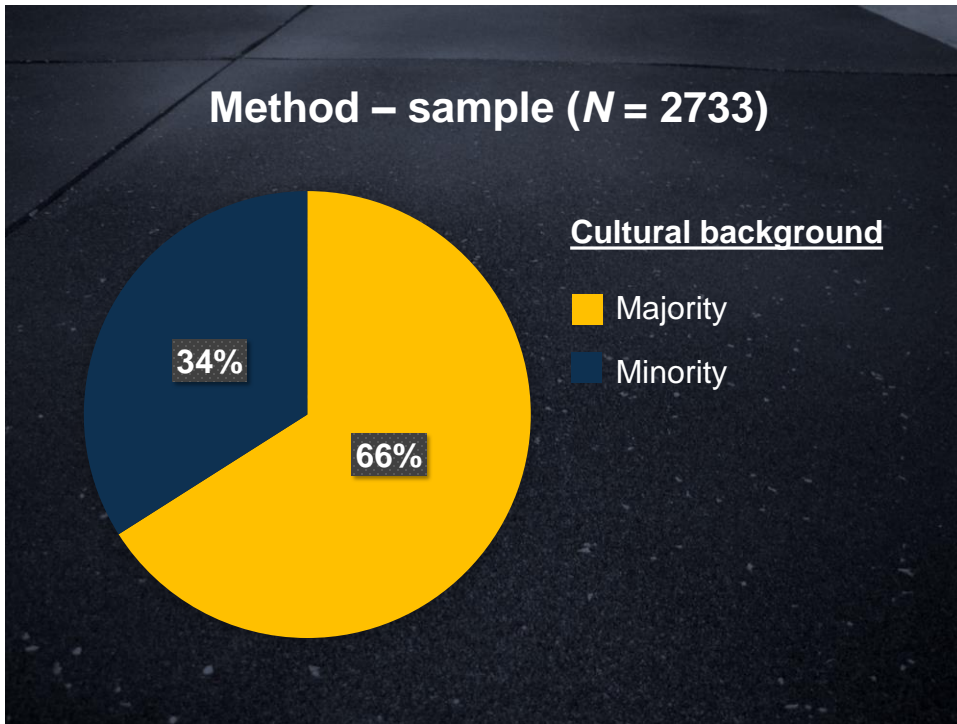


## Method – measures

- ❖ Anabolic steroids
  - ❖ Actual use
  - ❖ Thoughts about use
- ❖ Body dissatisfaction (MBAS-R)
  - ❖ Body fat
  - ❖ Muscularity
  - ❖ Height
  - ❖ Penis size (adapted)
- ❖ Eating disorder symptoms (EDE-QS)
- ❖ Psychological quality of life (BBQ)



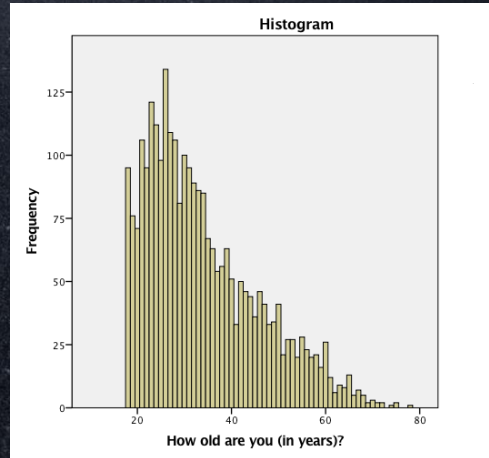




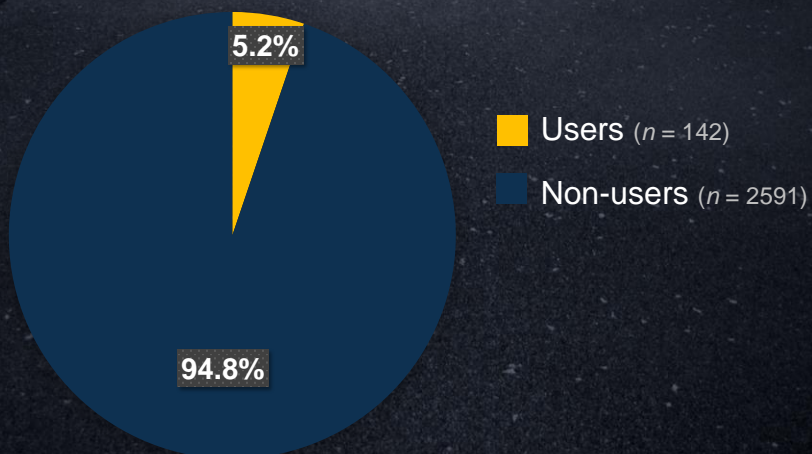
## Method – sample ( $N = 2733$ )

### ❖ Age

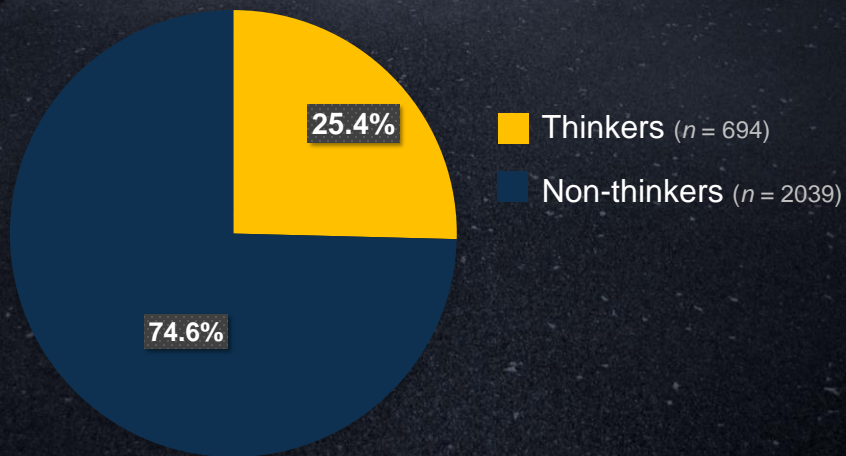
- ❖ Range: 18–78 years
- ❖ Mean = 34 years
- ❖ Median = 31 years
- ❖  $SD = 12$  years



## Results – prevalence of steroid use



## Results – prevalence of steroid thoughts



## Results – predictors of steroid thoughts

Predictor	$\beta$	SE $\beta$	Wald $\chi^2$	<i>p</i>
Age (years)	0.004	0.001	13.817	< .001
Body Mass Index	0.003	0.003	1.181	.277
Height (cm)	0.005	0.002	6.738	.009
Sexual orientation	-0.020	0.019	1.184	.277
Cultural background (majority <sup>ref</sup> /minority)	-0.052	0.028	3.363	.067
Muscularity dissatisfaction	0.213	0.015	177.867	< .001
Body fat dissatisfaction	-0.105	0.018	32.986	< .001
Height dissatisfaction	0.069	0.017	14.875	< .001
Penis size dissatisfaction	-0.012	0.014	0.674	.412
Eating disorder symptoms	0.224	0.032	45.610	< .001
Psychological quality of life	-0.002	0.001	8.373	.004



## Results – predictors of steroid use

Predictor	$\beta$	SE $\beta$	OR	Wald $\chi^2$	$p$
Age (years)	0.027	0.008	1.029	12.193	< .001
Body Mass Index	0.035	0.019	1.036	3.442	.064
Height (cm)	-0.011	0.014	0.014	0.616	.433
Sexual orientation	-0.087	0.131	0.131	0.439	.508
Cultural background (majority <sup>ref</sup> /minority)	0.545	0.191	0.191	8.167	.004
Muscularity dissatisfaction	0.196	0.122	0.122	2.583	.108
Body fat dissatisfaction	-0.440	0.126	0.126	12.260	< .001
Height dissatisfaction	0.145	0.116	0.116	1.557	.212
Penis size dissatisfaction	-0.124	0.096	0.096	1.683	.195
Eating disorder symptoms	0.625	0.207	0.207	9.130	.002
Psychological quality of life	-0.006	0.004	0.004	1.661	.197

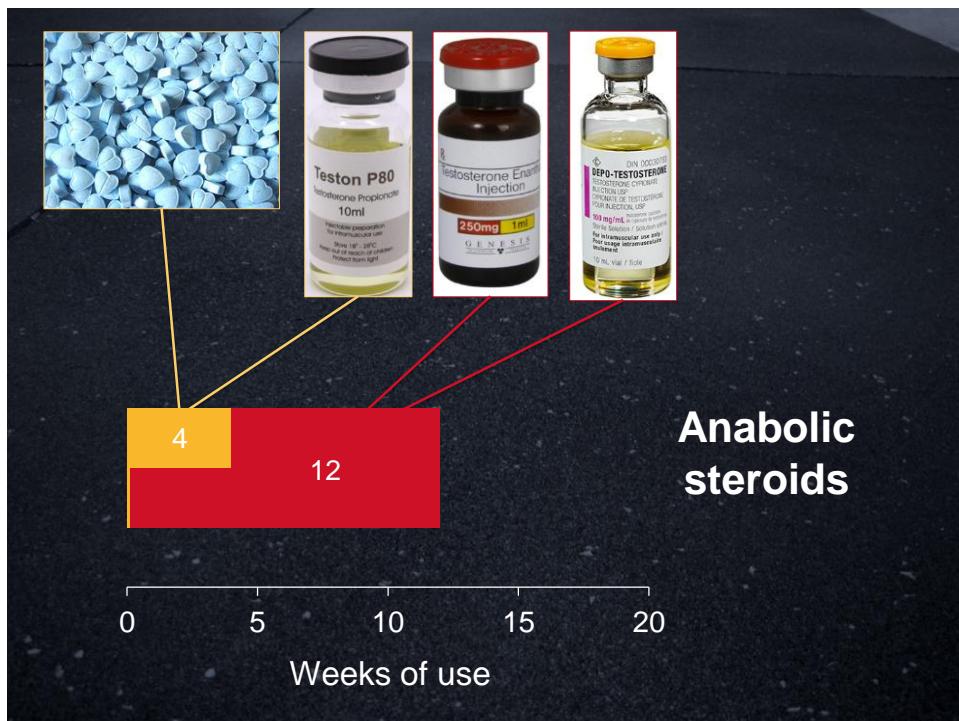
## Discussion

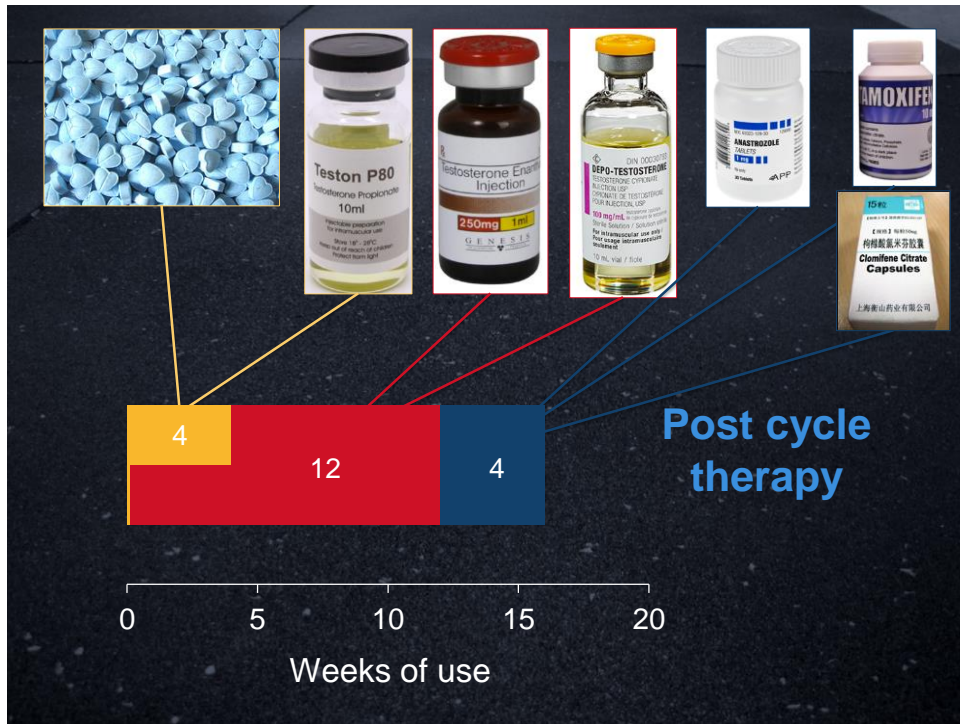
- ❖ Psychopathology related to body image and eating disorders are associated with anabolic steroid use amongst sexual minority men living in Australia and New Zealand
- ❖ Sexual minority men from minority cultural backgrounds (i.e., non-Australian/New Zealander) were more likely to use anabolic steroids (7.0% vs. 4.2%)
- ❖ Geosocial-networking smartphone application (GNSA) advertisements are a method for recruiting large numbers of sexual minority men with excellent geographical representation
  - ❖ (< 1 AUD / participant)



## Discussion – limitations

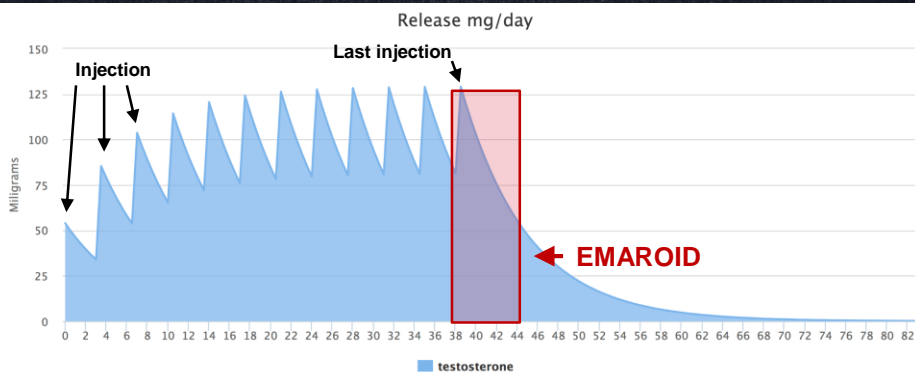
- ❖ Prevalence estimates not entirely unbiased; still mentioned 'body image' and 'body preferences'
- ❖ Potential for legitimate anabolic steroid use (i.e., medically prescribed) to be misanalysed as illegitimate/illicit
- ❖ Cross-sectional study design





## Discussion – future research (**funded!**)

- ❖ EMAROID (pronounced 'hemorrhoid')
  - ❖ Ecological momentary assessment study with steroid users ( $N = 250$ )
  - ❖ Primary aim is to examine the time-course and predictors of mental health disturbance during steroid discontinuation



## Discussion – future research (**funded'ish**)

### ❖ M-BODY

- ❖ GNSAs delivered nationwide across Australia and New Zealand to men who use Tinder and Grindr
- ❖ Longitudinal; new surveys issued every 3 months
  - ❖ Incentivized; survey completors get to donate \$5 to charity
  - ❖ Pilot tested with 425 individuals with eating disorders; response rate = ~75% (using email reminders only)

The Tinder logo, featuring the word "tinder" in a lowercase, rounded, red font with a small flame icon above the letter 'i'.

target  $N = 25,000$

The Grindr logo, featuring a yellow mask icon to the left of the word "Grindr" in a bold, yellow, sans-serif font.

target  $N = 6,000$



**ANABOLIC STEROID USE  
IN GAY AND BISEXUAL MEN LIVING IN  
AUSTRALIA AND NEW ZEALAND**