



## RACP Foundation Research Awards

### FINAL REPORT

<b>Project / Program Title</b>	Safety of gender-affirming hormone therapy for transgender individuals	
<b>Name</b>	Dr Brendan Nolan	
<b>Award Received</b>	2019 RACP Fellows Research Entry Scholarship	
<b>Report Date</b>	September 2020	
<b>Chief Investigator / Supervisor</b>	Dr Ada Cheung	
<b>Administering Institution</b>	The University of Melbourne	
<b>Funding Period</b>	Start Date:	September 2019
	Finish Date:	September 2020

#### PROJECT SUMMARY

Despite no clear evidence, transgender women are told to stop their feminising estrogen treatment several weeks before gender surgery, but this causes severe 'menopausal symptoms' with hot flushes, depression and distress compounding an already stressful preparation for and recovery from major surgery. This trial will establish if continuing estrogen gel around the time of surgery is safe and effective at improving 'menopausal symptoms'.

#### PROJECT AIMS / OBJECTIVES

In transgender women undergoing gender affirmation surgery, we will assess the influence of continuation of perioperative transdermal estradiol on: **(a)** blood clotting risk (measured by global coagulation assays); **(b)** vasomotor symptoms; **(c)** quality of life, and; **(d)** gender dysphoria.

#### SIGNIFICANCE AND OUTCOMES

There has been a 10-fold rise in Australian transgender individuals seeking healthcare over 5 years, mirroring worldwide trends. Our recent survey of 928 Australian transgender adults (manuscript in preparation) found that of the 384 transgender women, 18% had undergone gender affirmation surgery, however 64% desired surgery in the future. If continuation of transdermal estradiol leads to clinically important differences in hot flushes and social functioning this would provide impetus to do a larger study powered to detect changes in incidence of venous thrombosis. Due to lack of rigorously designed research, treatment practices vary widely. This will be the first of its kind randomised trial with the potential to improve clinical care and well-being for transgender women worldwide. Moreover, our access to state-of-the-art validated global coagulation assays have the

ability to predict blood clotting risk as a surrogate for venous thrombosis events. The international implications have a high likelihood of publication in leading journals.

## PUBLICATIONS / PRESENTATIONS

### Publications:

1. Angus LM, Nolan BJ, Zajac JD & Cheung AS. A systematic review of anti-androgens and feminisation in transgender women. *Clin Endocrinol (Oxf)* 2020 [accepted 3rd September 2020]
2. Nolan BJ & Cheung AS. Relationship between serum estradiol concentration and clinical outcomes in transgender individuals undergoing feminising hormone therapy: a narrative review. *Transgend Health* 2020 [accepted 3rd September 2020]
3. Nolan BJ & Cheung AS. Estradiol in the perioperative period: implications for transfeminine individuals. *Yale J Biol Med* 2020 [accepted 23rd May 2020]
4. Nolan BJ, Brownhill A, Bretherton I, Wong P, Fox S, Locke P, Russell ND, Grossmann M, Zajac JD & Cheung AS. Relationships between body mass index with oral estradiol dose and serum estradiol concentration in transgender adults undergoing feminising hormone therapy. *Ther Adv Endocrinol Metab* 2020. doi: 10.1177/2042018820924543
5. Nolan BJ, Leemaqz SY, Ooi O, Cundill P, Silberstein N, Locke P, Grossmann M, Zajac JD, Cheung AS. Risk of polycythaemia with different formulations of testosterone therapy in transmasculine individuals. *Intern Med J* 2020 [epub ahead of print 1st April 2020] doi: 10.1111/imj.14839

### Abstracts:

1. Nolan BJ, Brownhill A, Bretherton I, Wong P, Fox S, Locke P, Russell ND, Grossmann M, Zajac JD, Cheung AS. SUN-039 Estradiol Dose and Concentrations in Transfeminine Individuals. *J Endocr Soc.* 2020 May 8; 4(Suppl 1): SUN-039.
2. Nolan BJ, Leemaqz SY, Ooi O, Cundill P, Silberstein N, Locke P, Grossmann M, Zajac JD, Cheung AS. SUN-046 Prevalence of Polycythaemia with Different Formulations of Testosterone Therapy in Transmasculine Individuals. *J Endocr Soc.* 2020 May 8; 4(Suppl 1): SUN-046.
3. Nolan BJ, Leemaqz S, Ooi O, Cundill P, Silberstein N, Locke P, Grossmann M, Zajac JD, Cheung AS. Risk of polycythaemia with different formulations of testosterone therapy in transgender men (abstract #44). In: *The Australian Professional Association for Trans Health 2019; 2019 Oct 24-26; Fremantle WA.*
4. Nolan BJ, Leemaqz S, Ooi O, Cundill P, Silberstein N, Locke P, Grossmann M, Zajac JD, Cheung AS. Risk of polycythaemia with different formulations of testosterone therapy in transgender men (abstract #53). In: *Proceedings of the 62nd Endocrine Society of Australia Annual Scientific Meeting; 2019 Aug 18-21; Sydney NSW.*

## ACKNOWLEDGEMENTS

1. Angus LM, Nolan BJ, Zajac JD & Cheung AS. A systematic review of anti-androgens and feminisation in transgender women. *Clin Endocrinol (Oxf)* 2020 [accepted 3rd September 2020]
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Endocrinol Metab 2020. doi: 10.1177/2042018820924543

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