

SRF ACADEMIC SCHOLARSHIP RECIPIENT 2016

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PROJECT SUMMARY

Does the gut microbiome play a role in polycystic ovary syndrome?

The microbiome of the gut has emerged as a 'new metabolic organ', and it's been recognised for some time that it responds to diet, obesity and metabolic conditions. There is also rapidly increasing interest in the role of microbes in the large intestine being modulators of energy balance. This has potential clinical relevance in conditions associated with obesity, cardiovascular disease and type 2 diabetes. Given evidence for the involvement of the gut microbiome in these conditions, which are part of the wider PCOS risk-related phenotype, this points to a potential role of the gut microbiome in PCOS.

To date there have been no studies examining the gut microflora in PCOS patients. However, intriguing connections exist between cecal microbiome and androgen concentrations, and in this context it's noteworthy that hyperandrogenaemia is a hallmark of PCOS. Hence, in this pilot study, we hope to address two basic research questions, firstly, could an altered gut microbiome, as a product of PCOS, also be a contributory factor in the aetiology and pathogenesis of PCOS? And secondly, to what extent is there androgen regulation of the gut microbiome in PCOS?