

Polycystic ovary syndrome, combined oral contraceptives and the risk of dysglycemia

Kumarendran, Balachandran; O'reilly, Michael; Subramanian, Anuradha; Sumilo, Dana; Toulis, Konstantinos; Gokhale, Krishna; Wijeyaratne, Chandrika N. ; Coomarasamy, Arri; Tahrani, Abd; Azoulay, Laurent; Arlt, Wiebke; Nirantharakumar, Krishnarajah

DOI:

[10.2337/dc21-0437](https://doi.org/10.2337/dc21-0437)

Document Version

Peer reviewed version

Citation for published version (Harvard):

Kumarendran, B, O'reilly, M, Subramanian, A, Sumilo, D, Toulis, K, Gokhale, K, Wijeyaratne, CN, Coomarasamy, A, Tahrani, A, Azoulay, L, Arlt, W & Nirantharakumar, K 2021, 'Polycystic ovary syndrome, combined oral contraceptives and the risk of dysglycemia: a population-based cohort study with a nested pharmaco-epidemiological case-control study', *Diabetes Care*, vol. 44, no. 12, dc210437, pp. 2758-2766. <https://doi.org/10.2337/dc21-0437>

[Link to publication on Research at Birmingham portal](#)

Publisher Rights Statement:

This is an author-created, uncopyedited electronic version of an article accepted for publication in *Diabetes Care*. The American Diabetes Association (ADA), publisher of *Diabetes Care*, is not responsible for any errors or omissions in this version of the manuscript or any version derived from it by third parties. The definitive publisher-authenticated version will be available in a future issue of *Diabetes Care* in print and online at <https://doi.org/10.2337/dc21-0437>.

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

A. Risk of type 2 diabetes and dysglycaemia within BMI subgroups

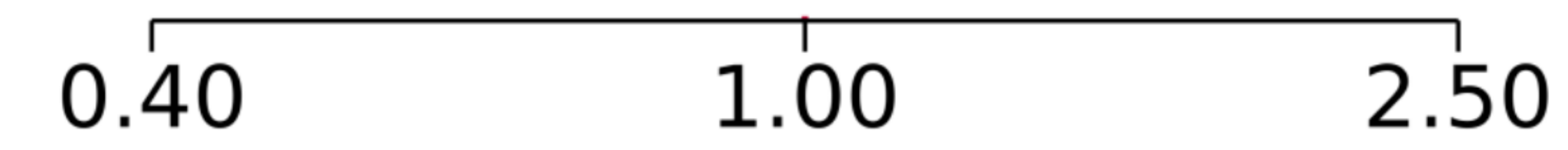
aHR (95% CI)

Risk of type 2 diabetes

Normal/Underweight		1.88 [1.41, 2.50]
Overweight		1.92 [1.56, 2.36]
Obese		1.88 [1.72, 2.06]

Risk of dysglycaemia

Normal/Underweight		1.44 [1.24, 1.68]
Overweight		1.87 [1.65, 2.12]
Obese		1.81 [1.69, 1.93]



B. COCP exposure and risk of dysglycaemia

aOR (95% CI)

Prescription of COCP within the exposure window

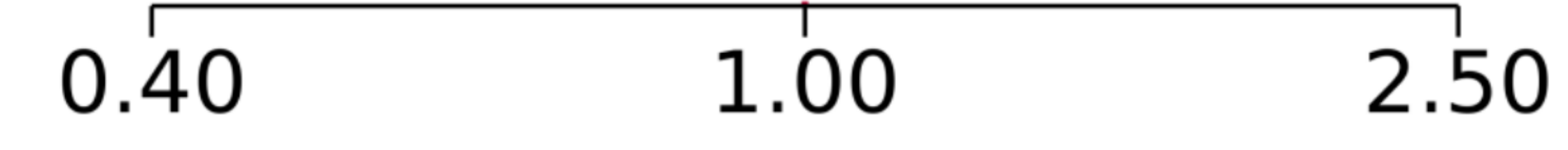
	0.74 [0.65, 0.85]
--	--------------------

Dose response relationship: Categorization by median prescription count (3)

No prescription of COCP within the exposure window		Ref
COCP prescription count ≤3 within the exposure window		0.80 [0.67, 0.96]
COCP prescription count >3 within the exposure window		0.67 [0.55, 0.81]

Categorization by type of progestin component

No prescription of COCP		Ref
Prescription of COCP without anti-androgenic progestin component		0.72 [0.59, 0.87]
Prescription of COCP with anti-androgenic progestin component		0.76 [0.63, 0.91]



Normal/Underweight: <23.5 kg/m² for patients of South Asian ethnicity & <25 kg/m² for patients of all other ethnic groups
 Overweight: 23.5-27.5 kg/m² for patients of South Asian ethnicity & 25-30 kg/m² for patients of all other ethnic groups
 Obese = ≥27.5 kg/m² for patients of South Asian ethnicity & ≥30 kg/m² for patients of all other ethnic groups