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## Long list of conflicts of interest in industry-funded drug trials are counterproductive and opaque for readers

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### ► To cite this version:

Sophie Leducq, Richard Barlow, Arabella Baker, Mikolaj Swiderski, Hywel Williams. Long list of conflicts of interest in industry-funded drug trials are counterproductive and opaque for readers. *Journal of Clinical Epidemiology*, 2024, pp.111491. 10.1016/j.jclinepi.2024.111491 . hal-04668789

**HAL Id: hal-04668789**

**<https://hal.science/hal-04668789v1>**

Submitted on 7 Aug 2024

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1 **Article Type:** Letter to the Editor

2 **Title:** Long list of conflicts of interest in industry-funded drug trials are counterproductive  
3 and opaque for readers

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22

23 **Manuscript word count:** 499

24 **References:** 5

25 **Figure:** 1

1 **Table: 1**

2 **Keywords:** conflict of interest, statement, funding, industry, randomized controlled trial,

3 atopic dermatitis, observational study

4

# 1 MANUSCRIPT

## 2 1. Introduction

3 Conflict of interest (COI) has been widely accepted as a mandatory item of reporting.[1] The  
4 optimal method for declaring COI remains unclear and varies from brief statements to  
5 extensive lists.[2,3] We hypothesise that exhaustive lists, encompassing all financial  
6 relationships with drug companies spanning many years (whether related to the study drug or  
7 not) are counterproductive and opaque. The objective was to determine whether the use of  
8 lengthy lists of COIs creates difficulties for readers in identifying the most relevant COIs in  
9 dermatological industry-funded randomised controlled trials (RCTs) of drug treatments.

## 10 2. Methods

11 A recruited panel of typical dermatology journal readers (UK dermatology clinicians and  
12 researchers) completed an online cross-sectional survey about COIs in a purposive sample of  
13 four RCTs published in leading journals. Each paper had a long list of COIs, covering more  
14 than a third of a page, on the topic of a commercial drug for a single skin condition. The  
15 primary outcome was the percentage of readers correctly identifying the company that  
16 developed the drug with authors who had a direct conflict with that company for the four  
17 papers included, assessed independently by three authors who acted as a reference standard.

## 18 3. Results

19 A total of 23 readers completed the survey (response rate 44%). Six (26%) were exclusively  
20 clinicians and 17 (73.9%) were research active (**Table**). No readers correctly identified direct  
21 COIs of authors to the experimental drugs (**Figure**). All 23 readers correctly identified the  
22 companies producing these drugs. Median time per paper taken to try and identify the authors  
23 with direct COI was 6 minutes [4-8]. Readers reported a median score of 3 [2-4] for  
24 confidence in their COI conclusions, indicating moderate confidence (6-point Likert scale; 1:  
25 no confidence to 6: complete confidence). Scores obtained by readers with an exclusive

1 clinical activity were lower than the scores obtained by researchers. Free comments  
2 highlighted challenges in discerning relevant COIs.

### 3 **4. Discussion**

4 Identifying authors with relevant COIs from long lists of COIs is counterproductive.  
5 According to our readers' comments and previous literature,[4] several modifiable factors  
6 could have contributed to challenges in accurately identifying relevant COIs, such as dense  
7 paragraphs, small font, initialled names rather than full names, information split across  
8 different pages and declaration of COIs in an appendix. In some senses, such COIs have  
9 become the exhaustive "small print" for terms and conditions that few people read on many  
10 websites. There is a need for transparency to avoid analysis bias and facilitate interpretation  
11 of COIs.[5] We suggest that a clear and simple statement should indicate which authors have  
12 a direct financial conflict with the product. We advocate for more reader-friendly and clear  
13 COI disclosures, which could be facilitated using an "ACE" framework denoting the Author(s)  
14 who received financial support from Company X (...a subsidiary of Company Y) who  
15 developed/manufactured the Experimental treatment drug [name of drug] in this study. Others  
16 have suggested a similar approach.[4] The standard full ICMJE COI statement could remain  
17 at the end of the article for those who need the detail.

18

1 **ABBREVIATIONS**

2 COI: Conflict of Interest

3 RCT: Randomised Controlled Trial

4 **ACKNOWLEDGEMENTS**

5 We thank patient contributors, Mrs Amanda Roberts and Mr Tim Burton, for their helpful  
6 comments on the manuscript, Dr Sonia Gran for her helpful comments on the protocol and  
7 questionnaire, Dr Laura Howells for her helpful comments on the questionnaire, Dr Carron  
8 Layfield for her help for disseminating the questionnaire and Maggie McPhee for her  
9 technical help. We acknowledge Dr Rachel Abbott, Dr Louise Clarke, Dr Stuart N. Cohen, Dr  
10 Jane Harvey, Dr Rubeta Matin, Mrs Rheanne Leatherland, Prof Nick Levell, Dr Bayanne  
11 Olabi, Prof Charlotte Proby, Mr Corey Simpson, Dr Hannah Wainman and anonymous  
12 participants who kindly answered the questionnaire.

13 **FUNDING**

14 No funding has been received for this study. Dr Sophie Leducq received a grant from the  
15 *Fonds de Dotation* of the French Society of Dermatology (on an educational grant funded by  
16 Amgen, unrelated to the submitted work) and *Collège des Enseignants en Dermatologie de*  
17 *France* for her one-year fellowship at the Centre of Evidence Based Dermatology.

18 **COMPETING INTERESTS**

19 The authors declare no competing interest.

20 **ETHICS APPROVAL**

21 Not applicable

22 **TRANSPARENCY DECLARATION**

23 The lead author affirms that this manuscript is an honest, accurate, and transparent account of  
24 the study being reported; that no important aspects of the study have been omitted; and that

1 any discrepancies from the study as planned (and, if relevant, registered) have been  
2 explained.

### 3 **DATA SHARING**

4 Data supporting the study findings will be available from the corresponding author on  
5 reasonable request.

### 6 **REGISTRATION**

7 This prospective observational study was registered on the 22<sup>nd</sup> of December 2022 at the  
8 Centre of Evidence Based Dermatology registration portal. The protocol can be accessed at  
9 <https://www.nottingham.ac.uk/research/groups/cebd/documents/protocol-coi.pdf>.

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19



1 **TABLE.** General readers' characteristics

2

<b>Characteristics</b>	<b>N = 23</b>
<b>Gender, <i>n</i> (%)</b>	
Female	14 (60.9)
Male	9 (39.1)
<b>Age (years)</b>	34 [31-44.5]
<b>Number of scientific articles read by month</b>	5 [4.0-10.0]
<b>Professional role, <i>n</i> (%)</b>	
Clinician	6 (26.1)
Researcher	7 (30.4)
Both clinician and researcher	10 (43.5)
<b>Work setting for clinicians, <i>n</i> (%)*</b>	
Public practice (NHS)**	16 (100)
Private practice**	2 (12.5)
<b>Number of years within dermatology specialty (1<sup>st</sup> year of residency)*</b>	7 [3.0-15.25]

3 *Data are expressed as median [IQR] or number (%)*

4 *\*Not applicable for 7 readers with an exclusive research activity*

5 *\*\*A reader can have multiple activities*

1 **FIGURE.** Outcomes stratified by paper and readers' characteristics  
2 *Primary outcome (percentage of readers who correctly both identified the company that*  
3 *developed the drug and whether any (and which) of the authors have a direct conflict with*  
4 *that company for the 4 papers included) stratified by paper and readers' characteristics*  
5 *(created with flourish.studio: <https://flourish.studio>).*

- 1 **Supplemental file**
- 2 **Appendix 1.** Methods
- 3 **Appendix 2.** Search strategy in Medline (equation research used in the GREAT database)
- 4 **Appendix 3.** Characteristics of included studies and extracted data