



European
Crohn's and Colitis
Organisation

European Crohn's and Colitis Organisation **Topical Review** on Environmental Factors in IBD

Christian Maaser, Lueneburg, Germany

ECCO topical reviews

- *focus on a particular topic related to the diagnosis, classification, or management of inflammatory bowel diseases and are authorised by ECCO by following the respective standard operating procedures including an open call and a consensus meeting*
- *reserved to areas with yet limited evidence-based information*

Reasons and Aim for this topical review

- In recent years increasing evidence to support the role of the exposome in IBD
 - Rise in the incidence of IBD far outweighs that which can be explained by genetic drift
 - Identifying modifiable environmental factors is challenging and prospective studies and controlled trials are scarce
 - In addition, though environmental factors are crucial, each individual factor may confer only a modest risk
- Aim: to investigate the strength of associations between environmental factors and IBD incidence and relapse

Working Groups

WG 1: Early life events

Lead: Ebbe Langholz

- Eduards Krustins
- Vincent Hernandez Ramirez
- Konstantinos Katsanos
- Elif Saritas Yuksel

WG 2: Gut-environment interface

Lead: Vito Annese

- Johan Burisch
- Pierre Ellul
- Tarkan Karakan
- Arie Levine

Consensus meeting ECCO
2016 in Amsterdam

WG 3: Lifestyle

Lead: Christian Maaser

- **Hannah Gordon**
- Gerassimos J. Mantzaris
- Colm O' Morain
- Hans Strind

Reviewers on behalf of GuiCom

- Andreas Sturm
- Stephan Vavricka

Early life events

ECCO Current Practice Position 2

Smaller families and being the older sibling increase the risk of developing IBD; however, data are equivocal



ECCO Current Practice Position 3

There is lower incidence of paediatric-onset IBD among those who have been breastfed, with a more pronounced effect in CD and a duration-dependent response

ECCO Current Practice Position 4

There is no support for the hypothesis that vaccinations in childhood predispose to the later development of IBD



ECCO Current Practice Position 5

There is insufficient evidence to support or refute the hygiene hypothesis



Medication

ECCO Current Practice Position 10

There is evidence linking long-term non-steroidal anti-inflammatory drug use with future IBD onset. However, the evidence to support such an association with aspirin is conflicting

The evidence linking non-steroidal anti-inflammatory drug [NSAID] use with IBD flare is inconsistent; it is unlikely that a short-term use is detrimental



ECCO Current Practice Position 11

Oral contraception is a risk factor for the development of CD and UC. However, once CD or UC is established, the use of hormonal contraception does not increase the risk of flare

ECCO Current Practice Position 19

Vitamin D deficiency may influence the pathogenesis and disease course of IBD but the mechanisms are not understood



ECCO Current Practice Position 13

Within Europe and North America, exposure to antibiotics is positively associated with the development of IBD, especially CD. This association is even stronger in paediatric-onset IBD and almost exclusively seen in CD



Geographical and seasonal



ECCO Current Practice Position 8

A positive association between urban air pollution and IBD has been described. However, it is difficult to interpret whether this is a direct consequence of pollution

ECCO Current Practice Position 18

Data regarding the impact of seasonality on IBD onset and flare are conflicting



ECCO Current Practice Position 20

Geographical gradients correlating with the incidence of IBD have been found in various studies, though a proof of association is still missing

ECCO Current Practice Position 21

Moving to areas of high-incidence increases the risk of IBD, particularly UC. It is not known whether moving to low-incidence areas protects against IBD



ECCO Current Practice Position 22

There is no evidence that short-term travel is an independent risk factor for IBD onset. The data on the impact of travel on established disease are conflicting



Lifestyle

ECCO Current Practice Position 16

Data on the protective effect of exercise on later development of IBD are inconclusive. However, regular exercise in patients with quiescent or mild disease may improve outcome



ECCO Current Practice Position 9

Smoking is a risk factor for CD. Continuing smoking after diagnosis is a risk factor for a more severe disease course. Smoking cessation improves disease outcome. Smoking is protective against UC. Smoking cessation has a negative influence on disease course. However, due to the increased risk of death associated with smoking, starting or continuing smoking is not a treatment option



ECCO Current Practice Position 15

Stress, anxiety, and depression have not been proven to be risk factors for later development of IBD. However, all have shown to worsen the course of IBD. Managing these conditions optimally has been associated with a positive outcome



Conclusions

Though this topical review does not give the final answer regarding the role of environmental factors in respect to the development and course of IBD

- Scientifically rated overview of the vast literature on potential environmental factors
- Understanding of the complexity of the potential involvement of environmental factors
- Help to inform your patients based on the current scientific evidence
- Realize there are many unanswered questions



The screenshot shows a web browser window displaying the ECCO website. The address bar shows the URL ecco-ibd.eu, which is circled in red. A red arrow points from the ECCO logo in the top left corner to the address bar. The website header features the ECCO logo and the text "European Crohn's and Colitis Organisation" and "Inflammatory Bowel Diseases". The navigation menu includes "Home", "About ECCO", "Congresses & Events", "Membership", "Education", "Science", "Publications", and "Public Affairs". The "Publications" menu is open, showing a list of items: "ECCO Guidelines", "Published ECCO Guidelines", "ECCO Guidelines", "ECCO Topical Review", "ECCO/ECCA Patient Guidelines", "CD Patient Guidelines", "UC Patient Guidelines", "JCC", "Current JCC eTOC", "JCC China 2013", "ECCO News", "Congress Abstracts", "Abstracts 2017", "Abstracts 2016", "Abstracts 2015", "Abstracts 2014", "Abstracts 2013", "Abstracts 2012", "Abstracts 2011", "eNewsletter", and "ECCO IBD Mobile App". The "ECCO Topical Review" link is circled in red, with a red arrow pointing to it from the "Publications" menu. The browser's address bar shows the URL <https://www.ecco-ibd.eu/index.php/publications/ecco-topical-review.html>. The Windows taskbar at the bottom shows the time as 09:09 on 15.02.2017.