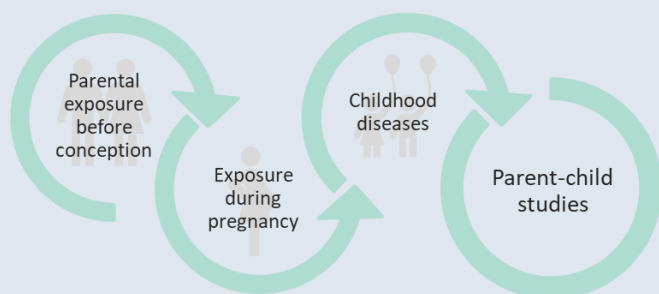


DOC*X-Generation cohort – Denmark

Intro box

DOC*X-Generation cohort is a Danish, nationwide population with information on maternal and paternal working history and address data linked to all liveborn children (1977-2018).

In EXIMIOUS, the cohort adds new knowledge about maternal exposure during pregnancy and risk of disease in the next generation.



Who is included in the cohort?

The DOC*X-Generation cohort (DOC*X-G)¹ builds on the existing occupational register-based DOC*X cohort.² All women from DOC*X is linked with their liveborn pregnancies based on information from the Danish Medical Birth Register.

Population information

Data included from 1977 to 2018

Liveborn children: approx. 2.4 million
Women: approx. 1.4 million

Examples of diseases – retrieved from the national patient register

Asthma - Type 1 diabetes -
Juvenile idiopathic arthritis

How DOC*X-G contributes to EXIMIOUS?

The inclusion of this specific cohort in EXIMIOUS makes it possible to investigate maternal exposures during pregnancy and the risk of disease in the children. The exposures *in utero* have previously been shown to increase risk of disease. DOC*X-G contributes with a generation perspective on the exposome.



What data did we collect?

The DOC*X-G is an established cohort based on register data in combination with job exposure matrices (JEM). In EXIMIOUS, the cohort has been expanded with air pollution data based on the home addresses of the mothers and children.

What is a JEM – job exposure matrix?

ID	DISCO-88 = JOB	JEM 1 (value)	JEM 2 (value)	Child outcome 1 (Type 1 diabetes)	Child outcome 2 (JIA*)
1	88-000001	0.000	1	Yes	No
2	88-001002	0.500	0	No	Yes
3	88-050607	1.000	0	Yes	No
4	88-403000	0.200	1	No	No
5	88-403000	0.200	1	No	Yes
6	88-403000	0.200	1	No	No

JEMs are tools to estimate the exposure in specific jobs where an individual exposure assessment is not available. The JEM will estimate the exposure as a mean of the specific job.

Air Pollution modelled at the home address

PM_{2.5} OC EC NO₂

EC = Elemental carbon; NO₂ = Nitrogen dioxide;
OC = organic carbon; PM_{2.5} = Particulate matter;

Studies in the cohort within EXIMIOUS

- Will maternal occupational exposure to ergonomic strain and psychosocial stressors during pregnancy increase the risk of asthma in the offspring?
- Will maternal exposure to air pollution during pregnancy increase the risk of juvenile idiopathic arthritis in the offspring?
- Will maternal exposure to air pollution during pregnancy increase the risk of type 1 diabetes in the offspring?

References

1. Begtrup et al. Int J Epidemiol, 2024, 53(4), dyae090
2. Flachs et al. Int J Epidemiol, 2019, 48(5), 1413-1413k

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