

# Supplement Material

## Identification and Characterization of Human Observational Studies in Nutritional Epidemiology on Gut Microbiomics for Joint Data Analysis

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**Supplement Table S1.** Description of other measurements assessed in the observational studies participating in KP-INTIMIC.

Study	Country	Alcohol consumption	Tobacco consumption	PA <sup>1</sup>		Sedentary behaviour	Anthropometry		SES <sup>4</sup>	Medication	Health status
				Q <sup>2</sup>	M <sup>3</sup>		Q <sup>2</sup>	M <sup>3</sup>			
DONALD study	Germany	√	√	√	—	—	—	√	√	√	√
EPIC-Potsdam	Germany	√	√	√	√	√	—	√	√	√	√
LISA	Germany	√	√	√	—	√	√	√	√	√	√
NAKO	Germany	√	√	√	√	—	—	√	√	√	√
Diet4MicroGut	Italy	√	√	—	—	√	√	—	√	√	√
DORIAN-PISAC	Italy	√	√	√	—	—	—	√	√	√	√
Infant microbiome studies	Italy	—	—	—	—	—	—	√ <sup>5</sup>	√ <sup>5</sup>	√	√
Italian Elderly Cohort	Italy	√	—	√	—	√	—	√	√ <sup>5</sup>	√	√
Octopus	Italy	√	√	√	—	√	—	√	√	√	√
IDEFICS/ I.Family cohort	Multinational	√	√	√	√	√	—	√	√	√	√
TransMic	Multinational	√	√	√	—	√	√	√	√	√	√
LucKI Gut Study	Netherlands	√	√	√	—	—	√	√	√	√	√
EarlyMicroHealth	Spain	—	—	—	—	—	—	√	√	√	√
ErNst	Germany	√	√	—	√	—	—	√	√	√	√
Elderly microbiome studies	Italy	√ <sup>5</sup>	√ <sup>5</sup>	√ <sup>5</sup>	—	√ <sup>5</sup>	—	√ <sup>5</sup>	√ <sup>5</sup>	√	√
DIMISA	Spain	√	√	√	—	√	—	√	√	√	√
EDILS	France	√	√	—	—	—	—	√	√	√	√
Medika Study	Italy	—	—	—	—	—	—	√	√	√	√
IBD South Limburg Cohort	Netherlands	√ <sup>5</sup>	√	—	—	—	—	√ <sup>5</sup>	—	√	√
Maastricht IBS Study	Netherlands	√	√	—	—	—	√	—	√	√	√
Effect of fibers on gut microbiota and SCFA in Parkinson patients and healthy references	Belgium	—	—	—	—	—	√	—	√	√	√
FoCus	Germany	√	√	√	—	√	√	√	√	√	√
MetaCardis	Multinational	√	√	√	—	√	—	√	√	√	√

<sup>1</sup> PA: physical activity; <sup>2</sup> Q: questionnaire-based; <sup>3</sup> M: measured (objective measurement); <sup>4</sup> SES: socioeconomic status; <sup>5</sup> data available in a subset of participants.

**Supplement Table S2.** Description of biomarkers and metabolome assessed in the observational studies participating in KP-INTIMIC.

Study	Country	Blood lipids	Glucose/Insulin	Inflammatory markers	Adiposity markers	Metabolome
DONALD study	Germany	√	√	√	√	√ (urine/plasma)
EPIC-Potsdam	Germany	√	√	√	√	—
LISA	Germany	√	√	√	√	√ (serum)
NAKO	Germany	√	√	—	—	—
Diet4MicroGut	Italy	—	—	—	—	√ (urine/stool)
DORIAN-PISAC	Italy	√	√	√	√	√ (urine/stool)
Infant microbiome studies	Italy	—	—	—	—	—
Italian Elderly Cohort	Italy	√	√	√	√	√ (serum)
Octopus	Italy	√	√	√	—	√ (plasma/stool)
IDEFICS/ I.Family cohort	Multinational	√	√	√	√	√ (urine/serum/stool)
TransMic	Multinational	√	√	√	—	√ (stool)
LucKI Gut Study	Netherlands	—	—	—	—	—
EarlyMicroHealth	Spain	—	—	—	—	√ (stool)
ErNst	Germany	—	—	—	—	—
Elderly microbiome studies	Italy	—	—	√	—	√ (urine/serum)
DIMISA	Spain	√	√	√	√	—
EDILS	France	√	√	√	√	—
Medika Study	Italy	√	√	√	—	√ (urine)
IBD South Limburg Cohort	Netherlands	—	—	√	—	—
Maastricht IBS Study	Netherlands	—	—	√	—	√ (stool)
Effect of fibers on gut microbiota and SCFA in Parkinson patients and healthy references	Belgium	—	—	—	—	√ (stool)
FoCus	Germany	√	√	√	√	√ (urine/serum)
MetaCardis	Multinational	√	√	√	√	√ (urine/serum)

**Supplement Table S3.** Availability of observational studies to store and share data.

Study	International/ National/ Regional	EC approval	IC provided	Agreed to store and share raw data		Willing to store and share metadata for federated joint analysis
				within INTIMIC	Other projects	
DONALD study	Germany	Yes	Yes	Yes	Yes, with permission from PI <sup>1</sup>	Yes, with permission from PI <sup>1</sup>
EPIC-Potsdam	Germany	Yes	Yes	No	No	Yes
LISA	Germany	Yes	Yes	No	requires cooperation contract and MDTA <sup>2</sup> and approval from SC <sup>3</sup>	requires cooperation contract and MDTA <sup>2</sup> and approval from SC <sup>3</sup>
NAKO	Germany	Yes	Yes	Requires approval from the NAKO eV	Requires approval from the NAKO eV	Requires approval from the NAKO eV
Diet4MicroGut	Italy	Yes	Yes	Yes	Yes	Yes
DORIAN-PISAC	Italy	Yes	Yes	No	depends on kind of data, permission of scientists involved, and anonymized	depends on kind of data, permission of scientists involved, and anonymized
Infant microbiome studies	Italy	Yes	Yes	Yes (microbiome data)	Yes (microbiome data)	Yes, after obtaining consent of the partners involved in the nutritional/health topics
Italian Elderly Cohort	Italy	Yes	Yes	Yes (microbiome data)	Yes (microbiome data)	Yes, after obtaining consent of the partners involved in the nutritional/health topics
Octopus	Italy	Yes	Yes	with permission from Octopus consortium	with permission from Octopus consortium	with permission from Octopus consortium
IDEFICS/ I.Family cohort	Germany	Yes	Yes	Yes, after obtaining consent of the PI <sup>1</sup>	Yes, after obtaining consent of the PI <sup>1</sup>	Yes, after obtaining consent of the PI <sup>1</sup>
TransMic	Multinational	Yes	Yes	Not yet	No	with permission from TransMic consortium
LuckI Gut Study	Netherlands	Yes	Yes	No	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>
EarlyMicroHealth	Spain	Yes	Yes	Yes	Yes	Yes
ErNst	Germany	Yes	Yes	Yes	Yes	Yes
Elderly microbiome studies	Italy	Yes	Yes	Yes (microbiome data)	Yes (microbiome data)	Yes, after obtaining consent of the partners involved in the nutritional/health topics
DIMISA	Spain	Yes	Yes	Yes	Yes	Yes
EDILS	France	Yes	Yes	No	Yes, with permission	Yes if anonymized
Medika Study	Italy	Yes	Yes	Yes	Yes	Yes
IBD South Limburg Cohort	Netherlands	Yes	Yes	No	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>

Maastricht IBS Study	Netherlands	Yes	Yes	No	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>	Yes, with permission from SC <sup>3</sup> , anonymized and with MDTA <sup>2</sup>
Effect of fibers on gut microbiota and SCFA in Parkinson patients and healthy references	Belgium	Yes	Yes	No	No	No
FoCus	Germany	Yes	Yes	No	Yes, with permission from P2N biobank and anonymized	Yes, with permission from P2N biobank and anonymized
MetaCardis	Multinational	Yes	Yes	No	with permission from SC <sup>3</sup> and anonymized	Yes, with permission from SC <sup>3</sup> and anonymized

<sup>1</sup>PI: Principal Investigator; <sup>2</sup>MDTA: Material and data Transfer agreement; <sup>3</sup>SC: Steering Committee