

# The Côte d'Ivoire dual burden of disease (CoDuBu) study

<b>Submission date</b> 26/07/2017	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 27/07/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 30/10/2017	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

The co-occurrence of infectious diseases and non-communicable diseases (not caused by infection) is poorly studied, despite the fact that this dual burden has become a reality for many low- and middle-income countries (LMICs). Even very little is known about how common infectious diseases (e.g. worms and malaria) and non-communicable diseases (e.g. high blood pressure and diabetes) influence each other. Repeated and chronic (long-term) infections that are common in LMICs may alter people's susceptibility to diabetes and heart disease. Worm infections may shift the immune system into a direction protecting against inflammatory diseases, whereas repeated infections such as malaria may increase the risk of inflammatory diseases. Adults surviving often lethal infections in LMICs may have a genetically different susceptibility to age-related diseases (e.g. high blood pressure). As a result, people in LMICs may develop these diseases at different rates and at different ages than Western populations. If confirmed, this calls for changes in the provision of health services. The aim of this study is to carry out a survey of adults from rural and urban parts of the Taabo district in south-central Côte d'Ivoire to study the co-occurrence of worm infections and malaria with metabolic syndrome, high blood pressure and diabetes.

### Who can participate?

Adults (aged at least 18) from three selected villages

### What does the study involve?

The survey consists of health examinations to assess the incidence of high blood pressure, diabetes, worm and malaria infections, lifestyle and risks of infectious and non-communicable diseases. Confirmatory tests are provided as well as a free first month of treatment and enrolment into subsidized national care programmes. A biobank of collected biospecimens (e.g. stool and urine samples) is set up for future research.

### What are the possible benefits and risks of participating?

All participants benefit from health examinations, laboratory tests, physician consultation and treatment, all free of charge. Participants receive health advice from the physician regardless of disease status. Participating health centres are equipped with diagnostic tools, and participating health workers are trained in non-communicable disease diagnosis and management. The

biobank will improve local research. There are no specific risks associated with this study, although providing stool and urine samples might be perceived as shameful. Furthermore, common drugs used for the treatment of worms, malaria, diabetes and high blood pressure might result in some side effects, but these are usually few, short-lived and the benefits outweigh the risk of not being treated.

Where is the study run from?

The study is conducted in three rural communities located in the Taabo district in south-central Côte d'Ivoire

When is the study starting and how long is it expected to run for?

April 2017 to December 2017

Who is funding the study?

Novartis Foundation (Switzerland)

Who is the main contact?

Prof. Nicole Probst-Hensch

## Contact information

### Type(s)

Scientific

### Contact name

Prof Nicole Probst-Hensch

### Contact details

Socinstrasse 57

Basel

Switzerland

4051

## Additional identifiers

### Protocol serial number

N/A

## Study information

### Scientific Title

Co-occurrence of common chronic infections (soil-transmitted helminths and Plasmodium) and common non-communicable diseases (diabetes and hypertension) in rural and urban Côte d'Ivoire

### Acronym

CoDuBu

### Study objectives

Repeated and chronic infections that are common in low- and middle-income countries (LMICs) may alter the susceptibility to diabetes and cardiovascular diseases as well as their related phenotypes, albeit in an infection-specific manner. Adults surviving often lethal infections in the context of LMICs may have a genetically different susceptibility to diabetes and hypertension.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

1. Ethikkommission beider Basel (EKBB, Switzerland), 25/07/2011, ref: 2016-00143
2. Comité National d’Ethique et de la Recherche (CNER, Côte d’Ivoire), 24/03/2017, ref: 032 /IMSHP/CNER-kp

### **Study design**

Observational cross-sectional survey

### **Primary study design**

Observational

### **Study type(s)**

Prevention

### **Health condition(s) or problem(s) studied**

Non-communicable diseases, infectious diseases

### **Interventions**

The study involves a baseline cross-sectional survey which will be carried out in three selected villages in the Taabo HDSS, followed by the establishment of a biobank. The cross-sectional survey consists of health examination to determine anthropometric indices, metabolic syndrome, as well as helminthic and malaria infections. It will also include questionnaire survey with regard to lifestyle and risks of IDs and NCDs. Identified cases of ID and NCD will be managed accordingly. Confirmatory tests will be provided for NCD cases as well as free first month of treatment and enrolment into subsidized national care programmes. A biobank consisting of collected biospecimens will be set-up for future research into mechanisms involved in ID-NCD interactions.

### **Intervention Type**

### **Primary outcome(s)**

All outcomes measured at baseline:

1. Hypertension, assessed using blood pressure monitor and questionnaire
2. Diabetes, assessed using blood glucose and glycosylated hemoglobin tests and questionnaire
3. Helminth infection, assessed using Kato-Katz stool test, Baermann stool test, medical test
4. Malaria, assessed using rapid diagnostic blood test and microscopy

### **Key secondary outcome(s)**

No secondary outcome measures

### **Completion date**

31/12/2017

# Eligibility

## Key inclusion criteria

1. Age  $\geq$  18 years
2. Residence in the selected communities
3. Written informed consent to participate

## Participant type(s)

All

## Healthy volunteers allowed

No

## Age group

Adult

## Lower age limit

18 years

## Sex

All

## Key exclusion criteria

1. Residence in the selected communities
2. No written informed consent to participate

## Date of first enrolment

23/04/2017

## Date of final enrolment

31/05/2017

# Locations

## Countries of recruitment

Côte d'Ivoire

Switzerland

## Study participating centre

Swiss Tropical and Public Health Institute

Socinstrasse 57

Basel

Switzerland

4051

**Study participating centre****Centre Suisse de Recherches Scientifiques en Côte d'Ivoire**

01

Abidjan

Côte d'Ivoire

01 BP 1303

**Study participating centre****Université Félix Houphouët-Boigny**

22

Abidjan

BP1106

**Study participating centre****Institut National de Sante Publique**

Abidjan

Côte d'Ivoire

BP V 47

**Study participating centre****Ligue Ivoirienne contre l'Hypertension artérielle et les Maladies Cardiovasculaires**

01

Abidjan

Côte d'Ivoire

BP 2858

**Study participating centre****Institut Pasteur de Côte d'Ivoire**

01

Abidjan

Côte d'Ivoire

BP 490

**Sponsor information****Organisation**

Swiss Tropical and Public Health Institute

**ROR**

https://ror.org/03adhka07

## Funder(s)

### Funder type

Other

### Funder Name

Novartis Foundation

### Alternative Name(s)

### Funding Body Type

Private sector organisation

### Funding Body Subtype

International organizations

### Location

Switzerland

## Results and Publications

### Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

### IPD sharing plan summary

Data sharing statement to be made available at a later date

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	27/10/2017		Yes	No