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PhD in Medical Sciences  
2019-2020

INVITATION to the Public defence of

**Inge ROGGEN**

To obtain the academic degree of '**DOCTOR OF MEDICAL SCIENCES**'

**Bone geometry and bone mineral density by peripheral quantitative computed tomography in healthy and diseased children.**

**Thursday, 16 January 2020 at 5 p.m.**

In Auditorium **Piet Brouwer**

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussels

How to reach the campus Jette:

<http://www.vub.ac.be/english/infoabout/campuses>

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## Summary of the dissertation

Many chronic diseases and eventually their treatments in childhood, affect the bone growth and bone mineralization of the skeleton. As trabecular and cortical bone have different growth patterns through childhood and adolescence and are influenced differently by internal and external factors, distinction between both bone types is necessary to allow clinicians to detect early stages of impaired bone accumulation.

The hypothesis was that in chronic diseases where hormonal or metabolic disturbances prevail, changes in the more metabolically active trabecular bone would be detected first, and that in diseases where disturbances in body composition, regular physical activity and muscle force are predominant, differences would be mainly found in cross-sectional (cortical) bone size, especially at the level of the lower legs, where muscle force and mass is more developed.

A large national database for the development of pQCT reference values at the tibia was constructed, as European reference values were lacking. Four chronic diseases (cystic fibrosis, obesity, anorexia nervosa and type 1 diabetes) were investigated cross-sectionally.

No correlation with the metabolic control or disease duration was found. In conclusion, bone geometry and BMD are affected differently in chronic diseases and poorly predicted by changes in body size and body composition

## Curriculum Vitae

Inge Roggen (born February 3<sup>rd</sup> 1982 in Leuven) obtained her Master in Medicine at the VUB in 2008 (which is also the year her son Axl was born). She started her PhD in 2009. Based at the Ghent University Hospital, field work brought her around the country. Struck by the fun of research, several side projects in emergency medicine sprouted from her imagination and resulted in numerous conference papers and publications.

In 2012, she continued her residency in paediatrics at the VUB and finished it at the UAntwerpen in 2016. This was subsequently followed by a supplemental specialization in emergency medicine in Sint-Niklaas and Antwerp. At the dusk of 2017, she started working at the emergency department of the Queen Fabiola Children's University Hospital, where she currently works as adjunct head of clinic. In between shifts at the QFCUH, she can be found either at the emergency department of AZ St-Jozef Malle, teaching medical staff how to resuscitate children (EPALS) and adults (ALS), coaching medical interns with their dissertation or enjoying a game of Catan with close friends.

Her research resulted in first author publications in several peer reviewed journals and she presented her research at national and international conferences. The project was funded by the Belgian Society for Pediatric Endocrinology and Diabetes.