

Glomerular filtration rate following GH treatment in SGA born young adults

W.J. Goedegebuure¹, G. Kerkhof¹, A.C.S. Hokken-Koelega¹

1. Dept. of Pediatrics, Subdivision of Endocrinology, Erasmus University Medical Center, Rotterdam, The Netherlands

GFR decreased only during 6 months after GH cessation, but thereafter GFR remained stable and within the normal range. GFR at 21 years is similar in GH-treated and untreated young adults born SGA and AGA.

Background

- **GH treatment** increases glomerular filtration rate (**GFR**), as serum IGF-I stimulates the renin-angiotensin system.
- Infants born with a **low birth weight** have a smaller number of nephrons, which causes a lower **GFR**, a higher blood pressure and a higher albumin-to-creatinine ratio in early adulthood.

Methods

1. **GFR** was calculated with the CKD-EPI formula in 261 **GH-treated** young adults born SGA (**SGA-GH**), at GH-stop and at 6 months, 2 and 5 yrs thereafter.
2. At 5 yrs after stop, a mean age of 20.9 yrs, **GFR** in 261 **SGA-GH** young adults was compared with:
 - SGA born young adults with age-matched controls with:
 - Persistent short stature (**SGA-S**, n=56)
 - Spontaneous catch-up growth (**SGA-CU**, n=118)
 - AGA born young adults with normal adult height. (**AGA**, n=135)

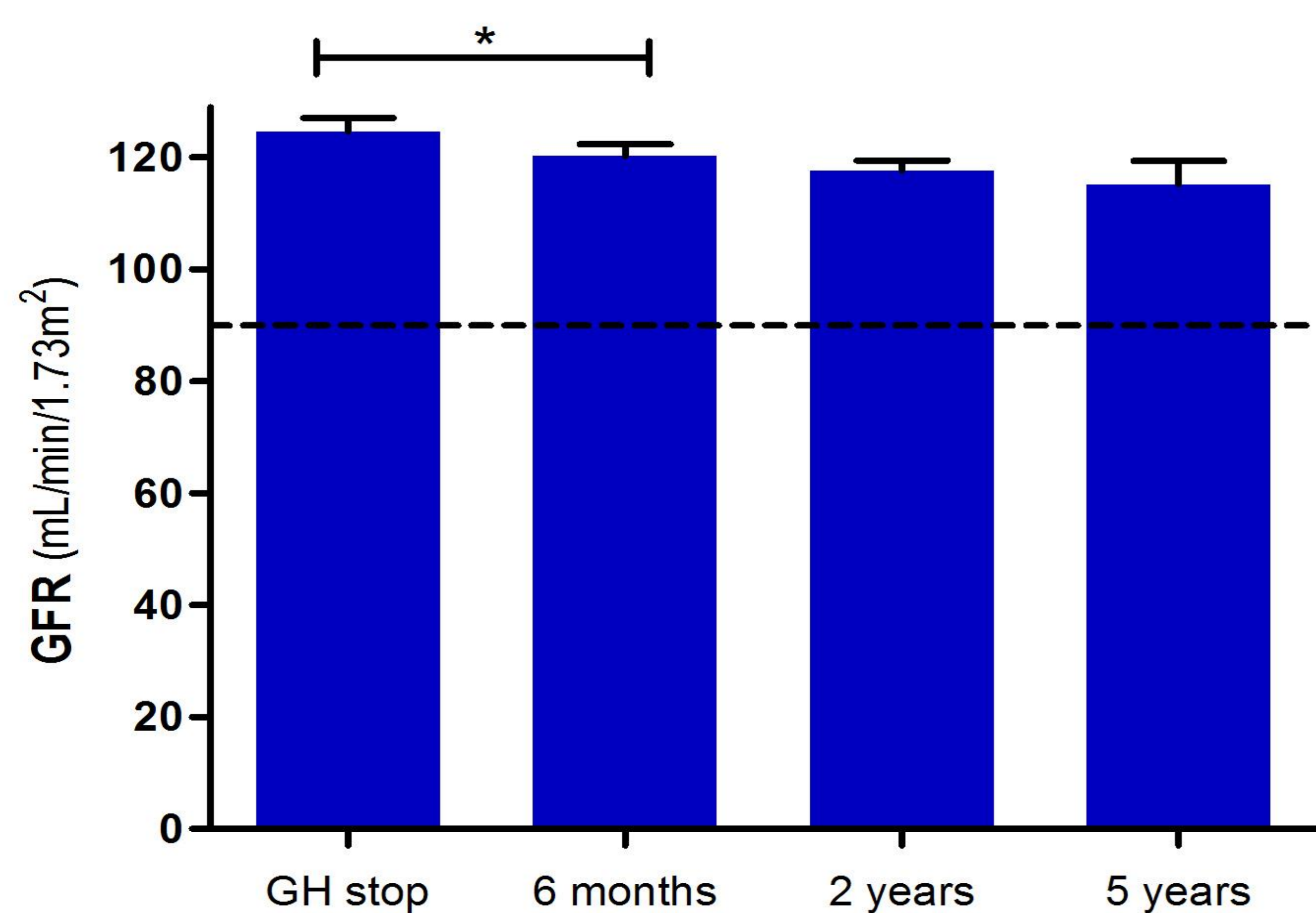
Objective

1. To investigate **longitudinal changes in GFR** following growth hormone (**GH**) stop in young adults born small for gestational age (**SGA**).
2. To compare **GFR at 5 years after cessation** with untreated young adults born SGA or AGA, at the age of 21 yrs.

Results

1. **GFR** decreased significantly during the first 6 months after cessation of **GH treatment**, while remaining well within the normal range (124.6 vs. 120.2 mL/min/1.73m², p<0.001), between 2- and 5 yrs.
2. At 5 yrs after **GH-stop**, SGA-GH adults had a similar **GFR** as the untreated SGA and AGA adults.

GFR in GH-treated young adults following GH-cessation



GFR at 21 years of age compared between groups

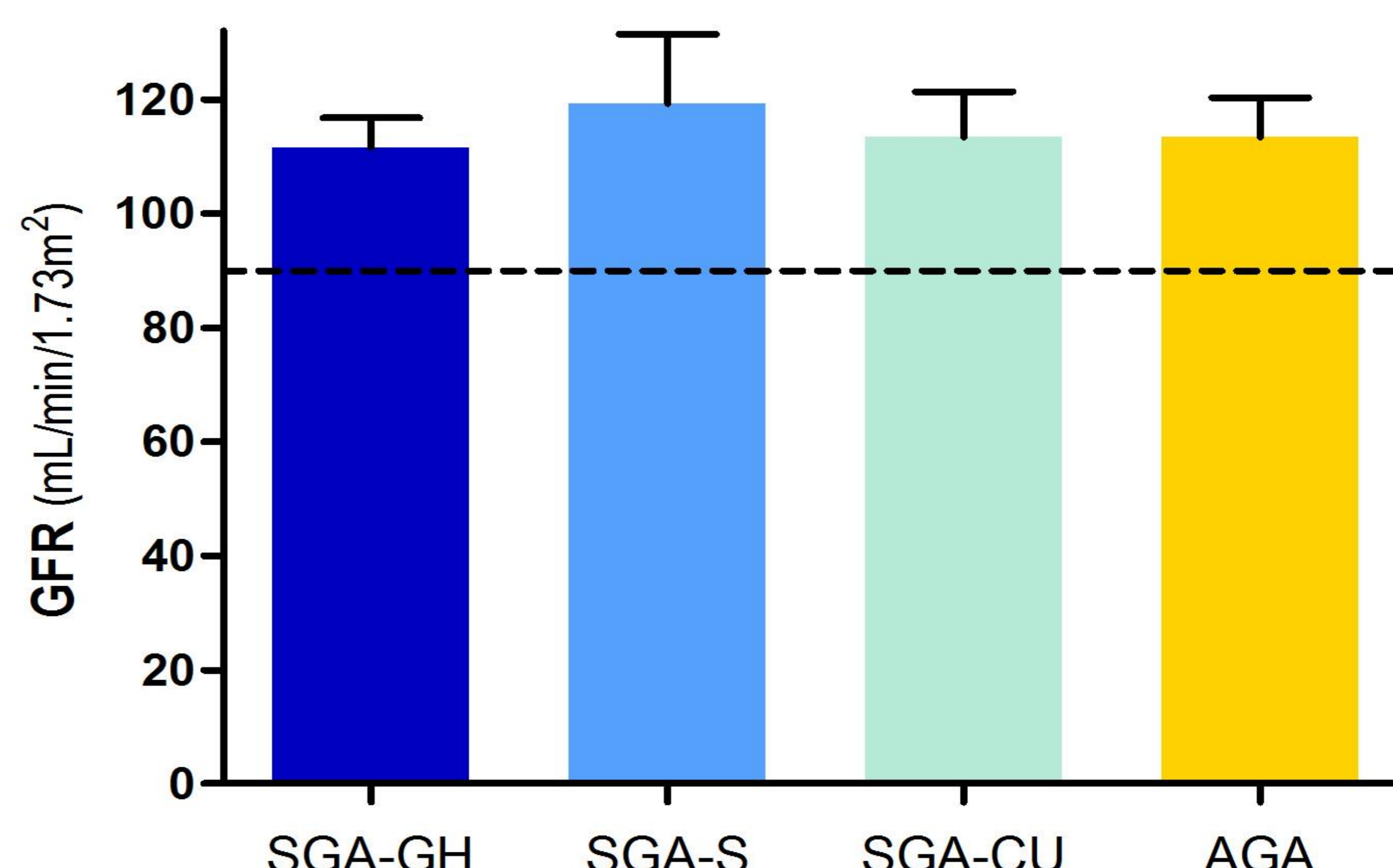


Figure 1. Longitudinal follow-up of GFR in GH-treated young adults and comparison at 21 years of age to untreated young adults born SGA and AGA.

Correspondence:

W.J. Goedegebuure
w.goedegebuure@erasmusmc.nl